

# Taxation of income from the employment and influence of taxation on consumption and savings

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*Source / Izvornik:* **Interdisciplinary management research XV, 2019, 1274 - 1288**

**Conference paper / Rad u zborniku**

*Publication status / Verzija rada:* **Published version / Objavljena verzija rada (izdavačev PDF)**

*Permanent link / Trajna poveznica:* <https://um.nsk.hr/um:nbn:hr:165:955984>

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*Download date / Datum preuzimanja:* **2025-03-06**

*Repository / Repozitorij:*



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THE JOSIP JURAJ STROSSMAYER UNIVERSITY OF OSIJEK  
FACULTY OF ECONOMICS IN OSIJEK - CROATIA  
POSTGRADUATE DOCTORAL STUDY PROGRAM IN MANAGEMENT  
HOCHSCHULE PFORZHEIM UNIVERSITY - GERMANY  
CROATIAN ACADEMY OF SCIENCES AND ARTS

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INTERDISCIPLINARY MANAGEMENT RESEARCH XV  
INTERDISZIPLINÄRE MANAGEMENTFORSCHUNG XV



Under the auspices of the President of the  
Republic of Croatia

Opatija, 2019

***Published by:***

Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek, Croatia  
Postgraduate Doctoral Study Program in Management  
Hochschule Pforzheim University, Germany  
Croatian Academy of Sciences and Arts

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***Design:***

Krešimir Rezo, graf.ing.  
Krešendo, Osijek

***Print:***

Studio HS internet d.o.o. Osijek

ISSN 1847-0408

Conference Proceedings is indexed in databases which are listed at the official web conference  
page: <http://imr-conference.com>

This publication is partly financed by Ministry of Science and Education of the Republic of  
Croatia.

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## VORWORT

Es ist uns ein Vergnügen, das Konferenzband "Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV" vorstellen zu können. Ein Buch aus dieser Reihe ist zum ersten Mal 2005 erschienen, als Resultat der Zusammenarbeit zwischen der Wirtschaftsfakultät in Osijek, Kroatien und der Hochschule Pforzheim, Deutschland, und insbesondere durch das Magisterstudium des Management. Die Zusammenarbeit der zwei genannten Partnerinstitutionen ist unter anderem durch jährliche wissenschaftliche Symposien gekennzeichnet, auf welchen interessante Themen aus verschiedenen Bereichen der Wirtschaft und des Managements vorgestellt und folglich in einem Band veröffentlicht werden. Jedes Jahr ziehen die wissenschaftlichen Symposien Akademiker anderer kroatischer, sowie ausländischer Universitäten, einschließlich Deutschland, Ungarn, Polen, Rumänien, Slovenien, Montenegro, Bosnien und Herzegovina, Serbien, Indien, Irland, Czechien, Israel, Italien, Sudafrica, Kanada, Litauen, Kosovo, Türkei, Belgien, Schweiz, USA, Slowakei, Dänemark, Mazedonien, Mexico, Zypern und Großbritannien an, die ihren wissenschaftlichen und professionellen Beitrag zur Diskussion über zeitgenössische Fragen aus dem Bereich des Managements leisten. Die Aktualität der behandelten Fragen, der internationale Charakter im Hinblick auf Themen und Autoren, die höchsten Standards der Forschungsmethodologie sowie die Kontinuität dieser Konferenzreihe wurden auch von der internationalen akademischen Gemeinde erkannt, weswegen sie auch in internationalen Datenbanken, wie Clarivate Web of Science, Thomson ISI, RePEc, EconPapers und Socionet, zu finden ist.

Die neueste Ausgabe von "Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV" umfasst 104 Arbeiten geschrieben von 257 Autoren. Der Erfolg früherer Ausgaben ging über die Grenzen der Länder hinaus, deren Autoren schon traditionell Teil der Reihe waren. Jedes der Autoren leistete einen bedeutenden Beitrag zu diesem fachübergreifenden Managementforum.

Als Herausgeber dieses Bandes hoffen wir, dass diese Reihe auch weiterhin Akademiker und Professionelle dazu bewegen wird, in Forschung und Beruf die höchsten Standards zu beanspruchen, und dass es weiterhin als Ansporn zu weiteren Formen von Zusammenarbeit unter Teilnehmern dieses Projektes dienen wird.

Dražen Barković, professor emeritus

Prof. Dr. Bodo Runzheimer

## FOREWORD

It is our pleasure to introduce the book “Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV” to you. The first volume appeared in 2005 as a result of co-operation between the Faculty of Economics in Osijek (Croatia) and Pforzheim University (Germany), particularly through the postgraduate programme “Management”. The co-operation between these partnering institutions has been nurtured, amongst else, through annual scientific colloquiums at which interesting topics in various fields of economics and management have been presented and later published in the proceedings. Over the years, the scientific colloquiums have drawn the attention of academic scholars from other Croatian universities, as well as from other countries including Australia, Germany, Hungary, Poland, Romania, Slovenia, Montenegro, Bosnia and Herzegovina, Serbia, India, Ireland, Czech Republic, Israel, Italy, South Africa, Canada, Lithuania, Kosovo, Turkey, Belgium, Switzerland, USA, Slovakia, Denmark, Macedonia, Mexico, Cyprus and the United Kingdom each making a contribution in academic and professional discussion about contemporary management issues. Actuality and importance of the issues discussed, the international character of the book in terms of authors and topics, the highest standards of research methodology and continuity in publishing have been recognized by the international academic community, resulting in the book of proceedings being indexed in world-known data bases such as Clariavate Web of Science, Thomson ISI, RePEc, EconPapers, and Socionet.

The latest edition, i.e. ““Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV” encompasses 104 papers written by 257 authors. The success of former editions has echoed beyond the traditionally participative countries and authors.

As editors we hope that this book will continue to encourage academic scholars and professionals to pursue excellence in their work and research, and to provide an incentive for developing various forms of co-operation among all involved in this project.

Dražen Barković, professor emeritus  
Prof. Dr. Bodo Runzheimer



GENERAL  
MANAGEMENT



# APPLICATION OF JOINTPOINT REGRESSION IN DEMAND FORECASTING ON THE EXAMPLE OF BAKERIES

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## **Abstract**

*A special place in the process of achieving competitive advantage and increasing product sales is occupied by demand forecasting. It allows not only to determine the level of interest in offered goods, but also to adjust its potential and resources to market expectations. Moreover, continuous analysis of sales data is an important element of company diagnostics. It enables to forecast the future values of the studied phenomenon, but also to get to know the relations taking place in it, to notice deviations from the norm and to react quickly to disturbing signals.*

*The subject of this article is a family business – a bakery that offers high quality traditional bakery products. The company's activity is based primarily on a regular group of customers, which are small local shops. Distribution takes place in the company's own vehicles, which deliver bread to customers six days a week. At some point in the successful company, as a result of the opening of a large supermarket in the area, sales started to fall. The dynamically changing situation required a quick reaction based on appropriate analyses, taking into account the important factors influencing demand and proposing new forecasts. Due to the specificity of time series under study, it was decided to apply jointpoint regression. This method enabled to define the existing dependencies and obtain reliable forecasts concerning product sales.*

**Keywords:** jointpoint regression, demand forecasting, time series analysis

JEL Classification: E27, M11



## 1. INTRODUCTION

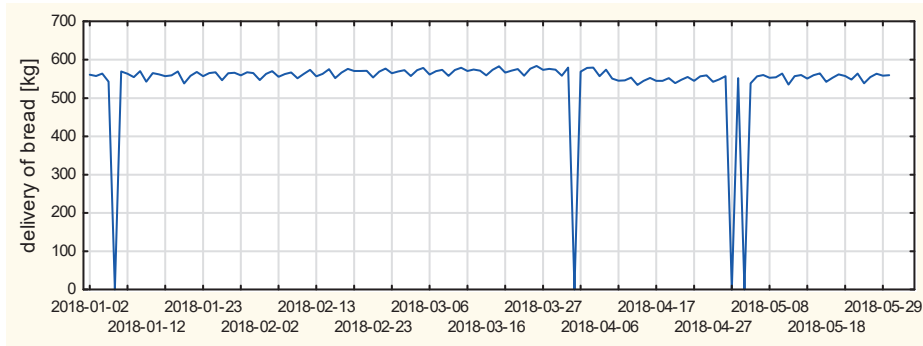
The company presented in the article is a small enterprise - a bakery, the competitive advantage of which is based primarily on high quality products. It offers bakery products made using the traditional method, based on natural ingredients and baked in a coal-burning oven. According to the owners, the popularity of the product is determined by the fact that it does not contain any preservatives, enhancers or other chemical additives. The company's reach is not large, among its customers are local grocery stores and several company sales points. The company gradually gained trust and popularity among customers, successively building a brand and reinforcing its position on the market, as evidenced by the constantly growing demand for its products. However, the market situation, subject to dynamic and sometimes unexpected changes, resulted in a sharp drop in sales of bread in local shops, which resulted in a drastic decrease in the number of orders placed with bakeries. The reason for this was the opening of a large hypermarket in the area, combined with an intensive advertising campaign and attractive offers. Apart from tempting attractions, many customers were drawn by the simple curiosity of the newly opened establishment. All this affected sales in the local grocery stores, forcing them to rebuild their strategy. This group also included the analyzed bakery. Analytical tools for forecasting future developments, based on time series analysis provide support for such decisions. This article presents an example of its application.

## 2. CASE STUDY

### 2.1. PRELIMINARY ANALYSIS OF THE GATHERED INFORMATION

The data provided by the bakery concerned sales of bread in the first half of 2018. An important step in the methodology making use of time series analysis is a visual assessment of the information collected, which was done first, so as to check how demand has developed in recent months. Deliveries take place from Monday to Saturday, therefore a 6-day time series was analyzed. The quantity of ordered goods (in kilograms) is shown in the graph below (fig. 1).

**Figure 1.** Graph of time series of bread sales



**Source:** own study

In the graph (Fig. 1) one can notice observations with a value of zero. These are 6 January (Epiphany), 2 April (Easter Monday), 1 May (Labor Day), 3 May (3 May Constitution Day), i.e. days which are free from work in Poland and on which deliveries did not take place. Since they disrupt the course of the analyzed series and can strongly influence the results, it was necessary to replace them. Due to the visible weekly variability in the number of orders, it was decided to use for this purpose the average value calculated for the selected day of the week, determined without the outliers (Table 1)

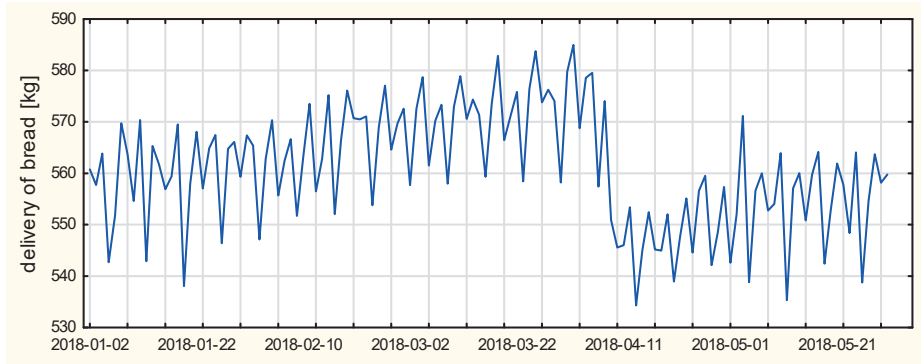
**Table 1.** Basic descriptive statistics for the examined variable

Day of the week	Number of observations	Mean [kg]	Median [kg]	Min. [kg]	Max. [kg]	Standard deviation [kg]	Coefficient of variation [%]
Monday	20	567.42	567.08	550.92	583.77	10.06	1.77
Tuesday	21	559.11	558.18	544.60	573.80	8.42	1.51
Wednesday	22	561.88	561.08	544.96	578.60	9.67	1.72
Thursday	20	567.66	568.48	552.02	579.51	7.15	1.26
Friday	21	547.35	546.40	534.32	559.32	8.66	1.58
Saturday	20	563.06	564.03	545.00	579.72	10.20	1.81

**Source:** own study

Although the time series in Figure 1 does not seem to be subject to any fluctuations other than those resulting from the day of the week, other changes are visible when the outliers are replaced (Figure 2). This also shows a strong influence of the atypical observations and the degree to which they falsify the results. They make it difficult and sometimes even impossible to carry out a correct analysis.

**Figure 2.** Graph of the time series after removing the outliers



**Source:** own study

The corrected graph (figure 2) clearly shows an upward trend and the existing seasonal fluctuations resulting from the number of orders changing during the week. What is also characteristic is the strong collapse in the trend, which results from the drop in sales related to the opening of the hypermarket in question.

### 2.1 ESTIMATION OF MODEL I PARAMETERS

In the first stage of the study, an attempt was made to describe the considered relationships by means of a function taking into account only the trend and the random fluctuations:

$$y_t = f(t) + \xi_t$$

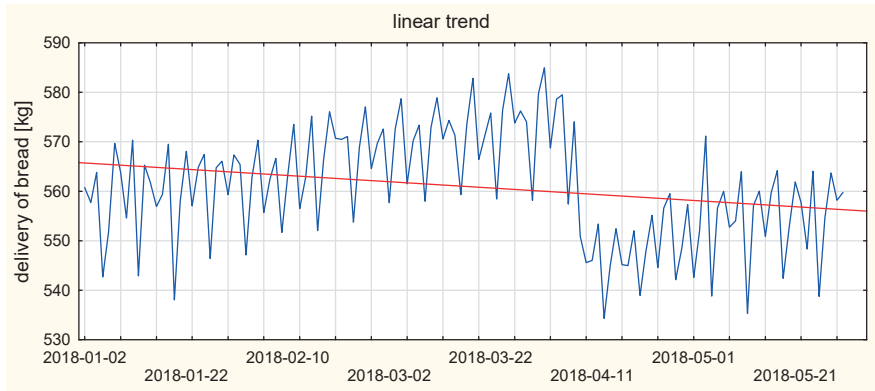
Where:

$f(t)$  - the analytical form of the trend function

$\xi_t$  - random fluctuations

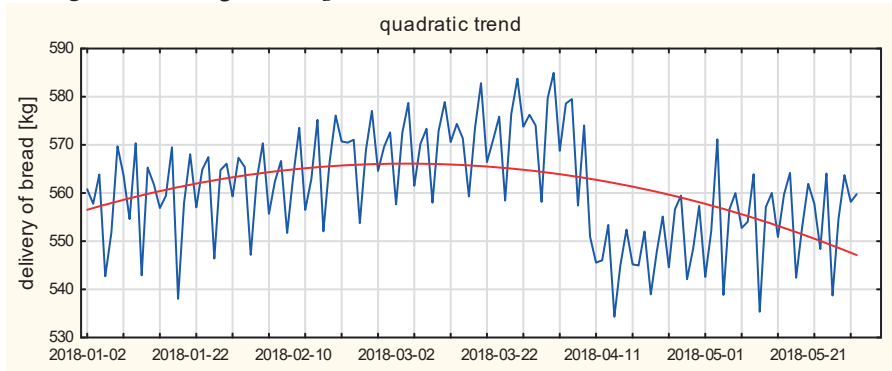
An attempt has been made at fitting the linear function Fig. 3 and the polynomial function Fig. 4 however, in both cases the fit is not satisfactory, because - contrary to intuition, which suggests a general upward trend - the linear function decreases from the very beginning, while the values of the quadratic function also begin to decrease when the maximum is reached. Such results are influenced by a sudden drop in sales of bread.

**Figure 3.** Fitting the linear trend to the examined series



Source: own study

**Figure 4** Fitting of the quadratic trend to the examined series



Source: own study

The form of the proposed functions of the trend, which does not reflect the actual implementation of the phenomenon, determined the application of the segmented trend, estimated on the basis of the recorded turning point (Sokołowski, 2010). To this end, two additional variables need to be introduced into the model:  $k$  and  $K$ . The variable  $k$  shall correspond to the appearance of competition by taking a zero value for the observation before the trend changes and a value of one after the change. The variable  $K$  is the product of the variable  $k$  and the variable  $t$  representing the linear trend. This makes it possible to estimate the parameters of the model:

$$\hat{y}_t = a_0 + a_1K + (b_0 + b_1)t$$

The idea behind this approach is that at the turning point the absolute term  $a_0$  is modified by  $a_1$  while the directional coefficient  $b_0$  is modified by  $b_1$ .

The parameters of such a model can be estimated in the way adopted for traditional jointpoint regression, using 2 exogenous variables. The results of this estimation are presented in table 2.

**Table 2.** Results of model 1 parameters estimation

N=128	R2= 0.51 F(2.125)=66.74 p<0.0000 Standard error: 8.03			
	b	Std. error of b	t(125)	p-value
	556.08	1.68	330.39	0.00
Absolute term				
t	0.23	0.03	6.83	0.00
k	-28.77	2.64	-10.88	0.00

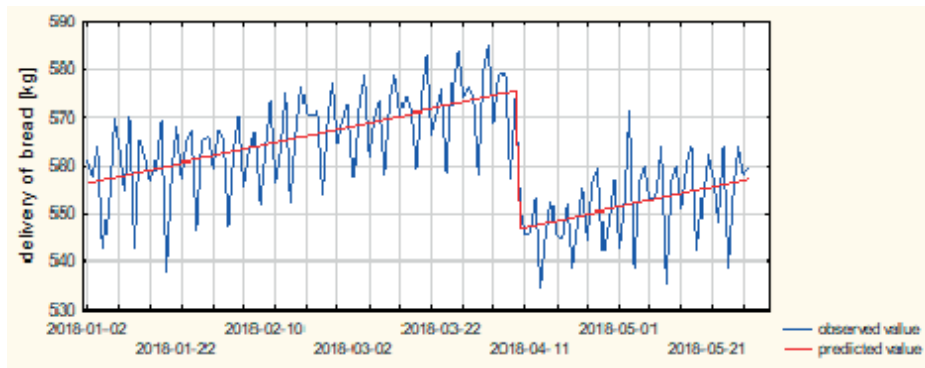
Source: own study

In this way, the following function was obtained

$$y = 556,08 - 28,77k + 0,23t$$

The graph of which, together with the course of real observations, is presented in Figure 5.

**Figure 5.** Linear trend functions and empirical observations graph

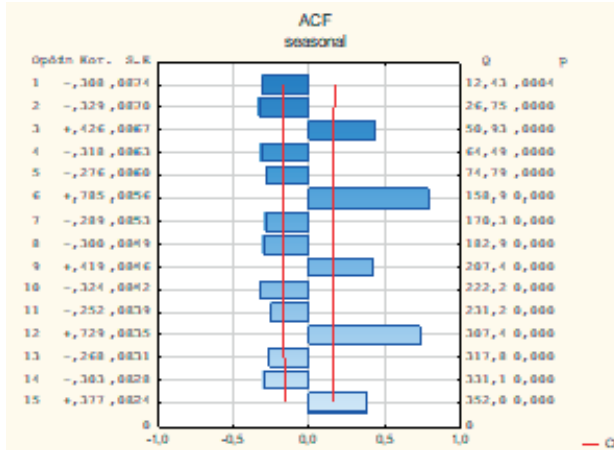


## 2.2 ESTIMATION OF MODEL I PARAMETERS

As Figure 5 shows, the proposed function reflects the upward trend well, but the seasonal fluctuations remain unexplained by the model, due to which the fitting of the model to the empirical data is insignificant, and the corrected coefficient of determination is only 51%. Therefore, their inclusion in the model is necessary. For this purpose, a new variable has been created, which is the difference between real observation and the segmented trend. A part of the values

determined in this way is positive and a part is negative, which confirms the seasonality, as shown in the autocorrelation graph in figure 6, which clearly shows a strong relationship for the lag d=6.

**Figure 6.** Graph of the autocorrelation function of the seasonality variable



Source: own study

Since the autocorrelation chart suggests weekly seasonality, the next step is to confirm and clarify this relationship. A one-way analysis of variance (Dittmann at al., 2011) is helpful in assessing the deviations from the trend. This is done by testing the significance of average time differences for individual groups. However, it requires meeting the assumption of normality of distributions in all the analyzed data populations, in this case, weeks. In addition, they should have the same variance (StatSoft, 2006). Therefore, the compatibility of the distribution of the seasonality variable in groups for all days of the week was examined using the Shapiro-Wilk test. The obtained results of the calculated probability (*p-value*) are presented in Table 3.

**Table 3.** Shapiro-Wilk test results

No.	Day of the week	Value of S-W test statistics	Probability level p
1.	Monday	W=0.96769	p=0.68146
2.	Tuesday	W=0.96378	p=0.56931
3.	Wednesday	W=0.96685	p=0.63836
4.	Thursday	W=0.92108	p=0.09121
5.	Friday	W=0.97161	p=0.76844
6.	Saturday	W=0.95633	p=0.44554

Source: own study

For all days of the week, the value of the test statistic does not allow to reject the H0 null hypothesis informing that the distribution of the tested variable is close to normal, as evidenced by the values of test probabilities  $p$  presented above (table 3). Therefore, it was justified to verify another condition entitling to apply the Anova test, i.e. homogeneity of variance in the examined groups. The Levene test and the Brown-Forsythe test were used. In the H0 null hypothesis, both tests assume homogeneity of variance between the tested samples, which was confirmed by p-value results obtained at the significance level  $\alpha=0,05$  (table 4).

**Table 4.** Results of homogeneity of variance tests

Levene test		Brown-Forsythe test	
Value of test statistic	p-value	Value of test statistic	p-value
F		F	
1.3506	0.2477	1.3054	0.2661

**Source:** own study

The obtained results allow for the utilization of the analysis of homogeneity of variance – ANOVA, the results of which are presented in table 5. At the significance level  $\alpha=0,05$ , the H0 null hypothesis concerning the lack of influence of the weekday factor on the analyzed dependent variable was rejected.

**Table 5.** Results of the analysis of homogeneity of variance – ANOVA

Variable	Analysis of variance							
	Selected effects are significant with $p < 0.05000$							
	SS Effect	df Effect	MS Effect	SS Error	df Error	MS Error	F	p
delivery of bread	6212.06	5	1242.41	10434.27	122	85.53	14.53	0.00

**Source:** own study

The result of a one-factor analysis of variance only informs about the fact that there are statistically significant differences in two groups. Further research is needed to gain precise information on which of the groups are different from each other. In order to do this, t-tests of the average difference for all possible pairs of groups were carried out, as illustrated in table 6

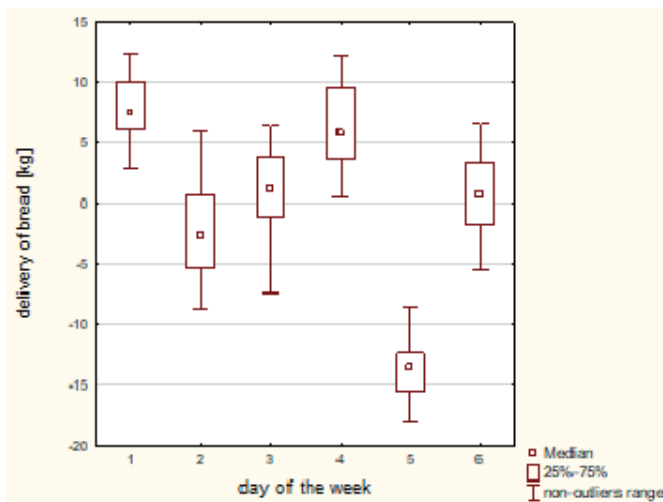
**Table 6.** T-tests for all days of the week

Pair of days	Mean Group 1	Mean Group 2	Standard deviation Group 1	Standard deviation Group 2	p-value
1Mon-2Tue	568.25	558.36	10.52	8.93	0.46
1Mon-3Wed	568.25	561.88	10.52	9.67	0.70
1Mon-4Thur	568.25	567.83	10.52	7.01	0.08
1Mon-5Fri	568.25	547.35	10.52	8.66	0.39
1Mon-6Sat	568.25	562.52	10.52	10.24	0.91
2Tue-3Wed	558.36	561.88	8.93	9.67	0.72
2Tue-4Thur	558.36	567.83	8.93	7.01	0.28
2Tue-5Fri	558.36	547.35	8.93	8.66	0.89
2Tue-6Sat	558.36	562.52	8.93	10.24	0.54
3Wed-4Thur	561.88	567.83	9.67	7.01	0.16
3Wed-5Fri	561.88	547.35	9.67	8.66	0.62
3Wed-6Sat	561.88	562.52	9.67	10.24	0.79
4Thur-5Fri	567.83	547.35	7.01	8.66	0.35
4Thur-6Sat	567.83	562.52	7.01	10.24	0.10
5Fri-6Sat	547.35	562.52	8.66	10.24	0.46

**Source:** own study

The obtained results indicate that there are significant differences between most days of the week, which is also confirmed by the frame diagram shown in Fig 7

**Figure 7.** Frame diagram of seasonality occurring on individual days of the week



**Source:** own study



The conclusions from the above analyses allowed for the construction of a new model, taking into account not only the segmented trend but also the weekly seasonality. Since in this case, the dependent variable is a qualitative variable, it is necessary to re-code it into binary variables (zeros and ones), corresponding to the individual days of the week, marked from  $D_1$  to  $D_6$ . Since their number is limited, they cannot be treated in the way adopted for continuous variables in regression, therefore the estimation of the model must be carried out with the exclusion of one of them. The excluded variable is then the reference level for the others. In this case it was decided to remove the variable  $D_5$  from the model, which corresponds to Friday, and carry out the process of parameter estimation, the results of which are presented in the table 7

**Table 7.** Results of model 2 parameters estimation

N=128	Adjusted R2=0.90063424 F(7.120)=165.44 p<0.0000 Standard error: 3.6089			
	b	Std. error of b	t(120)	p
Absolute term	541.92	1.05	516.78	0.00
t	0.24	0.02	15.44	0.00
k	-29.27	1.19	-24.59	0.00
$D_1$ Monday	21.86	1.11	19.58	0.00
$D_2$ Tuesday	11.89	1.10	10.79	0.00
$D_3$ Wednesday	15.18	1.10	13.78	0.00
$D_4$ Thursday	20.71	1.11	18.59	0.00
$D_5$ Saturday	14.93	1.11	13.40	0.00

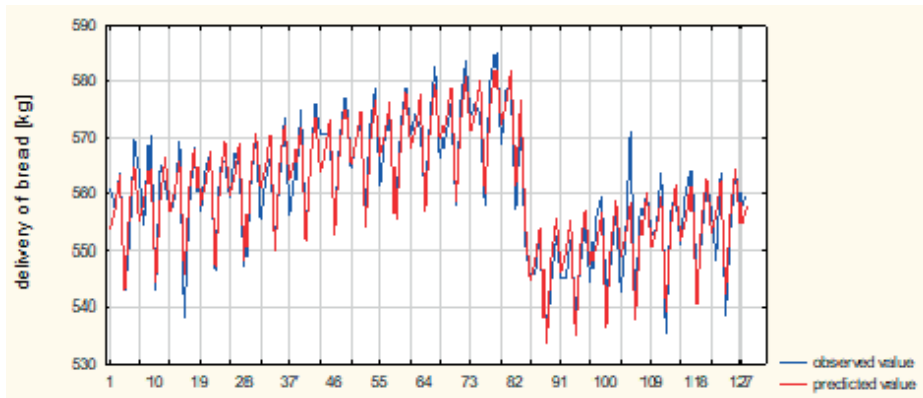
**Source:** own study

In this way the following function was obtained

$$y = 541,92 - 29,27k + 0,24t + 21,85 + 21,86D_1 + 11,89D_2 + 15,18D_3 + 20,71D_4 + 14,93D_6$$

The graph of which is presented in Fig. 8.

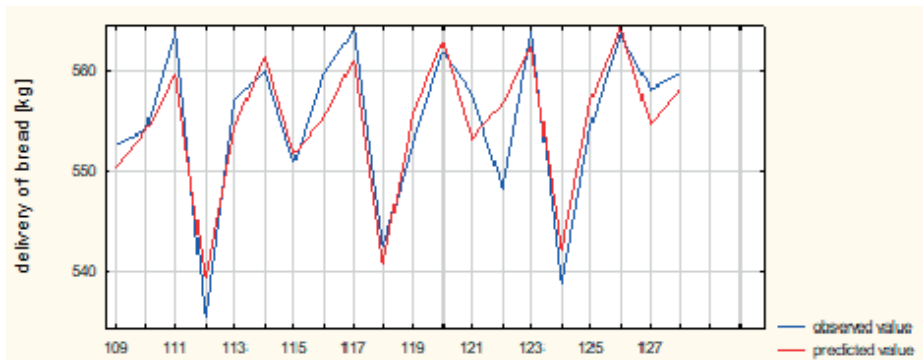
**Figure 8.** Graph of real data and forecast function according to model 2



Source: own study

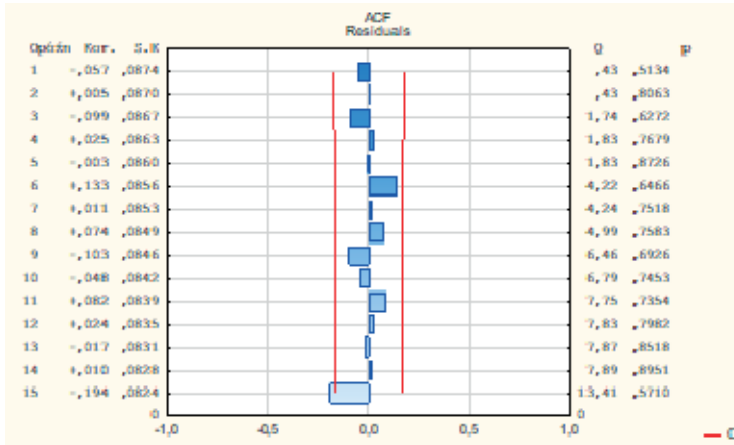
The fit of the forecast function is definitely better than in the case of model 1, the deviations are not large which can be clearly seen in the approximate graph in figure 9. This is also confirmed by the calculated coefficient of determination, which in this case equals 95%.

**Figure 9.** Approximate graph of empirical values and forecast function



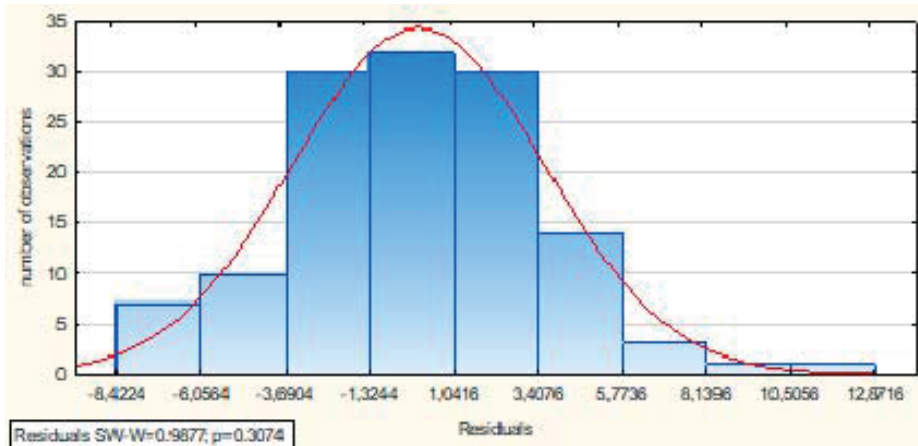
The last element of the study is diagnostics of the proposed model, which boils down to the analysis of its residuals. In a properly constructed forecast, they should be random and have a normal distribution. For this purpose, the autocorrelation function of the residuals of the model has been determined. As Fig. 10 shows, there are no significant values of the autocorrelation function that could indicate the existence of dependencies unexplained by the model, so we can consider the distribution of residuals as a white noise process.

**Figure 10.** Autocorrelation function of the residuals of model 2



An equally satisfactory result was obtained from the normality test of the residuals of the model, which at the level of significance  $\alpha=0,05$ , with the  $p\text{-value}=0.3$  did not allow to reject the  $H_0$  null hypothesis on the normality of distribution. The histogram of the distribution of residuals together with the fitting to the theoretical distribution is shown in Fig 11

**Figure 11.** Histogram of distribution of the residuals of model 2



**Source:** own study

### 3. CONCLUSIONS

Properly constructed forecasts are one of the elements of gaining a competitive advantage on the market. They make effective adjustments of products sales strategy to the needs and expectations of customers possible. Demand forecasting is particularly complex when factors disrupting its stable course occur, such as seasonality, and sales are affected by factors that are difficult to predict or describe. In this case, econometric tools and methods are used to support the estimation of models taking into account such disruptions. The article presents the application of a jointpoint regression model taking into account the non-classical form of the trend which did not work in the analyzed case - namely the segmented trend. Such a description of the trend together with the weekly seasonality allowed to obtain a reliable model allowing to describe the sales of bread in the analyzed bakery. The survey also showed that even in a difficult market situation of the economic downturn it is possible to gradually rebuild the position on the market, especially when the company has been diligently building its brand for a long time.

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# PRE-OPENING HOTEL MANAGEMENT – PHASES AND PROCEDURES

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## **Abstract**

*Opening a hotel is a complex project, which requires skilled participants. No matter the size of the hotel, there are certain phases and procedures that must be respected and followed. It is crucial to gain the best score at each phase. Since this is a project that involves many stakeholders, it is highly important to plan all steps carefully, in order to fulfil all the demands of the stakeholders. All aspects and potential risks must be considered and merged with strategy. In this case, an example will be shown of all the tasks and steps which are taken in the pre-opening phase. It usually takes between three to six months to implement all planned actions before the soft opening of a hotel. The pre-opening phase includes many challenges and opportunities. During this phase, all stakeholders face many operational issues. Considering the budget plan, the task force management needs to set up alternate plans, in order to backfill the critical period of the first year of operation. This is done in order to achieve financial objectives, as well as a return on investment. Therefore, management will adjust all procedures in the hotel pre-opening strategy and ensure the best approach.*

*The purpose of this paper is to point out the impact of the pre-opening hotel management on the whole project, and the influence on time determination of the next phase: soft opening. The aim of the research is to recognize the importance of crucial phases and procedures in the hotel business, which shows how to get tasks right. By analyzing steps of tasks which are performed regularly, the research will point out how the management of pre-opening hotel procedures are set up and represented and how strong an influence this has on the future of the new hotel on the market.*

**Keywords:** hotel, management, pre-opening management, task force management, project

JEL Classification: L83, Z30

## 1. INTRODUCTION

Today's tourism industry is one of the most dynamic socio-economic phenomena, which is based on the permanence of change and is reflected in tourism supply and tourist demand. The hotel industry is the mainstay of growth and development of tourism, mostly because of its totality and volume of business. Since the very beginning of tourism development, hotel systems have been the most relevant providers of each destination. These days, hotel management is fundamentally different from the original concept, so modern hotel management encompasses the core functions of planning, organizing, staffing, controlling and leading of all interlaced activities in the business process. In order to function successfully, the foundations of the entire organization should be based on well-established phases even before the start of the hotel business. Every hotel can have a successful business only if all stages are met well prepared before opening the hotel.

In the last few decades, in all strategic plans, special attention was paid to the implementation, control, and improvement in the overall quality of performing the basic phases of the business, and the implementation of standards in all hotel phases agreed and established just before the soft opening of the hotel. Of course, there are certain specificities in terms of management and work in the hotel pre-opening segment. Accordingly, the two systems are diversified: the quality management of the works and the complete management of the hotel business. This makes the initial opening very important and should be made as easy as possible for hotel management.

Among the basic components of each enterprise is the organizational structure without which it cannot successfully manage. The organization is a framework, within which various activities operate (Medlik & Ingram, 2002, 157). Vision, purpose, mission, and goals, which are part of the core hotel strategies, are easier to accomplish when a predetermined organizational structure is in the place. At the same time, the organizational structure needs to be tailor-made to changes within the enterprise, i.e. aligned with human and material resources (Avelini Holjevac, 2002, 31). As one of the core functions of management is precisely the organization, this function involves designing and programming such organizational structure of hotel business, which is the most optimal for successful business operations and the realization of positive business results in the future. The organizational structure follows the entrepreneurial goals which derive from the entrepreneurial strategy (Sikavica & Novak, 1999, 140).

In this paper, the research is based on the formation of the underlying structure of the hotel system. This includes making strategic plans, budgeting, selection and staffing for the opening while fulfilling other tasks that hotel management in the hotel pre-opening deals with all stakeholders of the project. It is important to emphasize that in this case, this phase begins with the conclusion of negotiations in selecting business partners and ends at the moment of the soft opening of the hotel.

In this phase, it is crucial to monitor and identify successes, in order to enhance and maintain the quality of the business plan, as well as to ensure a successful opening of the hotel.

## **2. THEORETICAL BACKGROUND OF PRE-OPENING HOTEL PHASE AND PROCEDURES**

### **2.1. DEFINITION OF MANAGEMENT AND HOTEL MANAGEMENT**

For a better understanding of the importance of this research, it is essential to define what hotel management in the hotel industry represents. By defining hotel management, a better understanding will be made of how the importance of the pre-opening phase is equal to that of all other stages in the hotel's business cycle. The simplest definition of the term management is the definition of H. Weihrich and H. Koontz, also authors of the book "Management". Management



is a process of designing and maintaining an environment in which individuals, working together in groups, efficiently achieve the chosen goals (Wehrich & Koontz, 1998, 4). Such a definition is a wide observation that management is in essence leadership, which can be etymologically substantiated. However, a more precise framework of the concept of management is quoted by author Z. Cerovic. Management is the process of shaping, directing, and harmonizing all the factors of the production-service process in which individuals, working together in the enterprise, efficiently accomplish the selected goals in carrying out the planning, organizational, staffing, leadership and control functions (Cerović, 2003, 7). The so-defined concept of management points out the basic management function. Starting from this, it is easier to find out what constitutes hotel management. Hotel Management is a group of leaders (managers), of all levels of management who, through their work and work of other employees, plans, organizes, manages and controls the hotel business (Cerović, 2010, 82). There are various levels of management in a hotel system since a hotel can be a business system, as a hotel business or an economic entity. On the other hand, it can be part of a larger system, and as such, it functions as an object unit or subsystem of a global hotel system or a hotel chain. Since the topic of this work is the pre-opening phase of a hotel, the complexity of the management concept will not be discussed. After defining the concept of management and hotel management, the next step is to determine the life cycle model of a hotel. The life cycle consists of several phases, through which every hotel system passes. According to Kreitner, it consists of five phases (Kreitner, 1989, 192):

- i. Pre-commercialization phase - an innovative strategy
- ii. The Phase of introduction – Infiltration (launching phase)
- iii. Growth phase - progress
- iv. Maturation phase - defensive
- v. The Phase of decline - withdrawal

According to these general phases of the life cycle of the hotel system, it is easier to locate the pre-opening phase. This phase includes the first two aforementioned phases since everything ranges from the design and the existence of the strategy and is the successful infiltration of the hotel into the environment. It can be concluded that the pre-opening phase of the hotel starts and overlaps with the final part of the pre-commercialisation phase and ends in the middle of the introduction phase. As the pre-opening phase of a hotel ends, then most

things are defined and settled. Only the completion of new hotel management with their employees, which must be ready for the hotel's opening and the beginning of market growth, remains.

## **2.2. THE GENERAL REVIEW OF THE PRE-OPENING CHECKLIST**

In order to start the hotel's pre-opening phase, it is essential to hire a responsible person who will be the hotel's general manager throughout the entire phase. A general manager is a person who works on behalf of a hotel home in front of a business partner, representing the owner, investor and hotel house to the public. The general manager at this stage together with all parties fulfils the set plans and tasks, following certain steps and procedures. All tasks must be completed within a specified period of time to finally reach the target date of the hotel's soft opening. This opening date of the hotel during this phase can normally be postponed, but it is important not to exceed the deadline for the execution of works and business activities. In the worst case, the date can be moved for a maximum of two to three months from the date originally planned. This depends on the assessment of the general manager, who is responsible for monitoring the execution of all tasks. In case the general manager estimates that the original date will not be possible, in agreement with the business partners, he will arrange the next potential date, and he must be careful about new potential losses, especially costs. In practice, plans and projections are always worked on for more opening dates, in order to reduce the risk of the overall project going in the wrong direction. Below are the initial steps that provide insight into the beginning of the hotel's pre-opening phase.

## **2.3. CRUCIAL STEPS TO BEGIN THE PRE-OPENING PHASE**

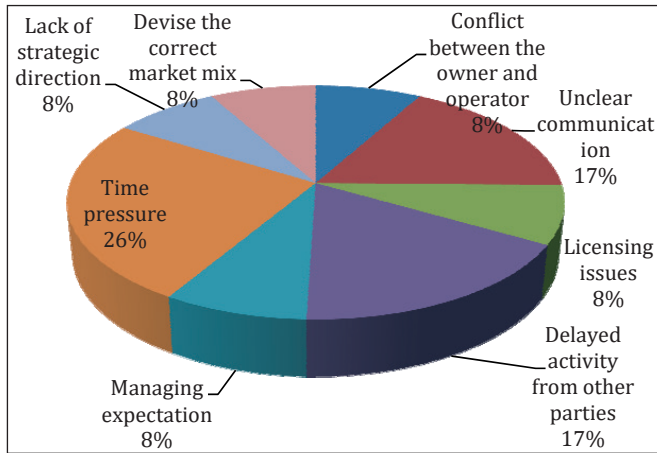
The hotel's opening phase begins half a year to a year before the soft opening of the hotel. The main prerequisite is the existence of a strategy, according to which the most successful opening of the hotel's opening phase must officially start one year before the opening. It includes the official part, not real actions. Of course, it depends on the size of the hotel, the structure of ownership and the manner of doing business. For small and family hotels, this time limit often overlaps with other previous phases. However, the emphasis of this research is on large hotels and it includes the proposition of the general model for opening a large hotel, which can be passed on to models of medium and small hotels. It

is important to emphasize that the concept of a large hotel includes over 150 rooms. The steps in preparing the hotel's pre-opening stage are:

- i. Research a new market niche (supply and demand conditions, location, other relevant factors)
- ii. Negotiating and contracting businesses with contract business partners (investors)
- iii. Selection of the hotel general manager for the pre-opening phase
- iv. Recruiting a Support Team for the General Manager
- v. Selection of hotel department managers

By completing each step of the preparation of the pre-opening phase, the pre-opening hotel phase starts, and it runs until the hotel's soft opening date. The first step in the process involves a huge knowledge and understanding of the tourism market, which has to be continually explored, in order to control and follow all changes in the demands and needs of the market. Mastering all challenges in the tourism market, it is important to constantly monitor all requests, needs, and motives, which make tourists travel to a specific tourist destination (Bruža & Rudančić, 2017, 20). Once the market is thoroughly explored, and all the relevant influential factors are established, then the negotiating and establishing of business partners follow. When concluding a contract between a hotel owner and an investor, it is important to determine who will be the general manager of the hotel at the stage before the opening. The next step is to form a general manager's assistant team, who will maximally assist and help with their knowledge, skills, and abilities. At that moment there is an officially formed pre-opening hotel management team. Then, along with the general manager, there is a selection of heads of departments, according to the needs and other conditions, which are results from the cooperation and agreement from the previous steps. Each of the included members has specific tasks, delegated and overseen by the hotel's general manager. A first step in the pre-opening phase of the hotel is the establishment of a checklist of tasks that must be accomplished by the hotel manager. In order to make it easier to determine when the tasks are performed, the execution of each task must be closely monitored and supervised. There are many challenges that a general manager faces at this stage, as indicated in the following chart.

**Figure 1.** Main Challenges Faced by General Managers During the Pre-opening phase



Source: <https://www.hospitalitynet.org/whitepaper/4071840.html> (access on 25-01-2019)

According to the chart, one of the most common challenges the general manager faces in the pre-opening of a hotel is time constraints, the delayed performance of delegated participants' tasks and communication problems. This refers to the previous claim that it is important to set a realistic timeframe to avoid the risk of delays, which usually cause unwanted financial aspects. In addition, the general manager must precisely determine who is doing what, when and where. To keep it under control, clear communication is needed, which is a challenge for each director at all stages of hotel opening and business continuation. Communicating is felt by the attitudes and relationships of the interlocutors and it causes various consequences, which can be manifested positively or negatively (Bruža & Rudančić, 2018, 20). Therefore, the general manager must continually pay attention to the quality of communication, delegate tasks clearly, control them, and ultimately counteract the risk of time constraints.

### 3. KEY FACTORS OF PRE-OPENING PHASE

#### 3.1. REQUIREMENTS AND PREPARATION

By the time the hotel opens, there are several phases, some of which overlap in terms of time constraints. According to the author Baker, there are even five stages, among which as the fifth, the final stage for a successful opening of the

hotel is the stage that includes the pre-opening activities of the hotel. There are five critical phases in the hotel development process comprising (Faz, Veeramalla & Dang, 2015, 5):

- i. Conceptualisation
- ii. Site Appraisal and Feasibility Study
- iii. Design and Evaluation
- iv. Construction
- v. Pre-opening Activities

Each of these five phases, which are mentioned, are equally important for the hotel to begin operating. This paper is based on that final fifth stage, i.e. the sub-phases and the procedures that are required for the most successful opening of the hotel. Once the baseline requirements have been met and certain conditions are met, i.e. when the general manager is selected, then he can begin with his or her work. When the general manager of the hotel accomplishes of the set goals according to certain plans, then the pre-opening phase of the hotel officially begins. In order to be as successful as possible in his work, he must be a visionary, a motivator, ready to take over and manage all risks. However, he must also know how to manage the introduction of a new organization, to be open to changes that are frequent and constant at this stage. In short, a general manager needs to know entrepreneurial management thoroughly. He should be competent in creating an enterprising company, flexible and adaptable, environment-oriented, market-oriented, innovative, focused on tourists, competitors and suppliers (Stipanović, 2006, 194). The basic requirements for the successful completion of the hotel pre-opening phase are:

- i. Successful positioning
- ii. Staffing and training of new employees
- iii. Successful implementation of standard operating procedures and standards

According to PricewaterhouseCoopers (PwC) research, and what researchers Faz, Veeramalla and Dang also mentioned and stated in their paper, more than 60% of project failures arise during the fifth phase – the pre-opening stage (Faz, Veeramalla & Dang, 2015, 5). This means it depends on the general manager's skills and his experience in this stage. His actions, however, are visible at the point when he has his own task force team, which will support him and help

him in resolving all issues and minimizing all potential risks on the way to the opening date of the hotel.

The general manager is faced with a certain level of control and influence, which means that he can't make decisions alone, but must constantly be in contact with the contract partners, i.e. with the investor and the general board of the hotel's chain that he represents. It is important for investors to constantly control operational strategies, and reduce unnecessary costs while at the same time increasing the value of overall assets and thus affecting the strength of the financial performance. In addition to limiting the general manager's influence, he must take into account the implementation of all standards from the construction of the hotel, to equipping and training of employees. It is very important to follow standard operating procedures. There is also a budgeting process. The investor is the one who has to finance the construction and equipping of the hotel, but the general manager must propose a reasonable budget for each item. The budgeting process usually takes several months, usually up to four months, and the general manager must get permission from the investor to implement the planned budget plan in the upcoming period.

The budget for the pre-opening phase of the hotel is particularly planned, and it is officially called the pre-opening budget. It involves financing various activities. In order for the budget to be justified, it is best to assign a task to each head of a department to make the budget of the corresponding department. In a situation where there is a budget for each department, it is easier for the general manager to make a general budget plan for the entire hotel, thus reducing the potential risks of investor refusals to finance any item, if justified and reasonable. According to some estimates, the most expensive department in the hotel is the Sales and Marketing Department, followed by the Human Resources Department, which many hotel houses point out after budget analyzes have been carried out.

### **3.2. EXECUTION STEPS IN THE PRE-OPENING PHASE**

In order for a general manager at this stage to successfully complete all tasks, it is important that he has a plan and execution schedule. In practice, a Gantt Diagram is often used as a tool for the visualization and execution of tasks in certain time periods. As a hotel is a complex system, a lot of tasks overlap each other in terms of time determinants. The Gantt Diagram can be successful if a

general manager follows his model for the execution of this phase. In this sense, a set of steps for the pre-opening phase of the hotel can be made, in which the author has designed during research and personal participation in the implementation of this phase. Execution steps in the Pre-Opening Phase are:

- i. Preparation guide setup
- ii. Configuring Pre-Opening Critical Path Checklist
- iii. Involving task force management team and HODs
- iv. Tasks delegation and resolving requirements
- v. Review of Critical Path Checklist
- vi. Finalizing operational tasks
- vii. Soft-opening

The first step which is called "Preparation guide setup" indicates the beginning of the pre-opening phase. In this step, it is important that the general manager review the content in detail and see what can be implemented for each element. Large hotel corporations usually have the same document, to ensure it is the same standard in all hotels within the hotel chain. Following the standard book and this document, the general manager can successfully negotiate all the necessary actions with the contractors and investors. This applies in particular to the information system and the installation of the hotel information system, which will be discussed below. Preparation guide implies that no deviations are allowed, since it is prepared in accordance with the standard book, and the standards must not be changed. They must be the same for every hotel within the chain. If there is a business need to change or supplement certain elements, (which also depends on the specifics of the facility), then the general manager must notify the board of the hotel chain and investors. The settings in this step are defined and are not eligible for amendments. Successful installation of the entire program requires the maximum engagement of all involved parties. The general manager must notify all parties of the beginning of the implementation, and when the time comes, it is imperative to inform the heads of departments and task force team members in detail. This document details how to execute the installation process for each department in the hotel, such as setup configuration, reservation configuration, profile configuration, property configuration, cashier configuration, and pre-installation and post-installation phases. For smaller hotels, this part is usually covered by the hotel owner, who is also the hotel manager. Also, in this step, the hotel chain and the investors should



already know details about the hotel departments and heads of departments (HODs). Also, it is a good idea to have a list of task force management. That will be explained further in the third step. The web site and online promotion should be already in progress, with some crucial information about the opening date, when and how to make a reservation, what the hotel will offer and whom to contact for further information.

The second step “Configuring Pre-Opening Critical Path Checklist” presents a unique step for each opening project. A special checklist is made for each and every hotel. There is one general template, but it does not include all the necessary elements. So, in order to fulfill all the requirements, a general manager has to complete it. This should be completed usually by the first step, during preparation guide setup, in order to proceed it to this, second step. The checklist includes all the important elements. This document should provide the following information:

- i. Hotel’s name (general information)
- ii. Pre-opening start date
- iii. Opening date
- iv. Current date (when is being completed)
- v. Team section
- vi. Name of responsible person
- vii. Number of tasks
- viii. Percentage Completed
- ix. Overall progress

The pre-opening start date indicates the date when this Pre-Opening Phase has begun. It is official and it includes the date when the general manager has finished the setup of the preparation guide, which is named as the first step of this phase. The opening date of the hotel means the official start of the hotel or the soft-opening date. This is the moment the hotel opens towards the market, starting with its standard operating procedures. In this case, a date is originally agreed upon and can’t be changed, except in exceptional circumstances. The current date means the date when each of the involved parts makes any changes in this document. It has to be registered, in order to have precise overall progress. Overall progress is presented at the bottom of the first page of this document. The team section includes all members of hotel management, such as the gener-



al manager, sales, marketing, revenue, communication, PR, meetings and events operations, front office and switchboard, housekeeping, food, and beverage department, as well as information technology and all other hotel specifics. Next to this part should be the name of the responsible person and the total number of tasks which have to be done. At the end of this document, the percentage of completed tasks should be clearly shown, so that each head of department and task force team member can know how much they did and how much they still need to accomplish. Also, the overall progress should be presented, so that the whole hotel management can be sure where they are currently, regarding the opening date. There are some more details that this document can have, such as the duration in days for each task, start and finish date, including proposed and actual finish date, remarks, etc.

The third step, named “Involving task force management team and HODs” presents a moment in which the general manager includes the task force management team and HODs. A general manager can continue with specific requirements and tasks. The task force management team includes members from the same hotel chain, which are experts in their departments. Usually, they are chosen from the main Human Resources Department of a hotel chain. A successful hotel can send their best employees on request from the hotel chain HR general department. They are like assistants to the pre-opening general manager. With the knowledge and experience they have, they can help to set up each department, respecting all standards and procedures. They also help the heads of departments in resolving all issues. Task force members easily detect all potential risks, communicate with a general manager, offer all possible options to avoid any gap during the pre-opening phase. They also participate in the recruitment of new employees, organize all the training and prepare new employees for a smooth start in the new hotel. They present the hotel brand and standards. Besides that, task force members are involved in further activities, such as controlling purchases, implementation of the preparation guide and detecting critical points in the critical path checklist. Heads of departments (HODs) are new hotel managers, responsible for setting up their own department, following the general manager’s instructions. They have the support of the task force members at all times.

After introducing all task force members and heads of departments, the general manager presents and delegates tasks. That is the next step in the pre-opening phase. They follow the Critical Path Checklist and during this phase,

they need to fulfill all requirements. For example, the general manager needs to communicate the status and the expectations and pre-opening business plan with all the heads of departments, schedule training for all employees, provide guidelines for all the head of departments on policies and procedures, refer to the brand and internal audit questionnaire, meet with task force members to brief them on all objectives, prepare a business plan for the first year operation and a budget, verify with owners and investors all parts of the agreement, etc. For the heads of departments the tasks are specific, so for example, the head of front office should obtain drawings and get familiar with Front Office areas, review room rates and room types, develop job descriptions, prepare standard operating procedures, help the human resource department with the recruitment of the front office department, establish a training plan, make a checklist of purchases, communicate with the general manager, prepare uniforms for this department, etc. During this step, all potential clients who will be working with a hotel should be doing site-inspection with heads of sales and marketing departments.

The next step is the review of the Critical Path Checklist. This step indicates what is done, what should still be done and where a hotel currently is. Each department has its own specifics and tasks, which are mentioned in the Checklist document. After completion, it should be marked in that document, so the progress of the phase can be visible. The general manager does reviews every day and supports other members in achieving requirements. Task force members are very important in this step since they can detect some potential issues faster than others. During this step, the Pre-Opening Phase should be at least 75% in progress. Equipment should be delivered, employees should be attending training, heads of departments should be available to complete almost everything and the general manager should present achievement to the stakeholders. The IT hotel system should be set up by this moment.

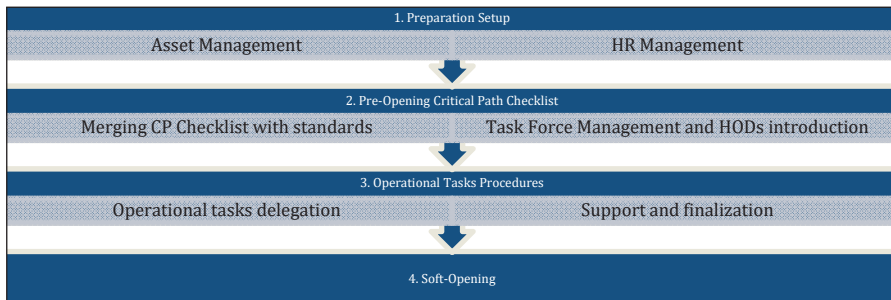
Finalizing operational tasks means that the Pre-Opening Phase is almost finished. There should be some technical details left, like managing the new hotel IT system, detecting some elements which should be done when the hotel opens. At the same time, the reservation system should function. A general manager has to do permanent control and inform stakeholders of the soft-opening date, in a way that is possible in order to proceed with that final step as it was planned or if there is still some time needed to fulfil some tasks. The last step, soft-opening, means the Pre-Opening Phase is complete. It finishes with

the opening date of a hotel to the public and the receipt of its first guests. Now, after detecting the main steps which have to be followed, a new model of the Pre-Opening Phase can be presented from a new perspective.

### 3.3. PRE-OPENING CRITICAL PATH MODEL

By defining the time determinant of the Pre-Opening Phase and explaining the flow and all the important steps of execution, a model can be formed. By following this model, one can easily fulfil all actions required for the pre-opening phase and easily transition to the next scope of work. The focus of this paper is to formulate and propose a new model that would ensure that a certain protocol meets the goals set out in the strategic plan and that the agreement signed between the stakeholders and that this phase is successfully completed, with minor deviations. The following is a suggested model, based on the research done by the author, comparing scientific knowledge and practical insights during personal participation in such a demanding project.

**Figure 2.** Model of Critical Path for Pre-Opening Hotel Phase



**Source:** Authors' analysis according to research

According to the above pre-opening phase implementation model, it is possible to detect at which point a certain step and task are needed to proceed to the successful completion or opening of a hotel, which is the ultimate goal of this phase. It is important to have a thorough preparation and permanent control of each phase and step to make the model successful. The general manager must ensure the requirements in the first step, in a manner that meets the requirements of the investor, i.e. all stakeholders, but also forms a successful team that will follow it at this stage and will continue to work and after the opening. This involves the formation of future hotel management and a task force

management team, which will assist him until the moment the hotel is opened. When one meets these requirements, then the next step is to set up a checklist, identify all the key elements of the Control Path Checklist and standardize the hotel standards that must be implemented. After merging the Critical Path Checklist with standards, a general manager has to introduce Task Force Management and Heads of Departments in an effective way. When he does, then he controls the execution of all necessary actions. The General Manager assigns tasks, delegates tasks to the Heads of Departments, and permanently supervises them, correcting and finalizing all activities. When all the required tasks are completed, the final step is followed by the Soft-Opening. This step ends with the Pre-Opening Phase and begins with a new phase, the beginning of the hotel.

#### 4. CONCLUSION

By defining what management really means, and then pointing out the meaning of hotel management, the role, and importance of the pre-opening phase of the hotel can be recognized, which is extremely important in order to make the hotel and business more successful. This is the phase that is the hardest part of the business cycle of the hotel system since the most critical moments appear at this stage. In the past few decades, in all strategic plans, special attention is paid to the implementation, control, and improvement of the overall quality of performing the basic phases of the business and the implementation of standards in all hotel phases agreed and established just before the soft opening of the hotel. In this paper, the research is based on the formation of the underlying structure of the hotel system, in terms of making strategic plans, budgeting, selection, and staffing of the best employees for starting work, while fulfilling other tasks that the hotel management in the hotel pre-opening deals with all stakeholders of the project. The key part is related to identifying and monitoring success in this phase, in order to enhance and maintain the quality of the business plan, as well as to ensure the opening of the hotel on the market.

In order to start the hotel's pre-opening phase, it is essential to hire a responsible person who will be the hotel's general manager throughout the entire phase. The hotel's opening phase begins half a year to a year before the soft opening of the hotel. The main prerequisite is the existence of a strategy, according to which the most successful opening of the hotel's opening phase must

officially start one year before the opening. When the general manager of the hotel enters into the realization of the set goals according to certain plans, then the pre-opening phase of the hotel officially begins. In order to be as successful as possible in his work, he must be a visionary, a motivator, and be ready to take over and manage all risks. However, he must also know that with the introduction of a new organization, he must be open to changes that are frequent and constant at this stage. In order for a general manager at this stage to successfully complete all the tasks, it is important that he has a plan and execution schedule. By defining the time determinant, by observing certain knowledge, with respect to certain scientific knowledge, it would be easier to know which are the critical points of the implementation of this phase and to which the most attention should be paid.

Following the research, several facts have come to light. This highlights the definition of the Critical Path Checklist, the creation of the task force management, the execution of a whole set of tasks, the permanent control and the provision of feedback. As a result of the research, a proposal for a new model for the implementation of this phase, which could serve as a guide to opening a hotel, is also mentioned, as well as providing new information that might have been omitted in future business and strategic plans. This also gives new insights to increase performance, while reducing the risk of completing the hotel opening plan.

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# THE HIDDEN POTENTIAL OF LEISURE TIME: BENEFITS OF SHORTER WORKING HOURS

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## **Abstract**

*The purpose of this paper is to re-examine the correctness of the current relationship between working and leisure time. For many economists, leisure is the period in which people consume and so consumption is the main aspect of free time they are studying. However, leisure is also the period in which people create. If we accept the thesis that the time that comes after the end of the working day has more significant economic implications than the consumption itself, we will have to consider other potential benefits associated with shorter working hours. Therefore, the paper seeks to explore contemporary perceptions about the effects of shorter working hours. Also, this paper tries to re-examine the correctness of the current relationship between work and time remaining after work. Emphasis has been put on the creative potential of free time, and in this regard, the directed development of hobby culture as a catalyst for entrepreneurship. The relationship between work and leisure goes beyond the issue of entrepreneurship development, so this paper questions the further consequences of shorter working hours. Contemporary knowledge suggests that shorter working hours could cause significant positive economic effects and lower social security costs. The liberation of leisure time and the development of hobby culture are also complementary to concepts of the knowledge-based economy and the concept of lifelong learning. Relevant research, for now, does not link the shorter working hours and employment growth, but there are serious indica-*

tions of productivity growth. It is our opinion that it would be desirable, even in our economic environment, to look more in-depth into the effects of shorter working hours, both through social experiments and through scientific research.

**Keywords:** entrepreneurship, hobby culture, leisure time, time management.

JEL Classification: J01, J81

## 1. INTRODUCTION

If we accept the idea that the development of *hobby culture* can strongly contribute to the development of entrepreneurship<sup>1</sup>, we also must wonder what changes are needed to encourage an average person to actively participate in spare time activities? Unfortunately, the necessary changes are significant, and it is difficult to imagine that public authorities will involve in such serious reforms in order to help stimulate entrepreneurship indirectly. The tragedy lies in the fact that reforms that would stimulate the *hobby culture* are necessary for several other economic and social reasons, and the development of *hobby culture* would be just a cherry on top of the cake of positive social changes. In other words, encouraging *hobbyism* should only be part of a major reform aimed at the sustainable development of a more meaningful and more successful economic and social system.

We can identify five key circumstances that prevent hobbies in taking on a stronger role in our society:

- 1) Lack of free time of appropriate quality
- 2) Invasion of employers on employee free time
- 3) The outdated model of education
- 4) Institutional obstacles which prevent hobbies' transition to entrepreneurship
- 5) Domination of passive mode of free time consumption

The first point assumes a **shorter working time**. The issue of working time has far greater implications than the development of entrepreneurship by creating policies which will enable the growth of hobby culture. This section aims to present the main beneficial consequences of such reform. Other points will be addressed in a

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<sup>1</sup> For more details about that hypothesis see Komljenović, N., Rančić, N. & Pilipović, O. (2018)



section called **institutional change**. These changes represent a systematic upgrade to work-time reform, and the goal is to create the conditions in which an active way of spending free time will produce multiple benefits for society.

## 2. SHORTENING OF WORKING TIME

The problem of the lack of adequate free time is best summarized in a quotation: “It is difficult for an individual to remain in the mood for active and energetic engagement, and to separate from previous experience and future expectation. After hard and stressful work, he is not eager to think about ways to spend his free time. Exhaustion and tiredness lead him to passive lethargy, drinking or involving in small but exhausting housework.” (Artić 2009, p. 287). At the same time, the same author also emphasizes that mass culture does not direct the individuals towards an active way of spending free time. “Free or spare time in the context of” mass culture “does not stimulate and develop the creativity of an individual in a way he would transcend and develop this culture in order to enrich it with new contents. ... Therefore, in this and another similar context, work becomes a dungeon of the human creative spirit and loses its focus on innovation and creativity.” (Artić 2009, p. 288). Considering the issue of free time Artić refers to Marx’s thesis, which in the present context visibly underlines the link between hobby and entrepreneurship. “Marx’s opinion is that the solution to the workers’ ability to turn work into their own choice would happen only when a worker becomes aware of his ability to turn, willingly accepted work, into self-interest and pleasure. Furthermore, when an individual accepts happily the activities by which he or she will fulfill his or her existence, they will be able to choose their own free time without external conditioning.” (Artić 2009, p. 288). In these assumptions we can clearly recognize the course of modern social relations because capital does not exclude free time, it rather protects it. Free time is the central issue for the development of *hobby culture*. The day has only 24 hours and man has limited energy potential. The available time and energy should be utilized in a way to maximize social benefit. If a person is exhausted by working, they will fail in other fields as well. Isn’t this problem in its core economizing? Isn’t the purpose of the economy to meet human needs by balancing between the scarcity of natural resources and the scarcity of available workload? Time as a unique economic resource which depends more than any other on economizing. Since we cannot accumulate it, compensate, stop or accelerate it, it is necessary to spend it rationally and efficiently.

Eight hours per day and forty hours per week of working hours are not based on the knowledge of economic science. Lawmakers promote such or similar solutions, but there is no scientific evidence to suggest that it is the ideal choice. Therefore, an eight-hour working day is nothing more than a rooted tradition. Working fewer hours does not mean that a person is lazy and consequently unsuccessful. That can be confirmed by the data of Eurostat (2018) which indicates that workers in the leading European economies, work considerably shorter than their fellow workers in economically less developed parts of Europe. On average, the least the time spent on work are Dutch, which works only 30.3 hours per week. The list of countries with an average of fewer than 37 hours a week includes Denmark, Norway, Switzerland, Germany, Ireland, Sweden, Austria, the United Kingdom, Finland, and Belgium. Apart from the United Kingdom and Austria, in these countries workers generally work less than the rest of Europe, considering only full-time employees. The highest number of working hours per week on average have Greeks, more than 42.3. Over 40 working hours per week on average, also have Slovaks, Czechs, Poles, and Bulgarians.

Such data direct us toward two conclusions; the economic success of a country is not related to the quantity but to the quality (labor productivity) of the working hours, and workers under certain conditions decide to work less. The theory of choice, in terms of relative scarcity, explains why workers decide to work shorter or longer. Economists consider the issue of choosing between work and free time as a choice between income and free time. One must sacrifice one to gain another, and it is more difficult to give up on the good which is scarcer. There is also a significant influence on cash income generated by one-hour work. If the hourly wage increases, we decide to buy more goods. If we consider free time as good, we can assume that people will be willing to change income for a time, therefore they decide to work less. By doing this we increase the cost of free time. This triggers the opposite effect; we decide to buy a little less free time and therefore work a little longer. The outcome ultimately depends on the relative strength of these two effects. It should be considered that purchasing additional goods encourages less work because goods are combined with time (consumed in a timely manner) in order to carry the usefulness. Employer behavior should also contribute to the shortening of working hours. The employee's work is considered as a cost, and employers will decide to lower this cost when productivity increases, which undoubtedly happened in

the past. History teaches us how these impacts created a process of continuous reduction of average hours until the mid-20th century, after which stabilization took place. There is no scientific consensus about the cause of stabilization (McConnel, Brue 1994, p.14-81), however, shortening of working hours through legislative changes in some of the most developed countries of Europe, shows that such a policy does not hold back the economy.

### 2.1. WORK EFFICIENCY

Raising of work efficiency, for employers is the most interesting effect of shortening of working hours. The one-year survey of 332 workers in one call-center in the Netherlands suggests that any prolongation of working hours results in a decline in productivity. According to their results, the prolongation of the work by 1%, results in an increase of “output” by 0.9%. The main reason for the decline in productivity is exhaustion. As surveyed employees worked on average only 4.6 effective hours per day, it is concluded, that the result is even worse when only full-time workers are observed. The conclusion of the decline in productivity is in line with most studies conducted to investigate working hours and productivity (Collewet, Sauermann 2017, pp. 5-8,21,22). Such research results are supported by various real-life experiments. In the Swedish town of Gothenburg, at the nursing home of Svartedalen, two-year testing of the six-hours working day confirmed that working time reductions have a positive impact on productivity. These results prompted some employers in Sweden to shorten their working hours. One such example is the orthopedics department at the Gothenburg City Hospital, two hospital departments in the city of Umeå, but also several small Swedish companies. The six-hour workday pioneer is certainly Toyota’s service center, which has been working six-hour work for past 13 years. According to their data, this model resulted in a 25% profit growth (Crouch 2015). There are many reasons why employers should seriously consider the possibility of shorter working hours. John Pencavel, in his work entitled “*The productivity of working hours*”, concludes: “Not only does long work result in tiredness and stress, which then manifests a decline in productivity, but also increases the probability of workplace failures, workplace accidents, and illness of the employees. All of this causes the employer additional costs. Though this is not a novelty, employers should know how to cut down on working hours without reducing the output.” (Pencavel 2014).

## 2.2. COST OF THE WELFARE STATE

Reducing working hours is directly related to reducing the costs of the welfare state. A Swedish experiment with a six-hour working day at a nursing home resulted, among other things, with 10% fewer sickness leaves among tested nurses (Oltermann 2017). Even better results have been achieved when the orthopedics department at the Gothenburg City Hospital has decided to switch 89 nurses and doctors to six hours working time (Eisenberg 2016). The significance of these results suggests that nurses participating in the six-hour experiment used less sick leave than all nurses employed in Gothenburg, and not just those in the control experimental group (Greenfield 2017). Such conclusions are no news, there are several types of research that link the working hours and the cost of the health system. One such study was carried out in the context of France's 1998 reform, which reduced the working week from 39 to 35 hours. The study confirms the correlation between shortening the working week and improvement in workers' health. Reducing working time also causes direct consequences on health, but also indirect, i.e. it directs people to a healthier lifestyle (Barniell, Bietenbeck 2017). The synthesis of many medical types of research, that are dealing with this topic, confirm the connection between long working hours and a range of medical conditions: lack of sleep, anxiety, depression, cardiovascular disease (Bannai, Tamakoshi 2014, pp. 14,15). Not only are hobbies a form of mental relaxation, but a large part of the hobbies is based on sports, healthy nutrition and generally healthy life. Also, the development of the *hobby culture* would not only stimulate traditional and corporate entrepreneurship but social entrepreneurship as well. Social entrepreneurship can be defined as a way of thinking, i.e. the process of creating and developing economic activities, by combining risk, creativity and/or innovation with a dependable management structure, within a new or existing organization whose primary objective is to create new social values. If this process generates profits then it is used to accomplish the mission of the organization (Vincetić, Babić, Baturina 2013, p. 259).

## 2.3. LIFELONG LEARNING AND KNOWLEDGE-BASED ECONOMY

Croatia, driven by the experience of other advanced economies, has accepted education as a *condition sine qua non* of progress. Unfortunately, implementing this idea has not produced significant results so far. The country's project has

increased the number of highly educated people but has also led to the degradation of criteria in higher education (Vranjican 2007, p. 105). The biggest failure of this reform was its incompatibility with the needs of the economy. The idea of lifelong education has proved even more problematic. In practice, it has not raised the quality of human resources, instead, it has mostly turned into a performance that does not aim to improve the knowledge and skills of employees, but to provide them and the companies that employ them with various necessary certificates. This criticism is based on the common model of lifelong learning implementation. The employee is sent by the employer to a course with a goal to obtain a specific certificate. Tired from business and private obligations, the worker is usually uninterested in various lectures that he attends in order to pass the required exam which will release him from this work-related obligation. The fundamental problem of the concept of lifelong education derives from the nature of time. The day lasts only 24 hours. It is impossible to include a new activity in these 24 hours, which should take place on a regular basis, while not being disassociated from another area of its activity. If such an expectation is really imposed, it is necessary to shorten the working time. Not only to gain new knowledge but also to keep the employee's energy potential and the enthusiasm required to acquire that new knowledge, since motivation and time is a prerequisite for successful implementation of the idea of lifelong learning.

Hobbyists' experiences in this area are very useful; the concept of lifelong learning by the nature of things is implemented in the idea of a hobby. Hobbyists are stimulated by the passion of the activities that represent their hobby and are constantly investing their free time in the development of new knowledge and skills that would elevate their hobby activity to a higher level. The power of the hobby lies in the fact that using its main feature, entertainment, solves the underlying problem of education - motivation. Of course, it should also be noted that many of the hobbies at their core represent learning, such as mastering new languages. Reducing working hours would also, given the precondition of proper institutional support, encourage employers to use the opportunities offered by practical tuition programs to partially compensate the work of absent employees with hours of work performed by students for the purpose of acquiring practical knowledge.

## 2.4. UNEMPLOYMENT

At the theoretical level, shortening of working time is often linked to the problem of unemployment. During the crisis in 1993, Volkswagen has decided that instead of firing excess workers, to cut their working time by 20%, with a 4% increase of hourly wages. All employees retained their jobs and solidary suffered a gross wages reduction of 16%. The net loss of earnings was lower than 16%. (It was estimated at 10-11%) (Boersch-Supan 2002, p. 20) Thanks to the German progressive tax model, workers have generally fallen to a lower tax bracket. This measure proved more than successful. Volkswagen achieved financial savings and maintained human capital. This experience encouraged the company to maintain the policy of flexible working hours to this date. Although it has proved to be a time-saving measure and very effective mean to fight against dismissals, serious indications have shown that this measure is not equally effective in creating new jobs. Explicitly, at the surprise of the administration, when in 1994 the number of employees fell by 5,000, thanks to the retirements and departures of workers who had found a better job, Volkswagen still did not solve its problem of surplus workers, caused by productivity increases brought by shortening working hours (Seifert, Trinczek 2000, p 3-7). According to the report that the company presented in the period from 1992 to 1995, productivity has increased by 10 to 20% (Boersch-Supan 2002, p. 20).

Axel Börsch-Supan, based on the Volkswagen case and other German experiences, questions the practical implementation of theoretical settings that links unemployment reduction with shorter working hours. According to him, such an effect is unlikely if employers, workers, and consumers have room to react to such measures. The decrease in unemployment will not occur if workers look for additional jobs, employers replace work with capital assets, and consumers look for less expensive goods. According to him, the result that an employer achieves by productivity growth has been eliminated by the growth of labor costs, although it allows the possibility of different conclusion because after the mid-90s the cost of labor has experienced a certain decline. He concludes that shortening of working hours has resulted in greater efficiency of the workforce, giving them more free time with little revenue cuts. This is a great success, but there is no evidence that shorter working hours are an efficient way of encouraging employment. It also suggests that earlier research by Köning, Pohlmeier, and Entorf was correct. They studied employment in Germany in the period from 1962 to 1986 and concluded that reducing working time by 6.25% (40 to



37.5 per week) reduced unemployment by only 0.2%. This result is confirmed by the 1993 research carried out by Kraft, which concluded that the main effect on employment growth is a decrease in labor costs (Boersch-Supan 2002, pp. 14, 15, 22, 23).

### 3. INSTITUCIONAL CHANGES

#### 3.1. PROTECTION OF FREE TIME

For the past decade, the awareness about the employer's invasion on employee's free time is being raised. The development of communication technology enabled all day availability of workers and extension of workers obligation on parts of the day during which workers should have for their other social roles. Off-hours availability, in most cases, is not regulated, forced "call duties" are not paid, and more and more employees are suffering in silence considering them as a part of modern working relations. The words of Benoit Hamon, the former French minister of education, simply summarize the problem: "The workers physically leave the office, but they do not leave their jobs behind. They remain connected with their work obligations through invisible electrical leashes, just like dogs. Messages and e-mails colonize the private life of a person until she or he ultimately breaks." (Wang 2017).

The problem of the balance between private and professional life is clearly described by the words of former German Minister of Labor Ursule von der Leyen, used during a campaign which aimed to establish clear rules on employers' access to a German worker's free time: "Modern techniques such as smartphones contributed to the flexibility of conducting the business, however, downside is that people can no longer find the balance between work and free time. The company must learn to deal with these technologies in a way that technology does not control and dominate our lives- instead, it should manage it. Companies should protect their employees from over-exposure." Von der Leyen, therefore, suggests the implementation of "crystal clear rules" when using official mobile phones and emails. "It should be clearly identified, by appropriate contracts, which employees must be available and at what time. It must be clearly defined that workers do not have to control or respond to electronic mail and that the official phone may be turned off" (Jutarnji.hr, 2012). The German

“information campaign”, during which companies were contacted in an attempt to address the items in the *German Occupational Safety Act*, which already contained the elements that should guarantee the mental and physical health of the staff, has resulted in positive outcomes. In Germany, many companies have established their own code of conduct in order to reduce the stress of employees, including some of the world’s renowned companies such as Volkswagen, BMW, Daimler, Allianz, Heinkel, Bayer, and Puma. As a result, the Volkswagen car maker does not forward electronic mail to mobile phones half an hour after the end of working hours. However, there are also companies that do not want to follow such examples, and employees depend on the goodwill of the administration (Vasagar, 2013). The discussion on the invasion of the employer on the free time of workers remains ongoing in Germany.

France decided to approach the problem in a traditional way - through legislative changes. Recently an amendment to the French *Code du travail* was adopted, which should guarantee respect for free time and annual leave, as well as private and family life. In this way, it tries to respond to the unpaid overtime and the more significant problem of the threat to the mental health of workers. According to the new legal text, an employer employing more than 50 employees, is obliged to enter negotiations with workers in order to agree on ways in which the workers’ private time will be protected. If the negotiations prove to be unsuccessful, the employer is required by its own act to regulate the issue of contacting the employee after working hours, the reasons justifying such treatment and compensation for the worker. Prior to the adoption of this Act, the employer is obliged to consult the workers’ council (Agence France-Presse, 2016, Ducorps-Prouvost, 2016). In this way, France upgrades the right to disconnection (*le droit à la déconnexion*). This human right was confirmed by the French Cour de Cassation in 2001<sup>2</sup>, concluding that the workers are not obliged to accept work from home, nor do business at home, and that workers’ inaccessibility after the end of working days is not a breach of duty (Ducorps-Prouvost, 2016).

The phenomenon of work from home is becoming increasingly dangerous for the employee’s free time. The international work organization has warned in the study entitled “*Working anytime, anywhere: The effects on the world of work (2017)*” about the dangers of work from home. Such a regime, despite

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<sup>2</sup> For more details see: Cour de Cassation, Chambre sociale, du 2 octobre 2001, 99-42.727



the strengthening of worker autonomy, leads to an extension of effective working hours and more frequent work on weekends and holidays. Workers work longer than the agreed working hours, and as a rule, such overtime is unpaid. In order to avoid such negative effects, it is necessary to develop regulation and good business practices that will ensure the achievement of positive impacts by minimizing negative (Eurofound-ILO, 2017, pp. 21-25, 57-60). In order to realize the creative potential of free time, it is necessary to develop an appropriate protection system. We have previously mentioned the German and French model of dealing with this problem. Both showed to be partially successful, but still insufficient. It is, therefore, necessary to take both examples and to upgrade them. Creating a quality legal framework and court practice is a necessity. It is, therefore, necessary to go a step further than the French example. There is a need to develop a system that will enable the worker to protect the rights without having to enter a legal battle with a financially more powerful employer. Furthermore, it is necessary to develop a system that will encourage employers to implement rules that protect workers' leisure time, and a system that will discourage opposing behavior. Applying the German model of building awareness of the importance of respecting employee free time is necessary. Legislative changes are, as a rule, limited in scope if they are not in line with cultural movements. If employers and workers do not develop awareness of the importance of respecting these new rules, the situation cannot be significantly improved. The campaign that happened in Germany is the right way, but it needs to be more long-lasting and more embedded in other media content.

### 3.2. REFORM OF EDUCATION

The current education system in Croatia almost completely ignores the development of creativity; especially innovation and entrepreneurship. We can go a step further and conclude that the educational system obstructs the creativity of children. An illustration of Gillian Lynne, used by Sir Ken Robinson, one of the most famous contemporary critics of education, can be used to illustrate this problem. He claims that people are most successful when they do what they have natural capacity for, and when they develop a passionate attitude toward that activity (Robinson & Aronica, 2009). If we accept this simple thesis, then the education system should strive to recognize and develop talents, but this is not enough; Modern schools should stimulate empirical learning, personal activity, and inner motivation. In this way, we can develop a passion for certain

areas. The human population is characterized by an extremely wide range of talents, unfortunately, most of them are undiscovered. As a rule, creativity is identified with art. Art subjects certainly deserve a better position in our education system, but creativity has a role in every area we taught in schools (Robinson, 2001).

The approaches to creativity have changed over time from the early 19th century when creative individuals were considered geniuses, and creativity was considered to be characteristic only of selected individuals, to a more scientific orientation that links creativity with divergent thinking. Today, the perception of creativity as a feature of selected individuals is gradually abandoned. Creativity is increasingly becoming a common human potential. Unfortunately, despite the tendencies and demands of modern society and modern pedagogy, schools still largely stimulate and value memory and analytical skills, convergent thinking and conformism, and don't encourage creative and critical thinking skills. We should be aware that creativity is obstructed by lack of respect for originality, limitation, lack of autonomy and resources, inappropriate norms, negative feedback, lack of time, competition and unrealistic expectations. Every child deserves to develop its creativity; therefore, the teaching of all subjects should be directed, to a certain extent, to encourage creativity, and teachers should be the one who will encourage creative thinking and expression. The teacher's task is to identify the potential creativity of each student and to encourage it because the educational system should provide students with the means to develop creative potential (Kunac, 2015).

The role of extracurricular activities is extremely important in encouraging and developing the creativity of young people. Such activities, according to their characteristics: freedom, diversity, dynamism, freedom from rigid curricular plans and programs, rigid discipline, appraisal, fear, etc., have a great potential for developing students' creativity. Unfortunately, their potential is not used enough in schools. Often, organization and implementation of extracurricular activities are "assigned" activities to teachers that are not interested in those subjects. Extracurricular activities often represent an extension of regular teaching hours and even worse, additional schooling, so they become a place for competitions of gifted students. They are also limited by the material resources of the school and the workload of the teachers, which does not meet the different needs of students; (Mlinarević, Gajer, 2008, pp. 50, 51). Many types of research that question students' interest are confirming that it is necessary to carry out

empirical learning through various practical activities in order to find additional ways to involve children. If students are offered interesting practical topics during their extracurricular activities, having in mind their different interests, it will increase their intrinsic motivation and will lead to greater involvement in the offered extracurricular activities (Kostović-Vranješ, Bulić, Novoselić, 2016). Creative abilities are not something absolute and static, but dynamically and voluntarily, they evolve throughout life, therefore society must build institutions that will encourage the development of creative thinking (Kunac, 2015). Unless we approach creativity-based reforms, we cannot expect from the coming generations to create new technologies, new jobs and generally new solutions. We will either develop our human potential, or we will be condemned to recycle foreign ideas with decades of delay.

### 3.3. SIMPLIFYING THE TRANSITION FROM HOBBYISM TO ENTREPRENEURSHIP

One of the fundamental obstacles in transforming hobbies into enterprises is psychological nature. Hobbyists who choose to try to monetize their experience, as a rule, have not yet decided to become entrepreneurs. The decision to enter an entrepreneurial adventure follows only after the first profit from the services or products is gained. If such first market survey proves to be profitable, hobbyists generally convince themselves that it is the time to transform the hobby into a business venture. This is the most sensitive phase in the desired transformation. Therefore, it is of utmost importance to introduce changes in the legal system that will recognize the order in which hobbyist becomes entrepreneurs. The existing legal framework discourages people to start their own business even before they really attempt to try it. Fulfillment of all legal requirements at the very beginning does not pose a problem for people who have a clear business vision and plan. However, in a period when people are just getting acquainted with the commercial potential of their hobby, these demands are extremely demotivating. Those who enter into a battle of complying with these legal requirements have, in most cases, already tested their product in an unofficial way, by avoiding the said regulations. That is why it is necessary to consider the legal framework that will enable the launch of trial business ventures. Hobbyists should be allowed to commercialize their activities in a way that they are not overburdened by the payment of taxes and contributions, requirements of special education and other similar obstacles, as long as they count as small

profitability activities. After a simple registration hobbyist should be able to try the market. The experience gained in this beginner's model should be motivating and enable the gradual development of a more serious entrepreneurial plan. During this period, a hobbyist could gradually prepare to fulfill the conditions required when opening a simple Limited Liability Company. As long as we don't adopt such reform, Croatians will start their initial entrepreneurial phase on the black market (Čatipović, 2014), or will be discouraged by the demands placed on them by the entrepreneurial venture.

### 3.4. PROMOTION OF ACTIVE FREE TIME ACTIVITIES

If we observe the phenomena of active and passive free time from the perspective of economic science, we can conclude that a balance is needed between these two forms of human behavior. It is easy to notice the economic significance of passive free time activities as it is directly related to the phenomenon of consumer culture, and in some ways represents a triumph of materialistic values. The active pursuit of free time, on the other hand, has no apparent economic implications, but more detailed observation will reveal that it indirectly and significantly affects the economic indicators of a country. It is closely related to education and the creation of new ideas, products and „healthy living“. Each of these categories stimulates the economy or reduces the public's costs. It is especially important to note that active free time is not in opposition to consumption, it even encourages it. Such thinking leads us to the conclusion that consumerism itself is not a social problem, which is a common conclusion within the humanistic scientific circles (Dadić, 2013, pp 100-106). The problem is passive consumerism, which behavioral pattern is based on consumption itself. If the consumption, after the fulfillment of basic living needs, is focused on products and services that promote education, development of critical consciousness and creativity, or some other desirable form of behavior, then the consumerism will be perceived as an investment in social advancement.

Recent research shows that free time is the area of everyday life in which young people get involved in the earliest and where their autonomy is greatest (Mlinarević, Gajer, 2008, pp. 50-51). For this reason, it is necessary to create the habit of active free time during childhood and adolescence. In this process, the school and the family should play the most important role, but the precondition for their success is the active role of the state policies. Behavioral patterns are

primarily transmitted from parents to children. This phenomenon is confirmed by numerous research and scientific papers (Družinec, 2016). Unfortunately, a positive contribution of the family can only be expected when such a reform really takes place and lasts for a long time. In this way, the generations raised in the society which has developed *hobby culture* will be able to transfer the patterns of the behavior that they have acquired to their children. The school today is to a large extent traditional or overloaded with content, tasks, tests, and evaluation. For the free time activities, the most important is their positive orientation, and it can be achieved by pedagogically designed activities that provide socially and culturally valuable contents in order to meet the individual needs of young people.

The state, local and regional government systematically supports a variety of socially beneficial activities conducted by private persons (less frequently business entities) joined in the legal form of *Associations* (Zakon o udrugama, article 4). State financially supports, depending on the classifying activity (or part of the activity) the association's program, or project, of general interest (Zakon o udrugama, article 32). The legal framework is rounded up the *Decree on the criteria, criteria, and procedures for financing programs and projects of general interest provided by associations* (Narodne Novine 26/15) and the *Law on Financial Operations and Accounting of Non-Profit Organizations* (Narodne Novine 121/14). Such a system should continuously be supported. It is of crucial importance to the wider understanding of projects that are of interest to the common good. Although the *Zakon o udrugama* (Narodne Novine 74/14, 70/17) uses an open definition, in societal consciousness this concept is still relatively narrowly understood. In the past few years there were some improvements which made a significant step towards preventing abuse of public funding, however, it made the funding system more complicated. It is important to emphasize that educating younger generations about opportunities and ways of organizing to promote common goals and enhance common interests is more important than financial aid. Also, the state, local and regional government units should pay more attention to the promotion of active involvement in various activities of public interest.

#### 4. CONCLUSION

This paper tries to re-examine the state of the current working hours and time that remains after work. Emphasis has been placed on the creative potential

of free time. In that context, we promote the idea of *hobby culture* development as a catalyst for entrepreneurship. The relationship between work and free time goes beyond the theme of entrepreneurial development, so this paper questions the other consequences of shorter working hours. Modern economic science suggests that shorter working hours could cause significant improvements and reduce the costs of the welfare state. The liberation of free time and the development of *hobby culture* are also complementary to concepts of knowledge-based economy and lifelong learning. Relevant researches, currently do not link the shorter working hours with employment growth, but there are serious indications of productivity growth. Since this topic was researched experimentally in the last few years, it would be desirable in our economic environment, to look more profoundly and deeper into the effects of shorter working hours: both through social experiments and through scientific considerations. The program of developing *hobby culture* as a catalyst for entrepreneurship should create jobs in the long run, as well as a healthier and more sustainable way of life. Unfortunately, long-term programs are difficult to turn into political votes with the conclusion that the great success lies in shorter working hours, greater efficiency of the workforce and additional free time on the account of a small reduction in revenue. In a country of low income, this really sounds painful, but it certainly isn't impracticable. The only thing that is required is giving up of consumption of a relatively small number of products and/or services, in exchange for undeniably true values such as efficiency, health, and future prosperity.

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# THE PERCEPTION OF ENTREPRENEURIAL CLIMATE IN THE REPUBLIC OF CROATIA

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## *Abstract*

*One of the most important roles of the government is to provide a positive entrepreneurial climate that allows clearly defined market conditions, thus attracting entrepreneurs (Vehovec, 2002). By focusing on the characteristics important for entrepreneurial growth, governments can develop policies and programs in a targeted manner to help entrepreneurs. In order to examine the entrepreneurial climate in the Republic of Croatia, the Entrepreneurial Climate Questionnaire was completed by 761 leaders from various Croatian companies. The three-factor structure of the entrepreneurial climate was obtained. The first factor, described as the strategic postulates of the country and their impact on the market (clarity of the vision of development and the vitality of the country systems that support it, such as science, education, legislation, financial strategy and justice), the respondents estimated as very unfavorable for successful business development in Croatia. The second factor, described as the behavior of the country on an operational level (public administration services), respondents rated somewhat more favorable than the first factor, though still far from optimal. The third factor, described as the country's impact on competition, was also assessed by the respondents as unfavorable (primarily, they are dissatisfied with the high level of corruption, numerous public administrations demands, unregulated grey labor market and high prices of the financial services). Significant differences in estimates with respect to the form*

*of ownership have been established, e.g. the state-owned companies estimated the entrepreneurial climate as the most favorable, private foreign companies as less favorable, and private domestic companies estimated it as the most unfavorable. At this point, it seems that the Republic of Croatia does not stimulate, instead, it is a major obstacle to the serious development of entrepreneurial climate and competitiveness. The results show that the situation could easily change with clear strategic guidelines and determination to make changes.*

**Keywords:** *entrepreneurial climate, competitiveness, state strategies, public companies, private companies*

JEL Classification: L26

## 1. INTRODUCTION

The role and influence of the government have been changing over time, and one of the most important roles in the contemporary world marked by the globalization trend is to provide a positive entrepreneurial climate. The positive entrepreneurial climate provides clearly defined conditions for market functioning and thus attracts entrepreneurs (Vehovec, 2002). To achieve this, the government of a certain country should support entrepreneurial policies in line with market trends, because such an initiative directly enables certain industries or companies to obtain a competitive advantage. Such example is the so-called Asian Tigers, for whom the governmental assistance was crucial to achieving a considerable competitive advantage, and even after that intervention, the governments continued to play a very important role. Best (1990) cites the example of the Japanese Ministry of International Trade and Industry (MITI) and its role in Japan's development after the Second World War. The creation of Japanese industries has been encouraged by many policies of this ministry, and the restructuring policy in the early stages of growth of certain industries can be seen as the focal point of creating Japanese competitive advantage. Lerner (2009) cites the examples of Silicon Valley in the United States, Tel Aviv in Israel and Singapore, which have succeeded thanks to their governments' stimulus.

The desire to stimulate the growth of economy and employment through entrepreneurship and innovation is a common theme in governmental policies since the 1970s. The key message of David Birch's from the MIT in "The Job Generation Process", published in 1979, is that new jobs in the United States are being created in small independent companies, not in the big ones, as it

was believed previously. Birch then recommended government policymakers to turn to indirect strategies, with a greater focus on the role of small businesses (Mazzarol, 2014). A public administration can choose between the following possible approaches (Penezić, 2008):

- ✦ A passive approach, the changes happen by themselves and create new conditions,
- ✦ An active approach, it responds to changes and succeeds in trying to improve side effects and outputs, and
- ✦ A proactive approach, the contemporary trends are noticed, and they cause change.

Public administrations are often slow to implement reforms that would enable the right tools and improve the economy (OECD LEL, 2015). Each country has a different policy in place to encourage and help enterprises and entrepreneurs. Legislation of the countries, which want to achieve the economic advancement, tries to do it in a variety of fields - from research and development to professional assistance, and involvement in the processes themselves (Short, 2012). Entrepreneurs deal with a variety of economic activities and cover a wide range of business. By focusing on characteristics that are important for entrepreneurial growth, governments can develop policies and programs to help entrepreneurs. These policies and programs are often dispersed through various governmental activities in different areas, such as agriculture, tourism, small and medium-sized enterprises, industrial zones establishment, communal infrastructure development, environmental protection, social protection enhancement, etc., so they rarely succeed in encouraging entrepreneurial growth (Rubel and Paladino, 2000). It seems that governments forget that strategic planning is a choice between a variety of options, in line with available resources and a chosen vision of development. Since no public or local government has enough resources to develop on all desired projects, it means that action plans that follow these widely set strategies often contain a list of measures and projects that cannot be implemented due to limited resources available to local governments.

The traditional approach to government influence tends to increase the total number of enterprises through start-ups programs and financing through investment in capital and technology transfer (Mazzarol, 2014). One of the most famous centers of entrepreneurial activity is Silicon Valley, which serves as a model for many governments in pursuit of stimulating economic growth. To-

day, many technological parks can be found throughout the world, following the pattern on which their model was created. Universities and development centers are situated in close proximity, and investors are welcome to be acquainted with the activities being undertaken. Such “entrepreneurial ecosystems,” despite the significant investments of governments and entrepreneurs, often mark poor performance (Mazzarol, 2014).

For financing their operations, governments can no longer rely solely on stable tax revenues, remittances from abroad, easy credit line opportunities, or speculative development schemes. In order to generate additional sources of revenue, it is necessary to identify problems and become better in identifying the requirements of potential investors, which increasingly require good and well-formulated investment projects. Successful economies develop different approaches to investment planning to raise and attract capital, build capacity and create new jobs. Broadly, there are three ways governments and their leaders can successfully retain entrepreneurs, investors, growth, and attractiveness (OECD LEL, 2015):

- ✦ By providing targeted support to employers and entrepreneurs. A government can organize a number of activities directly targeted at employers in order to boost their growth, improve their impact and direct capital investments
- ✦ By improving the business climate or developing the country or some of its parts. Governments intervene to improve the entrepreneurial environment. The government can improve the economic climate as well as the quality of the environment in which businesses, but also people, work.
- ✦ By promoting good business experiences, governments can improve the perception of the business climate. An economy with a high-quality business climate can fail to attract employers and investors if they are unaware that there is a good business climate, so efforts are needed to make this information reach the right place.

Isenberg (2010) developed a concept of “entrepreneurial ecosystems”. The author believes the countries are trying to achieve some unattainable ideals and seek for the successful examples in economies that are completely different from theirs. Today, most effective practices often come from the most remote parts of the world, where resources, legal frameworks, transparent management, and

democratic values are sometimes very weak. Based on lessons learned in countries such as Rwanda, Chile, Iceland, Israel, and Colombia, Isenberg defines nine principles for building a successful entrepreneurial ecosystem:

- To stop emulating Silicon Valley,
- To shape the ecosystem around local conditions,
- To engage the private sector from the start,
- To select existing companies, industries, and activities and build entrepreneurial ecosystems on their foundations, skills, and abilities,
- To make significant progress as soon as possible,
- To start immediately with changes in organizational culture,
- To change the established ways of doing business,
- To help clusters to reach organic development rather than quick and artificial,
- To reform legal, regulatory and bureaucratic frameworks.

The government's role needs to be indirect and focused on their alignment instead of management. Each of the nine principles mentioned above is key to entrepreneurship - but separately insufficient for its maintenance. They are of key importance only if integrated into the holistic system. Achieved success will become a paragon to others who are in the vicinity of this kind of change.

Acemoglu and Robinson (2008) claim that institutions are the root causes of different economic growth and development across countries. Douglass North (1990, p. 3, according to Acemoglu and Robinson, 2008) defines institutions as "rules of the game in the society or, the restricting conditions designed by humans shaping the human interaction." There are three important features of the institutions that can be seen in this definition:

- They have been designed by humans, which is contrary to other causes of economic growth and development outside human influence, such as geographic position,
- They are the "rules of the game" setting the "restrictions" to human behavior and,
- Their main influence is rewards-based.

International Data Corporation (USA) has reached a similar conclusion after conducting an analysis of the data from the period 2012-2016. The results

have shown that there is a set of factors with constant statistical significance impact on business efficiency throughout the study period. These factors are fiscal policy, institutional framework, social framework and education (Bris and Caballero, 2017). The second part of the study, related to business productivity, has shown that the single factor which has a consistent impact on productivity throughout the entire period is the institutional framework. These results indicate that “institutional competitiveness” plays a significant role in defining business efficiency and productivity.

Bris and Caballero (2017) confirm that the quality of the legislative and regulatory system is a key driver of efficiency and productivity. Increased transparency of government policies and the simultaneous reduction of corruption induce business efficiency and productivity. The adaptability of government policies to changes in the economy is equally important.

## 2. METHODOLOGY

In order to examine the perception of the entrepreneurial climate and its impact on the efficiency of companies in the Republic of Croatia, a questionnaire was prepared to contain 21 assertions, representing various areas important for the entrepreneurial climate. With respect to each assertion, the respondents evaluated them on a 7-tier Likert scale, 1 meaning complete disagreement with the assertion, and 7 meaning full agreement with the assertion.

For this research, an online survey method was used, and respondents were invited to participate via e-mail. The sample was occasional. The data was collected in June 2018. The participants first got the instruction in which the research goal was described, and it was emphasized to them that the survey was voluntary and anonymous, that there was no time limit, although the time needed for completing the questionnaire was approximately 20 minutes. Data were collected from 866 persons, and the incomplete and inconsistent responses were left out of further processing. The final sample of 761 persons in leadership positions in Croatia was obtained, of which there were 273 female and 483 male participants.

### 3. RESULTS

#### 3.1. THE ENTREPRENEURIAL CLIMATE IN WHICH THE ORGANIZATION OPERATES

The exploratory factor analysis was made on the data collected to obtain clear information on the specific characteristics of the entrepreneurial climate on the Croatian market and its impact on business operations. As a factor extraction method, the main component method was used. After the factor extraction, based on a Scree plot (Figure 1), showing the characteristic roots of all factors, it was decided to retain three factors.

**Figure 1.** Screen plot of characteristic roots of individual factors (N = 761)

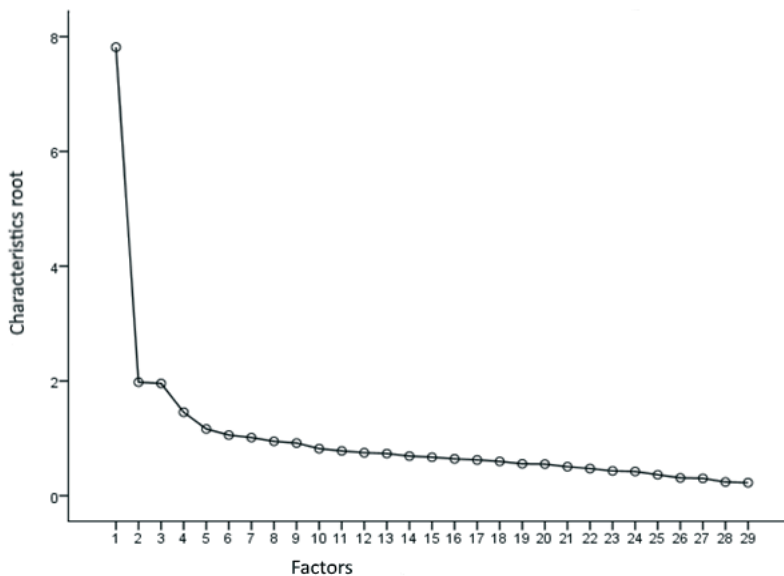


Table 1 shows the percentages of the explained variance of the retained factors.

**Table 1.** Display of the percentage of explained variance in retained factors before and after rotation and their characteristic roots (N = 761)

Factor	Initial characteristics root			Characteristics root after rotation		
	Characteristics root	% of variance	Cumulative %	Characteristics root	% of variance	Cumulative %
1	7.82	26.95	26.95	5.61	19.34	19.34
2	1.98	6.82	33.77	3.34	11.51	30.85
3	1.98	6.74	40.52	2.81	9.67	40.52

Varimax rotation was used to obtain a factorial clear structure, and three obtained factors explain 40% of the total variance, with as much as 20% explaining factor 1. Table 2 shows the structure of the retained factors and only significant factor loads are shown.

**Table 2.** Factor structure view after factor rotation (N = 761)

Assertion	Factor		
	1	2	3
<i>FACTOR 1 - Strategic determinants of the country</i>			
Scientific-research institutions focus research on entrepreneurship needs	0.75		
The level of cooperation between entrepreneurship and scientific research institutions is high	0.73		
The judicial system is independent of external influences	0.71		
The education system is geared towards the development of a competitive economy	0.71		
The judicial system is fast and efficient	0.70		
The government is spending taxpayers' money in the right way	0.57		
The regulations allow a fair market game	0.51		
The legislation and laws stimulate foreign investment	0.54		
The judicial system protects private property	0.52		
The customs procedures are implemented in the right way	0.51		
The company may easily dispute the procedures or regulations of the public administration	0.48		
Laws and regulations allow flexible employment and dismissal of employees	0.47		
It is easy to obtain a business credit line regardless of the company size	0.41		
Laws allow the transition to digital business models	0.40		
Croatian residents are mobile when for a job	0.33		
The financial market in Croatia is stable	0.32		
<i>FACTOR 2 - Operational activity of public administration</i>			
Laws and regulations are tailored to business trends		0.83	
Changes in laws and regulations are announced in time so that we can prepare for them		0.80	
We have all the resources needed to track changes that come from the state administration		0.69	
Public administration officials are skilled for the work they do		0.67	
The entrepreneurship climate in Croatia is stimulating for the company I work in	0.43*	0.68*	
<i>FACTOR 3 - Government influence on competitiveness</i>			
Enterprises financed by public funds distort the market competitiveness			0.61
The licenses and approvals needed to work make it difficult for doing business			0.55
The level of corruption in Croatia badly affects business			0.53
Incentives and tax deductions distort competitiveness			0.53
Meeting the demands of public administration is a huge burden			0.52
The judicial system causes business problems			0.51
The prices of financial services in Croatia make business more difficult than in other countries			0.49
Unregistered or informal companies/individuals distort the market competitiveness			0.49

\* the assertion is saturated with two factors with greater saturation by factor 2

Based on the factor structure, factor 1 represents assertions that point to the perception of the government strategy and its impact on the market through the vision development clarity and the ability of vital country systems (science, education, legislation, financial strategy, and justice) to support this strategy.



Factor 2 is represented by the assertions that point to the behavior of public administration towards business entities at an operational level, and factor 3 is represented by the assertions describing the government's influence on competitiveness.

Based on these factors, subclasses were created as simple linear combinations of results on their constituent assertions. Higher scores in factors 1 and 2 indicate a more positive attitude towards the Croatian entrepreneurial climate, and in factor 3, higher scores mean a more negative attitude. Table 3 shows the average results for the whole sample, ranked by the assertion size within each factor, to see how Croatian companies generally evaluate each of them.

**Table 3.** Overview of the average of results and their distribution on the questionnaire on the environment ranked within each factor (N = 761)

Assertion	M	Doesn't	Neither-	Agrees
		agree (1-2)	Nor (3-5)	(6-7)
<i>FACTOR 1 - Strategic determinants of the country</i>				
The judicial system is fast and efficient	1.64	85%	14%	1%
The judicial system is independent of external influences	1.76	80%	19%	1%
The education system is geared towards the development of a competitive economy	1.94	76%	23%	1%
The government is spending taxpayers' money in the right way	1.98	75%	23%	2%
R&D institutions focus research on entrepreneurship needs	2.23	66%	32%	2%
The legislation and laws stimulate foreign investment	2.32	64%	34%	2%
The level of cooperation between entrepreneurship and R&D institutions is high	2.33	62%	36%	2%
The company may easily dispute the procedures or regulations of the public administration	2.39	63%	35%	3%
Laws and regulations allow flexible employment and dismissal of employees	2.48	59%	36%	5%
Croatian residents are mobile when looking for a job	2.60	59%	33%	8%
The judicial system protects private property	2.76	49%	47%	4%
The customs procedures are implemented in the right way	2.77	45%	53%	2%
The regulations allow a fair market game	2.80	46%	52%	2%
It is easy to obtain a business credit line regardless of the company size	2.80	46%	51%	3%
Laws allow the transition to digital business models	3.17	38%	57%	5%
The financial market in Croatia is stable	3.30	34%	56%	10%
<i>FACTOR 2 - Operational activity of public administration</i>				
The entrepreneurship climate in Croatia is stimulating for the company I work in	2.41	62%	35%	3%
Public administration officials are skilled for the work they do	2.69	51%	44%	4%
Laws and regulations are tailored to business trends	3.08	45%	44%	11%
We have all the resources needed to track changes that come from the state administration	3.30	36%	53%	12%
Changes in laws and regulations are announced in time so that we can prepare for them	3.54	35%	48%	17%
<i>FACTOR 3 - Government influence on competitiveness</i>				
The level of corruption in Croatia badly affects business	5.61	6%	30%	64%
Meeting the demands of public administration is a huge burden	5.33	5%	42%	52%
Unregistered or informal companies/individuals distort the market competitiveness	5.21	6%	45%	49%
The prices of financial services in Croatia make business more difficult than in other countries	5.04	8%	46%	46%
The judicial system causes business problems	4.94	16%	35%	49%
Enterprises financed by public funds distort the market competitiveness	4.90	6%	54%	40%
The licenses and approvals needed to work make it difficult for doing business	4.69	11%	53%	36%
Incentives and tax deductions distort competitiveness	4.18	23%	49%	29%

From Table 3 almost all respondents perceive that the strategic determinants of a country that have an impact on the Croatian market, described by Factor 1,

are currently very poorly set. If we take into consideration that assertions were evaluated on a scale of 1-7, the average results below 2 can be viewed as an alarm signal. The worst rated assertions are related to the effectiveness and independence of the judicial system, which were given the lowest rates by more than 80% of respondents, while only 1% of them gave it good rates. Equally bad rated are the assertions related to education (76% of respondents rated this system as a very poor) and science (66% of respondents rated this system as a very poor) as tools necessary to achieve effective economies, and the government's policy of spending taxpayers' money in the wrong way (75% of respondents believe this). Third, there are several assertions pertaining to the legislative framework, which was assessed as an obstruction to the development of a competitive economy. In the total number of assertions that describe this factor, the best-ranked ones are those relating to the stability of the financial market and the legislative framework of digital business models, but their average means are below 4, which is only an average rating.

These results clearly indicate that respondents almost unanimously agree that the Government of the Republic of Croatia should urgently adopt a clear strategy for the development of entrepreneurial climate and, accordingly, define guidelines for the development of the judicial system, education system, science and an adequate legislative framework that would support the systematic development of a competitive economy. At this point, it seems that Croatia is not encouraging but is a major obstacle to serious development of an organization's competitiveness.

Assertions of Factor 2 are slightly better rated than those of Factor 1. These assertions describe situations in which companies and public administrations meet each other on an everyday, operational level. They refer to the promptness in obtaining the necessary information, the expertise of officials, specific regulations and the like, where the general deviation in quality of individual services is much greater, so many meets both positive behaviors or positive individual good practices, which necessarily raises ratings of Factor 2. Their highest average score is below 4, which leaves enough room for possible progress. The results on the assertions of this factor could probably be improved systematically further just by defining a clear strategy, which is described by Factor 1, i.e. without some additional targeted activities, though they are also desirable.

Ratings of the assertions in Factor 3 are interpreted opposite than ones of the first and second factors. Higher ratings mean poorer results, so they are

ranked like that. This factor describes the impact of the public administration on competitiveness and, it can be concluded that public administration, by its own performance or by refraining from performance, has set a number of challenges that may be insurmountable to many businesses. Therefore, companies may have problems not only to run a successful business but to survive in general.

On the first place is a high level of corruption, with which the public administration has obviously not yet coped in a strategic and systematic way leaving many companies in disrepair due to this significant problem of the economy. On the second place are obviously numerous public administrations demands, which cause problems for most enterprises in conducting business. Then there is a problem of still insufficiently regulated grey market and the problem of high prices of financial services. Lastly, the poor functioning of the judicial system and the disloyal competition of publicly financed companies are mentioned again. They jeopardize the business operations of the companies that need to find their own source of funding to achieve their goals and in addition to that, fight with everyday liquidity or public administration requirements. In this set of assertions, it seems that respondents are generally the least dissatisfied with tax reductions and incentives.

All of the above is an objective set of problems that could easily begin to change with clear strategic guidelines and determination to make changes. It can be stated that companies in Croatia are founded only by those who are very proactive, have a clear vision and enough courage to do business despite the limitations of the entrepreneurial climate. Environmental stimuli are, obviously, only theoretical, and companies are being obstructed by real problems such as the poor judiciary, corruption, poor science, and education strategies, etc. The only question is how long they will be able to fight the negative impacts of the environment and how much more successful they would be if, instead of constantly fighting with obstacles, they could operate on the wings of opportunities, because their goals and goals of the country should be identical.

It is no surprise that many Croatian small and medium-sized enterprises consider the market globalization as salvation, so they direct their business to foreign markets in a form of closer cooperation with them or distribution of products to them, so they see globalization not as a threat but as a great opportunity.

**3.2. IMPACT OF ENTREPRENEURIAL CLIMATE IN TERMS OF OWNERSHIP STRUCTURE**

To respond to this problem, a multivariate analysis of variance was used, followed by a canonical discriminatory analysis. First, the assumptions for the implementation of the multivariate variance analysis (checking the univariate normality of the distribution, the homogeneity of covariance of the matrix (Leven's test), and test of covariance matrices - covariance (Box's test) was carried out. Multivariate variance analysis has shown that enterprises with different ownership structure statistically significantly differ from the point of view of entrepreneurial climate perception (Wilk's  $\lambda = 0.95$ ;  $F(6,1504) = 7.16$ ;  $p < 0.01$ ). Given this result, a subsequent canonical discriminant analysis was carried out in the next step. Two functions were obtained, of which the other is not significant (Function 1 - Wilk's  $\lambda = 0.94$ ; chi-square (6) = 42.42;  $p < 0.01$ ; Function 2 - Wilk's  $\lambda = 1.00$ ; chi-square (2) = 0.19;  $p > 0.05$ ). Table 4 shows the matrix of the structure of the function obtained.

**Table 4.** Display of a matrix of the structure after conducted canonical discriminant analysis (N=761)

Entrepreneurial climate Function 1	
Factor 1	0.92
Factor 2	0.70
Factor 3	-0.60

The first function is significantly associated with all three factors, there is a positive correlation with the first two, and negative with the third, since the third, as it was already explained, is being interpreted opposite than the first two. This function represents the overall view of the entrepreneurial climate in Croatia. Greatly linked to it is the first factor, which describes the strategic determinants of the country, then the second one, which refers to the country's operative activities, and finally the third, which is about the country's influence on competitiveness. The higher the score, the more positive view of the entrepreneurial climate. In this function, the highest result was achieved by the respondents employed in state-owned enterprises (M=0.50), followed by those in the foreign-owned enterprises (M=0.22) and, finally, leaders from domestic-owned enterprises (M=-0.20). This means that the companies operating the easiest on the Croatian market are the state-owned companies, then the foreign private companies, which are likely to have both size and foreign expertise in their favor,

which helps them to cope easier with the country challenges. Domestic private companies see operating in such a climate as very hard.

In order to gain a more detailed insight into these differences, a comparative analysis of the average results for individual assertions represented by each factor of the entrepreneurial climate, given the ownership structure of the company, was conducted and presented in Table 5.

**Table 5.** Display of group average results on the questionnaire assertions and their comparison to the average results of the organization with respect to the ownership structure

Assertion	MU	MPDO	MPSO	MDO
<i>FACTOR 1 - Strategic determinants of the country</i>				
The judicial system is fast and efficient	1.64	1.61	1.62	1.89
The judicial system is independent of external influences	1.76	1.65	1.82	2.20
The education system is geared towards the development of a competitive economy	1.94	1.91	1.88***	2.31
The government is spending taxpayers' money in the right way	1.98*	1.86*	2.02*	2.67*
R&D institutions focus research on entrepreneurship needs	2.23	2.18	2.30**	2.27
The legislation and laws stimulate foreign investment	.232	2.17	2.42	2.85
The level of cooperation between entrepreneurship and R&D institutions is high	2.33	2.28	2.38**	2.36
The company may easily dispute the procedures or regulations of the public administration	2.39	2.27	2.55	2.58
Laws and regulations allow flexible employment and dismissal of employees	2.48	2.33	2.57	3.02
Croatian residents are mobile when for a job	2.60	2.57	2.62	2.76
The judicial system protects private property	2.76	2.64	2.89	3.00
The customs procedures are implemented in the right way	2.77	2.64	2.90	3.04
The regulations allow a fair market game	2.80	2.62	3.01	3.07
It is easy to obtain a business credit line regardless of the company size	2.80	2.59	3.12**	2.91
Laws allow the transition to digital business models	3.17	3.11	3.18	3.60
The financial market in Croatia is stable	3.30	3.13	3.61**	3.22
<i>FACTOR 2 - Operational activity of public administration</i>				
The entrepreneurship climate in Croatia is stimulating for the company I work in	2.41*	2.18*	2.63*	3.02*
Public administration employees are skilled for the work they do	2.69*	2.47*	2.82*	3.65*
Laws and regulations are tailored to business trends	3.08*	2.79*	3.42*	3.58*
We have all the resources needed to track changes that come from the state administration	3.30*	3.01*	3.66*	3.82*
Changes in laws and regulations are announced in time so that we can prepare for them	3.54	3.39	3.75**	3.73
<i>FACTOR 3 - Government influence on competitiveness</i>				
The level of corruption in Croatia badly affects business	5.61	5.63	5.60	5.38
Meeting the demands of public administration is a huge burden	5.33	5.42	5.30	4.91
Unregistered or informal companies/individuals distort the market competitiveness	5.21	5.35	5.00	5.18
The prices of financial services in Croatia make business more difficult than in other countries	5.04	5.23	4.76***	4.87
The judicial system causes business problems	4.94	5.04	4.87	4.53
Enterprises financed by public funds distort the market competitiveness	4.90	4.99	4.83	4.44
The licenses and approvals needed to work make it difficult for doing business	4.69	4.85	4.53	4.33
Incentives and tax deductions distort competitiveness	4.18	4.27	4.05	4.02

\*\*\* the lowest rating that was not given by respondents from private domestic companies

\*\* the highest ratings that were not given by respondents from state organisations

\* items with the greatest differences between the best and worst rating

MU - arithmetic mean per each assertion for the whole sample

MPDO - arithmetic mean per assertion for private domestic organisations

MPSO - arithmetic mean per assertion for private foreign organisations

MDO - arithmetic mean per assertion for state organisations

From the results shown in Table 5, it can be seen that the highest rates were given by the leaders of state-owned enterprises, then by leaders of private foreign companies and finally by leaders of private domestic companies. This table confirms the results of variance analysis and discriminant analysis,

which marked statistically significant differences between these three groups of companies with respect to the ownership structure. The following can also be read from the data:

- ✦ In comparison to domestic companies, the foreign private companies gave worse rates to the assertions related to the poor educational system, given that it is not directed to the development of a competitive economy. These companies often find themselves dissatisfied with the Croatian labor market, in terms of lack of expertise and competence to carry out various jobs, so it would be good to make the necessary reforms as soon as possible so that our workforce becomes more competitive in the market, especially for more demanding jobs.
- ✦ The foreign private companies also give the worst rates to the price of financial services in Croatia, which makes business operations more difficult than in other countries. It would be good to make analyses, which would reveal in detail key elements upon to which to act to attract and retain as many foreign organizations as possible in Croatia.
- ✦ It is interesting to note that the private foreign companies give the highest marks than all to the financial stability of the Croatian market, the ease of obtaining business credit lines regardless of the size of the organization and the timely announcement of changes or the introduction of new laws and regulations. It is possible that these assessments generally came as a consequence of the level of general business literacy of private foreign companies, which may in these settings see more opportunities than threats, as opposed to private domestic companies. The recommendation would be a continuous work on entrepreneurial literacy for private domestic enterprises so that they could see more opportunities than threats in the existing entrepreneurial climate, which would have a positive impact on their business operations (perhaps even on better management of financial performance indicators).
- ✦ The foreign private companies rated the cooperation between entrepreneurship and scientific-research institutions with the highest marks, which may indicate the existence of some systemic factors that enable them to do so, compared to domestic companies. It would be good to examine that as well and teach state-owned and private domestic companies how to gain greater benefit for themselves in this area.

- ♦ The greatest differences between the maximum and the minimum rates are observed on almost all the assertions that are included in the factor of so-called operational public administration activities, and the Factor 1 assertion, which assesses whether the government spends public revenue on the adequate things. This means that leaders of state-owned enterprises give higher rates to the assertions related to the operational operations of public administration (employee expertise, prompt informing, business environment encouragement, adjustment of legislation and regulation to the business trends) than their colleagues in private domestic companies.

Two conclusions can be drawn here. The first is that the overall operation of public administration is more tailored to a state-owned company than to the private ones. If this is the case, it is important to make a good analysis and adequate changes in accordance with them. The other is that there are numerous parameters of public administration that could be more favorable to smaller domestic private companies, but leaders of those companies are not familiar with them, which requires urgent action. A similar conclusion can also be applied to the statement that the government does not spend public revenue on adequate things. Perhaps systematic information on how the selected investments could fit into the development strategy could increase their overall understanding and affection towards them. In addition, the government should listen to the market needs of all participants, not just some, and respond promptly and adequately to them.

The Croatian market seems to be the most favorable to the state-owned enterprises, while systematically ignoring the problems of domestic private companies, which is why they suffer significantly. In other words, the healthiest and most vital part is encouraged the least, which is mostly determined to succeed, and it does succeed, in spite of all these obstacles. It raises the question of how long they will manage to do so and at what costs. The next question is how many entrepreneurs with excellent ideas have given up or failed, and how many potential entrepreneurs do not dare to start because of the obviously unfavorable entrepreneurial climate.



## 4. CONCLUSION

Numerous theoretical research and contemporary business practice point to the great importance of stimulating an entrepreneurial climate for the development of the country's competitiveness and the important role of the government to enable this through its strategic engagement. The aim of this research was to find out how the leaders of Croatian companies perceive the entrepreneurial climate in Croatia and does their perception differ due to the ownership structure of the companies they work in.

The factorial analysis of the obtained data showed the existence of three factors that describe the entrepreneurial climate in Croatia. The first relates to the perception of the country strategy and its impact on the market through the development vision clarity and the ability of vital country systems (science, education, legislation, financial strategy, and justice) to support that strategy. The second factor relates to the perception of public administration behavior towards business entities on an operational, daily level, and the third to the perception of country influence on competitiveness.

The results of the tests indicate that all respondents are very dissatisfied with all factors, and mostly with the first, where average results below 2 (on a scale of 1-7) can be seen as an alarm signal. The worst rated assertions are related to the effectiveness and independence of the judicial system, rated with the lowest grades by more than 80% of respondents, while only 1% of them rated them as well. Equally bad rated got the assertions related to education (76% of respondents rated this system as a very poor) and science (66% of respondents rated this system as a very poor) as tools necessary to achieve effective economies, and the government's policy of spending taxpayers' money in the wrong way (75% of respondents believe this).

Evaluations on the second factor are somewhat higher than those on the first - their highest average value is below 4, which is a result that still leaves enough room for improvement. Ratings on the third factor are also very bad. On the first place is a high level of corruption, with which the public administration has obviously not yet coped in a strategic and systematic way, leaving many companies in disrepair due to this significant problem for the economy. On the second place are obviously numerous public administrations demands, which cause problems for most enterprises in conducting business. Then there



is a problem of still insufficiently regulated grey market and the problem of high prices of financial services.

In order to answer the question of whether companies value entrepreneurial climate in Croatia different in terms of their ownership structure, a canonical discriminant analysis has been conducted. One significant discriminatory function has been obtained, which can be described as a general perception of the entrepreneurial climate in Croatia, and greatly linked to it is the first factor, which describes the strategic determinants of the government, and then the second, which refers to the government's operative activities, and finally the third talking about the government's influence on competitiveness. The higher the score, the more positive view of the entrepreneurial climate. In this function, the highest result was achieved by the respondents employed in state-owned enterprises ( $M=0.50$ ), followed by those in the foreign-owned enterprises ( $M=0.22$ ) and, finally, leaders from domestic-owned enterprises ( $M=-0.20$ ). This means that the companies operating the easiest on the Croatian market are the state-owned companies, then the foreign private companies, which are likely to have both size and foreign expertise in their favor, which helps them in some ways to easier deal with the state challenges. Domestic private companies express most problems regarding operating in Croatia.

The Croatian market seems to be the most favorable to the state-owned enterprises, while systematically ignoring the problems of domestic private companies, which is why they suffer significantly. In other words, the healthiest and most vital part is encouraged the least, which is mostly determined to succeed, and it does succeed, in spite of all these obstacles. All of the above is an objective set of problems that could easily begin to change with clear government's strategic guidelines and their determination to make changes.

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## ECO INNOVATIONS AS PART OF THE CIRCULAR ECONOMY: EVIDENCE FROM CROATIA

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### **Abstract**

*The circular economy is an economic model that promotes closing the loop, i.e. encourages the 3R principle: reduce, reuse and recycle. However, the transition from a linear economy to a circular economy is not straightforward and implies a set of indicators that determine and measure the development of the circular economy. With the purpose of supporting that transition, this paper elaborates eco-innovations as one of the indicators sets, including business operation activities toward adapting business models according to the principles of a circular economy. Eco-innovations reduce our environmental impact and make better use of resources. They also bridge the gap between research and the market. As such, they comprise of developing products, techniques, services and/or processes that reduce CO2 emissions, use resources efficiently, promote recycling and so on. After providing a relevant theoretical framework, this paper outlines Croatia's eco-innovation profile and then continues with a more specific analysis – presenting a case study regarding eco-innovations related to waste tyre rubber in Croatia. The study focuses on recent examples that already had certain commercialization attempts as well as those that are in their initial research phase, developing new innovation. Indeed, this paper does not analyses all indicators significant for circular economy development. The*

*reason for that is the authors feel the subject would be too broad for a single article. Nevertheless, this paper contributes to closing the loop by reviewing the most important issues related to eco-innovation as well as by demonstrating examples that indicate the direction of Croatia's development in the field.*

**Keywords:** *eco-innovation, circular economy, waste tyre rubber, Croatia*

JEL Classification: Q57, Q53

## 1. INTRODUCTION

According to the World Bank's data, the annual growth rate of the entire human population has been 1.2% for the last decade (World Bank, 2018). Perhaps that information is even more stunning when presented in nominal numbers: the current world population of 7.6 billion is expected to reach 8.6 billion in 2030 and 9.8 billion in 2050 (UN, 2017).

In addition to that, it should be noted that global wealth is increasing, too. Although there are countries in which per capita wealth declined or stagnated, average global wealth grew significantly over the past two decades (Lange et al., 2018). Davies, Lluberas & Shorrocks (2016) give interesting in detail information about the improvements of the estimation methodology and about the level and distribution of global wealth for the 14-year period (2000-2014). Unfortunately, as it is highlighted by Lange et al. (2018) emphasize that some countries rely mostly on tracking economic progress through gross domestic product and do not give enough attention to the wealth (to assets as infrastructure, forests, minerals, human capital etc.), although wealth provides countries to be sustainable in their development.

Taken together, such a growing and increasingly affluent population directly cause a significant increase in demand. Since available resources are limited, demand expansion compounds challenges on the resource side (EMF, 2013). Fundamental challenge concerns the fact that traditional linear consumption patterns ('take-make-dispose') are coming up to constraints in terms of resources scarcity (Ness, 2008).

As a response to those (and other) challenges, the European Commission launched a European strategy for smart, sustainable and inclusive growth: Europe 2020 (Europe 2020). As part of the strategy, it has been chosen to respond to the named issues by moving to a more restorative economic system. Such a

stance on a strategic and multi-national level has been the strong support to the concept known as circular economy, which has been facing intensified realization attempts in many different areas.

One of those areas are eco-innovations, that have been defined as any new or significantly improved product (goods or services), process, organisational change or marketing solution that reduces the use of natural resources (including materials, energy, water and land) and decreases the release of harmful substances across life-cycle (EIO, 2012,8).

As such, eco-innovations are the primary focus of this paper. Therefore, the aim of the study presented has been to identify eco-innovation principles as well as to detect relevant causalities and implications, all in order to support their generation and realization, which is dependent on the cooperation of scholars, businesses and public authorities.

## 2. THEORETICAL FRAMEWORK

### 2.1. CIRCULAR ECONOMY

The concept of circular economy originates from the work done by English born American economist Kenneth E. Boulding in 1960s, who discussed “open economy” and “closed economy”. Boulding introduced his revolutionary ideas saying: “The closed economy of the future might similarly be called the ‘space-man’ economy, in which the earth has become a single spaceship, without unlimited reservoirs of anything, either for extraction or for pollution, and in which, therefore, man must find his place in a cyclical ecological system.” (Boulding, 1966).

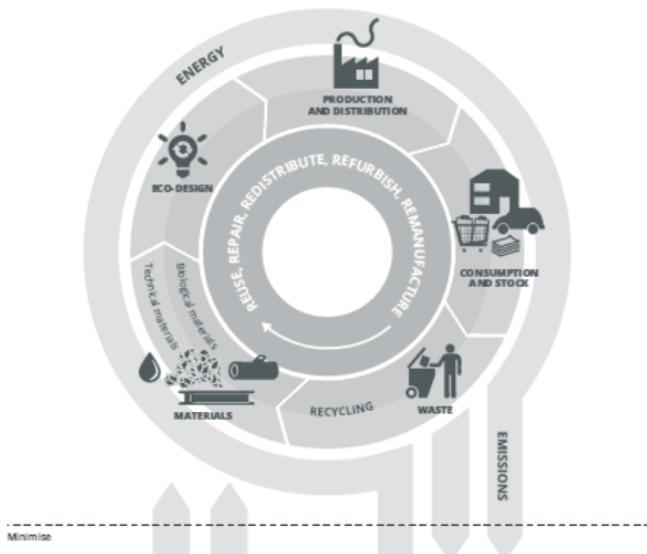
However, the term *circular economy* itself was raised by British environmental economists David Pearce and Kerry Turner (1989), who emphasized that a traditional open-ended economy thinks of the environment as of an inexhaustible pool of resources, which is in the same time a convenient waste reservoir. In such a system, there is no thinking about recycling or sustainability.

But, the emergence of the circular economy idea can hardly be traced back to one precise date or an author. It is an economic model that encourages the so-called 3R principle: reduce, reuse and recycle (Andrews, 2015) and as such can

be recognized in different schools who share the idea of closed loops, resulting in resource and energy savings as well as waste prevention. All of them imply a mindset change that considers waste as a potentially useful resource and not as a problem to manage and dispose of in landfills, as in linear economy.

European Environment Agency in its 2016 report called Circular Economy In Europe (EEA, 2016) presents a simplified model of the circular economy, incorporating several concepts whose joint idea is that eco-design, repair, reuse, refurbishment, remanufacture, product sharing, waste prevention, and waste recycling are important. The model is shown in Figure 1, whose outer circle represents the overall energy flows, emphasizing the need to increase both the total energy efficiency and the share of renewables, in comparison to the linear model. The middle circle represents the material flows in the recycling loops, distinguishing between technical and biological materials. Finally, the inner circle represents reuse, redistribution, repair, remanufacture and refurbishment, as the only means for minimal natural resources input, thus being the very core of the circular economy concept.

**Figure 1.** Circular economy model



**Source:** EEA 2016, p.10

By promoting the adoption of closing-the-loop production patterns within an economic system circular economy aims to increase the efficiency of resource

use, with a special focus on urban and industrial waste, to achieve a better balance and harmony between economy, environment, and society (Ghisellini et al., 2015).

During the last two decades research regarding circular economy has been significantly intensified but also policymakers recognized it as the key for achieving economic development within increasing environmental constraints (EEA, 2016). However, economic, environmental and social effects circular economy could bring have yet to be fully assessed. Additionally, the transition to a circular economy will need to involve all stakeholder groups: governments, scholars, businesses and finance, civil society and citizens.

## 2.2. ECO-INNOVATION

There are several determinants in carrying out the transition from a linear to a circular system of production and consumption. Among those, eco-innovations have been recognized as a key element of the process (de Jesus et al., 2018).

Importance of eco-innovations has been underlined by the Eco-Innovation Initiative, which is part of the EU's Entrepreneurship and Innovation Programme (2008), aiming to support innovation among SMEs and to improve their competitiveness. Even before that, European Commission defined eco-innovations in its Competitiveness and Innovation Framework Programme 2007 to 2013 as any form of innovation aiming at significant and demonstrable progress towards the goal of sustainable development, through reducing impacts on the environment or achieving more efficient and responsible use of natural resources, including energy (2007).

Definitions that can be found in academic sources emphasize the same key points:

- Eco-innovation is the process of developing new products, processes or services which provide customer and business value but significantly decrease environmental impact (Fussler & James, 1996).
- Eco-innovation is the production, assimilation or exploitation of a product, production process, service or management or business method that is novel to the organization (developing or adopting it) and which results, throughout its life cycle, in a reduction of environmental risk,

pollution and other negative impacts of resources use (including energy use) compared to relevant alternatives (Kemp & Pearson, 2008).

- Eco-innovations are innovation processes toward sustainable development...which develop new ideas, behavior, products, and processes, apply or introduce them, and contribute to a reduction of environmental burdens or too ecologically specified sustainability targets (Rennings, 2000).

Presented definitions suggest that sustainable economic processes do not involve short-term value creation at the expense of long-term wealth. In that sense, the term 'eco-innovation' has been increasingly used in the course of environmental management and policy development in recent years. But, since eco-innovations, in general, take into account the whole system - it's social, ecological and economic aspects, the term appears in diverse contexts (Carillo Hermosilla et al., 2009). To be exact, there are five main strands to eco-innovation initiative (de Jesus et al., 2018):

- Greening business
- Food and drink sector
- Sustainable building products
- Materials recycling and recycling processes
- Water efficiency, treatment, and distribution.

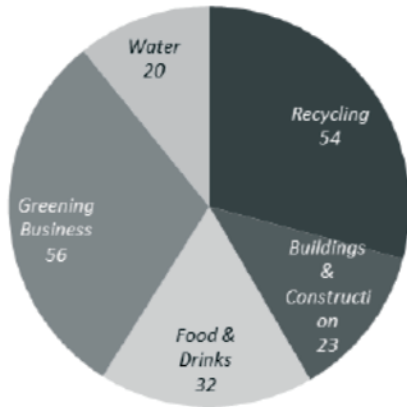
Those strands have been officially determined by the European Commission, by its Eco-innovation policy mapping (2013) as:

- eco-innovation and blue growth
- eco-innovation and food & drink sector
- eco-innovation and sustainable construction
- eco-innovation and waste directive
- eco-innovation and water framework directive

Therefore, the structure of eco-innovation projects is diverse, too. The latest Analysis and reporting of the results achieved by CIP Eco-innovation market replication projects (2016) shows the structure of conducted projects along five priorities, as presented in Figure 2.



**Figure 2.** Structure of conducted eco-innovation projects from 2008-2011



**Source:** Analysis and reporting of the results achieved by CIP Eco-innovation market replication projects, 2016, p. 1

It has been estimated in the Analysis (2016) that the full portfolio of conducted projects shown in Figure 2, reached an annual savings of 1.2 billion EUR through eco-innovation projects, in terms of money that would be needed to avoid or repair the effects of damages to the environment.

In addition to the above-noted remarks on the diverse nature of eco-innovation, also a multiplicity of stakeholders should be appreciated. Klemer et al. (1999) say that eco-innovations are all measures of relevant actors - firms, politicians, unions, associations, churches, private households, which develop new ideas, behavior, products, and processes, apply or introduce them and which contribute to a reduction of environmental burdens or too ecologically specified sustainability targets.

But, with many actors, there is always a question of responsibility and initiative. Important findings regarding specific roles of different actors have been provided by the recent study (Gliedt et al., 2018), suggesting especially the importance of innovation intermediaries, such as incubator and accelerator centers, at linking local, state and business actions in order to scale-up and influence green economic development in a politically feasible manner.

Continuing to different actors, also taking different levels into account is important. The impact of innovation can be analyzed not only on the level of an individual company, product or service (micro level) but also as a technology field, product system or on a subnational level (mezzo) as well as on the level of

an entire economy or national innovation system (macro). It should be kept in mind, however, that incremental innovations analyzed on the macro level are in fact aggregated material savings due to incremental changes at the micro level (EIO, 2012).

Despite an extensive literature on eco-innovation, and a growing body of research exploring the circular economy, little information can be found concerning whether and how eco-innovation can facilitate the change to a circular economy. Research conducted by Jesus et al. (2018) shows that an eco-innovation-driven techno-economic transition to a circular economy requires specific solutions, i.e. different forms of eco-innovation-driven “clean congruence” at distinct levels of operation. That is why authors of this paper find it relevant not just to outline Croatia’s macro-economic profile, but also to explore different examples on the micro level, involving different combinations of innovations and organizational set-ups.

### 3. METHODOLOGY AND METHODS

Literature research is being used as the primary method in 19% of studies on the circular economy (Ghisellini et al., 2018). This paper has been no exception, primarily for the purpose of theoretical framework compilation, but also in the course of macro-level empirical analysis.

In addition to literature research, content analysis method has been applied to consume the existing body of knowledge on eco-innovation and circular economy. Synthesis method has been used to summarize the previous findings, in order to notice relevant causalities and implications and create starting assumptions needed for the factual, empirical part of the research.

For the empirical part of the analysis, the authors of this paper have chosen a case study as the dominant research method. Since it allows the exploration and understanding of complex issues, they have found it the most adequate, especially for the micro-level part of the analysis. In that research phase, authors did several interviews with managers and employees of the company in question and observed business operation activities themselves, during visiting the company.

Case study method enabled researchers to go beyond the quantitative statistical results and data series analyzed at the macro-level and to conduct a holis-

tic, in-depth investigation, which made it possible for them to understand the behavioral conditions through the actor’s (Gumiimpex) perspective. As such, it helped them explain both the process and outcome of eco-innovation phenomenon through complete observation.

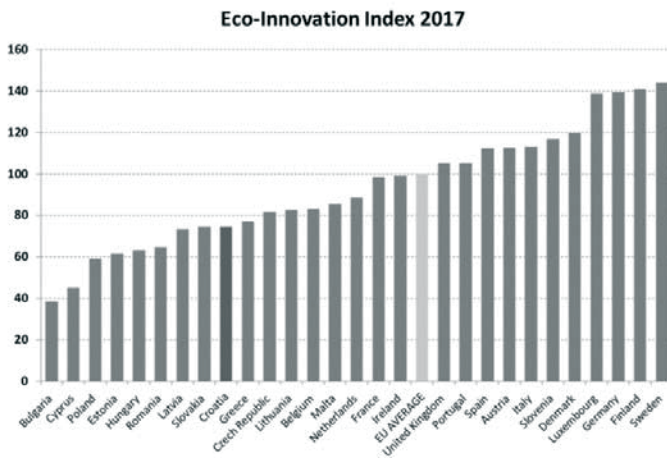
## 4. RESULTS AND DISCUSSION ON CROATIAN ECO-INNOVATION PROFILE

### 4.1. MACRO-LEVEL ANALYSIS

Croatia still has a long way to go in the transition from a linear to a circular economy, but adjustments of Croatia’s policies with EU regulations are in progress and significant improvements have been made in the past two years.

To gain a broader perspective, Croatia’s eco-innovation performance should be analyzed within the EU context. Such an analysis can be done using the Eco-innovation composite index presented in Figure 3.

**Figure 3.** Eco-innovation performance composite index



**Source:** Croatia EIO profile, 2017, p.3

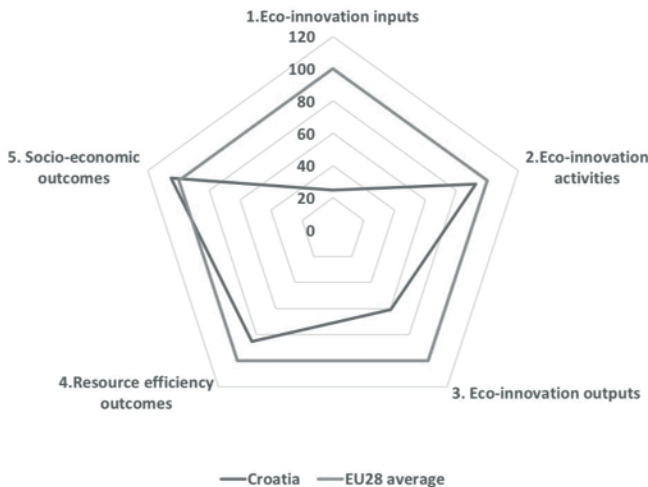
The Eco-innovation index demonstrates the eco-innovation performance of a country compared with the EU average and with the EU top performers. As shown in Figure 1, Croatia achieved a performance score that is 28% lower than the EU average, which places it 8th from the bottom in the EU-28 eco-

innovation ranking. This ranks Croatia within the group of member states that are catching up on eco-innovation practices compared to the rest of Europe.

Nevertheless, compared to 2015 when Croatia scored 61% of EU-average and was the fifth worst performing EU member, in 2017, Croatia rose 4 places with 18% improvement in eco-innovation.

Eco-innovation index is a composite index that is based on 16 indicators which are aggregated into five components: eco-innovation inputs, eco-innovation activities and eco-innovation outputs as well as environmental outcomes and socio-economic outcomes. Croatia's scores regarding different components are presented in Figure 4.

**Figure 4.** Components of the Eco-Innovation Index for Croatia



Source: Croatia's EIO profile, 2018, p. 4

All measured components except for eco-innovation outputs increased in performance ranking since 2015. Socio-economic outcomes more than doubled their value and eco-innovation inputs, even though well below the EU average, rose by 67%. In fact, with a score of 95, socio-economic outcomes are the area where Croatia performs relatively better compared to others and where the score comes close to the EU-average of 100 points. Within socioeconomic outcomes, two indicators - "Employment in eco-industries" and "Turnover in eco-industries" were not available for the 2015 report. In 2017, these indica-

tors are well above the EU average, which explains the significant increase in performance in this area. Finally, the indicator “Exports of products from eco-industries” is slightly above half of the EU average (Croatia’s EIO profile, 2017).

On the other hand, the worst part of this composite index comes from the area of eco-innovation inputs, where Croatia has an index 75% lower than the EU average. Particularly low scores are seen under the indicator “Governments environmental and energy R&D appropriations and outlay” where Croatia scored only 13% of the EU average. A relative number of “Total R&D personnel and researchers” measured in percentage of total employment in Croatia is around half of the EU average (Croatia’s EIO profile, 2017).

A recent study revealed results on another eco-innovation measure applied in different countries including Croatia, called ecological footprint - a tool for measuring and monitoring the sustainability of the new information society and the higher degree of openness in the European economy powered by the globalization process. It was the study conducted by scientists at the Bucharest University of Economic Studies in Romania, who found out that eco-innovation index will have a significant direct influence on the variability in the ecological footprint. Additionally, they constructed the model which has shown that non-EU member countries or newer EU member countries are predominantly assigned low ecological footprint scores (Ghita et al., 2018).

They classified different European countries by categorical levels of the eco-innovation index as shown in Table 1.

**Table 1.** The distribution of the European countries by the categorical levels of the eco-innovation index

Categorical Levels	Index Values	European Countries
1—Catching up with Eco-Innovation	Lower than 85%	Bosnia and Herzegovina, Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Macedonia, Malta, Montenegro, Poland, Romania, Slovakia
2—Average Eco-Innovation performers	Between 85% and 115%	Austria, Belgium, Croatia, France, Ireland, Italy, Netherlands, Portugal, Slovenia, Spain, Switzerland, United Kingdom
3—Eco-Innovation leaders	Higher than 115%	Denmark, Finland, Germany, Luxembourg, Norway, Sweden

**Source:** Ghita et al. 2018, p.13

Additionally, their analysis identified three statistically significant determinants of ecological footprint: eco-innovation index, share of employment in

foreign controlled enterprises (it represents openness of the economy, and in Croatia is lower than 19%) and spatial component regarding being part of the EU or not (they defined three categories within this determinant: non-EU-member, newer EU-member group: countries joining after 2004 and older EU-member group: countries joining before 2004) (Ghita et al., 2018). Taking those three determinants into account, they came up with interesting results shown in Table 2.

**Table 2.** The probability of ecological footprint change

Country Profile	Component Countries	Characteristics	The Average Probability of Changing the Ecological Footprint from one Category to Another (%)
Profile 1	Bulgaria, Macedonia, Montenegro, Cyprus, Croatia, Greece, Bosnia and Herzegovina, Romania	<ul style="list-style-type: none"> <li>✓ low ecological footprint level (very low or low),</li> <li>✓ mostly non-EU or new EU-member countries,</li> <li>✓ low eco-innovation level,</li> <li>✓ low share of employment in foreign-controlled enterprises (below the EU average)</li> </ul>	17.2%
Profile 2	Malta, Italy, Portugal, Spain, Switzerland, France, Germany, Ireland	<ul style="list-style-type: none"> <li>✓ low or moderate ecological footprint level,</li> <li>✓ mostly old EU-members, low level of employment in foreign-controlled enterprises (below the EU average),</li> <li>✓ high eco-innovation level (above the EU average)</li> </ul>	25.76%
Profile 3	Lithuania, Hungary, Poland, Slovakia, Czech Republic, Latvia, Estonia, Slovenia	<ul style="list-style-type: none"> <li>✓ high variability in the ecological footprint,</li> <li>✓ former socialist countries,</li> <li>✓ less developed,</li> <li>✓ slightly higher level of employment in foreign-controlled enterprises (slightly above the EU average),</li> <li>✓ but low eco-innovation level.</li> </ul>	20.41%
Profile 4	Belgium, Finland, Netherlands, United Kingdom, Norway, Austria, Denmark, Luxembourg, Sweden	<ul style="list-style-type: none"> <li>✓ high ecological footprint level (high or very high),</li> <li>✓ mostly old EU-members,</li> <li>✓ highly developed countries,</li> <li>✓ high level of employment in foreign-controlled enterprises,</li> <li>✓ high eco-innovation level, above the EU average.</li> </ul>	28.74%

**Source:** Ghita et al. 2018, p.17

Since eco-innovations are the focus of this paper, only that aspect of the above-shown table shall be commented on. Obviously, countries with low eco-innovation index have the lowest probability of their ecological footprint change, and therefore the lowest chance of decoupling of economic growth from environmental exploitation. Unfortunately, Croatia is among those countries, so expected development trends should be influenced as soon as possible.

After becoming aware of the situation, it is reasonable to look for the main obstacles of eco-innovation and circular economy development in Croatia. Four types of barriers have been identified by the latest report on Croatia's EIO profile (2017): cultural, technological, market and regulatory. Although all of them are interrelated, perhaps the market barriers are the most important since they

directly undermine transitioning towards a circular economy. An example of market barriers is a limited Green Public Procurement (GPP) funding/support, which results in limited funding for green/circular business models since firms may not be able to demonstrate convincingly that there is a market for their products in the absence of such procurement. On top of that, there is a significant lack of investments in R&D: in 2016, R&D expenditure in Croatia represented only 0.84% of GDP. And it's certainly not helping that there is a lack of awareness and/or willingness to engage in circular economy principles from the general population.

However, certain factors that can be recognized as drivers for the development of eco-innovation and circular economy do exist. Croatia's EIO profile listed external government pressures, financial subsidies, technological capabilities, environmental organizational capabilities, a market-based instrument, competitive pressures, and a demand for greener products (2017) as such factors. Among those, external government pressures and financial subsidies have been outlined as especially important for the expansion of the circular economy and eco-innovation. From that perspective, the most incentivizing institutions are The Environmental Protection and Energy Efficiency Fund (EPEEF), Croatian Agency for the Environment and Nature (CAEN) and The Croatian Chamber of Economy (CCE).

#### 4.2. MICRO-LEVEL ANALYSIS

Eco-innovation should be analyzed from the micro-economic perspective, as well. In Croatia, there are several eco-innovative companies/projects whose products/services/processes boost the transition towards a circular economy (Croatia's EIO profile, 2017). Some of them are presented in Table 3.

**Table 3.** Eco innovative companies in Croatia

Company name	Product/service
Centar za razvoj održivih tehnologija d.o.o.	Biogas production
Ducati components d.o.o.	Sustainable mobility
Ecology 108 d.o.o.	Ecological detergent
Ekomobile d.o.o.	IT solutions for the environmental protection service (remote reading)
Fabula	A pencil from recycled, organic waste

Freeway project d.o.o.	Eco bottle, web and mobile application
Gumiimpex d.o.o.	Recycled car tires
iCat d.o.o.	Energy efficient and environmentally friendly ships
Include d.o.o.	Smart bench
MikroGoran d.o.o.	IT solutions for the environmental protection service
MiPlast d.o.o.	Recycling, biopolymer development projects
Mobile Vehicle Technologie d.o.o.	GRUNNER, smart electric bicycle
Mobilisis d.o.o.	IT renewable solutions
Rimac automobili d.o.o.	e-vehicles, batteries, infotainment, solutions
Solvis d.o.o.	Solar tree, solar bench
Spectra media d.o.o.	Toner recycling machine
Tehnix d.o.o.	Technological solutions for waste management
Visiobike d.o.o.	e-bike

**Source:** authors after Croatia's EIO profile, 2017. p.10

All of these companies actually belong to three distinctive circular economy and eco-innovation areas: waste management, eco-labeling and/or renewable energy.

Out of them, and for the purpose of this specific study, company Gumiimpex, focusing on the waste tyre rubber, could be singled out. Authors of this paper find their activities especially important for the purpose of circular economy development since they not “just” produce eco-innovative products, but they take part in eco-innovative projects joining market efforts with scholar and public institutions’ ventures.

During an interview with the company’s management, it has been found out that Gumiimpex was founded as a vulcanizing craftsman workshop by Rudolf Kirić in 1970 in Varaždin. Since 1975, the workshop has continually expanded its own production of rubber technical products. The owner has noticed the opportunities for growth and development of his business that have been enabled by the transition to a market economy, so he was among the first who registered a trading company. Thus, in 1990 he founded Gumiimpex ltd. Varaždin, a company with 15 employees.

The emphasis is on production, so in 1993 a new facility with modern, high-tech equipment was opened. In the new millennium, Gumiimpex continued to invest in business space and equipment. ISO standards 9001 and 14001 have been introduced for quality management and environmental management. Sys-



tematic follow up of technological achievements as well as listening to customers' needs and market changes are the basis of continuous development. After nearly 5 decades of successful existence, today the company has nearly 400 employees and is the holder of many awards.

Gumiimpex produces more than seven thousand different rubber-technical products, recycles waste tyres, renews cargo tyres, markets car tyres for all types of vehicles, and provides vulcanization services in Varaždin and Zagreb. It is the first company in Croatia that started recycling used tyres in 2005. Through recycling, it processes waste tyres and produces useful secondary raw materials as well as final products of rubber granules.

They have also recognized the potential in renewable energy sources. In accordance with the company's ecological orientation, 4 solar plants have been built on the roofs of their premises in Varaždin and Trnovac Bartolovečki. Power Plant at Trnovec Bartolovečki is one of the largest integrated solar power plants in Croatia.

In terms of social responsibility, Gumiimpex finds developmental innovation projects an important way to participate in the community. Together with Brodosplit, the company participated in one of the largest construction projects in the history of Italy, the project "Doors of Venice", which aimed to save Venice from floods caused by seahigh. For this project, Gumiimpex produced over 300 pcs of rubber buffers, weighing in total impressive 920 kg. Buffers have been installed on steel castings.

By participating in the scientific project "RUCONBAR", together with the company Beton Lučko and Faculty of Civil Engineering in Zagreb, a composite product has been produced of concrete as well as of absorbing and supporting layers. Rubber granules have been obtained by recycling old automotive tyres and then 40% of the absorbent layer has been produced by those granules. In that way, an innovative product in the field of noise protection has been obtained. As such, the product is unique in the market.

Another interesting and important recent co-operation has been the participation of Gumiimpex in the consortium of the project ANAGENNISI - "Innovative Reuse of All Tire Components in Concrete", implemented within the FP7 program of the European Commission. The aim of the project was to develop innovative solutions for the reuse of all tyre components in high-value innovative, specific applications with reduced environmental impact. Under the

leadership of the University of Sheffield, other partners from Croatia have participated in the project, too: University of Zagreb, Arkada ltd. and Dulex ltd. As far as the international consortium members are concerned, the project involved Imperial College London and Twincon Limited from the UK, then Gradmont ltd. from Bosnia and Herzegovina, the Gheorghe Asachi Technical University from Romania, the Technology University of Cyprus, The European Tire Recycling Association-ETRA, as well as Comsa S.A.U. and Fhecor Ingenieros Consultores S.L. from Spain.

Currently, Gumiimpex is a partner on the project led by Faculty of civil engineering and Architecture Osijek, called Development of Reinforced Concrete Elements and Systems with Waste Tire Powder (ReCoTiP). The main goal of the project is to develop the new material which would be applicable to load-bearing reinforced-concrete structures with improved earthquake resistance. The material shall incorporate a share of recycled car tyre powder, in order to reduce the use of natural aggregate.

Gumiimpex continuously participates in scientific and research projects and strives to contribute to the improvement of sustainable development for the benefit of present and future generations. As its financial records are continuously positive, it is a fine example for the assertion made by Zhang, Sun, Yang, and Li: Environmentally proactive organizations are found to have more balanced dynamic capability development than those that are more reactive. To optimize green innovation, therefore, organizations need to embrace an ecological strategy and engage employees in learning (2018).

This example also provides a reasonable hope that eco-innovation development and its support to transition process towards a circular economy has a better chance of success in Croatia than predicted by the facts listed in this paper. The hope is reasonable because Gumiimpex is more than an individual contribution. It is a valuable benchmark that might provoke other cases of the kind.

## 5. CONCLUSION

Closing the loop depends largely on generation and implementation of eco-innovations. In a world whose population and aggregate wealth are both rapidly increasing, the only possible answer to resource scarcity is the adoption of the reduce-reuse-recycle principle. This is the core of the circular economy concept.

As the transition from a linear to a circular system is not straightforward, there are several determinants of the process, eco-innovations being one of them. This paper presented eco-innovations as the mean of economic and social development, decoupling the growth from environmental exploitation.

Results of the presented study demonstrated the importance of eco-innovation for the transition towards a circular economy model and supported the poor development expectations of Croatian economy by the eco-innovation index and the probability of changing the ecological footprint.

However, the micro-level investigation detected several companies successfully pioneering eco-innovations in their everyday business operations. Among those, the case of waste-tyre rubber recycling and use through the cooperation of private companies, public authorities and faculties have been outlined as a potential benchmark, providing hope that positive change in Croatia is possible after all.

## 6. ACKNOWLEDGMENTS

This work was supported by the Croatian Science Foundation under Grant number UIP-2017-05-7113, a project entitled Development of Reinforced Concrete Elements and Systems with Waste Tire Powder – ReCoTiP

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# CIVIL ENGINEERING COMPANIES IN OSIJEK-BARANJA COUNTY, THEIR BUSINESS OPERATIONS IN 2017 AND SIGNIFICANCE IN THE REPUBLIC OF CROATIA

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## **Abstract**

*After a long-lasting decline in the construction sector, which resulted in enormous losses, the downfall of the majority of market leaders at that time and large-scale layoffs, there have been some positive developments in this branch. However, civil engineering companies face numerous issues, the largest of which is finding a sufficient amount of work and a competent workforce. In Slavonia, one of the least developed Croatian regions, and in Osijek-Baranja County, the largest county in Slavonia, the impact of such negative trends has been even more severe. This paper analyses changes in the number of entities, employees, income, profit, salaries, and investments for companies classified under division 42 – Civil Engineering of the National Classification of Activities 2007 for Osijek-Baranja county in 2017. These changes are compared to the same type of indicators for the entire Republic of Croatia for the purpose of drawing specific conclusions about their status and significance.*

**Keywords:** civil engineering, Osijek-Baranja county, income, profit, employment, salaries

JEL Classification: L74, L70

# 1. INTRODUCTION – CIVIL ENGINEERING IN GENERAL

Apart from being the most significant branch of engineering, civil engineering is also the oldest branch of engineering. It comprises activities related to the construction of all types of buildings, bridges, tunnels, roads, railways, sewers and water supply systems, development of watercourses, utilization of water power, construction of soil improvement facilities, power plants and other facilities used in the production of all goods. A civil engineer is a person who practices civil engineering. Construction technique relates to the use of natural and processed resources that allows people to intentionally build new structures that are fixed to the ground. Civil engineers use both natural materials, such as wood, rock or soil (clay), and artificial materials, such as concrete, lime, brick or steel. Natural and artificial materials allow civil engineers to purposefully combine all these elements and incorporate them and the underlying land to form a whole, i.e. a structure.

## 1.1. DISCIPLINES OF CONSTRUCTION ENGINEERING

Based on the characteristics and type of work activities, construction engineering can be divided into two main disciplines or branches. The first discipline is called building construction, which, as the name suggests, is related to the construction of buildings. Buildings are high-rise structures and their main part is located above the ground. The term “building construction” comes from a translation of an internationalized Greek word “arkhitekton” (ἀρχιτεκτονική), meaning “architecture”. In Croatia, building construction is most commonly referred to as architecture.

The other major discipline of construction engineering is civil engineering. Civil engineering comprises the construction of roads, bridges, railways and tunnels and the construction of hydraulic engineering structures: sewers, water supply network, soil improvement facilities, water management structures, works for increasing the navigability of rivers, construction of canals and utilization of water power. Majority of these facilities are constructed at the near-ground level, but this is not always the case.

It is important to know that architecture and civil engineering cannot be clearly separated because architecture, on the one hand, comprises only archi-



tectural design of buildings, whereas civil engineering, on the other hand, comprises a large number of works for all types of structures. For example, bearing capacity and stability of a structure is verified by civil engineers at a later stage of project design development and also architects are often involved in civil engineering works. Nevertheless, such division does exist. However, in the past, civil engineering and building construction were not as separated as today because architecture comprised all civil engineering works and related techniques. Nowadays, works pertaining to one or the other branch are separated and their number has increased. Consequently, civil engineering has become a separate branch and its achievements and tasks often surpass those of architecture, particularly in terms of their diversity and significance for overall progress. Furthermore, in some countries, a person qualified as a civil engineer who can build roads and bridges is still called an architect.

## 1.2. CONSTRUCTION ENGINEERING CLASSIFICATION

### 1.2.1. Building construction

- ♦ **Residential structures**, i.e. residential construction: semi-detached structures, family houses, residential buildings, residential blocks, etc.
- ♦ **Commercial structures**, i.e. commercial construction: agricultural and industrial structures.
- ♦ **Public (social) structures**, i.e. public (social) construction: cultural buildings, hospitality buildings, health facilities, stores, administrative buildings, transport buildings, etc.

### 1.2.2. Civil engineering

- ♦ **Transportation engineering** relates to road design.
- ♦ **Construction engineering** relates to designing and constructing structures and/or dimensioning (tunnels, bridges, silos, water towers, dams, commercial and other buildings).
- ♦ **Geotechnical engineering** relates to planning and carrying out various types of works on the surface of or within the ground, such as tunnels, dams, landslides, levees, cuts, excavations, supporting structures, excavation support, and landfills. Geotechnics is essential for constructing



nearly all ground-based structures and it comprises almost all related construction activities. As an engineering discipline, geotechnics relies on mechanics and soil mechanics.

- ♦ **Hydraulic engineering** relates to the construction and maintenance of water supply, water management, and sewer facilities. Hydraulic engineering is important for water resources management. Hydraulic engineering comprises flow control structures and soil improvement practices. Hydraulic engineering is concerned with hydro systems, hydraulic engineering structures and utilization of water power, but it also takes environmental protection into account. To construct hydraulic engineering structures, it is extremely important to be familiar with hydrology as a scientific discipline, as well as with hydromechanics, i.e. fluid mechanics.

## 2. CIVIL ENGINEERING AND CIVIL ENGINEERING COMPANIES IN OSIJEK-BARANJA COUNTY

Naturally, civil engineering has always been practiced in Croatia as well. In the last 10 years, civil engineering had both the highest and the lowest recorded share in Croatian GDP. The highest share in GDP, 7.2%, was recorded in 2008, whereas the lowest share, 4.42%, was recorded in 2017. This indicates a continuous decline of civil engineering and its significance for Croatian GDP, as well as an increase in GDP stimulated by other industries. This is clearly presented by the main indicators in Table 1 below.

**Table 1:** Value of completed construction works, share in GDP, number of employees and number of active companies in the period from 2007 – 2017

Year	Total income (in HRK million)	%	Value of work done (in HRK 000)	%	Share in GDP (%)	Number of active companies	%	Number of employees	%
2007	57,951	100%	29,773,626	100%	6.90	9,063	100%	104,142	100%
2008	69,230	119%	34,915,314	117%	7.20	11,244	124%	108,260	104%
2009	58,462	101%	30,714,772	103%	6.90	15,090	167%	97,503	94%
2010	47,713	82%	22,808,572	77%	5.80	15,781	174%	91,052	87%
2011	44,820	77%	20,821,802	70%	5.30	14,784	163%	83,607	80%
2012	40,104	69%	19,226,934	65%	4.70	15,497	171%	78,579	75%

2013	39,736	69%	18,950,827	64%	4.50	16,643	184%	73,832	71%
2014	41,598	72%	17,527,688	59%	4.30	17,947	198%	72,028	69%
2015	40,311	70%	19,152,159	64%	5.00	19,240	212%	68,676	66%
2016	42,623	74%	19,870,379	67%	5.13	12,990	143%	68,653	66%
<b>2017</b>	<b>45,454</b>	<b>78%</b>	<b>20,180,147</b>	<b>67.78%</b>	<b>4.42</b>	<b>13,852</b>	<b>152.84%</b>	<b>67,307</b>	<b>64.63%</b>
2017/2016	1.07	107%	Increased by:	2%	-0.14	Increased by:	7%	Decreased by:	-2%

Source:(FINA, processed: HGK)

As shown in Table 1, it can be concluded that civil engineering in Croatia reached its peak in 2008 and that it has been in constant decline ever since. What is particularly interesting is the fact that this trend started to reverse in 2016 as the value of works and total income started to increase in spite of a decrease in other indicators, particularly in the number of active companies. The severe crisis lasted for a very long time and had a particularly strong impact on civil engineering. When we compare 2008 (the peak of civil engineering in Croatia) and 2017 (last available data), it is shocking how many workplaces in civil engineering were lost.

In 2017, there was an increase in investing activities, mostly due to the use of EU funds, which represents the major incentive for reviving the construction sector. At the same time, due to fiscal consolidation, public sector investments were somewhat restricted, with borrowing by citizens and companies being limited by increased investment loans and loan indebtedness. Due to such circumstances, since 2016, the physical volume and value of construction works have been increasing. Such an increase has not been recorded since 2008. Also, since 2016, the number of issued construction permits has been increasing as well, whereas the value of commissioned works has achieved a double-digit growth rate, the highest since 2007. In 2017, the number of issued construction permits and the value of work done continued to grow. Therefore, we can definitely expect that this positive trend will continue to grow in the future as well. All indicators of construction activities confirm subtly, but positive changes, as presented in Table 1. (HGK,2018)

Since Osijek-Baranja county is an integral part of the Republic of Croatia, its civil engineering activities also contribute to overall results and trends in the state. In 2017 in Osijek-Baranja county, 509 companies who are income taxpayers submitted annual statements pertaining to their construction activities. Their total income, which is shown in Table 2, amounted to approximately HRK 2.12 billion and were by 14.67% lower than in 2016 when they amount-

ed to approximately HRK 2.48 billion. Their share in total income generated by all industries at county level amounted to 8.5%, whereas in 2016 this share amounted to 10.2%.

**Table 2:** Income generated by construction companies in Osijek-Baranja county in 2017 in 000 HRK

Code and explanation (National Classification of Activities 2007)	Total income			
	2016	2017	Index for 2017/2016	Share
<b>F Construction</b>	2,479,177	2,115,607	85.33	8.50%
<b>County total – all industries</b>	24,336,723	24,838,813	102	100%

**Source:** (FINA, processed: HGK)

It is obvious that there were some abnormalities in 2017, due to which the positive shift that began in 2016 was prevented from developing further. Thus, it was impossible for the area of construction to maintain the growth trend. Authors of this paper believe that the main cause for such outcome is political instability, i.e. the “fall” of the Government, followed by extraordinary parliamentary elections. Due to these circumstances, all larger public investments were practically suspended for more than one year.

**Table 3:** Profit and loss of construction companies in Osijek-Baranja county for 2017 in 000 HRK

Activity code	Activity	Profit for the period				The loss for the period				Consolidated
		2016	2017	Index for 2017/2016	Share	2016	2017	Index for 2017/2016	Share	
<b>F)</b>	<b>Construction</b>	107,605	109,857	102.09	9.90%	202,544	387,968	191.55	28%	-278.111
	<b>County total – all industries</b>	1,140,733	1,110,990	97.39	100%	635,794	1,383,842	217.66	100%	-272.852

**Source:** (FINA, processed: HGK)

Profit of construction companies in 2017 (Table 3) amounts to approximately HRK 110 million and it increased by 2.09% in comparison with 2016. Investing activities, which are largely dependent on using EU funds, continued to increase. Due to loan indebtedness of both citizens and companies, consolidated financial results continued to decrease.

Table 3 also shows that the consolidated financial result was negative due to the limitations of any significant borrowing or investment being restricted by the indebtedness of both citizens and companies. Furthermore, investments in the public sector were also restricted. Finally, 2017 was the year of a large-scale market clean-up, marked by a negative impact of events related to Agrokor, the largest economic system in Croatia. (HGK,2018)

**Table 4:** Number of employees by working hours and investments of construction companies in Osijek-Baranja county in 000 HRK

Code and explanation (National Classification of Activities 2007)	Number of employees			Investments in fixed assets		
	2017	Index for 2017/2016	Share	2017	Index for 2017/2016	Share
F Construction	4,945	96.21	12.62%	17,167	50.54	1.80%
County total – all activities	39,184	103.21	100%	950,537	82.72	100%

**Source:** (FINA, processed: HGK)

In 2017, construction companies in Osijek-Baranja county (Table 3), had 4,945 employees, or 3.8% of employees less than in 2016, which represents a share of 12.6% in the number of employees hired by companies in all industries of Osijek-Baranja county.

When compared to 2016, investments in fixed assets in the area of construction saw a decrease of 49.5% in 2017. Investments in fixed assets amounted to HRK 17 million, which represents merely 1.8% of total investments of companies who are income taxpayers in Osijek-Baranja county. Without any doubt, it can be assumed that one of the main reasons for this drastic decrease in investments in fixed assets was the Agrokor crisis. (HGK,2018)

**Table 5:** Average net salary in HRK according to data from 2017 annual statements:

Activity	2016	2017	Index
<b>F Construction</b>	4,087	4,449	108.9
<b>County total – all activities</b>	4,134	4,453	107.7

**Source:** (FINA, processed: HGK)

Average monthly net salary per employee in the area of construction in Osijek-Baranja county for 2017 (Table 5) amounted to HRK 4,449.00, which represents an increase of 8.9% in comparison with 2016. Slightly above-average

salaries are definitely a positive factor for the development of construction, particularly due to the fact an increase by as much as 8.9% was achieved in only one year. This will undoubtedly contribute to the reduction in the emigration of workers, which is currently one of the major issues of construction in Croatia, including Osijek-Baranja county.

**Table 6:** Issued construction permits by type of structures in 2016 and 2017

	Total		Index	Buildings		Index	Other structures		Index
	2016	2017		2016	2017		2016	2017	
Republic of Croatia	8,018	9,418	117.46	6,418	7776	121.16	1,600	1642	102.62
Osijek-Baranja county	596	581	97.48	355	411	115.77	241	170	70.54
Share:	7.43%	6.17%		5.53%	5.28%		15.06%	10.35%	

Source: (FINA, processed: HGK)

As shown in Table 6, 581 construction permits were issued in Osijek-Baranja county in 2017, which is 15 permits (2.5%) fewer than in 2016. The number of issued permits in Croatia increased by 1,400, or 17.40%. From a total of 581 permits, 411 permits pertain to buildings (increase by 15.77%), whereas 170 permits pertain to other structures (29.46% less than in 2016). Of all construction permits issued in Croatia in 2017, 6.17% of permits were issued in Osijek-Baranja county. This share was higher in 2016 and amounted to 7.43%, which, in comparison with 2016, represents a decrease of 1.26%.

Although 2017 did not prove it entirely, the area of construction has seen some positive trends and slightly positive changes. Value of commissioned works and the number of issued construction permits increased, meaning that positive trends in construction activities can be expected to develop and grow further in the future. Undoubtedly, increased use of EU funds has greatly contributed to such developments. Energy efficiency renovation projects are conducted and new infrastructure projects are started. Besides that, reductions in citizens' and companies' tax burden and the creation of a more encouraging business environment give the opportunity of increasing investments in the private sector. Furthermore, new measures increase the demand in the area of residential construction. All these new circumstances lead to an increase in the number of jobs related to the civil engineering sector, which must be adjusted to the changing structure of work in terms of both technology and organization. Besides that,

there is a lack of workforce and there are no workers with specific qualifications and professions required to perform construction activities. Also, on the one hand, workers are emigrating to other EU countries, and on the other hand, the quota for importing foreign workers is too low and the educational system does not meet companies' requirements. All these issues must be resolved and it is also necessary to address the growing pressure of foreign competition on the national market.

Adequate state aid in the form of more efficient use of EU funds, verification of the implementation of the labor law and reductions in the tax burden on income would surely improve the overall state of civil engineering. In that manner, companies could ensure adequate employment for workers, as well as higher salaries and better working conditions, which would also reduce the emigration of professional staff. (HGK,2018)

### **3. RESEARCH ON CIVIL ENGINEERING COMPANIES IN OSIJEK-BARANJA COUNTY AND THEIR BUSINESS OPERATIONS IN 2017 (NATIONAL CLASSIFICATION OF ACTIVITIES 2007, DIVISION 42 – CIVIL ENGINEERING)**

This paper focused on determining the entities referred to in division 42 – civil engineering in Osijek-Baranja county and assessing their significance for civil engineering in the Republic of Croatia. From a total of HRK 13.64 billion of income generated in 2017 by companies classified under division 42 of the National Classification of Activities 2007, the share of Osijek-Baranja county amounted to 4.26% (HRK 582.36 million). When comparing companies in Osijek-Baranja county classified under division 42 with all companies in the county, the former contributed to the overall county's performance by generating 2.4% of its income and employing 3.4% of the total number of employees in the county. This data shows that this share and the resulting impact is fairly insignificant for both the county's performance and the performance of all companies in the country classified under division 42. Nevertheless, it is important to analyze this data because civil engineering has been identified as one of the branches of strategic importance in the Republic of Croatia.

### 3.1. DIVISION 42 – CIVIL ENGINEERING

According to the National Classification of Activities 2007, division 42 – civil engineering, this area includes general construction works on civil engineering structures. It includes works on new structures, repairs, additions, and alterations, construction of pre-fabricated structures on the site and construction of temporary civil engineering structures.

It also includes the construction of massive structures, such as motorways, streets, bridges, tunnels, railways, airfield runways, harbors, irrigation systems and other water projects, industrial facilities, sewerage systems, pipelines and electric lines, sports facilities, etc. This work can be carried out on own account or on a fee or contract basis. Portions and sometimes even entire works can be subcontracted.

#### 42.1 Construction of roads and railways

##### 42.11 Construction of roads and motorways

This class includes:

- construction of motorways, streets, roads, other vehicular and pedestrian ways
- surface work on streets, roads, highways, bridges or tunnels:
  - ♦ asphalt paving of roads
  - ♦ road painting and other markings
  - ♦ installation of crash barriers, traffic signs and the like
- construction of airfield runways

*This class excludes:*

- *installation of street lighting and electrical signals*
- *architectural and engineering activities (urban planning, structure design and other)*
- *project management for construction*

##### 42.12 Construction of railways and underground railways

This class includes:

- construction of railways and underground railways

*This class excludes:*

- installation of lighting and electrical signals
- architectural and engineering activities (urban planning, structure design and other)
- project management for construction

### **42.13 Construction of bridges and tunnels**

This class includes:

- construction of bridges, including viaducts and elevated highways
- construction of tunnels

*This class excludes:*

- installation of lighting and electrical signals
- architectural and engineering activities (urban planning, structure design and other)
- project management for construction

### **42.2 Construction of utility projects (distribution lines, electricity lines, and telecommunications systems)**

#### **42.21 Construction of utility projects for fluids**

This class includes the construction of distribution lines for the transportation of fluids and related buildings and other structures that are an integral part of these systems.

This class includes:

- construction of:
  - ✦ long-distance and urban pipelines
  - ✦ water main and line construction
  - ✦ irrigation systems (canals)
  - ✦ reservoirs
  - ✦ sewerage systems
  - ✦ sewage disposal facilities



- ♦ pumping stations

This class also includes:

- water well drilling

*This class excludes:*

- *project management activities related to civil engineering works(NKD 2007,201)*

#### **42.22 Construction of utility projects for electricity and telecommunications**

This class includes the construction of distribution lines for electricity and telecommunications and related buildings and other structures that are an integral part of these systems.

This class includes:

- construction of:
  - ♦ long-distance and urban communication and power lines
  - ♦ power plants

*This class excludes:*

- *project management activities related to civil engineering works*

#### **42.9 Construction of other civil engineering projects**

##### **42.91 Construction of water projects**

This class includes:

- construction of:
  - ♦ waterways, harbor and river works, pleasure ports (marinas), locks, etc.
  - ♦ dams and levees
- dredging of waterways

*This class excludes:*

- *project management activities related to civil engineering works*

##### **42.99 Construction of other civil engineering projects n.e.c.**

This class includes:

- construction of industrial facilities, except buildings, such as:

- ♦ refineries
- ♦ chemical plants
- construction of structures (other than buildings) for outdoor sports

This class also includes:

- land subdivision with land improvement (e.g. utility infrastructure, construction of access roads, etc.)

*This class excludes:*

- *installation of industrial machinery and equipment*
- *land subdivision without land improvement*
- *project management activities related to civil engineering works (NKD 2007,2018)*

### 3.2. RESEARCH METHODOLOGY

The main source of data for this research was Bisnode's Smart Vision, a "unique macroeconomic tool for monitoring the situation in Croatian economy". Essentially, this tool uses the data that all companies in Croatia must submit to FINA. Companies are legally obligated to submit this data on an annual basis as a part of their annual statements. Last available data is the data for 2017. Authors decided to analyze the data for 2017 and focus on key indicators, such as income, operating results, number of employees and average salary.

Therefore, by using the Smart Vision tool, the authors selected division 42 and set the following criteria (filters):

- ♦ Show only entities with registered head office in Osijek-Baranja county
- ♦ Show only entities with income above HRK 10,000.00 in 2017
- ♦ Show all entities with 1 or more employees (because labor costs cannot be analyzed if the company has no employees).

Entities filtered in this manner represent 99.65% of the county's income generated from operations classified under the division 42. It can be said that this is undoubtedly a representative sample for drawing relevant conclusions. Based on these filters and their results, it can already be concluded that it is impossible to conduct business activities classified under division 42 if there is no workforce. Table 7 shows all filtered entities for 2017 sorted by company in-

come (in descending order). Also, as shown in Table 7, the 24 companies comprising this sample had 1,308 employees in 2017, generated net profit in the amount of HRK 24 million (profit margin of 4.14%), generated added value in the amount of HRK 159 million and paid average gross monthly salary in the amount of HRK 6,750.64, or average net salary of HRK 5,079.79. The fact that all analyzed entities had positive operating results in 2017 is particularly encouraging. The only exception is the company Werks, but its negative operating result is understandable due to the fact that it initiated bankruptcy proceedings in 2017.

Osijek, as the county center, also dominates in terms of the number of construction companies in the county with a registered head office in Osijek. Namely, of 24 entities comprising this sample, 13 are registered in Osijek, 4 in Đakovo and 3 in Našice, whereas other settlements are represented, if at all, by no more than 1 entity.

Research methods used in further data processing are comparison and observation.

**Table 7:** Overview of all companies classified under division 42 in Osijek-Baranja county in 2017 by set criteria (in HRK)

NO	PIN	COMPANY	LOCATION	CREDIT RATING	NUMBER OF EMPLOYEES	INCOME	PROFIT	AVERAGE GROSS SALARY	AVERAGE NET SALARY	ADDED VALUE
1	44610694500	OSLEK-KOTEKS	Osijek	D	323	230,292,471	18,713,101	7,250	5,454	48,454,350
2	62759668985	CESTING	Osijek	B	280	85,596,655	1,026,059	7,775	5,838	35,741,767
3	80381365828	GRAMA	Osijek	D	119	65,342,642	86,155	6,872	5,083	14,260,618
4	91653866186	HIROGRADNJA	Osijek	C	104	33,018,483	1,316,094	6,063	4,569	10,919,278
5	70333556049	Vuka	Osijek	A	87	30,742,785	148,857	6,820	5,059	9,407,678
6	69701859287	KARAŠICA-VUČICA	Dorji Miholjac	B	105	30,548,331	56,125	6,084	4,698	10,296,969
7	84765164046	VODOGRADNJA OSLEK	Osijek	E	59	28,728,142	104,923	7,493	5,437	6,433,341
8	22880061995	ODVODNJA	Darda	B	58	18,850,656	179,288	7,044	5,219	6,482,920
9	94234165727	CROCUS	Osijek	B	35	12,152,544	424,974	4,300	3,333	3,361,828
10	03266089610	ELEKTRO-LOVOŠEVIĆ	Našice	C	30	9,882,089	462,212	5,350	4,203	3,478,480
11	84297936703	SCAF-INŽENJERING	Našice	B	10	8,691,785	12,783	3,966	3,165	572,412
12	18393644700	BINDER	Osijek	B	25	7,275,382	239,073	4,099	3,200	1,801,269
13	56074724484	CONSULT - KOP	Osijek	A	17	6,489,806	391,177	5,474	4,251	1,955,254
14	02717422650	MUJO	Osijek	A	11	4,336,420	213,974	7,822	5,604	1,468,165
15	05724099275	GEO TIM	Đakovo	A	9	2,797,160	859,031	5,105	3,993	1,628,403
16	76494689732	MAJUS	Đakovo	B	15	2,616,502	8,003	4,308	3,432	1,316,347
17	76632871204	TEGRAD	Đakovo	C	9	1,322,765	46,054	3,748	2,990	538,781
18	46774025506	KARTES	Osijek	C	1	519,519	14,560	5,163	4,165	97,256
19	47922465864	SELT	Osijek	C	5	475,879	2,300	2,986	2,369	205,996
20	03014237579	PUGOS-GRADNJA	Našice	D	1	242,867	20,342	3,500	2,800	76,852
21	28120485798	WELDER	Čepin	C	1	154,431	44,257	2,020	1,616	118,452
22	88611724685	CENTROGRADNJA	Đakovo	E	1	125,000	58,106	4,730	3,737	96,794
23	84820806875	WERKOS	Osijek	E	2	95,501	296,510	7,741	6,438	126,421
24	10664961553	ANDELIĆ	Zoljan		1	58,603	165	4,192	3,305	30,135
				TOTAL		580,356,786	24,000,188			159,001,006

Source: database research: <https://www.bisnode.hr/proizvodi/bisnode-smart-vision/> 30.1.2019.

### 3.3. HYPOTHESES

Main hypotheses that this research aimed to examine were the following:

- a) The share of gross annual labor costs in relation to annual income is below 15% of the amount of generated income
- b) Average net annual salary is lower than the average net salary in Croatia in 2017
- c) The lowest amount of revenue per employee is HRK 100,000.00 or more per year
- d) Companies from the observed group with more than 30 employees are surely profitable
- e) Companies from the observed group generate more than 20% of added value per income item

In the following sections, these hypotheses were examined and particular conclusions were drawn.

## 4. RESEARCH RESULTS

### 4.1. THE SHARE OF GROSS ANNUAL LABOR COSTS IN RELATION TO ANNUAL INCOME IS BELOW 15% OF THE AMOUNT OF GENERATED INCOME

The hypothesis is the following: to generate HRK 1.00 of income, the amount of HRK 0.15 or less must be invested in labor costs for generating that income. Namely, due to the technological advancement, the volume of required work has decreased, i.e. labor is increasingly substituted by automation. Thus, labor costs have been decreasing for decades, but that is not the main subject of this research. In civil engineering works, in particular, major expenses pertain to construction materials and machinery depreciation. Gross labor costs are much more relevant in this sense because they represent costs incurred by the employer, thus being much more adequate than net labor costs (the amount that workers eventually receive).

Based on the data obtained from the analyzed sample, annual labor costs for each employer can be easily calculated by multiplying the average gross monthly salary with the number of employees, and then by multiplying the product with

12, i.e. the number months in a year. Therefore, the ratio between annual gross salary expenses and total annual income is the final and key indicator for this hypothesis. Table 8 shows all these indicators calculated for the sample.

**Table 8:** Share of annual salary expenses in income for division 42 in Osijek-Baranja county

NO	COMPANY	INCOME	NUMBER OF EMPLOYEES	GROSS SALARY	AVERAGE MONTHLY GROSS SALARY	AVERAGE ANNUAL GROSS SALARY	SHARE OF SALARY EXPENSES IN TOTAL INCOME (IN %)
1	OSIJEK-KOTEKS	230,292,471	323	7,250	2,341,750	28,101,000	12%
2	CESTING	85,596,655	280	7,775	2,177,000	26,124,000	31%
3	GRAVIA	65,342,642	119	6,872	817,768	9,813,216	15%
4	HIDROGRADNJA	33,018,483	104	6,063	630,552	7,566,624	23%
5	Vuka	30,742,785	87	6,820	593,340	7,120,080	23%
6	KARAŠICA-VUČICA	30,548,331	105	6,084	638,820	7,665,840	25%
7	VODOGRADNJA OSIJEK	28,728,142	59	7,493	442,087	5,305,044	18%
8	ODVODNJA	18,850,656	58	7,044	408,552	4,902,624	26%
9	CROCUS	12,152,544	35	4,300	150,500	1,806,000	15%
10	ELEKTRO-LOVOŠEVIĆ	9,882,089	30	5,350	160,500	1,926,000	19%
11	SCAT-INŽENJERING	8,691,785	10	3,966	39,660	475,920	5%
12	BINDER	7,275,382	25	4,099	102,475	1,229,700	17%
13	CONSULT - KOP	6,489,806	17	5,474	93,058	1,116,696	17%
14	MIJO	4,336,420	11	7,522	82,742	992,904	23%
15	GEO TIM	2,797,160	9	5,105	45,945	551,340	20%
16	MAJUS	2,616,502	15	4,308	64,620	775,440	30%
17	TEGRAD	1,322,765	9	3,748	33,732	404,784	31%
18	KARTES	519,519	1	5,163	5,163	61,956	12%
19	SELT	475,879	5	2,986	14,930	179,160	38%
20	PUGOS-GRADNJA	242,867	1	3,500	3,500	42,000	17%
21	WELDER	154,431	1	2,020	2,020	24,240	16%
22	CENTROGRADNJA	125,000	1	4,730	4,730	56,760	45%
23	WERKOS	95,501	2	7,741	15,482	185,784	195%
24	ANDELIĆ	58,603	1	4,192	4,192	50,304	86%
	<b>TOTAL</b>	<b>580,356,418.00</b>	<b>1308</b>		<b>8,873,118.00</b>	<b>106,477,416.00</b>	<b>32%</b>

**Source:** database research: <https://www.bisnode.hr/proizvodi/bisnode-smart-vision/> 30.01.2019.

Based on this analysis, it can be concluded that the aforementioned **hypothesis was not confirmed**. Namely, in 2017, all companies comprising the sample incurred total labor costs in the amount of HRK 106.5 million and the share of labor costs in total income amounted to 32%. Also, it can be noticed that companies with higher income, which are listed in the top half of Table 7, generally have a lower share of labor costs in total income than companies listed in the bottom half of the table. This is undoubtedly a result of a higher level of organization and the use of more advanced equipment, which enable companies to generate more income while incurring equal or lower labor costs. In civil engineering, a common practice is to keep the share of labor costs below 15% to maintain operational sustainability of a company. By simply looking at the listed companies, it can also be concluded that some of the companies with a high share of labor costs eventually bankrupted (Vodogradnja, Werks), while the others are under majority public ownership (Casting, Odvodnja, Karašica-Vučica). All this suggests that such market conduct is not sustainable in the long term and that the share of labor costs in income must be reduced by increasing operational efficiency.

#### 4.2. AVERAGE NET ANNUAL SALARY IS LOWER THAN THE AVERAGE NET SALARY IN CROATIA IN 2017

Based on the data obtained from the Croatian Bureau of Statistics (Official Gazette 21/2017, document no. 506 of 10 March 2017), in the Republic of Croatia in 2016, the average gross salary paid by legal entities amounted to HRK 7,752.00, whereas the average net salary paid by legal entities amounted to HRK 5,685.00.

In section 3.2, it has been stated that the companies from the analyzed sample paid average monthly gross salary in the amount of HRK 6,750.64 and the average monthly net salary in the amount of HRK 5,079.79. Based on this data, **it can be concluded that the average gross salary paid by the companies from the analyzed sample is lower than the national average by 12.92%, whereas the average net salary is lower than the national average by 10.65%**.

This difference is significant and civil engineering is obviously a branch that does not offer high income. Yet, if annual salary expenses incurred by the companies from the analyzed sample were higher by 12.92%, that would decrease their profit by HRK 13.7 million. In that case, their profit margin would be

1.77%, which would make this branch significantly unattractive for entrepreneurs (considering the risks and a substantial amount of funds required for initial investment).

It is clear that below-average salaries for working under hard conditions represent a rather limiting factor for finding and training new workers, as well as for motivating them to choose this profession. In that regard, 2017 was significant because it raised awareness of the fact that more and more qualified workers and professionals move to more developed EU countries, where they have significantly better working conditions. Emigration of workers culminated in 2017 and 2018, which lead to the conclusion of a new branch collective agreement for civil engineering on 20 February 2018. By virtue of this agreement, gross base salary in civil engineering was increased from HRK 3,112.20 to HRK 3,750.00, or by 20.5%.

#### 4.3. THE LOWEST AMOUNT OF REVENUE PER EMPLOYEE IS HRK 100,000.00 OR MORE PER YEAR

To examine this hypothesis, it was necessary to calculate revenue per employee and profit per employee. This is presented in Table 9, in which analyzed companies are sorted by profit per employee (in descending order).

**Table 9:** Presentation of analyzed companies by profit per employee

NO	COMPANY	INCOME	NUMBER OF EMPLOYEES	PROFIT	REVENUE PER EMPLOYEE	PROFIT PER EMPLOYEE	PROFIT MARGIN PER EMPLOYEE
15	GEO TIM	2,797,160	9	859,031	310,796	95,448	31%
22	CENTROGRADNJA	125,000	1	58,106	125,000	58,106	46%
1	OSIJEK-KOTEKS	230,292,471	323	18,713,101	712,980	57,935	8%
21	WELDER	154,431	1	44,257	154,431	44,257	29%
13	CONSULT - KOP	6,489,806	17	391,177	381,753	23,010	6%
20	PUGOS-GRADNJA	242,867	1	20,342	242,867	20,342	8%
14	MIJO	4,336,420	11	213,974	394,220	19,452	5%
10	ELEKTRO-LOVOŠEVIĆ	9,882,089	30	462,212	329,403	15,407	5%
18	KARTES	519,519	1	14,560	519,519	14,560	3%
4	HIDROGRADNJA	33,018,483	104	1,316,094	317,485	12,655	4%



9	CROCUS	12,152,544	35	424,974	347,216	12,142	3%
12	BINDER	7,275,382	25	239,073	291,015	9,563	3%
17	TEGRAD	1,322,765	9	46,054	146,974	5,117	3%
2	CESTING	85,596,655	280	1,026,059	305,702	3,664	1%
8	ODVODNJA	18,850,656	58	179,288	325,011	3,091	1%
7	VODOGRADNJA OSIJEK	28,728,142	59	104,923	486,918	1,778	0%
5	Vuka	30,742,785	87	148,857	353,365	1,711	0%
11	SCAT-INŽENJERING	8,691,785	10	12,783	869,179	1,278	0%
3	GRAVIA	65,342,642	119	86,155	549,098	724	0%
6	KARAŠICA-VUČICA	30,548,331	105	56,125	290,936	535	0%
16	MAJUS	2,616,502	15	8,003	174,433	534	0%
19	SELT	475,879	5	2,300	95,176	460	0%
24	ANDELIĆ	58,603	1	165	58,603	165	0%
23	WERKOS	95,501	2	-296,510	47,751	-148,255	-310%
		580,356,418	1308	24,131,103			

**Source:** database research: <https://www.bisnode.hr/proizvodi/bisnode-smart-vision/>  
30.1.2019.

The table shows that the profitable company with the lowest revenue per employee generated HRK 58,603 of revenue per employee and that only three entities in total have revenue per employee below HRK 100,000.00. **Therefore, the hypothesis was not confirmed.**

Moreover, based on the data from Table 9, it can also be noticed that there are no general rules regarding this matter. This is understandable because a company's profitability is affected by a multitude of factors (and expenses) other than labor costs. Nevertheless, Table 9 shows that all companies with income above HRK 100,000.00 were profitable. This is an excellent result, which shows that 2017 was a successful year for companies classified under division 42 in Osijek-Baranja county. Analysis of each of these companies shows that the average revenue per employee amounts to HRK 326,242.96, whereas the average profit per employee amounts to HRK 10,570.00. This suggests that there is room for increasing profitability per employee.

#### 4.4. COMPANIES FROM THE OBSERVED GROUP WITH MORE THAN 30 EMPLOYEES ARE SURELY PROFITABLE

This hypothesis was based mainly on the assumption that companies with a large number of employees know what they are doing, that such a great amount of workforce has adequate organization and equipment and that it also efficiently uses other resources. By sorting analyzed companies by the number of employees, it can be noticed immediately that **this hypothesis is correct**. Each of the 15 companies with 30 or more employees was profitable. Therefore, it can be concluded that more employees mean a greater chance for a company's profitability. However, this rule is not absolute because it is obvious that all companies classified under division 42 had a successful business year. As mentioned in previous sections, a company's profitability is also affected by other factors, and these were obviously the decisive factors for those two companies.

#### 4.5. COMPANIES FROM THE OBSERVED GROUP GENERATE MORE THAN 20% OF ADDED VALUE PER INCOME ITEM

Added value is calculated as sales income less the cost of goods and services purchased from other parties and depreciation costs. This is one of the indicators which make a particular branch attractive or unattractive to the social community.

To examine this hypothesis, it was necessary to calculate the share of added value per income items. This is presented in Table 10, in which analyzed companies are sorted by income (in descending order).

**Table 10:** Added value per income items

NO	COMPANY	INCOME	PROFIT	ADDED VALUE	SHARE OF ADDED VALUE IN INCOME (IN %)
1	OSIJEK-KOTEKS	230,292,471	18,713,101	48,454,350	21%
2	CESTING	85,596,655	1,026,059	35,741,767	42%
3	GRAVIA	65,342,642	86,155	14,260,618	22%
4	HIDROGRADNJA	33,018,483	1,316,094	10,919,278	33%
5	Vuka	30,742,785	148,857	9,407,678	31%
6	KARAŠICA-VUČICA	30,548,331	56,125	10,296,969	34%
7	VODOGRADNJA OSIJEK	28,728,142	104,923	6,433,341	22%
8	ODVODNJA	18,850,656	179,288	6,482,920	34%

9	CROCUS	12,152,544	424,974	3,361,828	28%
10	ELEKTRO-LOVOŠEVIĆ	9,882,089	462,212	3,478,480	35%
11	SCAT-INŽENJERING	8,691,785	12,783	572,412	7%
12	BINDER	7,275,382	239,073	1,801,269	25%
13	CONSULT - KOP	6,489,806	391,177	1,955,254	30%
14	MIJO	4,336,420	213,974	1,468,165	34%
15	GEO TIM	2,797,160	859,031	1,628,403	58%
16	MAJUS	2,616,502	8,003	1,316,347	50%
17	TEGRAD	1,322,765	46,054	538,781	41%
18	KARTES	519,519	14,560	97,256	19%
19	SELT	475,879	2,300	205,996	43%
20	PUGOS-GRADNJA	242,867	20,342	76,852	32%
21	WELDER	154,431	44,257	118,452	77%
22	CENTROGRADNJA	125,000	58,106	96,794	77%
23	WERKOS	95,501	-296,510	126,421	132%
24	ANĐELIĆ	58,603	165	30,135	51%
		580,356,418	24,131,103	158,869,766	27%

**Source:** database research: <https://www.bisnode.hr/proizvodi/bisnode-smart-vision/>  
30.01.2019.

Table 10 shows that **the hypothesis was confirmed** because the average share of all companies from the analyzed group in added value per income item amounts to 27%. Any activity generating above 20% of added value is welcome in any economy and any public administrative body should encourage the development of such activities in the territory of its competence.

## 5. CONCLUSION

Civil engineering represents an extremely important branch for any economy because it constructs the tangible assets used for residential, commercial and other purposes. In addition, it is related to other similar industries, from construction materials industry, metal industry, wood industry, chemical industry, non-metallic and glass industry to furniture manufacturing and, to an extent, service industry. It also employs a significant amount of workforce because it is still dependent on human labor, which is why full automation is impossible.

This branch was most severely affected by a far-reaching and lasting economic crisis which impeded technological advancement, reduced civil engineer-

ing capacities and decreased the competitiveness of civil engineering companies in the Republic of Croatia. Civil engineering can be classified as an activity that is largely dependent on economic cycles. Therefore, it is not surprising that the economic growth which started in 2017 was followed by further development of positive trends in civil engineering activities.

Maximum utilization of EU funds allows Croatia to conduct new infrastructure projects and consequently, the companies classified under division 42 of the National Classification of Activities 2007 are able to stay in operation. In that regard, the current status of Osijek-Baranja county is not bad. There are companies in Osijek-Baranja county that can to some extent complete future infrastructure projects, the number of which has been growing. Another positive factor is the fact that these companies can grow by creating new jobs, which should also increase employees' gross earnings and thus motivate the younger generations to choose civil engineering as their profession.

For all these reasons, it is obvious that the future of civil engineering in Croatia is promising, but the construction sector also must adjust to the changing structure of work, address the increasing pressure of foreign competition on the Croatian market and resolve the issues pertaining to the emigration and lack of workers with adequate qualifications and professions. Moreover, technology advances at an unbelievably rapid rate, thus changing production processes faster than ever. This paper also indicated the downsides that companies classified under division 42 are less efficient and that their work productivity is below the required average. All of the above represents factors that must be worked on in the future for the purpose of achieving technological advancement, competitiveness and eventually profitability and long-term operational sustainability in the area of civil engineering.

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# PROJECT MANAGEMENT IN GOVERNMENT ADMINISTRATION

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## **Abstract**

*Project management (PM) in government administrations (GA) in all countries reflects the increasing demands for better effectiveness, efficiency, and quality of services. In GA the PM is directed towards the establishment of managerial principles and public governance, growing their efficiency and quality, making effort to achieve and maintain the sustainability of their functioning.*

*Based on national strategic documents GA is establishing project within programs and portfolios to develop, increase and upgrade capabilities.*

*Ministries of defense facing new challenges to respond to new threats introduce project management principles. The aim is to reach strategic goals expressed in strategic documents to build the new tools to deter and defend national interests and interests of international organizations that nation is part of.*

*For that purpose Ministry of defense of Republic of Croatia (MoD) introduced the Program Management Office (PMO) as part of MoD organization and hierarchical decision-making levels for better supervision, command, control, and decision making in PM. With the new organization establishment, MoD achieved the better success of introducing new capabilities as declared and targeted in national defense planning documents.*

**Keywords:** *project management, government administration, PM office, Ministry of Defence*

JEL Classification: H00, H11

## 1. INTRODUCTION

Here we discuss project management (PM) in government administrations (GA) wherein all countries reflects the increasing demands for better effectiveness, efficiency and quality of services. In GA the PM is directed towards establishment of managerial principles and public governance, growing their efficiency and quality, making effort to achieve and maintain the sustainability of their functioning.

GA is spending public money collected from taxpayers in government budget which has to be spent wisely for executing government objectives to improve the quality of government service for the benefit of citizens.

There is a range of different PM methodologies used around the globe. The most used PM methodologies are Project Management Body of Knowledge (PMBOK), Projects in a Controlled Environment (PRINCE2) and Agile. All three are used depending of organisation preferences and projects to be undertaken. As GA in this work is using PMBOK or PRINCE2 these two are to be listed.

Project management standard PMBOK defines as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements. Project management is accomplished through the appropriate application and integration of the 42 logically grouped project management processes comprising the 5 Processes Groups”. And “The specific project characteristics and circumstances can influence the constraints on which the project management team needs to focus”. (PMI, 2013, p. 5-6).

The PMBOOK Guide “contains the standards for managing most projects most of the time across many types of industries”. (PMI, 2013, p.6, p.18).

PRINCE2 is a process-based method for effective project management. This methodology is extensively used by the UK Government and widely recognised and used in the private sector, both in the UK and internationally. The PRINCE2 method is in the public domain, and offers non-proprietary best practice guidance on project management. The methodology focus is on business justification, defined organisation structure for the project management team, product-based planning approach, emphasis on dividing the project into manageable and controllable stages and flexibility that can be applied at a level appropriate to the project. (PRINCE2, 2019)

## 2. PROJECT MANAGEMENT IN GOVERNMENT ADMINISTRATION (GA)

As defined in A Guide to the Project Management Body of Knowledge (PMI, 2013) “PM is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements”.

Project management is important for functioning of GA and for the purpose to assist to reach established strategic and operational goals declared in planning documents. The focal point for integration of strategic management in any organisation is PM. Different countries developed their own specific approach to PM with the respect to A Guide to the Project Management Body of Knowledge (PMBOK) “as general principle and framework to provide guidelines for managing individual projects and to define project management related concepts. It also describes the project management life cycle and its related processes, as well as the project life cycle”. (PMI, 2013, p. 1)

PM in GA is established and led somewhat different than in business sector still respecting PM general framework but applying some specifics. Such specifics exist in different organisations depending of their organisation structures, hierarchy, leadership and personnel. Public administration is also specific since it relies on established legal framework which is very stiff. For that purpose PM must obey hierarchy and legal procedures as in PM in GA financial resources support comes from state budget and report of budget spending is public for taxpayers to know where money goes.

### 2.1. PROJECT MANAGEMENT IN GA IN SLOVENIA

Government of the Republic of Slovenia 1997 adopted the general project management methodology in state administration (MVPDU) which represented the framework for project planning and implementation in Slovene PA. The MVPDU methodology was developed on the bases of the PRINCE2 methodology. (Žurga, 2018, p.150) This methodology is still valid and unchanged.

Although the methodology is in force since 1997 according to Žurga (2018) not all ministries use the PM methodology. Knowledge and understanding is not at the same level in all ministries. Project offices are rare in organisation structures in ministries lacking the defined rules in PM.



In document issued by the Government of the Republic of Slovenia „Public administration 2020, Public administration development strategy 2015–2020“ declared to “undertake measures to attain the strategic objectives when introducing project management” (Kern Pipan et al. 2015, p.56). Measures are clearly stated as follows:

- ✦ preparation of the project management methodology in public administration;
- ✦ systematic training of employees in public administration on the project-oriented manner of work
- ✦ establishment of a tool for IT-supported planning and implementation, monitoring and reporting on major strategic projects;
- ✦ establishment of the leading body or an organisational unit to coordinate and supervise the implementation of projects. (Kern Pipan et al. 2015, p.56).

This approach should contribute to better understanding and implementation of PM in GA.

## 2.2. PROJECT MANAGEMENT IN GA USA

Project management is at the core of almost every government business implementation related to initiatives for improvement. “Scrutiny for government project management extends far beyond a government organization’s internal customers to its citizens, its political appointees, and even to the United States Congress”. (Pyne & Rigby, 2002). In addition, in their work Pyne and Rigby (2002) observe several trends in the business of government that is contributing to the public sector movement toward a project orientation.

Pyne and Rigby (2002) elaborate trends in business of government as follows: There is “a significant portion of the government’s work that is being outsourced to commercial entities.” Therefore, government workers must transition from functional management responsibilities to project management. Project management is important to ensure that work under a contract is on time, within budget, and to the government’s specifications.

Government organizations are using project management to enhance efficiency and demonstrate their own viability. Good government project management means that work cannot necessarily be done better by a commercial entity.

Competition exists for work between government organizations. For example, a government organization is no longer obligated to use its own Facilities Management group; they could go, and have gone, to another Facilities Management organization with their requirements. Project management provides a framework for better and consistent customer service.

The size of the federal civilian workforce has declined by 19% since 1985. In addition to shrinking, the workforce is aging and considering retirement. Middle managers need project management skills to handle increased workloads and increasingly complex programs.

Government organizations are being called upon to provide 24-hour, secure, access for citizens. This has resulted in a dramatic increase in highly visible, complex information technology projects.

Effective project management is the key to maximizing any organization's business opportunities and in meeting its challenges. It will enable the government workforce to meet time, cost, and performance constraints, while focusing on its customers' satisfaction". (Pyne & Rigby, 2002).

### 2.3. PROJECT MANAGEMENT IN GA UK

PM in UK is regulated 2017 by Guidance Project and programme management as "essential resources for project delivery professionals leading, managing or involved in projects or programmes in government." (Gov.UK, 2017)

In UK since 2010 as a result of UK government reorganisation the Minister for the Cabinet Office announced that the Best Management Practice functions have moved into Cabinet Office. Government apply the Prince2 methodology as essentials for managing any project.

The Infrastructure and Projects Authority (IPA) supports the successful delivery of infrastructure and major government projects by working with government departments and industry. Its support includes offering expertise in all aspects of project delivery.

The Government Functional Project Delivery Standard sets out expectations for the direction and management of all government portfolios, programmes, and projects.

The Treasury Green Book provides guidance for public sector bodies on how to appraise proposals before committing funds to a policy, programme or project. (Gov.UK, 2017)

#### **2.4. PROJECT MANAGEMENT IN GA IN THE REPUBLIC OF CROATIA**

Project management is present in whole world for decades but in Croatia is not validated inadequate way. According to the words of prof. Radujković in the past few years significant advancement is evident, but potentials of profession of project management are not used to the measure to produce expected benefits to organizations and community. A certain advancement in business world in Croatia are evident but still not enough and benefit in increasing success of projects are immeasurable. (Paparella, 2017)

In GA project management, according to available information is arranged primarily in the area of project management for EU funded projects what, by prof. Radujković, represents lesser part of projects where project management profession is involved. Larger amount of projects are executed as internal projects of organisations and in business commercial projects. (Paparella, 2017)

### **3. PROJECT MANAGEMENT AND EDUCATION**

As the solid base towards stronger implementation of project management into the practice in Croatia are education modules in Croatian faculties, university colleges and education centres. Here are just few randomly selected as examples:

#### **3.1. UNIVERSITY OF APPLIED SCIENCES BALTAZAR ZAPREŠIĆ.**

At the moment there is several hundreds of thousand persons certified in IPMA Four Level Certification system. Certification of Project Management students is executed in cooperation with Croatian Association of Project Management (CAPM) since 2009. CAPM represents International Project Management Association (IPMA) gathers national members of over 70 countries of the world. Until today IPMA certificates in Croatia acquire over 270 students of Project Management of University of Applied Science Baltazar, Zaprešić. (Veleučilište Baltazar, 2018)

### **3.2. ALGEBRA UNIVERSITY COLLEGE, PROJECT MANAGEMENT SEMINARS**

Algebra is providing attendees with basic and advanced knowledge of project management through interactive exercises in web environment applying curriculum with simulation of project process in virtual project teams of participants. Algebra is also cooperating with CAPM in process of preparation for certification. (Algebra; 2018)

### **3.3. MIRAKUL EDUCATION CENTER ZAGREB.**

In cooperation with leading Croatian experts and Mirakul lecturers organize business seminars and workshops in key areas of business. Students gain knowledge and skills needed for certification for Project Management Professional (PMP) certificate. As well as IPMA certificate PMP is recognized as universal standard of excellence in Project Management. (EduCentar; 2018)

## **4. PROJECT MANAGEMENT IMPLEMENTATION IN GA**

Project management in GA is not sufficiently recognized as a tool for the successful process of initiating, leading and completion of projects. Efforts in the implementation of project management were undertaken in ministries of Croatian Government where project management knowledge and skills are applied by educating and certifying personnel in project management and establishing program management offices, and introducing rules and regulations.

For the purpose of this study three ministries with practice and documentation in project management will be represented by the Ministry of Regional Development and EU Funds, Ministry of Construction and Physical Planning and Ministry of Defence. The Ministry of Defence will be elaborated in more details as a case study.

### **4.1. PROJECT MANAGEMENT IN MINISTRY OF REGIONAL DEVELOPMENT AND EU FUNDS (MRD & EU FUNDS)**

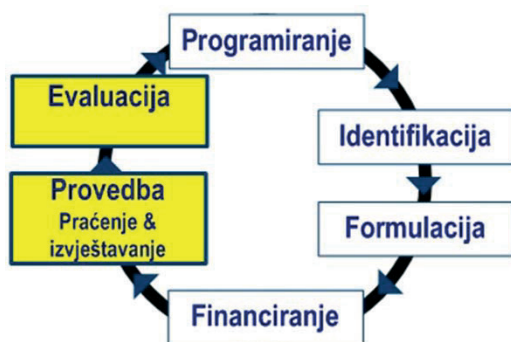
MRD & EU Funds was established by the Law on Establishment and Scope of Ministries and Other Central Bodies of State Administration (Official Ga-

zette 93/16, 104/16) to equally develop all parts of Croatia, to improve work and life conditions with emphasis to less developed regions. (Ministarstvo regionalnog razvoja i fondova EU, 2018)

In the area of project management MRD & EU Funds is oriented to prepare priorities of multiyear and annual strategic and operational documents for use of EU funds and other international sources of financing for regional development. (Ministarstvo regionalnog razvoja i fondova EU, 2018)

MRD & EU Funds in its webpage declare responsibility for monitoring of entire program and project execution as well as for monitoring and execution of decisions and recommendations. In the process of project execution monitoring and evaluation are part of project life cycle. With these tools MRD & EU Funds evaluates and assess effectiveness in projects and programmes execution financed in the framework of EU assistance program. (Ministarstvo regionalnog razvoja i fondova EU, 2019)

**Figure 1.** Project cycle in MRD & EU Funds



**Source:** (Ministarstvo regionalnog razvoja i fondova EU, 2019)

For this purpose and to better withdraw of EU funds allocated for Republic of Croatia in various areas MRD & EU Funds in 2014 initiated project of Academy of regional development and EU funds. The goal is to inform and educate student population on EU funds and present to students the importance of EU funds as one of most important source of financing different development projects and provide skills and tools for preparation of project proposals. Until today Academy educated over 600 young people and prepares them for use of EU funds. (Europski strukturni i investicijski fondovi, 2018)

The project of Academy is developed in four modules which assist students to understand projects and to gain skills in full spectrum of project lifecycle from idea to the completion of project documentation for EU financing. (Europski strukturni i investicijski fondovi, 2018)

#### **4.2. PROJECT MANAGEMENT IN THE MINISTRY OF CONSTRUCTION AND PHYSICAL PLANNING (MCP)**

MCP was established by the Law on Establishment and Scope of Ministries and Other Central Bodies of State Administration (Official Gazette 93/16, 104/16). In its scope the ministry performs administrative and other tasks related to construction, physical planning and housing, and participates in the development and implementation of programmes from European Union funds and other forms of international assistance in these fields. (Ministarstvo graditeljstva i prostornog uređenja, 2018)

Ministry has specific responsibility in the area of construction where construction was regulated by Laws: Building Act (Official Gazette 153/13, 20/17), Construction Products Act (Official Gazette 76/13, 30/14, 130/17), Act on the Chamber of Architects and Chambers of Engineers in Construction and Physical Planning

(Official Gazette 78/15, 114/18), Act on Physical Planning and Building Tasks and Activities (Official Gazette 78/15, 118/18), Act on Proceeding with Illegally Built Buildings (Official Gazette 86/12, 143/13, 65/17, 14/19) and Administrative Fees Act (Official Gazette 115/16) and list of statutes, decisions and internal regulation including statutes and decisions of EU. (Ministarstvo graditeljstva i prostornog uređenja, 2019)

In the area of construction MCP strictly regulated roles and responsibilities of persons who perform activities in construction project management who must be registered for specific activities. The intention is to avoid conflicts of interests of stakeholders in construction program management. It is strictly emphasized that registered organization for construction must have project manager.

MCP in 2009 introduced into force Regulation on necessary knowledge in the area of project management. Since then the Regulation is amended and the newest document is dated from 2015.

According to the Ordinance on required expertise in the field of project management (Official Gazette 85/15) person authorized as project manager for specific project is by regulation of MCPPP obliged to have necessary knowledge and skills in project management and, as minimum, to be certified through system of certification of International Project Management Association (IPMA) and/or Project Management Institute (PMI). (Ministarstvo graditeljstva i prostornog uređenja, 2019)

Apart from that program manager has to have education in architecture, construction, electrotechnics or civil engineering. There is also regulation for the level of education and minimum of ECTS points. (Ministarstvo graditeljstva i prostornog uređenja, 2019)

#### 4.3. PROJECT MANAGEMENT IN THE MINISTRY OF DEFENCE – THE CASE STUDY

Ministry of Defence (MoD) was established by the Law on Establishment and Scope of Ministries and Other Central Bodies of State Administration (Official Gazette 93/16, 104/16).

From the very beginning, when the Ministry of Defence and Croatian Armed Forces (MoD and CAF) were established, various project management processes were conducted. Projects were conducted in functional organizations by decisions of the minister of defense.

During five-year post-war transition period until 2000 MoD was advised and supported in transformation from war to peacetime structure by one US consulting company who laid down foundation for future development of Defence Management System in MoD. System was basically built on implementation of three interrelated systems, Defence Planning System, Defence Management System and Decision Making in Procurement System. All of them integrated by Planning Programming Budgeting and Execution System (PPBES) in more long term planning and executing manner with introducing for the very first time managing the processes and project-oriented organization. Originally PPBES is an “annual Department of Defence (DOD) process for allocating resources. It serves as the framework for DOD civilian and military leaders to decide which programs and force structure requirements to fund based on strategic objectives”. (Peters, 2018)



Croatia's membership in Partnership for Peace (PfP) in 2000 (NATO, 2005) and later Membership Action Plan (MAP) in 2002 (NATO, 2019) as a NATO aspirant recognized needs for development of a new capabilities defined in strategic documents as Partnership Goals and Force Goals. This brought MoD to the position to form the working groups or task forces with the clear directions to initiate, lead and conclude the process of procurement, adjustment and implementation of a new defence system into the CAF. It was the working groups to lead the process by their best knowledge and skills. There were no standards of project management.

It does not mean that projects were not led professionally and that they were not brought to its successful conclusion. Simply they were not led by standards of project management and there was no central administrative evidence and coordination of projects as part of the program and entire MoD project portfolio.

Projects were initiated, conducted and brought to its successful conclusion by the imagination and significant efforts of the appointed heads of the working body together with the appointed members, personnel from different parts and functional organizations of MoD and CAF.

Through the time and recommendations of personnel who were familiar with standards of project management, MoD introduced to project management principles. Project management principles were formalized and set inadequate framework by officially regulated project management process.

First document to regulate PM in MoD was internal document Regulation for Project Team Activities which was approved and introduced by the minister of defence in 2001. This document defined the position and role of project team in process of acquisition of armament and military equipment for CAF. The intention of this Regulation is to fit the PM in internal procedures, rules and regulations as well as legal framework for procurement of armament and military equipment. It was first but important step in better PM in MoD.

For the purpose of project standardisation and better overview, control and decision making on projects, MoD in 2014 approved and introduced Methodology of management of development projects of MoD and CAF (Ministarstvo obrane; 2014a). The methodology was developed on the basis of the IPMA (International Program Management Association) standards. This document based on project management standards with recognition of national legal framework introduced basic order in project management process from initia-



tion to its conclusion. Since the MoD is governmental organisation all regulations and procedures must comply with national laws and regulations.

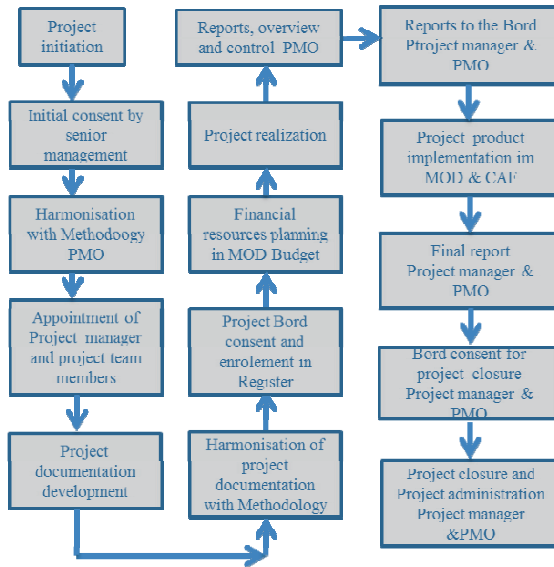
Methodology introduced standard steps in project management, project categories according to IPMA, type of project according the complexity of projects, stakeholders, and senior supervision and decision body The Board for supervision, control, and decision making in project management (Board). The Board was established 2014 (revision Act 2017) by the Decision of minister of defence and the board consists of key civil and military personnel of MoD and CAF where state secretary/deputy minister was appointed as the head. (Ministarstvo obrane; 2014b)

As additional tool for project supervision MoD formed the Project Register as evidence of projects which were already in process and new accepted projects by the Board. Board, to clarify its role in project management, introduced the Rules of procedure of the Board. (Ministarstvo obrane, 2017b).

The next very important step in process of project management institutionalization is the Project Management Office (PMO) in MoD Statute which was formed as independent body in organisation structure directly subordinated to minister of defence. Its position, role and line of work was set and described in Art 170 of the Statute of internal organization of the MoD (Official Gazette 2/17) Statute entitled PMO for project coordination, time framework, extent, expenses, quality and human resources. PMO is also the organisation which provides the Board with all relevant documentation and information as support for decision making. Its role was recognized in revised document of the Board "Odluka o osnivanju Odbora za nadzor kontrolu i odlučivanje u upravljanju projektima" (Ministarstvo obrane, 2017a)

To improve project management process PMO prepared a draft of revised Methodology which incorporates improvements in project management process with more details and clarifications specific for GA is prepared for brush up and confirmation by senior management during 2019. The revised methodology is much more aligned with PMBOK guide then previous one. (Ministarstvo obrane, 2018)

Figure 2. Project steps flow



Source: (Ministarstvo obrane, 2018)

Important part of Methodology is incorporated in annexes which contains steps on project development process and standard forms for initiation, planning, reporting and risk management. Depending of project category and type Methodology proscribes the key documents to be developed for specific project. Such documents are Tactical Technical Study, Feasibility study, Risk analysis, Status report, Final report, Analysis of project success, Lessons learned etc. Apart of listed, as every project is new, original and different may have additional specific documentation which were relevant for specific project (Figure 2.).

The entire project management process is in compliance with specifics of a structure, work organization, hierarchy and other internal regulations in the field of organization management. Projects regulated by Methodology are initiated by stakeholder i.a service of CAF or functional areas of MoD.

PMO in 2018 initiated education, workshops and certification for heads of project teams of active projects. The next phase is to continue education in project management primarily for project team members in active projects. In continuation, the aim is to continue with regular annual cycle to share the knowledge, skills, and competencies of project management and to develop a wide base of civilian and military personnel of MoD and CAF later to be included in new projects as leaders or team members/experts.

PMO developed and implemented information support by the development of specific software that fits into the needs to keep evidence of documentation and to keep track of each phase of each project from the Project Register. Information model consists overall overview of all projects from the Project Register, individual project information on project phases, finances (planned budget, phase expenditures items, remaining financial obligations etc.), project team minutes registry, list of project team members with skills review and work results.

## 5. CONCLUSION

As PMI definition say Project management is temporary endeavor undertaken to create a unique product, service or result. And a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal.

Project management is important because it is systematic and regulates standard steps from beginning to the end respecting specifics of each project as one-time operation. With introducing at least basic regulation of project management in certain organization it is much easier for every stakeholder to understand his role. It is even better when proper understanding of project management is introduced in organization and when large number of personnel in certain organization understands at least the basic rules of project management. For that reason, independent of prescribed regulation, it is much more important to have as much as possible number of personnel of any organization educated in project management. For those involved in project management process it will be easier to initiate, lead and bring projects to successful conclusion and implementation.

GA in Croatia is not using PM systematically in all government bodies. It is more related to senior individuals recognizing the benefits of PM to save efforts, time and money and introduce PM in their organization which then becomes the standard.

Still, there is much more to do ahead in embedding and establishing a certain level of understanding of the necessity of project management for better use of financial, material and human resources and to increase the level of success.

Articles such as this and with the assistance of experts an member of academic society can motivate GA to introduce PM as standard procedure to improve organization and to implement new technologies in GA procedures.

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# THE ROLE OF SOCIAL NETWORKS IN THE MANAGEMENT OF SPORTS NONPROFIT ORGANIZATIONS – CASE STUDY OF FUTSAL CLUBS IN EASTERN CROATIA

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## **Abstract**

*The aim of this paper is to determine the connections between social media activity and different success categories in sports organizations. This primarily refers to the number of spectators following sports organizations. Sports organizations which are the subject of this research are futsal clubs in eastern Croatia that play in the highest ranks of competitions managed by the Croatian Football Federation. Futsal, also known as five-a-side football, is a sport with a long tradition and a high percentage of players and supporters. It is important to mention that, even though the analyzed sample deals with clubs competing in the first and second rank of competitions, those sports organizations are nonprofit and amateur in terms of their structure, since players who play for*

*the clubs only get a certain fee, rather than a salary, which means that futsal is not their primary job. From that point of view, the analyzed sports organizations can be placed in the context of all sports nonprofit organizations. The aim of the research is to determine whether and in what manner can varying intensity of activities on social networks such as Facebook and Instagram affect the attendance or business results of a sports organization. Nowadays, in the time of intensive use of social networks, it is considered obligatory to be present on social networks. Taking the targeted audience of the analyzed sports organizations into account, a conclusion shall be made on the impact of different scopes of social network activities by individual sports organizations on the overall results of a nonprofit sports organization. The obtained results will be highly indicative considering that most sports organizations in the Republic of Croatia are nonprofit regardless of their competition rank, and their players have amateur status.*

**Keywords:** *social networks, sports nonprofit organizations, futsal competition, attendance*

JEL Classification: L39, M37

## 1. INTRODUCTION

Recreational sports definitely play a major role in the health and social segments of all individuals, but of society in general as well. In the health context, they constitute an imperative life component which should ultimately result in physical activity and health care. In the social context, recreational sports cover another indispensable life component that reflects in the human need to socialize and spend time together. Recreational sports, which are categorized into leisure time, voluntary and free choice of each individual, have the potential to fulfill these tasks. For this reason, it is necessary to pay special attention to the organization of recreational sports and to the management of organizations that organize activities in the field of recreational sports. Futsal, also well known as five-a-side football, is one of the sports activities that stand out in the domain of amateur and recreational sports. Futsal as a team sport greatly encourages team spirit as well as homogeneity and, due to low organizational costs and its link to the classic “big” football, it became widespread in the world; therefore, it has a long tradition in the area of eastern Croatia as well.



Taking into account that futsal sports organization are non-profitable for the most part and that they are placed in the category of citizens associations, it is extremely important to be competent for management of such organizations, since their primary aim is not financial gain, but continuous development of futsal. Regardless of the fact that the primary aim of non-profit organizations is not making a profit, it is extremely important that such organizations manage their finances responsibly, in order to function normally. Just as digital transformation affected all segments of society, so it did the segment of sports and, in terms of management, the segment of managing small and non-profit sports organizations. The fact is that recreational sports belong to the domain of leisure time greatly affects a sports organization's business approach since the quantity and conception of leisure time have largely changed. Nowadays, people work longer hours and have less leisure time at their disposal. In addition, futsal organizations have competitors from many different social areas, from those in sports that also seek their own market and customers, to non-sports ones that fill the leisure time of an individual with programs of their own. In this contest for each individual, the sports organizations need to use all the competitive advantages they have over other activities in order to realize their goals.

The important thing is to mention the fact that all sports organizations need to adapt to social and consumer needs and demands that are constantly taking place in the surroundings they act in. Despite the fact that the primary purpose of non-profit organizations is not making a profit but reinvesting the funds raised in the development of sports through the evolution of their non-profit sports organization, they are increasingly turning to the approach of professionalizing certain activities in their business operations. This paper will focus on presenting the importance of this adaptation through the digital transformation of business operations in futsal organizations with an emphasis on the eastern part of Croatia. The aim of the implemented research is to establish the way in which application of digital tools affects the development of futsal organizations and, following this, their comparison with regards to the rate of digital tool application in everyday business operations. Taking into account the age structure of the market, this definitely is an important tool for achieving goals, i.e., efficiently using digital tools and media in everyday activities, retaining existing members and acquiring as well as attracting new ones. Digital tools such as websites can greatly contribute to transparency, they enable the creation of a central place for informing the public and members, but through certain mod-



els of acknowledging sponsors and donors as well as different models of online commerce they can provide an additional source of revenue through this digital channel. Social networks, as a sort of added features of websites, allow for much faster and more direct communication with members, providing short-term information, but also, most importantly, they enable two-way communication between futsal organizations and the user.

## 2. THEORETICAL PART OF THE PAPER

### 2.1 FUTSAL AND ITS SIGNIFICANCE

Futsal is an extremely popular team sport all over the world. Its popularity is based on several important elements. In the organizational sense, its organization does not require extensive infrastructural needs, which is why futsal can be played in courts of different sizes as well on different terrains. To make things as simple as possible, an arbitrary size court, two markings for the goal and a ball will suffice. All other elements only increase the quality of the organization and the game. Another very important fact lies in the similarity of futsal to football, which is why it is often referred to as five-a-side football in the Republic of Croatia. Since playing “big” football requires more players and a larger grass-covered football pitch, which is not required for playing futsal; futsal became extremely popular with younger age groups that cannot notice any significant differences between “big” football and futsal. Despite the fact that the majority of the futsal-playing population is comprised of men, women partake in futsal as well. Life expectancy of futsal players is far longer than in most athletes and this is precisely why many football players continue doing sports on a recreational level by playing futsal after they finish their professional football career.

According to Crofutsal.com (2018), in the context of futsal as an organized sport, it is not considered to be a version of indoor football that is played according to strict FIFA rules. For a long time, futsal existed under different names: street football, five-a-side football, indoor football, etc. According to one version, the creation of futsal can be attributed to Juan Carlos Geriani who, at the YMCA youth competition in Montevideo in 1930, presented football with 5 players on each team. Another version goes in favor of the claim that futsal came into being at the beaches of Brazil. In the 1960s Netherlands, Helder

Indoor Soccer Organization (HZVO) was founded, which was the beginning of institutionalization of futsal. In Madrid, *fútbol de salón* and all other names of the game were officially and internationally changed to FUTSAL in 1985. In the world, there are approximately 30 million people involved in futsal in at least 100 countries worldwide. In Italy, for example, approximately 4 million people play futsal, along with a million that play football.

Futsal has a long tradition in all parts of the Republic of Croatia, especially the one on a recreational level. Organization of a great number of competitions, both outdoors and indoors, has been attracting a large number of competitors, but supporters as well, which says a lot about the great popularity of this sport. During the summer, in places in the Republic of Croatia with futsal courts, summer tournaments with many prizes are held, and besides the recreational and representative futsal players from Croatia, many players from abroad participate in them as well. All these arguments go in favor of the claim from the beginning of this paragraph, i.e., that futsal truly is a popular sport, both in Croatia and the world.

## 2.2. FUTSAL STRUCTURE IN THE REPUBLIC OF CROATIA

In the Republic of Croatia, the sports umbrella organization is the Central State Office for Sport. Its primary task is to make a long-term strategy for the development of sports in the Republic of Croatia and, through legal instruments and authorized legal persons, control implementation of the strategy at all levels (Central State Office for Sport: 2018). The legal framework for operation and all activities are linked to the sports activity described in the Sports Act. The Act regulates the sports system and sports activities, professional jobs in sports, sports competitions, sports financing, supervision and other matters significant for sports (Official Gazette:2006). The Act was passed in 2006, however, due to its flaws and poor rate of application it became a subject of discussion, and a new Sports Act is being drafted that should cover and correct those elements that were missing in the initial Act, i.e., the initial formulation was not suitable to for the actual condition.

According to the basic division, sport in the Republic of Croatia is divided into (Bartoluci;2003:151):

- Physical education of children and youth

- ♦ Competitive sports
- ♦ Sports recreation for citizens
- ♦ Kinesiotherapy and adaptive sports

Since competitive sports is divided into amateur and professional, it can be said that futsal in the Republic of Croatia is primarily placed in the category of competitive sports, the amateur type to be precise. In the institutional sense, the most highly positioned sports association in the Republic of Croatia is the Croatian Olympic Committee. Its mission is to permanently contribute to the promotion of sport as universal civilization heritage; spreading of Olympic principles, as well as ethical and moral standards in sports; creating the top sports achievements of the Croatian athletes; promotion of the Republic of Croatia as a democratic state; fair relationships among the participants in sports (Croatian Olympic Committee:2016). Hierarchically, national sports federations and local sports organization are below the Croatian Olympic Committee. All sports in the Republic of Croatia are assembled around national sports federations for a certain sport, and national sports federations coordinate the highest structures of competitions through their county organizations and local sports associations.

Football competitions in the Republic of Croatia, including futsal competitions, are coordinated by the Croatian Football Federation. The authority that organizes competitions within the Croatian Football Federation is the Futsal Commission (Croatian Football Federation: 2018). The competition system for the senior category is organized in one 1st HMNL (Croatian First League of Futsal) and three regionally divided 2nd HMNL (Croatian Second Leagues of Futsal). Besides the league competitions, a cup competition is organized and held in each region in the beginning, then the best teams continue to the competition on a national level. All competitions below these two levels and the cup are competitions that are not under the direct supervision of the Croatian Football Federation, i.e., they are considered to be recreational systems of competitions. An example of this is county leagues of futsal, as the third level of competition. These are not official HNS competitions, however, county football centers support them and give them a status of competitions. In younger age categories, tournament or league competitions are organized in individual regions for certain age categories.

When discussing the east region that includes Osijek-Baranja, Vukovar-Srijem, Brod-Posavina, Požega-Slavonia and Virovitica-Podravina Counties, and their futsal structure, then it is important to emphasize that, in the season of 2017/2018, of the 12 teams in the 1st HMNL, the eastern part of the country had 2 representatives: MNK Osijek Kelme from Osijek and MNK Brod 035 from Slavonski Brod. From the aforementioned, it may be concluded that the majority of teams is from the other two regions, the south one and the north one. In the 2nd HMNL East, 9 clubs competed in the season of 2017/2018, 3 of which were from Osijek-Baranja County, 3 from Vukovar-Srijem County and 3 from Brod-Posavina County. In a season of 2018/2019 in the 2nd HMNL East, there are 10 clubs competing, 2 of which are from Osijek-Baranja County, 4 from Vukovar-Srijem County, 2 from Brod-Posavina County and by 1 team from Požega-Slavonia County and Virovitica-Podravina County.

**Table 1:** Number of teams in the official HNS competitions in seasons of 2017/2018 and 2018/2019

Season 2017/2018					
	OBC - 031	VSC - 032	BPC - 035	PSC - 034	VPC - 033
1st HMNL	1	0	1	0	0
2nd HMNL	3	3	3	0	0
Season 2018/2019					
	OBC - 031	VSC - 032	BPC - 035	PSC - 034	VPC - 033
1st HMNL	1	0	1	0	0
2nd HMNL	2	4	2	1	1

**Source:** Author's research

Ultimately, it can be additionally emphasized that all futsal clubs in the Republic of Croatia greatly rely on volunteering at all levels since, regardless of the non-profit level, they act at the amateur level, the specificity of which will be further discussed in the following paragraph. The only exception, i.e., a club that has professional players is MNK Split (Crofutsal.com: 2018)

### 2.3. NON-PROFIT ORGANIZATIONS IN SPORTS

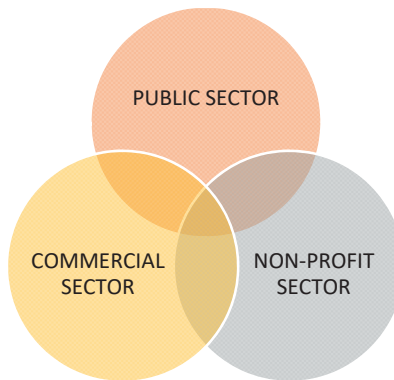
Sports organizations, according to the basic division, may be categorized into three different types according to the sector they act in. These are (Tomić, 2007:57):

- Public (state) sector

- ♦ Volunteer (non-profit) sector
- ♦ Commercial (professional) sector

It is very important to note that these three sectors greatly depend on each other in everyday functioning, as seen in *Figure 1: Institutional sectors in sports and their interdependence* and certain sports organizations overlap in different institutional sectors. This way we have organizations competing in professional ranks, but in the organizational sense, they function as non-profit citizens associations.

**Figure 1:** Institutional sectors in sports and their interdependence



**Source:** Tomić, M (2007), *Sportski menadžment*, Belgrade: DATA STATUS

Non-profit sports organizations make the greatest part of sports organization and these include all those sports organizations the primary task of which is not making financial gain, as is the case with sports organizations acting in the commercial sector. To realize their goals which primarily regard the development and expansion of non-profit sports organization in the sports sense, they have unavoidable expenditures, therefore they need to collect revenue through memberships, sponsorships, donations, public sources of revenue or sales of certain services to balance the revenue and expenditure sides of the budget.

Non-profit sports organizations that are the subject of this research may, by many criteria, mostly be characterized as simple sports organizations of the “kitchen table”, unlike clearly structured sports organizations that are characterized as organizations of the “executive office”. “Kitchen table” organizations, as defined by Beech and Chadwich (2010;203), are organizations where most decision-making in the organization and administration typically occurs around the kitchen table or something similar. The same authors state that these orga-

nizations, among others, are typically characterized by the following: an absence of a central office location and paid staff, heavy reliance placed on volunteers who hold a number of different roles within the organization, the structure has few hierarchical levels, the sports organization is governed by a few formal rules, little specialization of volunteer roles or tasks, and decision-making is centralized with a few people.

In order to sustain themselves in today's competitive market, non-profit sports organizations need to define their strategies and include answers to questions on their relationships with current and future members, the manner of defining the management structure and control mechanisms with an aim of defining responsibility. What is also necessary is to define the short-term and long-term strategic direction of a non-profit sports organization through long-term and short-term goals and, through this, define all processes and long-term policy of the sports organization that will clearly present values on which the sports organization should be based on and towards which it should strive.

When considering a broader context of sports, regardless of the type of sports organization and regardless of the fact that this paper deals with futsal organizations, it is important to mention the fact brought up by Bartoluci and Škorić (2009:47) which says that the area of sports in the developed European countries generates much more funds in the market, than it is invested in by the state. For all the aforementioned reasons and the fact that the volunteering level and the level of transparency for all its members and the public is very high in non-profit sports organizations, use of digital technology and a full digital transformation of business operations may significantly contribute to the realization of set goals.

#### **2.4. ROLE OF THE INTERNET AND THE IMPORTANCE OF DIGITAL TRANSFORMATION IN SPORTS**

Digitalization in everyday life is present on each step so it is very difficult to find a segment of society that is not at least partly digitalized or not in the process of digital transformation. The digital transformation may be described through two strategies. The first strategy is an optimization that includes digitalization of the existing business operations and the second strategy would be innovation, i.e., the introduction of innovations at the business model level and creation of new products and services based on digital technology (100posto.

hr:2017). Digital business models “include all business activities that occur electronically and with the help of digital technologies which, through extensive electronic integration with the surroundings, generate new value and utilize benefits of running business operations in the digital economy”. (Spremić; 2017:38)

According to several authors, sports as an institution include four main components (Xian, Hedman, Tan, Tan, Lim, Clemmensen, Henningsson, Mukkamala, Vatrappu, van Hilleberg; 2017):

- The organizational component
- The technological component
- The symbolic component
- The educational component

The aforementioned authors believe each of these components went through a digital transformation of their own as a result of necessary adaptation to today's digital way of life and functioning of the society as a whole. Because of this, sports digitalization contains the aforementioned components as well, and the paper will further present the fact that some of the elements interlink with each other, i.e., influence several components. Further on, the effects of digital transformation on each component will be discussed.

Digitalization of the organizational component reflects in the use of digital technologies in administration which eliminates the need to carry out processes by hand and hence reduces the chance of making mistakes. Digital technologies enable splitting of live broadcasting rights for TV rights, but also to rights that regard the use of digital technologies which generate new revenue for clubs, but also new value for sponsors, supporters as well as for owners and members of sports organizations. Use of digital data analysis generates new value in terms of revenue as well, and both social networks and websites allow new members from all over the world new ways of communication and inclusion in the work of sports organizations. The occurrence of fully digitalized sports (eSports) opens a completely new market and way of experiencing sports.

Digitalization of the technological component may have had the greatest impact on sports and athletes. Promotion of sports in the technological sense can be noticed in the commercialization of physical components and effects of athletes through their conversion to digital products such as computer games



as well. Additionally, monitoring of players and their form by analyzing data received through wearable technology can be used to reduce weaknesses in individual players, but also to record their strengths compared to others with an aim of utilizing them better and improving the athlete's form. In certain sports, digital technology was implemented in the rules of the game themselves and is used as a tool in resolving certain controversial situations during a contest to determine the final outcome or the winner.

Digitalization of the symbolic component of sports relates primarily to the fact that digitalization allowed the events occurring in a sports organization or on a sports competition to be transmitted all over the world. For example, supporters of a club or club members can now keep up with events in their club, news from practice, presentation of new players or games of their club and it can all be viewed live, at the time when the event is taking place. This way, sports organizations increase their base of supporters, but also enable supporters and club members to become closer to their club or to connect to it even more through such interaction. This way, the gaps between keeping up with a club physically and doing so online are closed. Social networks and online channels for transmitting video content play an important role here.

Digitalization of the educational component regards promotion of information on the health components of athletes and their form through detailed training analysis, preparation, the contest itself, but also post-competition analysis. The most important role in this component is that of wearable technology and the "Internet of things" (*IoT*). This way, traditional ways of training are changed, but so are the required competencies the employees in sports need to have. With the help of digital technologies and specially created computer applications, different digital simulations, training analyses and adaptation to the needs of all athletes are implemented. With social networks and different digital platforms for the exchange of video and other material, knowledge and new developments are transferred from coach to coach, but also from player to player. There are no geographical or linguistic barriers for sharing this knowledge and it became available for everyone; in this context, conditions and competencies necessary for the realization of sports achievements are equal for all.

In the managerial sense, digitalization in sports is extremely important in the areas of marketing and client management. Client relationship management greatly changed with the use of digital technologies. The term "*Customer*



*Relationship Management*” (CRM) and systems that enable client management in the business world play an important role when discussing the business operations of a company. CRM can be defined as a way of managing relationships with clients, i.e., approach to company management through interaction with current and prospective customers. The CRM approach attempts to analyze customer data and their history of relationships with the company to improve business relationships with clients/customers while placing an emphasis on retention and ultimately achieving sales increase (BizIT.hr;2016). Lately, CRM has been increasingly used in sports organizations as well. Up until 20 or so years ago, in terms of marketing, sports organization were focused on ticket sales, advertising space in the stadium and sales of props at the shops. All activities were limited to the area of the stadium and around it. When doing so, no attention was paid to the ones who purchased those products. There were no records of clients at all, which are the supporters in this case. By starting to pay attention to the relationships with the supporters, the focus of the clubs started to shift from products and services they sell to the persons they sell them to.

From the perspective of viewing sports that were not viewed by a large number of viewers due to the physical specificity of such sports, digitalization led to an extremely significant increase in viewers, i.e., clients. For example, water sports such as sailing could not be adequately viewed since viewers would either remain on land or they would need to board a vessel to view the races, which is of course quite inconvenient. Digitalization allowed for these sports to be viewed all over the world, however, transparency and regularity of the competition itself significantly improved as well. Each vessel can now be tracked with the Internet and a GPS device. A similar thing happened with long-distance running competitions. A specially developed computer application can track each competitor from the beginning to the end with maximum precision through wearable technologies worn by all the competitors. This way of tracking the position of the participants can be provided for all the viewers as well. Regarding sports such as, e.g., extreme skiing at mountain peaks, it is extremely difficult, even impossible for viewers to physically view the sports event live. Digital technologies are the things that allowed people to view such sports from the comfort of their homes.

At the end of this paragraph, it can be concluded that digitalization in sports brought up great changes in the management of sports organizations and, in some cases, even in sports themselves. This change primarily regards the new

ways of collecting, processing and later on analyzing data on athletes and sports activities themselves. The concept of client relationships completely changes, in the case of a relationship with the supporters in sports, so the supporter is put in the first place, which was until now exclusive to the product and service. The manner of promotion completely changes with the use of new Internet tools. With the development of management in sports, the time period of sales activities in sports increased from the time of duration of the sports activity to the entire day of the sports event (in expert literature, this is known under the term match day). Certain sales activities, with the digital transformation of sales operations, are later on continuously expanded to the whole year due to the change in the relationship with supporters and the manner of mutual communication between players, supporters, sponsors, owners, and the public. The way we consume sports today changed dramatically in the last few years. Visiting a sports event no longer means just viewing a sports event, all of it is starting to be perceived as a social experience and an adventure associated with these events (Eventbrite.co.uk;2016).

When talking about specific digital tools, then sports organizations have a whole array of options they can use to improve their work. Besides improving the work, proper use of digital technology leads to greater transparency of business operations, better data protection, improvement of communication with members in all directions as well as networking with the goal of exchanging experiences or gaining information on activities in real time. Most often, these digital tools are web pages of a sports organization, communication on social networks, online stores, forms for online application, specialized applications for electronic data processing, etc.

### 3. RESEARCH PART OF THE PAPER

#### 3.1. METHODOLOGY

In terms of methodology, several scientific methods were used for the purposes of the research part of this. Geographically, the subject of the research was the area of eastern Croatia and the sample included five of the most eastern counties: Osijek-Baranja County, Vukovar-Srijem County, Brod-Posavina County, Požega-Slavonia County, and Virovitica-Podravina County. To accu-

rately determine samples in the secondary research, accurate sample parameters were gained through the publicly available information on the condition of futsal competitions in Croatia and especially in eastern Croatia. Several different methods were used for the needs of primary research. Initially, a research was carried out by surveying responsible persons in futsal organizations included in the sample and after this, official, non-publicly available data on the number of viewers were gained from an official of the Croatian Football Federation. In the secondary research of publicly available data, a detailed analysis of activities on the Facebook social network for all futsal organizations included in the sample was carried out. All 9 futsal clubs of the 2nd HMNL East and two clubs from the area of eastern Croatia that compete in the 1st HMNL were included in the sample. The considered competition season is the season of 2017/2018 since this is the most recent completed competition season. Results obtained in the primary and secondary research were analyzed and synthesized to form relevant conclusions in accordance with the goals set in the aforementioned research.

### 3.2. RESEARCH RESULTS

Analysis of research results can be started by reviewing levels of activity on Facebook. This analysis shall establish the number of people that follow Facebook pages of the analyzed futsal clubs and the level of activity of the Facebook page administrator. These data can be significant in the later parts of the research.

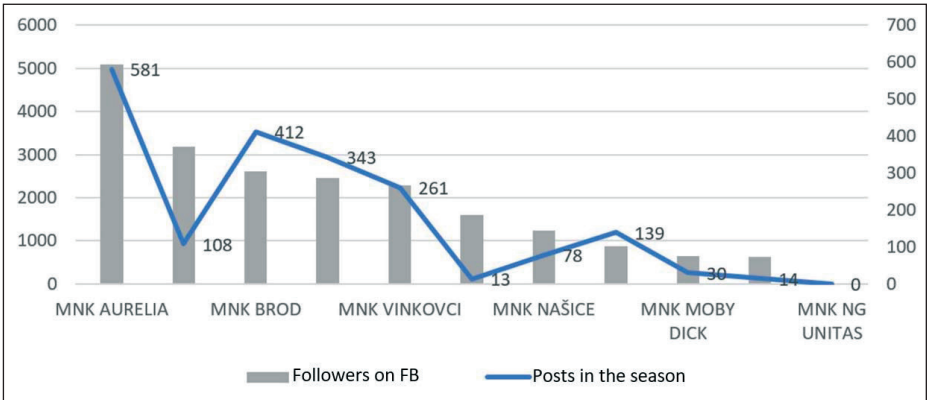
**Table 2:** Relationship between the number of followers and posts on Facebook pages of futsal clubs

Team	Number of followers on FB	Number of posts in the season
MNK AURELIA	5092	581
MNK Osijek Kelme	3178	108
MNK BROD	2601	412
MNK BROD 035	2462	343
MNK VINKOVCI	2276	261
MNK OSIJEK 031	1599	13
MNK NAŠICE	1228	78
MNK BATA BOROVO	865	139
MNK MOBY DICK	639	30
MNK MALA MLJEKARA	620	14
MNK NG UNITAS	0	0

**Source:** Author's research

If the data from the table were to be presented in a graphic form, it becomes even easier to notice that the relationship between the number of followers usually goes in line with the number of posts on individual Facebook pages in the last season. The exceptions to this are clubs from Osijek, MNK Osijek Kelme and MNK Osijek 031. These clubs had significantly fewer posts than their competitors, MNK Osijek Kelme had only 108 posts in the whole competition season and MNK Osijek 031 had only 13 posts in 365 days. Despite the fact that MNK Osijek Kelme has a large number of followers, this potential is obviously not adequately used.

**Chart 1:** Representation of the relationship between the number of followers and posts on Facebook pages of futsal clubs



Source: Author's research

The research also conducted an analysis of the potential viewer base and realistic data on the average number of visitors in a home game. Men from age 15 to 64 (source: Croatian Bureau of Statistics; 2011) were considered as the basis of calculation of potential viewers, i.e., high-school students and persons of working age that live in a place where a futsal organization has its seat. The female sex was not considered since the percentage of female viewers in the total number of viewers is very small, and this number does not have a significant influence on the result of the research.

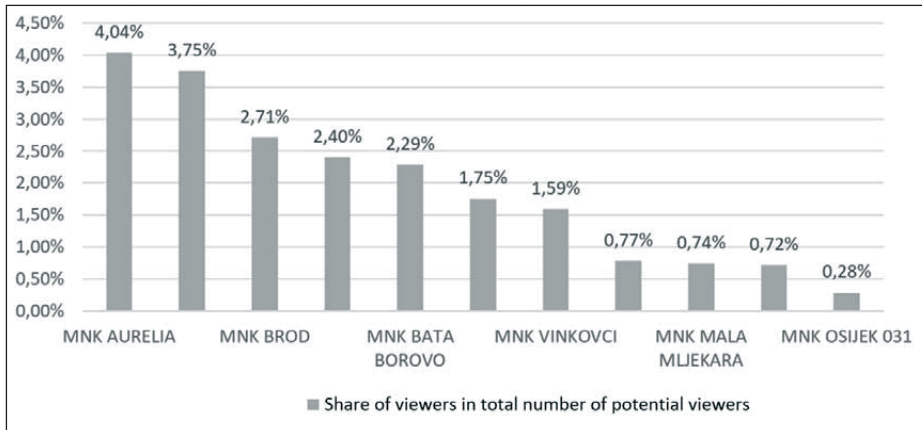
**Table 3:** Representation of potential and actual viewers during the home games

Team	Potential viewers	Average number of viewers	Share
MNK OSIJEK KELME	35440	127	0.36%
MNK OSIJEK 031	35440	50	0.14%
MNK BROD	19274	261	1.35%
MNK BROD 035	19274	231	1.20%
MNK AURELIA	11579	234	2.02%
MNK VINKOVCI	11579	92	0.79%
MNK BATA BOROVO	8735	200	2.29%
MNK NAŠICE	5714	100	1.75%
MNK NG UNITAS	4525	35	0.77%
MNK MALA MLJEKARA	4042	30	0.74%
MNK MOBY DICK	799	30	3.75%

**Source:** Author's research

When considering data in *Table 3: Representation of potential and actual viewers during the home games*, it can be noticed that the number of visitors, when compared to the potential, is less than 1% in half of the sample. It is also very important to note the fact that in 3 places, there are 2 clubs that are competitors to each other in terms of attracting the potential base of viewers. The aforementioned places are Osijek (MNK Osijek Kelme and MNK Osijek 031), Vinkovci (MNK Vinkovci and MNK Aurelia) and Slavonski Brod (MNK Brod and MNK Brod 035). For the purpose of providing a clear representation and due to the existence of two clubs in the same city, the total number of potential viewers per club was divided in half for the aforementioned cities, the results may be seen in *Chart 2: Graphical representation of the share in the number of viewers in the total number of potential viewers*. In this representation, it can be seen that futsal clubs with the smallest number of posts on social networks are once again in the back, while MNK Aurelia, which had the largest number of posts, has the greatest share, but it also has the most followers on its Facebook page.

**Chart 2:** Graphical representation of the share in the number of viewers in the total number of potential viewers



**Source:** Author's research

In the theoretical part of the paper, the importance of responsible and efficient financial management was mentioned, regardless of whether non-profit organizations are in question or not. It is precisely in a non-profit organization that own sources of revenue are extremely important. This is why an analysis of part of sold tickets on the revenue side of the budget was carried out in order to try and find a connection with activities on Facebook.

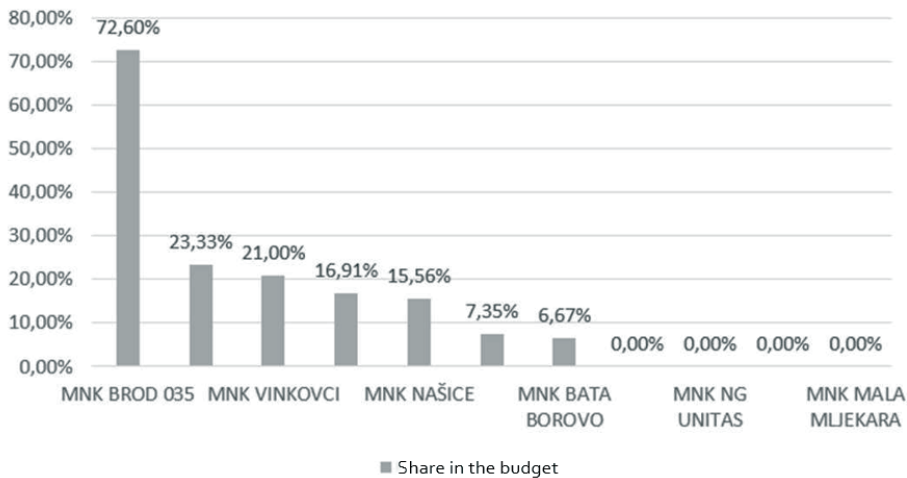
**Table 4:** Representation of the size of the budget and share of revenue in the budget generated by ticket sales

Team	Budget	Revenue generated by ticket sales	Share in budget
MNK OSIJEK KELME	380,000.00 HRK	27,940.00 HRK	7.35%
MNK AURELIA	97,000.00 HRK	16,400.00 HRK	16.91%
MNK BROD 035	70,000.00 HRK	50,820.00 HRK	72.60%
MNK OSIJEK 031	70,000.00 HRK	0.00 HRK	0.00%
MNK BROD	60,000.00 HRK	14,000.00 HRK	23.33%
MNK NG UNITAS	50,000.00 HRK	0.00 HRK	0.00%
MNK NAŠICE	45,000.00 HRK	7,000.00 HRK	15.56%
MNK BATA BOROVO	45,000.00 HRK	3,000.00 HRK	6.67%
MNK MOBY DICK	40,000.00 HRK	0.00 HRK	0.00%
MNK MALA MLJEKARA	40,000.00 HRK	0.00 HRK	0.00%
MNK VINKOVCI	30,000.00 HRK	6,300.00 HRK	21.00%

**Source:** Author's research

Graphical representation of the share in revenue generated by ticket sales in the budget of a sports organization shows indicative data. The teams that had the greatest number of posts on Facebook have the largest share of revenue generated by ticket sales in their budget. Foremost, these are the clubs MNK Brod 035 and MNK Brod as well as MNK Vinkovci and MNK Aurelia. On the other hand, clubs that quit the competition after the season 2017/2018 are in the back, i.e., clubs MNK Mobi Dick, MNK NG Unitas and MNK Osijek 031. Along with MNK Mala mljekara, these are the 4 clubs that generated no revenue from season, member or regular tickets.

**Chart 3:** Graphical representation of the revenue share in the budget generated by ticket sales



**Source:** Author's research

By referring to *Table 5: Representation of the relationship between the ranking at the end of the season 2017/2018 and activity on Facebook* it can be noticed that, as in previous cases, futsal clubs that are more active on Facebook have a higher ranking, i.e., the ones that had a lower level of application have a lower ranking. There are 3 futsal clubs that quit the competition in season 2018/2019 which are marked with an asterisk in the table and after an inspection into their basic Facebook activities, it can be noticed that they were extremely low in intensity.

**Table 5:** Representation of the relationship between the ranking at the end of the season 2017/2018 and activity on Facebook

Team	Ranking	Number of followers on FB	Number of posts in the season	Level of competition
MNK VINKOVCI	1	2276	261	2nd HMNL
MNK BROD	2	2601	412	2nd HMNL
MNK AURELIA	3	5092	581	2nd HMNL
MNK NG UNITAS*	4	0	0	2nd HMNL
MNK BATA BOROVO	5	865	139	2nd HMNL
MNK NAŠICE	6	1228	78	2nd HMNL
MNK MOBY DICK*	7	639	30	2nd HMNL
MNK OSIJEK 031*	8	1599	13	2nd HMNL
MNK MALA MLJEKARA	9	620	14	2nd HMNL
MNK BROD 035	8	2462	343	1st HMNL
MNK OSIJEK KELME	9	3178	108	1st HMNL
*Quit the competition in season 2018/2019				

**Source:** Author's research

All research presented in the paper points to a correlation between activities on Facebook and sports, business and financial results of non-profit sports organizations.

## 4. CONCLUSION

Non-profit sports organizations in the area of eastern Croatia, but in the world in general as well, are definitely going through a very important phase of transformation in which they are starting to apply different digital tools in their business operations more and more. One of such digital tools is social networks or, in this case, Facebook. The fact going in favor of this is that it is becoming more difficult to find funds, i.e., change in the perception of non-profit sports organizations management which believed that it was sufficient to fund themselves solely through public sources of revenue and that it was not necessary to seek additional funds through other commercial sources of revenue. Many sports organizations are adhering to a wrong principle which dictates that they do not need to generate additional funds if they are non-profit and are forgetting the fact that the essence of a non-profit organization is not generating as



many funds as possible but using the raised funds for additional investments in the development of sports they deal with and not for profit.

Facebook is one of the more efficient ways of communication and one might say of advertising as well when considering its effect and financial resources deployed. Research in this paper showed that futsal clubs which actively use Facebook as a tool in their operations have better results in other areas. Starting with the sports ranking at the end of the season where it can be noticed that clubs which were the least active on Facebook did not compete in the upcoming season. Furthermore, the same link can be noticed with the share of people attending events when compared with the number of potential viewers, i.e. revenue generated by ticket sales and their share in the total budget.

From all the aforementioned it can be concluded that for sports organizations and perhaps most for recreational, non-profit and amateur competitions, activity on social networks can have positive effects on everyday operations, both in sports and business.

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## INFLUENTIAL ASPECTS OF POLITICAL COMMUNICATION WITH EMPHASIS ON LOCAL ELECTIONS 2017

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### **Abstract**

*Influential or persuasive aspects of communication necessarily relate to political communication that has its purpose primarily in this convincing dimension. The aim and purpose of politics as a discipline and communication is to convince the target audience of the quality of the political programs or policies that a particular party, group or individual brings to the political arena.*

*With the development of communication channels, we can also monitor the development and adaptation of political communication to all kinds of media politics and politicians use to communicate with their public. Today it is hard to determine which medium is suitable for the public so we can hardly speak about the segmenting of the media as the target channel through which we communicate targeted messages. The 'target audience' is almost at the palm of our hand, which makes political communication much easier.*

*What we can distinguish between communication aspects are messages that are shorter or longer, which are accompanied by attractive and receptive visuals and so-called hashtags that identify the target audience to which it is addressed. Although such communication is adapted to online media or social media, traditional media track events on these platforms and consequently adapt communication to so-called offline media.*

*Persuasiveness and influential aspects are reflected in the number of clicks, likes, and shares of a certain status, according to which traditional media determine who and what is interesting to follow. The influential aspects of political communication will be further explored through the analysis of content and case study of local elections in 2017. The aim is to show that political communication and persuasive aspects are not universal, but adapt to the participants of political communication and the target public.*

**Keywords:** *political communication, persuasion, public, media, social networks*

JEL Classification: D72, D83

## 1. INTRODUCTION

The process of persuading someone into something is as old as humanity; it is born with us and dies with us. The media are very skillful in convincing, but instead of declining over the many years of their existence, they are even getting better in convincing the public. Although the media offered us these new values that we were not aware before, they offered us a new way of life, new possibilities, but also a lot of information which might help us in determining what is true and what is not. As far as media persuasion is concerned, we almost never ask 'what if' - on the contrary, the truth we get from the media is accepted as the only real truth.

The fundamental aspect of persuasion discussed in the paper is the persuasion power of politicians who influence the perception of the world around us as equally as the media. Aristotle claimed that we are 'homo politicus', so we probably instinctively fall under the influence of politicians' persuasion magic, even though political communication and their messages are deeply questioned. They are skilled in what they do, know how to gain public attention, and for their persuasion purposes, they also use the same media we consume. The me-

dia carefully select messages transmitted to the public, so some politicians are more convincing than others. But when it comes to politics, we ask 'what if'...

Traditional media, social networks, and today's information dissemination speed have changed the way information intended for the influential aspects communicate their message to us instead of just transmitting the naked information. Journalists used to check their sources, their integrity was important, but now the speed is crucial. The quality of information is put aside. Quality of the information or the message is measured by the influence it may have on the reader - the recipient of the information and in which direction that information can move further.

## 2. COMMUNICATION ON NEW MEDIA

The media have always had a tremendous impact on people who consume them, and equally affect the world of human cognition. The value of information or media content affects the number of consumers who consume media industry content (Bestvina Bukvić et.al., 2016). Producing and distributing media content is getting faster every day, and messages that are created and sent via media are aimed at affecting people. It is therefore important to know and understand each media platform that we use with the intent of communicating with our community.

New media are now a part of popular culture, and if we look at popular culture through semiotics, a new and different view of the contemporary world is required. As the new media developed, they adapted and fitted into everyday practice until the generations of users became addicted to them. Below all these media are the cultural constructs of speech and language, common values, ideas, beliefs and practices (Gaines, 2010: 12, according to Danesi, 2010)

### 2.1. NEW MEDIA AS A NEW COMMUNICATION PLATFORM

The success of a computer as a universal information - processor device lies in the very fact that the universal language is present in this medium, within which the various types of information can be encoded and that language can mechanize it. It is precisely the computer that is characterized by a well-known Leibniz dream of a universal language that would be the lingua characteristics which would allow a 'perfect' description of knowledge that represents the 'real

signs' of concepts and things, and the calculus ratiocinator, enabling the conceptualization mechanism. If such language was in use, Leibniz claimed 'mistakes in understanding would be avoided, and infinite philosophical discussions would cease because all philosophers would say 'we are adding up' (Codognet, 2014).

The development of technology has influenced the creation of new media that have created a universal language. New media, digital media, the virtual world, satellites, and all other innovations like SMS, the Internet, blogs, and social networks have changed not only the way we communicate but also the things we value and which are becoming the most important to us in everyday life. In this way, mass media, by image and sound, entered our private lives from distant places, which influenced the sense of privacy, and our personal experiences with new technologies differ greatly because of the speed of acceptance of such an accelerated way of communicating.

The new media and new platforms the technology development brought out have influenced the speed and quality of everyday communication. Messages and sentences are becoming shorter. Sometimes the picture alone is enough to transfer the message in real time and as such to be accepted by the recipient. Virtual communities and online social networks are mostly groups of people using the Internet's default communication infrastructure (media environment) to communicate and participate in daily interactions with virtual friends (O'Neill, 2008: 24).

We are invited to participate in the online community to share content and data with similar 'strangers'. We have the ability to inhabit this digital world and play the inventive roles from the comfort of our own home, being always available, at any time and anywhere. We are a technology generation 'infected' by the blend of different media devices. Social networks, due to the rapid exchange of information and countless many members of the online community are becoming the fastest growing phenomenon (O'Neill, 2008: 24). The globalization and the spread of communication reached the highest homologation of social models of production, giving primacy to the semiotics. One type of market now dominates the whole planet, one type of production and system consumption that leads to homologation not only in human behavior but in imaginative life (Petrill, 2005: 549).

### 2.1.1. Visual symbols of contemporary communication

Emoticons, due to the way they developed, became a real social phenomenon, an indispensable part of modern communication, and in line with the advancement of technology, there are also their 'advanced' versions. Scripturally, it is difficult to convey emotions, intentions or tones, so Internet users have come up with emoticons (a blend of 'emotions' and 'icons'), or keyboard character sets that represent facial expressions.

In order to simulate voice communication, virtual communication users turn to a group of non-voice characters called emoticons, as well as acronyms and abbreviations. Emoticons simulate speech - they actually simulate facial expressions and physical communication that accompanies speech - which would make speech communication (Randall, 2002). This symbol gives us a clearer understanding of the mood of the interlocutor in any form of virtual communication, and there are three forms of emoticons used in virtual communication (Amaghlobeli, 2012):

1. Typographic emoticon - :-) or: - (- consists of punctuation marks or some other typographic symbols that can be found on the keyboard;

2. A graphic emoticon ☺ or ☹ - often animated, is a sketch of some of the computer extensions (JPG, GIF), and some of them automatically form the typographical emoticon in the graphic;

3. Verbal emoticon ( Happy Smiley ) is a graphic or typographical emoticon that is becoming more productive, in parallel with a non-verbal smile.

If we look at the emoticons in the context of the six basic emotions that psychologist Paul Ekman came to during his researches, these emoticons really look like a human face. Below are examples of emoticons and their meanings for four facial expressions for which there are written rules in the form of typographic emoticons.

- :-) or :) smile, happiness or joke (eyes and smiling mouth)
- :-( or :( frowning face or sadness (eyes, nose, and frowned mouth)
- X-( anger (squinty eyes, nose, and frowned mouth)
- :-O surprise (eyes and mouth open)

In computer terms, they are a series of characters, such as a colon, a parenthesis or a dash, or a thumbnail, and both versions should represent the face of the subject and convey the mood and emotions of the person who typed it. In other words, emoticons are considered to be the form of a paralanguage that was born in emails, online ads and chat rooms, which popularized a long ago created smiley.

Emoticons are often used on online or virtual platforms as an addition to the written text. The most common is a smiley :-) with the meaning 'I'm laughing to a joke'; winking ;-)) with the meaning 'I'm winking and grinning to a joke'; :-( sad smiley with the meaning 'I'm sad'; :-P with the meanings of 'poking my tongue out of my mouth'; :D or :-D a big smile with the meaning of 'I'm thrilled'; and :-O 'I'm open-mouthed, in surprise'. In the written message, the addition of an emoticon in the middle of the text or at the very end of it gives the person receiving the message a clear tone and a sense to the written message (Danesi, 2004: 73).

The fact that virtual platforms cannot express emotions today is absurd. Just as any text, such as a novel or poetry, expresses emotions, the addition of emoticons as facial expression is important for transmitting the message in online communication. No matter which online platform you choose, the fact is that different types of characters, different colors, and emoticons can be used to express our own emotions. Some emoticons are in the form of an image and do not consist of some symbols typed on the keyboard. Today, the amount of emoticons is countless and every sender of the message can complete the tone of what he wants to say (Berger, 2010).

### 3. DIGITAL MEDIA AND ONLINE COMMUNICATION

The appearance and development of social networks have made two-way communication between politicians and voters, as well as with their opponents, quicker and easier. Twitter, taking the primacy over the radio, has become the fastest medium millions of posts go through every day. The importance and speed of Twitter have been recognized by numerous companies, non-governmental sector, private users, political parties and politicians individually, and having an active profile means being available for direct communication 24 hours a day (Đaić et al., 2017: 125). The new generations born or growing up in



the digital and online world are called the 'Internet generation' or 'digital natives'. The 'new era' generations are driven to the information provided 'immediately' and 'right here'. They are who we call the 'Internet generation'.

Digital media are lighter, cheaper and require less space when storing data, they are harder to eradicate but also easier to delete or accurately copy. The analog medium requires a certain type of device when it is reproduced or created. On the other hand, digital media use a universal machine, a computer that does this all at once and is used for all digital forms.

Social networks, their potential, and constraints, in political terms, are a different communication platform that substantially changes the current ways of communication processes (Đaić et al., 2017: 128). Web 2.0 or new media facilitate direct communication, especially since the introduction of the mobile wireless standard, and the new standard - to be online the whole day. Easy access to information means that the users themselves put their materials on the Internet and thereby increase and create databases. In keeping with these simple but sometimes inadequate rules, the media are trying to come to their auditoriums every day. By placing information, they consciously or unconsciously impact public opinion, therefore, there is still a need to pay close attention and constant review and control.

#### 4. POLITICAL COMMUNICATION AND INFLUENCING SOCIAL NETWORKS

Politicians today use various blends of communication channels to achieve the purpose of political communication, which is persuasion – convincing people into something and influencing public attitudes. In the process of persuasion, public relations are increasingly involved between politicians and the media. In modern societies, the media are the bearers of political communication that goes beyond direct face-to-face communication. Their role in making politics visible is indisputable, providing information to the public by opening a discussion place.

We can talk about political communication in the sense of what is interesting for everyone involved in communication analysis - verbal and non-verbal speech, or the study of the messages that have been made and whether they are in accordance with what our body is saying. Are there any hidden messages?

Dynamics of communication manages the power of the media to select messages and shape their presentation and to use the strategic use of political and social power to influence topics of discussion as well as to start and frame public themes (Habermas, 2013: 149).

Particularly interesting are the politicians whose public appearances are constantly being analyzed, as well as influential aspects of political communication. Social networks have, too, become the relevant source of information in journalism circles, or at least a source of good topic ideas. Twitter has thus become one of the most relevant sources of information because research has shown that Twitter, more frequently than the planetary popular Facebook network, is used to expedite seriously and verified information. Although new techniques and technologies are unavoidable communication channels, the power of television is not decreasing. This most powerful mass media allows us to conduct communication analysis of public performances of famous people.

The appearance of the Internet as a tool of political communication raises numerous researches and discussions of its potential in the electoral campaign, especially considering that online users are exactly the voter's candidates want to attract. The low levels of political communication we are witnessing on a daily basis, as well as continuous manipulation, and the infamous and often badly communicated messages, resulting in distrust of citizens towards political parties and politicians. On the other hand, there is an 'army' of young people who show abstinence, and which are an important pillar of the development of a democratic society. By being interactive, the Internet is different from all other media. On the Internet, man is not only a passive observer, as in most other advertising techniques, but he is also an active tracer, a 'surfer' for information, a participant in social networks. On the Internet, an individual can post information, open pages, participate in discussions, not only exist as a consumer of information - but he is also the creator of information (Haramija, 2014: 448).

#### **4.1. INFLUENTIAL ASPECTS OF POLITICAL COMMUNICATION**

The online community is getting louder, and today it raises the question of the role of the media in reporting on politics and how far the impact of political communication to the work of the media goes. Persuasive communication is most often defined as a form of communication that tries to influence others, i.e. their beliefs, attitudes, and/or behavior, using cognitive and effective arguments

and appeals. This influence is attempted to be achieved through symbolic structures and using selected methods and techniques considered to be the most optimal for achieving predetermined goals of communication (Hrnjić, 2008: 11). The main goal and purpose of both the media and politics are to convince its public in the messages being transmitted. Techniques of persuasion are equally well-used by Hollywood producers whose miraculous techniques and special effects convince us into the genuineness of what we see. Similar techniques are used by television when transmitting news. The most sophisticated persuasive techniques are used by political public relations. The public is more likely to accept them because they are different from advertising itself, and messages that the public through the media gains from public relations are easier to fall into the fertile ground. Public relations use various persuasion techniques to convince us that their product is the best. They do it either by 'selling' positive images of corporations and different public figures every day or assuring us that certain politicians share our attitudes about a better future and how they are the people we should give our voice to.

In order for the public relations to convey their message, they need the media, and the media are more present than ever. The persuasive messages will be seen on the Internet, on leaflets, billboards, and on traditional mass media as well. The language of persuasion is easy to learn, and long ago Aristotle had taught people of it through speaking and writing. If we learn to read the media, we will recognize when someone tries to convince us in something but the question is whether persuasion is here to convince us or just to help us decide whether we are right?

## 5. RESEARCH

For the purposes of this paper, after a thorough theoretical presentation, the visual communication aspects created by the Internet and the social media will be analyzed. In the research part of the paper, promotional material from the 2017 local election campaign, which was communicated as a channel through the web pages and social media, will be analyzed. The aim is to show that well-designed visual tools can influence attracting the attention of the target audience. The colors of the visuals will also be analyzed, as well as the messages of the ads, and the timing of their release.

Furthermore, social media communication, primarily the Facebook channel, will be analyzed in the research part, which in the campaign of a candidate for the county prefect of Osijek - Baranja County proved to be the most appropriate communication channel for message transmission and presentation of policy to target public. Given the specificity of the local environment and the media ownership structure, the paper will look at the minimal media coverage on traditional media channels, of one of the candidates for the county prefect of Osijek - Baranja County. In the so-called media blockade, the analyzed candidate succeeded in finding a communication channel and presented himself to the citizens of Osijek - Baranja County, which will be equally represented through the research part of the paper. For the research part of the paper, open source, high-quality sources published on the Internet and social media will be used.

#### **5.1. ANALYSIS OF POLITICAL COMMUNICATION OF CAMPAIGN ACTORS FOR LOCAL SOCIAL MEDIA CHOICES**

In February 2017, during the campaign, on Ivan Anušić's official Facebook page a profile photo was changed. In the primary focus were Ivan Anušić and a few young people who were happy and smiling, talking to him and holding his hand. The photo got 366 'likes' and was shared four times (Picture 1)

During the same month, an interview accompanied with a short text entitled 'My County Prefect Ivan Anušić' was shared from the web page 'kamenjar.com', the primary focus is on a concrete topic, i.e. the campaign program to be realized. The photography of Ivan Anušić was also shared, with the description which cited his determination, loyalty, and commitment to the citizens. The most common hashtags used in the post were: #mojzupan (#mycountyprefect), #ivananusic and #hdz (Picture 2).

By the end of February, two releases were successfully received by the followers. Six photos from the first post, where the focus was on casually dressed Ivan Anušić who was on a meadow in Antunovac with his dog Rex, were shared. The additional description under the picture referred to Ivan Anušić as a family man and a person who successfully balances the business and family responsibilities. The post was liked 299 times. In the second post, the album '70<sup>th</sup> anniversary – Osijek Football Club' was shared. The event took place at the Croatian National Theatre in Osijek. The album contained 22 photos, including Ivan

Anušić, theatre audience and, of course, the footballers of Osijek Football Club. In these photos, Ivan Anušić was dressed formally, wearing a suit, and around the neck, he had a special detail for that occasion, an FC Osijek scarf. In that post, hashtags like #pokrenimograd (#restartthecity) and #nkosijek were used. With this announcement, Ivan Anušić explained that the city's football institution was a symbol of the city of Osijek and congratulated the club's 70<sup>th</sup> birthday (Picture 3 and Picture 4).

Blue colors and the HDZ logo prevailed. There were links to his official social sites (Facebook, Twitter, Instagram). In April, the young population was particularly visible in the photos, and young followers were invited to volunteer. The common hashtags on this announcement were #volonTiraj ("volunteer") #ivananusic #mojzupan (#mycountyprefect) #obz (an acronym for Osijek-Baranja County), while the photo itself presented a young team standing by Ivan Anušić's side. On the official Facebook page, the album '21 Archbishopric meeting of workers in political life' was also added, the location of the meeting is in the city of Đakovo. In one photo, Ivan Anušić shakes hands with Msgr Đuro Hranić, while on the other 20, the atmosphere of the Catholic Theological Faculty in Đakovo is presented. In the same month, another interview was shared, this time published in the daily newspaper 'Glas Slavonije', which is being released in Osijek, the words of Ivan Anušić being outlined in the interview. On the occasion of Easter, Ivan Anušić has been tagged on the pictures of the Facebook page of the humanitarian association 'Rijeka Ljubavi', where he was seen giving away 700 Easter packages for children from socially vulnerable families. Ivan Anušić was also tagged in the photo of the creative home for children 'Dokkica Association' from Osijek, which performs various educational activities for the youngest citizens in Osijek. In the photo, Ivan Anušić holds a hand-made colorful box in his hand and the paper with the phrase 'Laughter is a cure' (Picture 5 and Picture 6).

In the middle of the month, an album containing six photos was published, photographs featuring HDZ candidates for municipal mayors, mayors and county prefects of Osijek-Baranja County. The dominant colors on the photograph are the colors of the Croatian flag and extremely blue color. The album is liked 212 times and shared 10 times. Followers on Facebook particularly liked the post in which 49 photos were added, in the album 'Easter in our kindergartens'. In the photos, Ivan Anušić is hanging out with the youngest population in kindergartens in Ivanovac and Antunovac. The municipality donated packages

full of Osijek candy factory products (Picture 7 and Picture 8). Four new photos were added to the album 'Presentation of Elected Program for Development of the Osijek-Baranja County' 2017 - 2021, the Croatian Democratic Union. The post presented a more detailed program that is to be realized, the problems to be solved and the motto 'together to the win for a new beginning!'. In the photograph, Ivan Anušić is in the front, by the microphone, holding a speech, while in the background the blue color and HDZ logo prevail. Also, Ivan Anušić's business cards were photographed in one of the posts (Picture 9).

In one of Facebook statuses, links were provided in which the electoral program and 343 projects that were planned to be realized were presented to the followers. The published post talked about Ivan Anušić's possibility of becoming a county prefect of Osijek – Baranja County, which would then lead eastern Slavonia to a brighter future. In this status, the hashtags #343SpremnaProjekta (#33ProjectsReadyToGo) and #DoPobjede (#UntilTheWin) were used. Also, in one of the posts, Ivan Anušić thanked all those who supported his candidacy with their signature, accompanied by a photo of two young girls dressed in HDZ shirts. The post got 403 likes and was shared 15 times (Picture 10).

Three photos were also taken on the International Day of Nurses in KBC Osijek (Clinical Hospital Centre Osijek), and a link was shared from Ivan Anušić's official website (Picture 11). On Mother's Day, a photo of Ivan Anušić and his mother Kata was shared (Picture 12). Ivan Anušić also visited the Retirement Home. The post contained a single photo where Ivan Anušić is with an old lady and hashtags #BoljaBuducnost (#BetterFuture) #MojZupan (#MyCountyPrefect) #ZaNoviPocetak (#ForTheNewBeginning) #IvanAnušić (Picture 13).

The campaign included famous people who participated in it, so the popular singer Tony Cetinski could be seen on the pictures, as well as the former handball coach and state team player Slavko Goluža. Due to their overall popularity and a big number of Facebook followers, the visibility of the campaign was greatly impacted (Picture 14 and Picture 15). In the end, Ivan Anušić, in one of the Facebook statuses, thanked everyone who voted and participated in creating new ideas for the future and invited all the followers to come to the elections. Here was used a hashtag #ZaNoviPocetak (#ForTheNewBeginning) as well (Picture 16).

## 5.2. THE ANALYSIS OF POLITICAL COMMUNICATION OF THE PARTICIPANTS IN THE LOCAL ELECTIONS CAMPAIGN VIA PROMOTIONAL MATERIALS

The posters and the visuals are characterized with simplicity and clarity, the font is standard and readable, and the blue color, the sign color of the Croatian Democratic Union, prevails. Blue is often associated with depth and stability. It symbolizes trust, loyalty, wisdom, self-confidence, faith, and truth. The main motto 'For the new beginning' was used most of the time, as well as visuals featuring important days such as 'Women's Day'. Visuals were used as a 'thank you' note for voting, as well.

The visual that is directed at the 'VolonTiraj' project is particularly creative since it referred to a young population, prevailing in blue and white, but 'TI' (YOU) in the word 'volontiraj' (volunteer – wordplay) is highlighted in red. The shirts made for the campaign had a phrase 'Za novi početak' (For the new beginning) and a hashtag #mojzupan (#mycountyprefect) and social network logos (Facebook, Twitter, Instagram), and on the back 'Ivan Anušić' and the official website link was printed. The same is communicated on the other promotional materials - lighters, pens, etc.

In promotional posters, the team of Ivan Anušić went for a simple and minimalist style. The posters contain blue background with white letters, the face of the candidate on the poster, in order to make it easier for the public to connect, and the message 'For the new beginning' and 'For county prefect' – two messages that have marked his campaign for the local elections. As previously stated, the team of Ivan Anušić has made good use of social networks, so the promotional materials, along with the traditional media, were submitted via the portal and as social media ads. The added value of the posters is QR code, or augmented reality, which is linked to the slogan 'Jedna Hrvatska' (One Croatia). Throughout this communication tool, all candidates of the Croatian Democratic Union were connected on the national level (Picture 17). As the campaign developed, the team of the Croatian Democratic Union decided to show the deputies of the prefect to the public. This banner also radiates with simplicity and all the elements listed above, and it contains a message to circle number 1 for the county prefect of Osijek - Baranja County. This communication channel may be the most explicit (Picture 18). It was followed by a leaflet containing a summary of the political program of Ivan Anušić, summarized to the most essential points. The leaflet was distributed to home addresses, equally



distributed through the web site [ivananusic.hr](http://ivananusic.hr) and through social media. This is the only promotional material that does not contain the above-mentioned communication messages but still exudes minimalism with a dominant blue color (Picture 19). The 'VolonT'Iraj' part of the campaign is probably the most interesting and dynamic. Ivan Anušić evidently addressed the younger population, which was largely neglected, but he invited them to join and contribute to 'the new beginning'.

The echo of this part of the campaign was positive, and the promotional materials themselves differ from the previous ones in many details. The human faces and playful colors are dominant, the slogan itself is of different color and its tones are more vibrant than the usual blue colors recognizable for the Croatian Democratic Union. Posters from the 'VolonT'Iraj' group do not contain any communication messages from the primary promotional material. Same as the previous ones, these materials were distributed through the web page of [ivananusic.hr](http://ivananusic.hr) and the social media (Picture 20).

## 6. DISCUSSION

In the previous chapter, we discussed the influential aspects of political communication, in which we also discussed the local elections in 2017, wherein the research part we analyzed the campaign for the county prefect candidate of Croatian Democratic Union, Ivan Anušić. This candidate was selected because of the diversity of campaign access. Although at the very beginning of the campaign Anušić was not a favorite, and polls showed that local elections were to be won by Vladimir Šišljagić, by intensifying the campaign itself, as well as political rhetoric, circumstances changed in favor of Ivan Anušić, who ultimately won the local elections. The traditional media were turned to the current county prefect at that moment, and he got more media attention. Other candidates had to use alternative communication tools, i.e. social media, through which they sought to reach the target audience. Today it is difficult to say with certainty whether this is an alternative communication channel, although it is certainly not a mainstream media. This option was best used by Ivan Anušić, as he used Facebook social network maximally to disperse his own messages to the different target audience. Visuals were designed to show simplicity, but contained remarkable messages #mojzupan (#mycountyprefect) and #zanovipocetak (#forthenewbeginning) which confirmed our first hypothesis H1: Due



to the adequate implementation of convincing factors in public communication, local elections candidate influenced the public's attitude. Likewise, in addition to the established and entrenched political communication with already pre-prepared phrases, the language Ivan Anušić used on social media stood out from the other candidates' language. He was acceptable to the traditional voter body, but Anušić made a move in political communication and spoke directly to the young people he communicated within a more informal way. The best example of this is the campaign 'VolonT'Iraj'.

## 7. CONCLUSION

Today it is hard to determine which medium is suitable for by the public so we can hardly speak about the segmenting of the media as the target channel through which we communicate targeted messages. Persuasiveness or influential aspects also manifest through the number of clicks, likes, and shares of certain posts, according to which traditional media determine who and what is interesting to follow. Even though we are 'homo politicus', our society is deeply politicized and we instinctively fall under the influence of convincing politicians, regardless of the fact that their political communication and their messages are deeply questioned. They are skilled at what they do, they know how to gain public attention, and for their persuasive purposes, they are increasingly using social media which we originally used to communicate with, perhaps, a long-lost friend. Today, politicians and parties are friends on social networks, and communication with them has never been simpler and more immediate. While traditional media still choose politicians and messages to be transmitted to the public, and because of these messages some politicians are more convincing than others, the situation on social networks is significantly different because there is not a time limit or timing in this type of communication, nor a gatekeeper. Today we are all online, so this way of communication has become customary. Numerous people interact via SMS, blogs, or make friends on social networks - which requires a new way of evaluating forms of communication. Communication is often ambiguous today, precisely because of the different media and communication platforms we are surrounded with. The media have always had a tremendous impact on people who consume them, and equally affect the world of human cognition. Producing and distributing media content is getting faster and faster every day, and messages that are created and sent

via media are aimed at affecting people. It is therefore important to know and understand each media platform that we use with the intent of communicating with our community.

New media, digital media, the virtual world, satellites, and all other innovations like SMS, the Internet, blogs, and social networks have changed not only the way we communicate but also the things we value and which are becoming the most important to us in everyday life. In this way, mass media, by image and sound, entered our private lives from distant places, which influenced the sense of privacy, and our personal experiences with new technologies differ greatly because of the speed of acceptance of such an accelerated way of communicating. For high-quality, persuasive political communication, it is important to listen to public opinion, which can be much simpler through social media than through channels traditional media provide. In this way, it is easier to correct the bad communication steps and, due to the shortness of the campaign itself, adjust the message to the polling body that is being targeted. Social networks have become the relevant source of information in journalistic circles or at least a source of good ideas for their topics. Twitter has thus become one of the most relevant sources of information, as research has shown that Twitter is being used more often than the planetary popular Facebook network, to make the serious and verified information spread faster. Persuasion is the primary purpose of politics and politicians, and the appearance of the Internet as a tool of political communication raises numerous researches and discussions of its potential in the electoral campaign. More so, the practice shows that online users are precisely the voters that candidates want to attract. It is important how we present something, so politicians need to be able to know the interests of the audience.

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## 9. ADDITIONAL MATERIALS - PICTURES



Picture 1



Picture 2



Picture 3



Picture 4



Picture 5



Picture 6





Picture 7



Picture 8



Picture 9



Picture 10



Picture 11



Picture 12



Picture 13



Picture 14



Picture 15



Picture 16



Picture 17



Picture 18



Drage Baranjke i Baranjci,

**HDZ**  
Hrvatska

predstavljam Vam osnovne smjernice svog programa za ravnomjeran razvoj cijele Osječko-baranjske županije u razdoblju od 2017. do 2021. godine. Baranja zbog svoje prirodne i kulturne posebnosti obiluje potencijalima koji nažalost do sada nisu bili dovoljno iskorišteni. Stvorit ćemo preduvjete za kvalitetniji život na području Baranje kako bismo spriječili iseljavanje mladih te projektima razvijali gospodarske, poljoprivredne, turističke i brojne druge potencijale.

**Programi i projekti**

- Osnažit ćemo gospodarske potencijale kroz projekte namijenjene poduzetnicima
- Razvijat ćemo poduzetničke zone i inkubatore
- Građevinske dozvole izdavat ćemo u roku od 15 dana
- Osigurat ćemo besplatnu prehranu svim učenicima osnovnih škola
- Prehrana za osnovnoškolsku djecu nabavljat će se od slavonskih i baranjskih proizvođača
- Povećat ćemo broj timova Hitne medicinske pomoći
- Pokrit ćemo područje Baranje HotSpot točkama
- Iskoristit ćemo sve turističke resurse s područja Baranje i osnažiti turističku ponudu
- Revitalizirat ćemo kulturnu i prirodnu baštinu
- Pojačat ćemo prometnu povezanost i obnoviti ceste u našoj nadležnosti
- Uredit ćemo prirodne vodotokove i revitalizirati zapuštene vodne površine

U partnerskom odnosu s Vama, kao i s Vladom RH, aktivno ćemo raditi na razvoju Osječko-baranjske županije kroz Projekt Slavonija Baranja i Zapadni Srijem. Predanim radom, vođeni znanjem, iskustvom i vizijom stvorit ćemo preduvjete za kvalitetniji život Slavonaca i Baranjaca i tako spriječiti iseljavanje mladih iz naše županije.

[www.facebook.com/ivan.anusic12](https://www.facebook.com/ivan.anusic12) • [www.instagram.com/ivananusic1310](https://www.instagram.com/ivananusic1310) • [twitter.com/ivananusic1310](https://twitter.com/ivananusic1310)  
**www.ivananusic.hr**

Picture 19.

**HDZ**  
Vjerodostojno.

**IVAN ANUŠIĆ**

**VolonTiraj**

#mojzupan

[f](https://www.facebook.com/ivananusic12) [i](https://www.instagram.com/ivananusic1310) [t](https://twitter.com/ivananusic1310)

volontiraj@ivananusic.hr  
www.ivananusic.hr

Picture 20.



# BEHAVIORAL ECONOMICS AND MAKING OF BUSINESS DECISIONS

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## **Abstract**

*The development of behavioral economics and its growing implementation had a considerable impact on the process of making business decisions. Modern management and decision-making have not been connected exclusively with mathematical models anymore for a long time. An increasing number of researches that refer to observing the business decision-making process clearly indicates that it is not influenced only and exclusively by rational considerations, but also by psychological processes, the emotional, as well as the spiritual state of the decision-maker. Man is both, a rational, and an emotional being, therefore, his decisions will not be the consequence of rational choices alone, but they will also often be directed on satisfying the need originating from the psychological world of the decision-maker. Human beings are often not aware of the external and internal factors influencing their choices, they are rationally and emotionally limited. The rational limitation is reflected in the fact that it is not possible to have absolutely all the information that led us to the best possible decision, while the emotional limitation is reflected in the fact that man often does not recognize his internal state and emotions and runs away from them even more often. It is exactly the internal and external factors that affect our thoughts, actions, and feelings and make the process of making business decisions difficult and complex.*

**Keywords:** behavioral economics, decision-making, rationality

JEL Classification: D23, M29

# 1. QUALITY OF INFORMATION AND BUSINESS DECISION-MAKING AS A PREREQUISITE FOR BUSINESS MANAGEMENT

The century in which we live and work has been marked by numerous changes emanating from incessant innovations. They are principally related to the unremitting development of technology within which information technology is rapidly developing. It is precisely the latter that brought about major changes in both decision-making and management. The world today is a global village where information is exchanged at a speed that is almost impossible to perceive and interpret. Its quantity develops into an impediment to quality decision-making, because it is becoming increasingly difficult to distinguish between information relevant to the decision-making process and information which does not have any effect on this process whatsoever. Information is at the heart of every business decision-making. In order for a piece of information to be considered useful in the decision-making process, it should be timely and accurate. Similarly, it should have other features that ensure its quality, such as actuality, precision, and comparability. A piece of information containing the qualitative features lies in the core of business decision-making.

Decision-making is the foundation of business management; there is no management without making decisions. Furthermore, without good-quality and timely information, there is no business decision-making and subsequently – no business management. Hence, we can conclude that information is the most important resource on which business decision-making and management are based. (Švigir, 2018, 21).

Today, management has become demanding for at least two reasons. The first relates to the market volatility that constantly compels every decision-maker to try to leave their own framework of deliberation and action, while the other relates to the psychological and social aspect of the generations to come, which has been and still is significantly influenced by the development of information technology.

Business management is closely related to business decision-making and is predominantly associated with the highest levels of management. Decisions that are made at the highest management levels, apart from quality information, include the prior experience of the decision-makers which makes the decision-making process complex and unpredictable.

Different definitions of decision-making, in relation to management, can be arranged into two basic groups: one refers to authors who equate the terms of governance and decision-making, while the other refers to authors who are in minority and who believe that it is erroneous to equate the terms of governance and decision-making. And even though decision-making can be observed as a broader category since it involves making non-managerial decisions as well, all decisions are still deduced from managerial decisions (Sikavica et al, 2014, 4)

Business decision-making is a prerequisite for business management, while quality information is the starting point for successful business decision-making. Therefore, it can be concluded that the quality of business management will depend on the quality of information.

## 2. FACTORS INFLUENCING THE DECISION-MAKING PROCESS

Business decision-making is influenced by numerous factors which can primarily be divided into external and internal. External factors are those upon which most enterprises do not have influence and to which they must adapt. These refer to the external environment consisting of: (Bahtijarević Šiber et al., 2008, 454-457)

- ♦ the economic and social environment that also includes the business environment (economic system, technology, competition, buyers and suppliers, trade unions and other interest groups, infrastructure, natural resources, etc.)
- ♦ the political environment (political system, political stability, political risk, etc.)
- ♦ the legislative environment (laws, trade incentives/restrictions, etc.)
- ♦ the social and cultural environment (values, customs, demographic factors, etc.).

All the factors mentioned above influence the process of making decisions, and in particular, decisions aimed at enterprises' long-term development and investment cycle, i.e. decisions that are strategy-oriented and made at highest management levels. The external environment is most often highly volatile, insecure and risky, which additionally complicates the decision-making process. Although, when making business decisions, managers often rely on quantitative

information, believing that their sheer volume will make their decision-making more reliable, still, most of the important decisions of a company are made as result of intuition and assessment. Research conducted in 2018 on a sample of 308 large companies doing business in the Republic of Croatia showed that managers, when making business decisions, mostly use reports containing quantitative financial information and that they use them primarily when setting up both short-term and long-term goals. (Švigir, 2018, 282-285). This research shows that, in the decision-making process, managers primarily rely on rationality, ignoring the psychological aspect of the decision-making process.

Internal factors influencing the decision-making process comprise the business processes and the human resources of an enterprise. Business processes additionally include information technology that significantly supports their creation and monitoring. Human resources are predominantly oriented towards people's competence to make business decisions, as well as their knowledge and skills. Although decision-making is a cognitive process that relies on reason and rationality, it is, however, impossible to ignore the psychological processes that unfold each time business decisions are made. Contemporary research has shown how much attention is paid today to the emotional and experiential dimension triggered by the decision-making process, which significantly influences the outcome of the decisions that are being made.

For a long time, all research ignored the experiential and associative way of information processing and decision-making, by approving only analytical procedures. However, faced with today's business environment of rapid changes and increased uncertainty, decision-makers started looking for new tools, and only relatively recently, theoretically and empirically started developing awareness of the functionality of emotional-experiential images in the decision-making process. Recent research has shown that "intuition" as a concept in decision-making is as equally valuable as the rational-analytical concept. Both are often described as two different, but equally valuable, sides of the same coin. (Bulog, 2014, 7)

Humans are complex beings with intertwined past, present, and future. Therefore, the decisions they make include their experiential dimension that initiates rational arguments, but also an entire spectrum of emotions, thus creating rational intuition as the basis for business decision-making.

Carl Gustav Jung distinguished four basic psychological functions, two rational ones (thinking and feeling) and two irrational ones (sensation and intu-

ition). Intuition and sensation represent a cradle in which thoughts and feelings develop as rational functions. Intuition does not denote something contrary to reason but rather marks something out of reason's context. It is a sophisticated form of judgment by experts who excellently apply years-long experience and specific experience. Intuition does not come easily, requires years of experience in solving problems and is based on a solid and complete understanding of business details. (Khatri & Alvin, 2000, 57-86)

In addition to reason and emotion, business decision-makers often supplement the decision-making process with a spiritual dimension by considering how their decisions affect other people, both inside and outside the company, and ultimately the entire social community.

### 3. DEVELOPMENT OF BEHAVIORAL ECONOMICS

Economic thought has always been striving towards provability through set hypotheses and their empirical validation or refutation. Its basic premise was rooted in the hypothesis of rational choices and stable preferences.

The theory of rational choice was set in economic mathematics in 1944, in the pioneering work of Neumann and Morgenstern "Theory of Games and Economic Behaviour". It has become an integral part of neoclassical economic theory as one of the variants of the theory of rational expectations regarding economic stability. Its implicit assumption is "homo economicus", the model of an individual who behaves rationally by acting on his/her own selfish interests, and the central interest is to maximize profits. (Katunarić, 1995, 35-52)

Economics differs from other sciences on the belief that human behavior can be explained by the assumption that subjects have stable and well-defined preferences, ultimately proven by rational choices consistent with market choices. (Kahneman et al., 1991, 193-206)

However, a human being is not just a rational being. Correspondingly, his/her preferences are not always stable and well-defined. Emotions often play a more dominant role in the process of making business decisions than rationality to which classical and neoclassical economic theory point. Likewise, apart from ratio and emotion, the decision-makers' social status also significantly influences their choices i.e. preferences.

Economics is based on the axiomatic definition of individual preferences. It is assumed that each individual is able to form stable preferences. Economics, therefore, does not deal with psychological preference-forming processes or with social factors influencing those processes. For economists, preferences are default variable and therefore they define rationality by using the logical-mathematical condition of transitivity: if we like to consume commodity A more than commodity B, commodity B more than commodity C, then we like to consume commodity A more than commodity C. (Šonje, 1995, 129)

The assumption of “homo economicus” entirely abstracts other dimensions of humankind except the one pertaining to rationality and stability. Although it is considered that economics as a science has always been solely and exclusively based on logical-mathematical models, this claim is not entirely correct. This is proven by numerous economists who have throughout history questioned the relationships within social politics and consequently the economic community pointing to the fact that decision-makers in decision-making do not neglect the ethical, moral and even the spiritual aspect of humans.

The emergence of economic science is associated with Adam Smith and his renowned work “The Wealth of Nations”. He taught natural theology, ethics, law and political economy in Glasgow. His lesser-known work published in 1759, “The Theory of Moral Sentiments”, promoted him into an acknowledged philosopher and moral theorist of that era. In that work, Smith speaks of humans as beings able to make moral judgments based on other bearings, and not just on selfishness. This seeming paradox is solved, as Smith argued, by the ability to feel compassion. It is exactly this ability to feel compassion that is the basis of altruism and morality. (Babić, 2002, 538-539)

Rationality models are directed towards observation of the wealth available to decision-makers, and the choice of the best option made by rational “homo economicus”. It was precisely the abstraction of other dimensions of humans that led to the development of behavioral economics which showed that individuals are not as rational as classical and neoclassical economists would like to portray them. Therefore, the focus of behavioral economics is the observation of irrational deviations from rationality as a prerequisite for making a choice that would best meet the needs of the decision-maker.

Behavioral economics is a discipline which examines behavioral irrationalities as “deviations” from or bias against a model of rational behavior i.e. it is a

psychological discipline that synthesizes empirical findings primarily from psychology and economics. It is a discipline that enhances the exploratory power of economy, combining it with more realistic psychological settings, by using social, cognitive and emotional factors in understanding the economic decisions of individuals and institutions. (Polšek & Bovan, 2014, 7)

Though it was deemed that behavioral economics had introduced an entirely new view of economic science, it is important to emphasize that classical and neoclassical economic thought has always shown interest in the psychological aspect of decision-makers and were aware of their influence on the decision-making process.

Most ideas promoted by behavioral economics are not new; on the contrary, they are actually rooted in neoclassical economic thought. Namely, at the time when economics became a scientific discipline, psychology as a scientific field was still unknown. Many economists were also psychologists of their time. An example of this is Adam Smith. Namely, he was the most influential economist of the 18th century. Adam Smith presented an idea which is well-known today, the one of the loss aversion” effect and said that “we suffer more when we fall *from a* better *to a* worse situation than we *ever* enjoy *when we rise from a* worse *to a* better situation”. It wasn’t only Adam Smith who pointed out the psychological aspects with which economic science abounds. Jeremy Bentham, a British philosopher and the founder of utilitarianism, whose utilitarian concept set the foundations of the neoclassical economy, wrote about the psychological underpinnings of utility. Some of his insights into the determinants of usefulness have only just begun to gain importance. Furthermore, Francis Edgeworth’s “Theory of Mathematical Psychics” takes into consideration “box” diagrams that show possible outcomes of negotiation between two persons and includes a simple model of social utilitarianism in which the utility of one person is conditioned by the reduction of the usefulness of another person. (Camerer & Loewenstein, 2002, 3-4)

Behavioral economics is not an entirely new discipline and it can be established that its ideas are deeply rooted in classical and neoclassical economic thought. Although classical and neoclassical economic theories were primarily focused on rationality, they did not completely ignore the totality of an individual and the manner in which s/he brings it into the business decision-making process. Behavioral economics went further in its observations of people’s be-



havior, particularly in the process of making business decisions, proving that people do not behave steadily and consistently while making their choices. And with that, it opened room for further explorations that helped comprehension of people's behavior and their choices in the process of making business decisions.

#### 4. BEHAVIORAL ECONOMICS AND BUSINESS DECISIONS

Business decision-making is considered linked to psychology. All decision-makers bring in their entire personality in the decision-making process, and that, apart from intellectual capacity, includes their psychological maturity as well as their spiritual legacy. It is difficult to fully understand business decision-making without understanding psychology, especially one approach to psychology called behaviorism.

Behaviorism observes human behavior and the rules underpinning behavior that were instigated by stimuli from the environment as well as the experience we gain from the earliest age. Yet, behaviorists disregard two important determinants which significantly influence human behavior. Those are psychological processes and free will. Behaviorists are not that much interested in psychological processes occurring in humans but are rather more focused on behaviors that can be observed and measured through scientific methods. Equally, they assume that free will is illusory, which implies the determination of human behavior.

Neglecting psychological processes and their influence on people's behavior, as exercised by the behavioral approach, faces criticism from both psychologists and economists. Such criticism is fully justified because the complexity of the decision-making process implies the existence of many relationships that we develop with ourselves and others since before we were born. It is therefore worth asking to what extent behavioral economics diverges from the neoclassical economy. If behavioral economics abstracts individual free will as well as the psychological processes that occur in the person with the idea that human behavior is determined, then, in proving its ideas it uses the concept of "ceteris paribus" just as neoclassical economic thought does. (Švigir, 2018, 51)

John B. Watson is considered to be the founder of behaviorism. He was an American psychologist who believed that psychology, in order to be considered science, needs to collect data which can be publicly disclosed and presented, just



as in any other science. He believed that behavior was public and consciousness private, and that science was to deal only with public facts. Watson and other followers of behaviorism argued that an individual's general behavior is the result of conditioning and that the environment shapes behavior by supporting specific habits. Thus, for example, giving chocolate to children (awards) to stop crying affirms the habit of crying. (Smith et al., 2007, 7).

The development of psychology as a science has led to the development of numerous psychotherapeutic directions which corroborated the fact that humans are complex beings that cannot be accessed unilaterally. Each psychotherapeutic school gave its unique contribution to finding the causes of human activity, but it was often equally unilateral in approaching the human, placing an emphasis on one segment of observation, and consequently losing sight of the totality of the individual both in being and acting. The behavioral approach was also not immune to such mistakes. If human behavior emerges only as a result of conditioning and the influence of the environment that affirms certain behaviors, then it is more than obvious that emotions are completely rejected as the possible cause of certain behavior and action. Rejection of emotions as a cause of one's behavior means completely rejecting an important part of an individual, which is often the decisive motive for their actions.

The behavioral psychotherapeutic approach also influenced the development of behavioral economics which was a response to neoclassical economists' claim that individuals are motivated in their decisions by rational choices and stable preferences. Although classical and neoclassical economists were aware of the psychological as well as the ethical and moral dimensions of individuals, still in their claims and evidence they were more aligned with the logical-mathematical proof of economic models. In addition to considering the rational segment, behavioral economics also took into consideration the irrational segment of human beings, the one that came about as a result of conditioning or suppression of the environment. Therefore, this irrationality to which behaviorism points out can reflect in the part of irrationality which came about as a result of someone else's irrationality, especially the one that has conditioned us throughout life by the supporting our behavior. This irrationality came from family, friends and the environment, that is, all those we have met or will encounter throughout life.

With the emergence of behaviorism, a new term "homo reciprocans" was introduced in economics, supplementing action and the understanding of the

action of “homo economicus.” In that sense, behaviorism that was accepted and observed in the context of behavioral economics has contributed significantly to the “understanding” of people’s behavior.

Even though individuals bring their whole personality in the decision-making process, their rationality as well as their emotional nature, there are still limitations to that involvement. These emanate from human imperfection. Therefore, we cannot speak of perfect rationality and perfect emotional state that might lead to a perfect decision, but we rather talk about limited rationality and changeability of emotions i.e. imperfect conditions in which we make business decisions. Limited rationality strives for the best possible and not for the perfect decision. It is a decision that is good enough and which results in decision-makers’ sense of satisfaction.

Nobel laureate Herbert Simon developed the theory of limited rationality in order to explain the fact that people irrationally seek satisfaction, and not maximization of utility, as it had been usually assumed by economics. Psychological traits, such as overinflated confidence, partiality, projections, and the effects of limited attention, have now become part of the standard theory. (Poles & Bevan, 2014, 41-45)

The emotional world of decision-makers is subjectively marked. Emotions are characterized by fickleness, so decision makers are frequently influenced by one set of emotions when business is going in the desired direction, while emotions are completely different when unpredictable or unwanted situations occur in the business. This fact invokes an emotional maturity of the decision makers reflected in their awareness of the emotional state in which they are; the acceptance of their emotions, their understanding of the causes of the emergence of those emotions and the delay of the moment of decision-making. All of this is related to the mature personality that needs to be a quality of decision makers.

Within the aspects of decision-making, the influence of perception and personality on decision-making is significant and important, although decision-makers do not have to be aware of this influence. Different individuals see the world in a different way. The way information obtained through sensory pathways is interpreted represents the perceptual process. Psychological research has identified a wide range of factors that affect the decision-making process of individuals by limiting rationality when processing information. Some of the most important factors are attention, memory, heuristics, predisposition and

the person's perception. On the other hand, personality is the basic and one of the most powerful psychological forces that affect the decision maker. (Bulog & Dadić, 2014, 103-108)

It is important to note that behavioral economics, apart from psychological, neglects the spiritual dimension of individuals, if the free will is illusory and that human behavior is determined. The latter assumption is inaccurate because otherwise, it would explain the behavior of people in moments when they perform great works. A person is a spiritual being who makes decisions that can at first glance seem entirely opposed to "common sense," and are often opposite to the emotional state that would result in making entirely opposite choices. Likewise, behavioral economics negates the free will of human beings as the ability to choose not according to utility but according to conscience.

Despite these criticisms, behavioral economics has made a breakthrough in understanding the process of making business decisions, proving that decisions in general and business decisions accordingly are not and cannot be motivated solely by rational elections alone.

## 5. THE ROLE OF LIMITED RATIONALITY IN THE PROCESS OF MAKING BUSINESS DECISIONS

Rational decision-making is the most common way of making business decisions, particularly at lower managerial levels. Those are operational, repetitive decisions based on operational information. Such information is a product of high-quality information systems. Although rational decisions primarily based on financial information are largely carried out at lower management levels, however, in the decision-making process higher-level management also often relies on financial information.

Most business decisions are based on rationality and on numbers or financial information. Equally, management at all levels believes that decisions made in such way are far better when compared to intuitive decisions. (Švigir, 2018, 302) Rational decisions are most often related to reason and logic, and since reason and logic are generally based on exact values, it is consequently believed that decisions made in a rational manner will be of better quality and their outcomes will be more successful.

Homo economicus possesses knowledge about the relevant aspects of its environment which, even if not entirely complete, are impressively pure and complete. There is a stable and well-ordered set of predispositions and options for absolute comparison of the available behavioral variants. From the point of view of decision-making theory, an “economic man” is always able to find and/or choose the version of decision (or behavior) that maximizes his/her personal preferences and his/her own interest, has full knowledge of the means that can maximize usefulness in the decision-making process. (Sikavica et al., 2014, 87)

This is the concept of complete (objective) rationality, which has the following shortcoming: the idea that a person is capacitated to choose one among the many variants presented to him/her that will result in maximum utility ignores the possibility that somewhere else there is another version that is actually the best and that would be in fact ideal for the decision-maker. Complete rationality turns humans into supernatural beings, attributing them with an ability to choose the ideal solution in the decision-making process. In reality, however, something completely different unfolds: the most satisfactory outcomes are selected, most often using heuristics, which enable reaching optimal solutions with the rational use of available resources, which not only include money but also the time needed to make a quality business decision. It’s a limited (confined) rationality. The idea of “limited rationality” and “satisfactory choice” was first considered by Herbert A. Simon, one of the fiercest critics of the concept of rationality.

“Standard economic models that discuss human behavior contain at least three unrealistic concepts that need to be modified:

- ♦ unlimited rationality,
- ♦ unlimited will (motivation),
- ♦ unlimited selfishness.

Herbert Simon criticized these concepts by comparing them to a free lunch. If human knowledge were unlimited and if we would have unlimited use of time, it would hardly be expected to make optimal choices. The concept of rationality would make us use “shortcuts” in order to make decisions. (Mullainathan & Thaler, 2000, 5-13)

All three concepts simultaneously idealize and humiliate human beings. First of all, unlimited rationality turns human beings into robots which decide solely and exclusively guided by rationality. Furthermore, human beings do not

have a perfect motivation. The latter is always confined to one's own vision of the life they want to live, and that does not have to be motivated by rationality and pursuit of wealth. Ultimately, unlimited selfishness deprives people of altruism and empathy toward other human beings. Consequently, in the context of business decision-making and management, acceptance of the behavioral concept, as well as the concept of limited rationality, is more acceptable and meaningful. (Švigir, 2018, 69)

The concept of limited rationality is a more realistic concept of complete rationality. It completely rejects the idea of a perfect decision and accepts the optimal decision as the one to strive for. The optimal decision is one made in imperfect external and internal circumstances. It is equally influenced by rationality, emotions, and the decision maker's value system. Since human beings in the process of making decisions bring in their entire personality, which is influenced by everything mentioned above and since humans are imperfect creatures, the process of their decision-making, as well as the decisions they make, will be also imperfect and influenced by constant changes.

Human behavior, even rational human behavior, is not constant and unchangeable. Likewise, it is not perfectly adapted to its surroundings. (Simon, 1979, 510)

Human thinking needs to be compared with scissors: one blade represents the environment and other people's cognitive abilities. According to this paradigm, it makes no sense to study human rationality in abstract tasks and to expect that they would reflect the efficiency of thinking. (Simon, 1990, 7)

Cognitive bias in decision-making or limited rationality as discussed by Herbert A. Simon take into account all the limitations of human beings, and principally their rational constraint which manifests in their cognitive inability to absorb all existing information that could affect the quality of business decisions. Aside from being rationally limited, a person is equally emotionally limited, which manifests in the volatility of emotions and their impact on the quality of business decisions.

Given that in the business decision-making process management still relies more on quantitative information and rational decision-making, it can be concluded that this fact leads to the possibility of neglecting the impact of their own rational constraints on the decision-making process. (Švigir, 2018, 306)

Ignoring the impacts of rational limitations on decision-makers in the process of making business decisions creates a feeling of unrealistic supremacy often taking a wrong course and producing unwanted consequences. It is therefore important to constantly warn management at all levels of the traps that occur during the process of making business decisions, not because there is a possibility for those traps to be fully anticipated and subsequently rejected, but rather to raise awareness about them and eventually transform them into an acceptable business risk

## 6. CONCLUSION

Making business decisions is a demanding process both from a cognitive and psychological point of view. The volatility of today's business, as well as the volume of information we have at our disposal, has made decision-making processes more difficult. Rational decision-making instituted on the very fundamentals of the classical and neoclassical economy, which presupposes perfect rationality of the decision-makers, has been replaced by more realistic models offered by behavioral economics. However, it also shows certain limitations that reflect in the abstraction of psychological processes during decision-making as well as the abstraction of the free will of the person deciding. The human individual is a complex being acting by exercising free will and at the same time a being who decides under the influence of psychological processes that are an integral part of the decision-making process. Behavioral economics has made a significant contribution to the observation of decision-making process and has paved the way for further research that will certainly go in the direction of eliminating the aforementioned shortcomings identified by both psychologists and economists. The more realistic models which introduced the term of limited rationality in the observation of the decision-making process as well the limitations related to psychological processes point to the fact that decisions are made by imperfect people in imperfect circumstances. These limitations prove that decision-making is not and will never be a perfect process in which there is no place for errors, but rather a process that embodying many imperfections and unpredictability.

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# RISK MANAGEMENT OF THE SOCIO-ECONOMIC SYSTEM AND INSURANCE AS A STABILITY INSTRUMENT

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## **Abstract**

*Social risks such as age, inability, disability, poor health, insufficient health care and other costs that can cripple the normal lives of citizens are the dangers that care should be taken to the entire society at the level of the state system.*

*Stability of the society is based on the satisfaction and security of each member and takes care of the dangers of social character across the various levels of satisfying the needs in terms of meeting the living conditions. Various security and protection processes are trying to achieve the normal living conditions for every citizen.*

*Economic security and the standard of citizens are largely dependent on compulsory social security, with a tendency to expand voluntariness and private equity, to protect the various dangers covered by a pension, health insurance, and unemployment insurance systems. Theoretically, analytically and empirically*



*in this paper, we prove the importance of the pension system for the economic stability of each member of the society.*

**Keywords:** management, social risks, economic stability, pension insurance

JEL Classification: G32, H55

## 1. INTRODUCTION

Stable living conditions of citizens are common concerns of the individual and the society as a whole. Stability and security of the individual in every respect should be the imperative goal. Security is an indispensable constituent element of every good society. As a public good, as a non-exclusive and irrational value, security has an important impact on social, economic, and political processes (Loader and Walker, 2007). Stability of the living standard of citizens is largely dependent on the insurance business, especially the pension insurance regardless of whether it is mandatory or voluntary. Pension policy is a part of the socio-economic policy of each country. Many authors point to the link between social welfare development and the development degree of the society in which the following main factors are mentioned (Prasad and Gerecke, 2010):

- Level of economic development,
- Demographic aging and other demographic changes,
- Development of democracy, political institutions, and burden of political inheritance,
- The universality of the globalization process.

The intergenerational solidarity pension system has been operating in all European countries for decades regardless of their political and economic organization and level of development (Vojinović, Žarković, 2016.a). Challenges of survival and development of a socio-economic system are also largely dependent on the results of the insurance business and funds available as own financing sources of the national economy (Vojinović, Žarković, 2016.b). By concluding a pension insurance contract, users are provided with a secure income in a situation in which the acquisition of funds is impossible by their own work. This insurance ensures the social and material security of an individual due to aging or loss of working ability. In addition, this insurance has the significance of a higher labor productivity stimulus as it enhances the material interest of

the insured for greater effectiveness of the work that later provides a greater volume of rights (Jovanović, 2015).

Pension funds represent institutional investors and are, in this respect, similar to insurance companies. It is characteristic for pension funds that the inflow of funds is realized in a continuous dynamic way and the outflows of funds are foreseeable (dynamically observed) which suggests that there should not be a problem of insolvency as the surplus of financial resources can be placed on the capital market (Vunjak, Kovačević, 2016). According to the same authors, pension plans are divided into:

- Funded pension plans,
- Unfunded pension plans.

The pension insurance systems are divided into those established on fixed contributions and those established on determined reimbursement (Davids, 1995). In the practice of pension protection, which is, on the one hand, a way that releases citizens from age risks and represents a method of accumulation of funds as a saving method, it represents, on the other hand, the greatest possible incentive for economic development and becomes increasingly a combination of mandatory and voluntary protection. With this kind of protection, citizens are ensured with pensions when they are retired. Pension and disability insurance belongs to the social security group because of social and economic implications at the level of society. We receive a lot of information on this sphere every day that confirms the significance of this social security (Birovljev, Vojinović, Mirović, 2015). By collecting finances in funds, through contributions of insured persons or from other sources of income, investment, or budget inflows, a mass is made which serves to secure the payment of pensions for current users. In some retirement pension systems reimbursement may be time-bound or lifelong (Hansell, 1999).

Social insurance provides under the principles of compulsory, reciprocal and solidarity, the insured persons with health care and material benefits in case of emergence of certain social risks such as illness, age, disability, death, and unemployment. There are different terminological and conceptual definitions of social insurance in literature. Here are some definitions of the concept of social security:

1. Accordingly, social insurance represents the legal expression of that part of social policy and its directed social relations that are related to the organized social-material, health, and psychological protection of the insured persons and insured persons of certain social risks on the principle of financial contribution, reciprocity, and solidarity (Jovanović, 1998, 411).
2. Social insurance is the area of social policy in which working people are obliged to provide material insurance and medical care in cases of illness, disability, age, death, and unemployment for themselves and members of their families on the principles of solidarity and mutuality (Lakičević, 1987: 34).
3. Social insurance is a form of social security that aims to provide adequate economic and social security for insured persons in the event of insurance risks: illness, pregnancy, birth, accidents at work, temporary or permanent, partial or total loss of working ability, unemployment, inhumane, the loss of the breadwinner and death (Judgment, 1994-273).
4. It could be said that social insurance is a system of material, social and psychological protection of a person (who is insured) and includes protection against illness, injury, disability and age protection (by meeting retirement requirements). Social insurance will also provide protection for family members in certain cases or in terms of prescribed risks (Brajić, 1991.:527).

Social risks, their observation and the creation of stability and security are a result of the implementation of social policy, the social system and its actors (Hagmann, 2015) in different segments of life, whereby the forms of protection change during evolution (Williams, 2008). State pension systems have been facing problems for decades, which is the case in a large number of countries. According to the United Nations estimates, by 2050 the share of the population of Europe aged over sixty-four will grow to 28%, from 16% in 2000 and 8% in 1950. Similar movements can be expected in North America and even in Asia (Swiss Re, 2008). Risks represent dangers that are caused by different events. They are an uncertainty regarding the achievement of an objective with an alternative to the existence of harmful events on our health and property. In an objective sense, it measures the absence of threats to acquired values, in the subjective sense, the absence of fear that such values will be endangered (Wolf-

ers, 1962). Social processes, social policy, and pension insurance systems represent instruments for risk analysis, impairing their harmful effects, thus creating the stability and safety of members of the society (Risley, 2006)

One of the leading risks endangering the stability of living is certainly unemployment that is being accessed systematically and socially. However, most countries now mandate mandatory insurance as the main form of insurance in case of unemployment, and some countries explicitly forbid voluntary insurance such as the Czech Republic, Estonia, Greece, Ireland, Italy, Lithuania, Malta, Poland, Portugal and the United Kingdom (Čulo, Bejaković, 2017, 385). The importance of the social protection system is also seen in relation to the youngest members of society (Laklija, Milić Babić, Lazaneo, 2016). The idea of early childhood social support is focused on eminent state and non-profit organizations aimed to improve the quality of life of children from the earliest age. In the mentioned group of children underdeveloped children, who need additional intensive professional health and social support from the very first days of their lives, are also involved.

## 2. ANALYSIS, CHALLENGES AND CHANCES

In his work Šučur (2016-16), and according to ESSPROS (ESSPROSS, 2012) sources, states the benefits and services that are covered by social insurance: health/sickness, financial compensation for physical or mental illness excluding disability and health services for maintaining or improving health, inability, ageing, survived restrained members, cash or non-cash benefits related to the death of a family member, family/children, cash or non-cash benefits except health care which is related to pregnancy costs, birth, adoption or upbringing of children and care for other members of the family, unemployment, cash or non-cash benefits related to unemployment, housing, housing allowance, social exclusion, monetary or non-cash benefits related to the reduction of social exclusion that are not covered by other functions.

Rights from retirement and disability insurance are classified into personal rights, ie personal risks, meaning that they cannot be transferred to other persons. Mandatory insurance is provided by contributions paid by insurers and employers and the means for increasing liabilities that arise from the acquisition of rights under special conditions for certain categories of the insured are provided from the budget. (Zakon o penzijskom i invalidskom osiguranju, 2003)

Serbia's pension system is based on two pillars- the mandatory pension insurance and the voluntary private insurance (Matković, 2016) that was introduced in 2006 when the first DPF started with its work and was named Delta Generali (September 2006). For many reasons, the states decided to carry out a reform of the pension system, in particular in terms of parametric changes, which most often implies the increase of age limit, prevention of temporary retirement by applying indices and ways of calculating property, abolishing more favorable positions of individual categories of insured persons and others (Horstmann, 2011, 2012; OECD, 2013). The crisis that occurred later was used as an excuse for introducing unpopular political measures in response to long-standing and recognizable demographic challenges (Casey, 2012).

### **2.1. CHALLENGES OF STABILITY AND SAFENESS OF THE SOCIAL PROTECTION ACHIEVEMENT**

The economic crisis has strongly distorted the pension systems and encouraged numerous reform changes in public and private systems. Extrication from GDP, on average in EU countries, has risen by over 1% only in 2009 and in some countries by more than 14.5%, such as France, Austria, and Italy. In some countries, the financial crisis has shifted into debtors, therefore the shares of the pension system reached 17.5% of GDP which was the case with Greece. (Eurostat base).\*\* Pension funds accumulate very high amounts of cash. The management of these funds is realized through pension funds that aim to provide retirement benefits to their retirees. With regard to financing, we differentiate between two systems (Jašarević, 2010: 198):

- 1) The system of intergenerational solidarity (pay-as-you-go system)
- 2) Capitalization system (ie funded system).

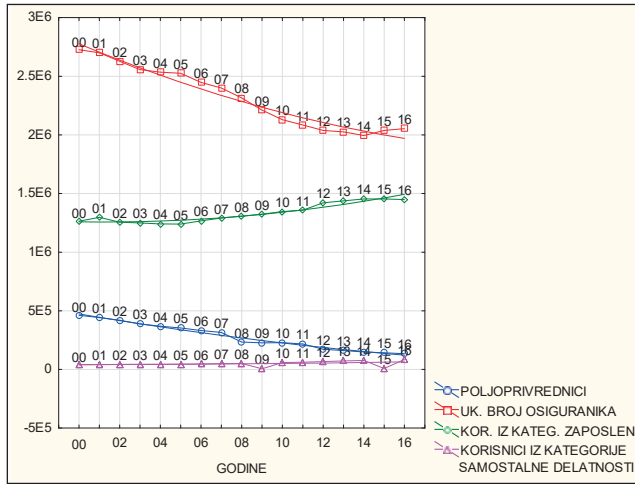
**Table 1.** Overview of insured persons by categories

YEAR	EMPLOYED	SELF-EMPLOYED	FARMER	TOTAL NUMBER OF THE INSURED
2000	2 098 233	166 144	461 904	2 726 281
2001	2 079 107	178 663	441 705	2 699 475
2002	2 021 485	186 419	419 253	2 627 157
2003	1 972 618	196 061	387 433	2 556 112
2004	1 962 053	204 897	368 207	2 535 157
2005	1 946 671	224 786	353 374	2 524 831
2006	1 883 602	231 534	332 538	2 447 167
2007	1 848 306	236 936	314 925	2 400 167
2008	1 859 285	222 392	233 385	2 315 062
2009	1 778 739	206 002	227 089	2 211 830
2010	1 714 393	186 806	228 242	2 129 441
2011	1 666 505	199 666	217 704	2 083 875
2012	1 661 638	203 976	172 509	2 038 123
2013	1 648 295	216 488	160 801	2 025 584
2014	1 619 340	226 155	148 981	1 994 476
2015	1 684 545	211 751	141 939	2 038 235
2016	1 699 472	221 207	133 113	2 053 792

**Source:** The Authors (adopted by <http://pio.rs/images/dokumenta/statistike/2017/Statisticki%20godisnji%20bilten%202016.pdf>)

Movements of the total number of insured persons in the pension fund as well as the trend of changes in the observed period are shown in the following graph. Employed insured persons are employed persons, civilians serving in the Serbian Army, persons engaged in temporarily and occasionally jobs, foreigners employed on the Serbian territory, domestic nationals employed abroad, domestic citizens employed on the territory of the Republic of Serbia with foreign organizations. Insured self-employed persons are persons who are, in accordance with the law, independently engaged in economic or other activities if they are not insured by employment, priests, and religious officials if they are not insured by employment, members of the agricultural association. Insured farmers are persons who are engaged in agricultural activities and are not beneficiaries of pensions or are not in the process of education. (Zakon o penzijskom i invalidskom osiguranju, Službeni glasnik Republike Srbije)

**Graph 1:** Trend of the insured due to categories



**Source:** Authors (Statistics 13, SPSS 23)

The financial risk of the pension system is a danger that can undermine social processes of protecting citizens endangering their social status and existence. Proper management of pension insurance by using funds collected from insured persons, its investment and spending are required to be professionally controlled. According to the rates presented, the ratio of insured persons and fund users should at least be 3,5: 1 to ensure the financial stability of the system if we neglect operating costs. Incomes from investment activities are an important part of the revenue side of the fund (Rakonjac-Antić, 2004).

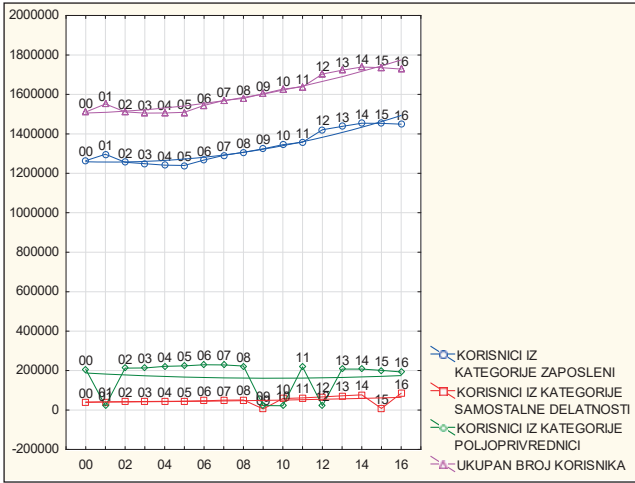
**Table 2.** Overview of pension user categories- the number of retirees

YEAR	USERS-EMPLOYED	USERS-ACTIVITIES	USERS-FARMERS	TOTAL NUMBER OF USERS
2000	1.264.175	39.337	207.289	1.510.801
2001	1.297.004	41.207	213.480	1.551.691
2002	1.255.814	42.905	212.778	1.511.497
2003	1.248.662	43.472	213.438	1.505.572
2004	1.241.082	43.938	221.047	1.506.067
2005	1.239.573	45.225	224.178	1.508.976
2006	1.267.574	47.181	229.293	1.544.048
2007	1.290.611	49.872	229.072	1.569.555
2008	1.306.394	50.959	222.986	1.580.339
2009	1.324.338	54.450	224.880	1.603.668
2010	1.345.733	58.368	222.480	1.626.581
2011	1.357.846	61.851	218.948	1.638.645

2012	1.420.892	66.718	215.530	1.703.140
2013	1.438.016	72.036	207.783	1.722.649
2014	1.454.332	77.047	207.783	1.739.162
2015	1.453.469	81.550	200.923	1.735.942
2016	1.449.278	85.215	193.645	1.728.138

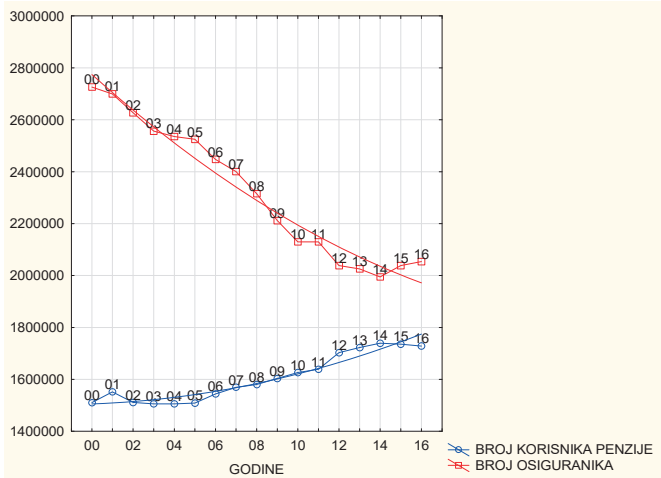
Source: Authors ((adopted by <http://pio.rs/images/dokumenta/statistike/2017/Statisticki%20godisnji%20bilten%202016.pdf> -19.12.2018.)

Graph 2. The trend of the number of users- retirees



Source: Authors Personal Processing (Statistics 13, SPSS 23)

Graph 3. The trend of the number of insured and retired



Source: Authors Personal Processing

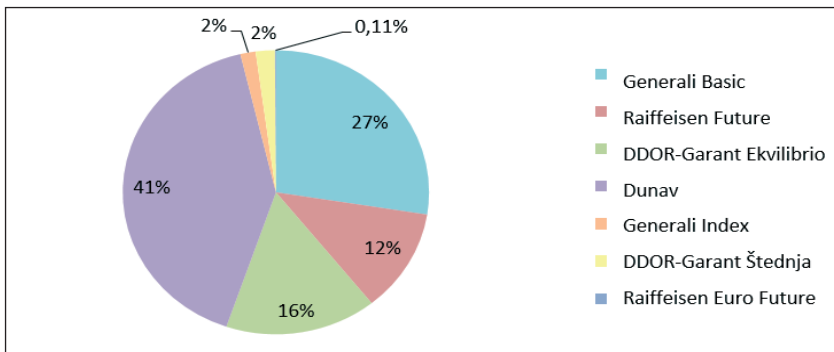


## 2.2. THE POSITION OF PENSION FUNDS ON THE FINANCIAL MARKET

Voluntary pension insurance is an additional form of pension insurance that increases the number of pension benefits for individuals over the volume of mandatory retirement insurance. This insurance is manifested in two ways (Jovanović, 2015):

- 1) Persons, who are not covered by mandatory insurance, are insured to provide for themselves all the rights given by mandatory and disability insurance and
- 2) Persons who are covered by compulsory insurance in order to ensure a greater volume of rights in relation to the scope foreseen by the mandatory insurance.

**Graph 4.** The market share of some DPF funds in 2016



**Source:** Authors Personal Processing (adapted by [https://www.nbs.rs/internet/latini-ca/62/62\\_2/statisticki\\_aneks.pdf](https://www.nbs.rs/internet/latini-ca/62/62_2/statisticki_aneks.pdf) - 24.12.2018.)

The Voluntary Pension Fund Management Company is an economic firm that organizes and manages one or more voluntary pension funds (Vojinović, Žarković, 2016.b). According to the Law on Voluntary Pension Funds the management company is established only as a closed joint stock company. The cash share of the companies' share capital provided for management, when it is established, amounts at least 1.000.000 (one million) Euro in dinar equivalent, at the middle exchange rate of the National Bank of Serbia on the day of payment.

**Table 3.** Overview of net assets by mutual funds (in millions of Euros)

	2014.	2015.	2016.
Dunav	81,83	100,08	112,07
Generali Basic	51,30	64,23	75,17
DDOR GarantEkvilibrio	34,65	40,61	43,73
Raiffeisen Future	22,95	27,84	32,07
Generali index	2,74	3,50	4,43
DDOR GarantŠtednja	2,90	4,28	5,48
Raiffeissen Euro Future	-	0,08	0,28
TOTAL	190,37	240,62	273,23

**Source:** Personal Data Processing by Authors (adapted by [https://www.nbs.rs/internet/latinica/62/62\\_2/statisticki\\_aneks.pdf](https://www.nbs.rs/internet/latinica/62/62_2/statisticki_aneks.pdf) - 24.12.2018.)

### 3. CONCLUSION

Social security established in the social process of the state pension system is in serious concern and its stability is compromised, despite the positive changes in the last two years. The width of the meaning of this topic is not only to protect older and incompetent but their closest and youngest family members, too. There is a broad understanding of the concept of support for parents. Accordingly, it includes any intervention for parents aimed to reduce the risk and/or promote the instruments of protection for their children's social, physical, and emotional well-being (Moran, Ghate and Merwe, 2004: 21). According to the functioning of this system based on proportionality rather than equality, it is obviously possible to float in the adequacy of financial reserves to cover the liabilities. That is why the ability of the state to subsidize (Birovljev, Vojinović, Mirović, 2015) has been left open.

Reforms of the pension system were, therefore, necessary not only in the direction of parametric changes but also in functional ones. Many countries burdened with this problem introduce more levels of protection for their citizens. In Serbia, it is implemented through three pillars of the pension insurance (Matković, 2009). The possible solution to this problem is to contribute periodically the funds by means provided by the state. In addition to the possibility of increasing the contribution rate, the PAYG system also has the option of reducing the level of retirement benefits that are likely to further aggravate the poor financial situation of the retired. Another objection to this system is

the interruption of the link between individual contributions and individual benefits. Thus, this system provides a great stimulus for temporary retirement.

In the capitalization system, money interflows to an individual or collective accounts managed by a pension fund. Collected funds are invested through the intermediation of a financial stock exchange into securities in order to achieve a certain return. In this system, the pension is directly dependent on the contributions paid and the yield on the invested means of contribution, ie from the capitalization rate. Younger people prefer such a form of funding for pension funds because they are motivated to create savings for retirement days. This system is, in principle, superior to the previous one, because every employee becomes aware of the fact that through paying contributions one saves for retirement days. The employee is also aware of the fact that these means will not serve to cover the pensions of other persons. Such a system has eliminated the shortcomings of the current financing system and it has no impact on the demographic factor.

Another benefit of this system is the strong link between individual contributions and individual benefits. Everyone saves on his/her special account. Incomes on invested funds of contributions at a fully funded system increase the number of retirement benefits and promote the development of the economy of each country.

It is also important to consider the issue of the transition of the pay-as-you-go system to a fully funded system in a large number of countries. The question is: what if the PAYG system suddenly stops functioning and the young generation immediately goes over to a fully funded system? As a result, older people will remain without retirement benefits. It is clear that any transition from a pay-as-you-go system to a fully funded system will cause a number of problems: high transaction costs, social tension, conflicts of interest between current and future retirees. This can be explained more closely by the fact that people are based on the view that it is unfair to allocate funds to current retirees because it can be expected that, after changes take place, no one will do so for them.

It can be concluded that expenditures for social benefits are of non-cyclical nature because in the initial period of the crisis they are higher (observed over the share of GDP). Later on, they reduce through changes in social expenditures, restrictive measures (Bouget, 2003). According to Castles (2001, 2016), social security spending is to a lesser extent exposed to the restrictive policy within the overall cost. All of these reasons have caused a wave of pension system reforms across Europe.

Thus, the best way for countries to manage their retirement costs is to create a three-pillar system (World Bank, 1994). The first pillar in the Republic of Serbia is reviewed due to demographic aging and longer life expectancy that means receiving retirement for a larger number of years. The second pillar, or mandatory private pension insurance, exists in Croatia, Bulgaria, Macedonia, Poland, and Slovakia. In the Czech Republic, Slovenia, Ukraine the second pillar has not been formed yet; therefore the structure of the pension system consists of the first and third pillar. Because of the increase in unemployment and the reduction of tax revenues, the redirection of contributions to private pension insurance funds becomes too much a burden for state systems; therefore, some countries are permanently (Hungary, Bulgaria since 2015) and some temporarily (Estonia) abolishing the second pillar of the pension system or have lowered the rates on contributions (Poland, Romania, Latvia, Lithuania, Slovakia) (OECD, 2013; Horstmann, 2012).

The second pillar did not survive in Serbia for the following reasons: firstly, the introduction of the second pillar is very expensive; secondly, it is not certain that the pensions in this pillar would be higher. Giving up the second pillar can be explained by high administrative costs and very low revenues resulting in mistrust of private funds (OECD, 2013). In short, the introduction of the second pillar implies huge investments and quite uncertain results.

The third pillar is very important because it allows the option of additional savings, therefore, in addition to the social security of pensioners. Within this pillar, additional marketing actions need to be introduced in order to involve more and more employees into this system. This pillar is very important as an introduction of the second pillar and as an alternative process of pension protection that allows the state to relieve its costs and manages to control the social protection system while accumulating and creating funds in an institutional sense.

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# EFFECTIVE ORGANIZATIONAL MANAGEMENT – A CASE STUDY

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## **Abstract**

*Today, the success of an organization is more than ever a result of effective organizational management, and it is indisputably essential to the business of every organization. Outstanding importance is attributed to management, which is constantly evolving and is a result of many factors of the organization. Management is the process of shaping and maintaining an environment in which individuals achieve specific goals by working together in groups. Undoubtedly, productivity, globalization, competitiveness, and change cannot be realized without a precise, comprehensive understanding of human resources. Man is no longer a limited organizational resource but a significant source of new value. Changes, as well as market success and long-term development, become an essential factor in which business strategy depends. Companies which will achieve top performance in their products and services are those who have discovered how to implement the ideas and abilities of people at all organizational levels. Human resources represent the core strength of an organization, and accordingly, the key*



*to success lies in the way companies choose and, subsequently, organize people. Through analysis of the defined problem, this paper will show the importance of management and human resources based on the example of one of the most successful companies in the Republic of Croatia – Podravka.*

*Podravka is the leading food company in the Republic of Croatia with brands that are recognized on the international market, and it records positive financial results year-on-year, which indicate effective organizational management of Podravka. The keys to its success are its creative, dynamic and successful employees. Podravka emphasizes that its core values are creativity, passion, and consumer satisfaction since they add excellence to everything they do and thus promote the underlying values of the company.*

**Keywords:** *management, business strategy, human resources, Podravka*

JEL Classification: M10, O15

## 1. INTRODUCTION

Today, an organization's success is more than ever a result of effective organizational management, and it is indisputably crucial to the business of each organization. For the last few decades, the human resources division has been the fundamental strength of an organization, and accordingly, the key to success lies precisely in the way companies choose and then organize people. An analysis of the defined work problem will show the importance of management and human resources through an example of one of the most successful Croatian companies with long-standing tradition and numerous awards for successful business operations.

This paper aims to present an example of effective organizational management in Podravka. By analyzing the company's business, its process of creating competitive advantages and investing in employees, this paper will show the success of effective organizational management in the observed enterprise.

In the following text of this paper, the theoretical determination and importance of the effective organizational management, essential managerial functions, the role of business managers and human resources will be described as the key to the success of effective organizational management. Podravka is the leading food company with brands which are recognized worldwide and have positive and high financial results every year. The key to its success lies in creative, dynamic and suc-

cessful employees and for this reason, Podravka was chosen as a case study that presents a theoretical review of literature in the real world.

## 2. MANAGEMENT IN ORGANIZATION

In the business environment, there is an increasing number of rapid changes; the survival of each organization depends on its ability to respond quickly to changes and adapt to the new situations. In other words, the key to the survival and success of modern organizations lies in their management. As stated by Jovanović (2015: 145-146) *“Changes may be happening in their industries, but managers may simply fail to detect these changes because their attention is focused on personal strategies or other related aspects. Most research suggests that changes must often be dramatic or have major consequences for firms before their managers take notice of them. Noticing changes depends on those changes being seen as ‘breakpoints’ (Kiesler, Sproull, 1982). Changes that tend to be noticed are those changes that are significant, sudden, or catastrophic. It seems, unfortunately when managers and their firms face significant and sudden changes in their industries, it is often too late for them to respond effectively. Business is declining as a result and some companies never fully recover.”* Consequently, in the following text, the role of modern managers and the success of the effective organizational management as well as the importance of current managers in daily business and the achievement of market competition will be described.

There is no unique definition of management, so scientists such as Wehrich and Koontz (1998) define management as *“a process of shaping and maintaining an environment in which individuals, working together in groups, efficiently achieve the chosen goals.”* Moreover, Swansburg (1996:1) states that *“To manage is to forecast and plan, to organize, to command, to coordinate and to control. To foresee and plan means examining the future and drawing up the plan of action. To organize means building up the dual structure, material, and human, of the undertaking. To command means binding together, unifying and harmonizing all activity and effort. To control means seeing that everything occurs in conformity with established rule and expressed demand”.* Furthermore, Dasgupta (1969) defines management as *“the creation and control of the technological and human environment of an organization in which human skill and capacities of individuals and groups find full scope for their effective use to accomplish the objectives for which an enterprise has been set up. It is involved in the relationships of the individual, the group, the organization, and the environment.”*

Additionally, Koontz (1961) defines management as “*the art of getting things done through and with people in formally organized groups. It is the art of creating the environment in which people can perform, and individuals could cooperate towards the attaining of group goals. It is the art of removing blocks to such performance, a way of optimizing efficiency in reaching goals*”. Also, Mary Gushing Niles (1956) states that “*Good management, or scientific management, achieves a social objective with the best use of human and material energy and time and with satisfaction for the participants and the public.*” All of the previously mentioned definitions can be reduced to a process that implies maintenance and modeling the environment in which an individual is found, working together in the team, through joint efforts and energies, to achieve specific organizational goals.

Similarly, Datalab (2016) defines management as “*a special discipline, multi-disciplinary, that deals with the research of the problems of managing certain jobs, ventures, and social systems.*” This definition of management implies a complex process involving many sub-processes, as well as a group of individuals who manage systems and methods. While the definitions of management are numerous, each of these can be inferred from the following essential managerial features: procedural approaches to management, but also the skill based on which goals are achieved.

Although there are numerous directions and schools within management theory, there is still no consistent theory that could be used in practice. To that goal, the closest contingency theory is used. This theory emphasizes the importance of the real situation in which the manager is situated, regardless of whether it is in the United States or another country. For this reason, management, besides its scientific dimension, also contains elements of skill and art. More precisely, “*management is science, and successful management is art. This is the main reason why management can never learn and even less copy.*” (Sikavica, Bahtijarević-Šiber, 2004) Just as there is no general model to guarantee the success of an organization, there is no general model for implementing effective management in the organization. The success of each organization is unique, cannot be rewritten and is separate, and when that is not the case, it would be impossible to explain the different business results that the organization achieves.

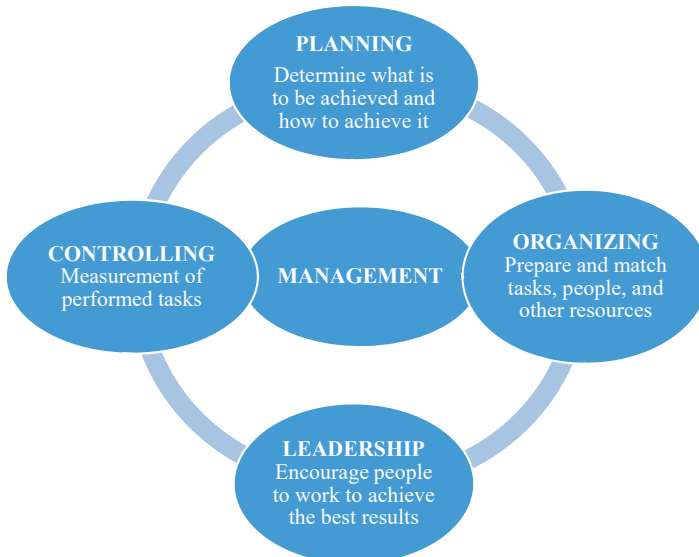
Nowadays, the success of an organization is more than ever a result of effective organizational management. One of the reasons for the bankruptcy and

failure of an organization lies in dysfunctional management. Consequently, it is necessary to develop effective organizational management that adjusts to changes in the business environment and is in the constant process of evolution, resulting from the many factors of the organizational structure. For the success of each organization, it is of utmost importance to have successful management. Efficient management of human resources in the organization contributes to the development of a favorable business environment, thus creating more and more business success.

Although different management theorists mention different (four or five) managerial functions, the concept of managerial functions in the second decade of the 20th century is set by the father of management, Henry Fayol, and the function of a manager today represents the basis for their identification. It is possible to distinguish the following interconnected managerial duties (Figure 1):

- ✦ Planning,
- ✦ Organizing,
- ✦ Leadership and
- ✦ Controlling

**Figure 1.** Basic managerial functions



**Source:** Made by authors according to Sikavica and Bahtijarević-Šiber, 2004

Koontz and O'Donell (1968) define planning as a function which “*is not an activity that is carried out continuously but only occasionally quarterly, semi-annually, annually, and as such focuses on the future, which implies the use of effort, knowledge and needed resources to achieve the desired and set goals. Planning is a reflection on how to systematically achieve the desired, before carrying out the activities themselves*”. In other words, Bateman and Snell (2007) state that planning is a decision-making process as to what to do, what future problems are likely to be and which actions need to be taken to achieve a competitive advantage on the market.

Unlike planning, the function of organizing is a continuous process that takes place on a daily or weekly basis, which implies preparation of all activities within the organization and aligning people, tasks and other resources in accordance with the principles and goals set. The primary task is to determine the role of people working together in the team, i.e. to establish a proper role structure among employees, who need to perform coordinated, efficient and effective routine processes and activities. Lacking in quality of an organization can lead to many consequences, such as a more significant amount of employee stress, an increase in overtime working hours and poor employee efficiency states (Sikavica, 2004).

Leadership, as one of the most critical managerial functions that largely depends on the company's performance, implies activities aimed at interacting between managers and employees. Sikavica (2007) outlines that the main point of the leader is the ability to influence his associates and to motivate them to contribute to the achievement of common goals through their work and activities.

Controlling, as the last management function, allows a manager to see if he or she is working in the desired direction. Controlling, therefore, is defined as “*... the process of measuring and assessing the degree of realization of set goals and taking corrective action if the process demonstrates that there are negative deviations*” (Pudić, 2016). Without control, managers cannot know how much they have done and to what degree of success. It also serves the purpose of better planning and setting goals for the future.

Today, one of the most critical tasks of a manager is aimed at employees, i.e. modern managers are expected to motivate others, and their charisma and attributes often influence this. “*Modern managers must first know how to motivate,*

coordinate and link different individualities, whether they are in production or the service” (Bistričić et al., 2011: 32).

This means that managers after they get acquainted with the outside environment, need to focus their knowledge and skills on the internal state of the organization. In other words, they must devote themselves to interpersonal relationships, eliminate all struggles and conflicts so that the organization can develop smoothly in the future.

The key to becoming a successful manager is not to look for the most suitable organizational structure but to focus on managing the company in line with the changes that occur in the environment and the market. “*Human resources are the total knowledge, skills, abilities, creative opportunities, motivation and loyalty that an organization (or society) has.*” (Jambrek, Penić, 2008: 1190) Human resources of the organization create a synergy between the various abilities and intellectual capital of a company that helps in business development and achievement of the organization’s stated goals. The management of human resources is a series of interrelated tasks and activities aimed at employing an adequate number of a qualified workforce that, through their abilities, talents, knowledge, interests, and motivation contributes to achieving success following organizational goals. One of the ways to meet the set goals and ensure that the right people are placed in the right places and can take full advantage of the organization’s success is managing talents. “*Talent Management is a comprehensive and integrated system of a series of interrelated HMR activities to attract, motivate, develop, and maximize the use of the potential of people with extraordinary knowledge and skills that are of strategic importance for the organization in achieving sustainable competitive advantage, further development and performance,*” states Bahtijarević-Šiber (2014:164). The recognition of key talents that have over-the-art skills, knowledge, creativity and developed innovative intelligence and ability to create products, ideas, and solutions in a new way is crucial to the value and success of the organization.

As stated by Glavaš, Uroda and Santo (2018: 811) ” *...there is constant concern about business processes and their improvement, but also, there is the need for these processes to develop in order to achieve the best effectiveness and profit as a unique economic component. Therefore, there is also the need for education and employment of competent employees...*”. Human resources represent the core strength of an organization, and accordingly, the key to success lies precisely in

the way that organizations choose and then organize people. A small number of organizations today recognized the need for radically redesigning the philosophy of the whole organization, which would simply focus on the personal development of an individual. The Hanover, Inamori, and Bill Obrien believe that managers need to redefine their business, or abandon old dogmas about planning, organizing and controlling, and “... *their responsibility for the lives of a large number of people is considered almost sacred.*” According to OBrien, the basic task of a manager is to “*create better-living conditions.*” (Džubur, 2003: 47).

“Creative effort” is created by setting a vision and a clear picture of reality, that is, it implies the force that connects the reality and the vision and is caused by the natural tendency to the solution. By stimulating and supporting creativity in humans, the very essence of human knowledge is attained. People who have a high level of expertise and who have a constant desire to learn something new achieve the results that they want in life, and this results in the spirit of the learning organization. Those organizations that discover how to foster people’s commitment to organization and readiness to learn at all levels have great opportunities to achieve competitive advantage and market monopoly.

### 3. CASE STUDY: PODRAVKA - EXAMPLE OF EFFECTIVE ORGANIZATIONAL MANAGEMENT

Podravka is one of the leading companies not only in Croatia but also in most of Central and Eastern Europe. The company mentions “*creativity, trust, passion, consumer satisfaction and excellence*” as its core values, and its vision is focused on “*improving the daily quality of life of their consumers, customers, and employees through innovativeness and internationalization while the mission is geared towards innovative culinary experience and healthy living solutions for all*” (Podravka). The goal of Podravka is to improve the quality of life of the society in which it operates and from its foundation invest in various activities that make the quality of society’s life better. Podravka “*invests in science and education, sustainable development, culture, art, sport, and humanitarian projects*” (Podravka). Human resources management as a part of enterprise management and effective organizational management greatly contributes to the mission and vision of Podravka.

Podravka is a food and pharmaceutical company founded by brothers Matija and Marijan Wolf in 1934 in Koprivnica. The Wolf brothers founded a fruit



processing workshop that 13 years later became what is today known as Podravka. After World War II, the company shifted into social ownership and bears the name Podravka since 1947. Podravka was privatized in 1993 and registered as a joint stock company. *“The Podravka Group is a multinational group that operates through subsidiaries and representative offices in 25 countries around five continents (Europe, North America, Asia, Africa, and Australia). Significant business operations of the Podravka Group are in Croatia, Slovenia, Bosnia, and Herzegovina, Russia and Poland”* (Podravka Group, 2018: 15). Podravka’s entry into foreign markets started in 1967 when their product Vegeta was exported to Hungary and Russia for the first time. Podravka started its involvement in the pharmaceutical industry in 1972 when Belupo was founded, and they began to manufacture medicines. Podravka’s business expanded in 2000 with the construction of a manufacturing plant in Poland. In 2006, Podravka bought the brand name, Eva. In 2007, Podravka bought Polish brands Warzywko and Perfekta and the Croatian brand Lero. Podravka continued its acquisitions in 2009 with the brand Belsad, and in 2015 Podravka acquired Žito (Žito, Zlatno polje, Natura, Gorenjak, 1001 Cvet, Šumi bomboni, Maestro). In addition to these purchases and acquisitions, in collaboration with the Ruđer Bošković Institute, the Center for Food Innovation has been established in 2013.

Since it is a huge and successful company, the management structure in Podravka consists of the Management Board, the Supervisory Board, and the General Assembly. Management of Podravka consists of a president and four (4) members appointed by the Supervisory Board. The Chairman and the members of the Management Board shall be appointed for a period determined by the Supervisory Board (up to five years) and may be reappointed. The beginning of the term of the Management Board shall be counted from the day of appointment of the Management Board. Members of the Management Board are responsible for the work of the Company. Management’s mode of operation and division of duties among the members of the Management Board are regulated by the Rules of Procedure of the Management Board (Podravka). The Supervisory Board has nine members, eight of which are elected by the General Assembly by a quarter majority of the votes cast, and one member of the Supervisory Board appoints the Workers’ Council of the Company in a manner and accordance with the provisions of the Labor Law. Members of the Supervisory Board are elected for a period of four years. The beginning of the term of office for each member of the Supervisory Board shall be counted from the day of the



election. To improve corporate governance and business transparency, two sub-committees of the Supervisory Board were established - the Audit Committee and the Remuneration Committee.

The right to participate and to exercise the right to vote at the General Assembly is given to shareholders registered in the computer system of the Central Depository Clearing Company (CDCC) which applies for participation at the General Assembly no later than the seventh day before the General Assembly. Shareholders, stakeholders, and proxies of shareholders vote through ballot papers listing the number of votes belonging to each participant of the General Assembly. According to the Companies Act, the General Assembly decides on the use of profits. The General Assembly shall determine the distribution of the profit to the shareholders following the Company's business results and financial position and other relevant factors. The General Assembly may legitimately decide whether it represents at least 30% of the total number of voting rights. The General Assembly is chaired by the President of the General Assembly, appointed by the Supervisory Board upon the proposal of the Management Board.

During 2017, Podravka's management focused on optimizing costs related to the Food segment while at the same time they were trying to redefine the business model to create the prerequisites for a viable and efficient way of doing business (Podravka Group, 2018: 46). Cost optimization ended successfully thanks to a series of internal activities and measures undertaken by the company's management. To achieve profitability, business decisions were made in 2017 to enable value creation for future Podravka shareholders. The arrangements were related to the reconciliation of assets, and *"the most significant costs related to value adjustments of assets relate to the value adjustment of Warzywko and Perfecta brands in the amount of HRK 17.9m, value adjustments of assets in HUBs in Africa and MENI in the amount of 17.6m HRK and value adjustment of frozen vegetables in Serbia in the amount of 10.7m HRK"* (Podravka Group, 2018: 46).

As stated above, the company's goal is to achieve development and growth through quality management of sales assortment, with emphasis on key brands such as Vegeta, Dolcela, Lino, etc. One of the key benefits of Podravka is strong distribution (about 500 000 stores around the world), a lot of employees (about 6,500) and a variety of food products (more than 800 different items). Based

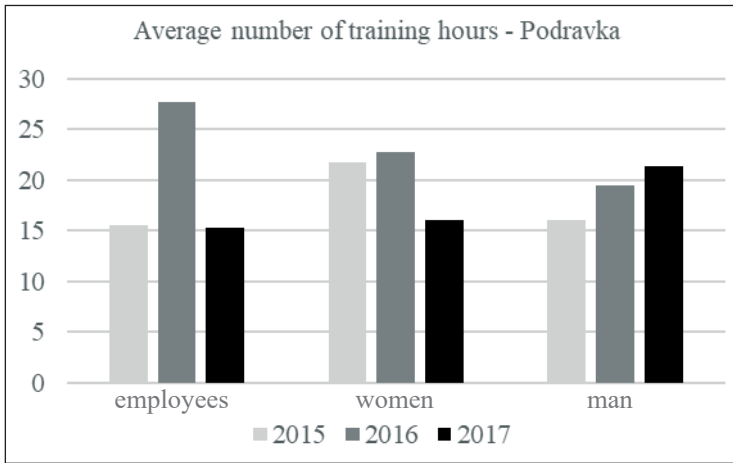
on Podravka's long-standing business, the financial losses of one product are successfully replaced by the financial gains of another product. From the above-mentioned example, effective organizational management was manifested in 2017 when the corrected income of the *Children's Food* business program achieved a loss of 7.1m HRK while the *Podravka Food* business program in the same period earned a profit of 8.2m HRK.

Podravka's most significant advantage is that production and operations management is located in Croatia, more precisely in Koprivnica. Production and management in its factories for Podravka represent the possibility of a rapid response to the changes in the market. In other words, information going back and forth between the market and the buyers and their feedback is quick, and many changes can be done in a short period of time.

Thanks to effective organizational management, Podravka has a clear strategy and a good organization for achieving its business goals, but the key to its success is its creative, dynamic and successful employees, who are always ready to make their contribution to the company's well-being and invest more time and effort in achieving above-average results.

Podravka offers its incentives and challenges to its employees, providing a wide range of options for professional and personal development and dynamic in everyday work. In their words, employees are allowed what they deem is necessary for *"... individual and teamwork and to reach the potential. In interpersonal relationships, we care about respect, trust, sincere dialogue, and transparency, while in work excellence and aspiration towards achieving above-average results"* (Podravka). Podravka launches its passion into everything it does, and people who live Podravka's values build strength and a better future.

It is important to emphasize that Podravka has continuously invested in their employees and their knowledge throughout the history of the company (Figure 2) and has also presented knowledge in its strategy as the most valuable asset, and employees own this knowledge.

**Figure 2.** The average number of training hours

**Source:** Made by authors according to the Sustainable Development Report

By analyzing the picture above, it can be concluded that Podravka has a large number of its human resources annually included in educational programs or workshops. The primary goal of each educational program is to use the acquired knowledge and skills as much as possible in everyday work. Compared to the categories of employees, women averaged the highest hours of training during 2016, while men averaged the most hours of training during 2017. Looking at men and women as a universal category, it is evident that the least number of hours of training averaged during 2015.

#### 4. CONCLUSION

The success of today's organizations is more than ever a result of effective organizational management and is indisputably essential to the business of each organization. In almost every country today there is overwhelming importance for constantly evolving management due to the activity of numerous external and internal organizational factors. If management acknowledges the "human perspective" or the human component of an organization, the organization's success is even more significant since human resources are the most valuable one organization can have. Human resources represent the core strength of an organization, and accordingly, the key to success lies precisely in the way companies choose and then organize people.

Podravka recognized the need for the radical redesign of the philosophy of the whole company, which implies a focus on the personal development of an individual. Accordingly, Podravka continuously invested in its employees through the history of the company and included them in educational programs. Its vision is reflected in the effort to become the leading food company located in the regions of Southeast, Central, and Eastern Europe. By analyzing this company, it can be concluded that good organization and effective organizational management are the keys to success that is reflected in positive financial results. Podravka's business growth, which grows year after year, proves the value of effective organizational management, good strategy, and organization.

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# PERSONAL DIMENSION OF MANAGEMENT – PERCEPTION OF OPERATIONAL POLICE EXECUTIVES OF THE IMPORTANCE OF MANAGERS’ INDIVIDUAL TRAITS FOR THE SUCCESS OF MANAGEMENT

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## **Abstract**

*The police are a security service that protects fundamental constitutional rights and freedoms of citizens. In the police system, the role of management is important, and it has two key dimensions: personal and institutional. Personal dimension of management is demonstrated through the responsibility of police executives (managers) in the police system at all levels - operational, tactical and strategic. Apart from their professional knowledge and skills, the success of police managers also depends on their individual traits - abilities and personality traits. This paper deals with the perception of operational police managers of the importance of managers’ individual traits for the success of management at the operational level. Given the above, empirical research was carried out, using the method of survey, by means of a Questionnaire on Traits and Success of Police Managers. The research included 106 heads of police stations from police administrations with headquarters in the regional centers of the Republic of Croatia (Split, Rijeka, and Osijek) and their surrounding police administrations. Respondents were given a questionnaire with some of the important traits of managers (12 of them), which mostly referred to overall management in the private and public sector. With regard to the above, the respondents expressed their opinion in accordance with their own knowledge and work experience, stating that each of indicated traits has an important*

role for the success of police managers in the Croatian police system, primarily in case of managing police stations as fundamental police organizations. Data collected were also considered in the context of the existing system of selection of managers in the Croatian Police, which should be developed. The aim of this research was to identify the importance of certain traits of managers in the police practice (empirical introspection), to valorize some of the managerial traits in the procedures of selection of future managers (preferential selection) and to develop appropriate managerial potentials in persons employed in the police system (educational anticipation).

**Keywords:** personal dimension of management, managers' individual traits, the success of the police management, the perception of operational police managers

JEL Classification: M10, M12

## 1. INTRODUCTION

The police are a central service of the Ministry of the Interior which protects citizens' fundamental constitutional rights and freedoms, as well as other values protected by the Constitution of the Republic of Croatia (Police Act, Article 2). The police carry out police tasks and apply police powers in order to prevent and eliminate danger in criminal investigations. A police officer is an official of the Ministry authorized to carry out police tasks by applying police powers (Act on Police Tasks and Police Powers, Article 1 and 2).

Police executives (managers) are very important and they have a special responsibility in the police system at all levels. Positions of executive police officers (Police Act, Article 43) include planning, organizing, managing, and monitoring work processes in the police and routing, coordinating and supervising police officers.

Management in general and police management as well consists of personal (individual) and organizational (technical) dimensions. These dimensions are reciprocal, inseparable, and complementary. Personal dimension of management has a specific value with the organizational dimension of management depending on it and resulting from it.

Apart from the professional knowledge and skills they have, the success of police managers also depends on their individual traits - abilities and personal-

ity traits. With regard to some of the important traits of managers which relate to overall management in the private and public sector in general, a survey was conducted by means of a questionnaire. Traits evaluated by the respondents included verbal communication, leadership, stress tolerance, determination, intelligence, and others.

Respondents were operational police managers – heads of the police station, 106 of them. They expressed their opinion of the high importance of all twelve traits of managers (as offered in the questionnaire) in the context of their contribution to the success of police managers in managing police organizations - primarily in case of police stations.

Data collected by the research were analyzed separately and in the context of the existing system of selection of managers in the Croatian police. It is intended to improve this system in terms of content and form and thus, reflections/ attitudes of respondents who have relevant practical knowledge and accumulated experience of managing organizational units at the operational level of the police system can serve as orientation.

In principle, the existing system of identification and selection of managers in the police that has been simplified and elementary should include (among other things) evaluation of candidates regarding those traits of managers that are proven in practice as useful and which are preferred by the existing police managers with relevant years of service in the police system and significant experience in managing the police organization.

Personal dimension of management (individual skills and personality traits of managers) essentially determines the success of individual organizational units in the police as well as the police system as a whole. Personal dimension of management represents a type of software or a nucleus of the management system, while the organizational or technical dimension of management system can be seen as its platform or hardware

*In fact, management deals with people and their relations in the organization. It is the modern management that emphasizes the importance of so-called soft variables, such as people in the organization, their knowledge and abilities and leadership styles, unlike the earlier phases of management development that focused on the so-called hard variables such as strategy, structure, size, technology, planning, controlling, etc. (Sikavica 2011:627-628).*



## 2. RESEARCH METHODS

The research carried out was predominantly empirical and it was based on primary data collected by means of a survey method using a questionnaire. Characteristics of the sample, a method of data collection and used statistical analyses determine the subject of research in quantitative and qualitative terms. This research is of limited scope in terms of analysis and coverage of issues being studied, but it has special value because of professional profiles of respondents who are police officers with functions extremely important for the police system and its functionality.

### 2.1. SAMPLE

The survey included 106 respondents - heads of police stations (exceptionally, deputy heads or assistant heads participated in the research instead of heads of several police stations that justified their absence - illness, etc.) from police administrations with headquarters or areas belonging to large Croatian cities (regional centers) Split, Rijeka, and Osijek.

When it comes to the questionnaire, the respondents stated several of their demographic characteristics which may be relevant with regard to their opinions/attitudes related to researched problems. Indicated characteristics of respondents are given in Table 1.

**Table 1.** Demographic data of respondents – heads of police stations

Demographic data (N=106)		N	%
Sex	Male	99	94.3
	Female	6	5.7
Age	25-30 years of age	--	--
	30-35 years of age	2	1.9
	35-40 years of age	17	16.3
	40-45 years of age	31	29.8
	45-50 years of age	29	27.9
	50 + years of age	25	24.0
Category of police administration	1 <sup>st</sup> category	--	--
	2 <sup>nd</sup> category	49	46.7
	3 <sup>rd</sup> category	32	30.5
	4 <sup>th</sup> category	24	22.9

Type of police station	Regular	19	18.4
	Combined	51	49.5
	Specialized	33	32.0
Category of the police station	1 <sup>st</sup> category	11	10.8
	2 <sup>nd</sup> category	36	35.3
	3 <sup>rd</sup> category	55	53.9
Years of service in the police	5-10 years	--	--
	10-15 years	6	5.8
	15-20 years	9	8.7
	20-25 years	42	40.4
	25 + years	47	45.2
Years of service as a police executive	Up to 1 year	1	1.0
	1-3 years	5	4.8
	3-7 years	14	13.5
	7-10 years	13	12.5
	10-15 years	35	33.7
	15-20 years	22	21.2
	20 + years	14	13.5

**Source:** author's own data

- *Sex structure* of respondents in this research suggests that women are largely underrepresented when it comes to managerial functions at the operational level in the Croatian police. According to unofficial data, in 2014, out of the total number of police officers in the Ministry of the Interior, 17.29% of them were women, while the rest were men.
- Regarding the *age structure* of respondents, the prevalent age was between 40 and 45 years of age and the average age of sample  $M = 45.3$  years of age. The average age of respondents is significantly higher than the average age of the total population of police officers in the Ministry of the Interior, which, according to unofficial data in 2014 was 38.5 years of age.
- Respondents came from *three categories of police administrations* (out of the existing four categories). The largest number of respondents came from the second category police administration (headquarters in Split, Rijeka, Osijek, and Pula), which is also logical given that such police administrations of higher rank include a greater number of police stations than the third and fourth category police administrations.

Regarding categories of police administration in which the respondents are employed, it should be mentioned that the *Police Act* (Article 10) prescribes

that police administrations are established for the purpose of performing police and other tasks in the territory of the Republic of Croatia. The area and headquarters of a particular police administration are determined by the Government of the Republic of Croatia by means of regulation based on indicators such as *the size of an area, population, number of criminal offenses and misdemeanors, characteristics of traffic routes and geographical position and other significant safety indicators*

By means of the Regulation on Areas, Headquarters, Types, and Categories of Police Administrations and Police Stations (Article 3), it is prescribed that twenty police administrations shall be established in the territory of the Republic of Croatia, with determined categories, as follows – *1<sup>st</sup> category*: Zagreb County Police Administration; *2<sup>nd</sup> category*: Split-Dalmatia County Police Administration, Primorje-Gorski Kotar County Police Administration, Osijek-Baranja County Police Administration and Istria County Police Administration; *3<sup>rd</sup> category*: Dubrovnik-Neretva County Police Administration, Karlovac County Police Administration, Sisak-Moslavina County Police Administration, Šibenik-Knin County Police Administration, Vukovar-Srijem County Police Administration and Zadar County Police Administration; *4<sup>th</sup> category*: Bjelovar-Bilogora County Police Administration, Brod-Posavina County Police Administration, Koprivnica-Križevci County Police Administration, Krapina-Zagorje County Police Administration, Lika-Senj County Police Administration, Međimurje County Police Administration, Požega-Slavonia County Police Administration, Varaždin County Police Administration and Virovitica-Podravina County Police Administration.

Criteria for categorization of police administrations are as follows: *security and criminalistics* (prescribed in the cited Article 10 of the Police Act) and *political and territorial* (“respecting special regulations determining the regional organization of the Republic of Croatia” - the quotation referred to in Article 2 of the above-mentioned Regulation).

Regional organization is regulated by the Local and Regional Self-government Act, Act on Territories of Counties, Towns, and Municipalities in the Republic of Croatia and the City of Zagreb Act.

The result of the provisions of these regulations is the establishment of 20 police administrations in the Republic of Croatia, which according to their number, name and territorial jurisdiction correspond to counties in a way that

each county has “its own” police administration. The exception is Zagreb County Police Administration, whose jurisdiction includes two counties - Zagreb County and the City of Zagreb, which is especially determined in administrative terms as it has the status of the capital of the Republic of Croatia and also the position of the county.

- Respondents came from *all three categories of police stations* (mostly from the third category) and from *all three types of police stations* (mostly from combined stations). *Regular* stations are those in which regular and criminal police are situated, *combined* stations include traffic police or border police, in addition to the above-mentioned fundamental police forces, and *specialized* stations are those including only specialized police forces - traffic, border, maritime and airport police. (*Organization of the police in more details – please refer to Regulation on the Internal Organization of the Ministry of the Interior*).
- Respondents’ length of service in the police system is an important demographic characteristic which significantly determines the relevance of respondents’ answers to the subject matter. The basic premise in this respect is that the respondent’s length of service in the police correlates with the degree of relevance of the respondent’s answer. The prevailing period of respondents’ length of service in the police in this research is 25 years and more, with an average length of service  $M = 23.8$  years. Indicated years of average length of service in the police are extremely relevant for the credibility of opinions/attitudes expressed by respondents with regard to police management and managers.
- Particularly important demographic characteristic of respondents in this research should be their length of service in managerial positions in the police, during which they gained managerial work experience (knowledge, skills, and abilities) which resulted in their attitudes/opinions on police management and its characteristics. The prevailing period of respondent’s length of service in managerial positions in the police is 10-15 years, with the average respondents’ length of service in managerial positions  $M = 12.8$  years. Indicated years of average length of service in managerial positions in the police are extremely relevant and respondents’ answers are of high importance and credibility in the process of recognizing police management as a subject of this research.

## 2.2. DATA COLLECTION METHOD

The research was conducted by means of a survey, using a *Questionnaire on Traits and Success of Police Managers*. The questionnaire consisted of an introductory and a main part. The introductory part included the following information - a short description and purpose of survey, an explanation of a respondent's role and what is expected from him/her regarding the manner and the approach to completing the questionnaire, statement of voluntary surveying, guaranteed anonymity of respondents and the use of data obtained exclusively for the purpose of scientific research.

The main part of the questionnaire consisted of three groups of the question with regard to the following: a) respondent's demographic data; b) evaluation of the police system efficiency level and c) evaluation of the level of importance of certain managers' traits (abilities and personality traits) for the success of management.

Technically, the questionnaire was one of the three components of the integral questionnaire on police management issues that were drawn up for the concerned population of respondents. The survey was conducted in the official police premises of the Ministry of the Interior, in Osijek-Baranja County Police Administration, Split-Dalmatia County Police Administration and Primorje-Gorski Kotar County Police Administration in October and November 2018, during the seminar which was a part of professional training of police executives (medium level of management; module 1 - operational police management).

## 2.3. STATISTICAL ANALYSIS METHODS

Data collected were processed using a statistical computer program for sociological research SPSS 17 (*Statistical Package for the Social Sciences*). The analysis of the obtained data was performed by descriptive statistical procedures, by indicating absolute and relative frequencies, expressing their mean values (arithmetic mean, median, mode) and ranking the variables according to the perceived degree of their importance. Respondents' perception of the importance of particular traits of police managers (abilities and personality traits) for the success of police management was determined by *an importance scale* (from 1 to 7), with figures 1 and 2 indicating low importance of a particular variable, figures 3, 4 and 5 medium importance and figures 6 and 7 indicated high impor-

tance. Respondents' perception of efficiency level of the police system was determined by a rating scale (1 to 7), with a low level of efficiency being marked by 1 and 2, a medium level marked by 3, 4 and 5 and high level by figures 6 and 7.

### 3. RESULTS AND DISCUSSION

The main part of the questionnaire, as it has been already mentioned, referred to gaining respondents' opinions/attitudes about the level of efficiency of the police system and about particular traits of managers (abilities and personality traits) and their impact on the efficiency of police managers.

Regarding the perceived level of efficiency of the police system (achieved results in the police practice in relation to police duties and tasks prescribed by law); the results showed that this level of efficiency is average (Table 2)

**Table 2.** Level of the efficiency of the police system – respondents' perception

	Evaluation	f	%	M	M <sub>e</sub>	M <sub>o</sub>
Level of the efficiency of the police system	1-low	---	---	4.36	4	4
	2-low	2	1.9			
	3-average	18	17.0			
	4-average	38	35.8			
	5-average	36	34.0			
	6-high	12	11.3			
	7-high	---	---			
	Total	106	100.0			

Source: author's own data

The average level of efficiency of the police system (according to respondents' perception) is a challenging fact in terms of the requirements of finding ways to improve the functionality of the system. In this regard, police management is a key factor to be developed on several bases, including a system of identification and selection of managers in the police.

Regarding the traits of managers, the respondents were asked to evaluate, in accordance with their own knowledge and work experience in the police system at a positions of police officers and police executives, what level of importance, in their opinion, has each and every trait in achieving success of police managers in the Croatian police system.

Traits evaluated by the respondents were taken from Burack and Mathys 1980: 212 (according to Bahtijarević-Šiber, 1999: 462). These are the most commonly used factors in determining managerial potentials in US companies. Traits concerned and their short descriptions are shown in Table 3.

Respondents were asked to answer the questions honestly by circling corresponding number (from 1 to 7) reflecting the level of importance they consider corresponding to each of managers' traits mentioned in the questionnaire, in the context of contribution of these traits to the success of police managers in managing organizational units of the police - primarily police stations. The respondents' answers are shown in Table 3.

### 3.1. MANAGERS' TRAITS AND THE SUCCESS OF MANAGEMENT – THE RESPONDENTS' PERCEPTION

Abilities and personality traits of managers are important *personal instruments* used by managers when performing managerial functions. It is therefore important for organizations to properly identify and valorize indicated "instruments" (individual traits) in the procedures of selection of managers for certain managerial positions.

*Respondents expressed their opinions on the most important personality traits of police managers in a way that they were presented a list of twelve characteristic traits of managers (six positives and six negative) from which they should select three traits that, in their opinion, mostly characterize police managers... Along with the "non-objectivity", one of the most frequently selected traits of managers were "superficiality" and "dependence". It is obvious that all three traits that were most frequently selected by the respondents are negative. Along with "honesty" the least selected traits were "objectivity" and "independence". It is obvious that all three traits of managers who were least frequently selected by the respondents are positive. (Orlović, Velić, Harambašić, 2015: 546-547)*

A typical list of managerial qualities (Bahtijarević-Šiber, 1999: 461) applied in the selection is the following: energetic, ambitious, intelligent, creative, business-oriented, self-confident, communicative, analytic, decisive, persuasive, sharp. It is a combination of intellectual abilities and personality traits. ... Due to the nature of managerial positions and modern conditions, apart from these characteristics, the ability of cooperation and teamwork, initiative, tolerance to uncertainty and flexibility become (and are) very important characteristics.

*With regard to police management, the greatest intensity of work motivation among police officers' results from independence and autonomy in work, as well as teamwork and coordinated actions in more complex cases, while the manner of selection of executives and their unequal attitude towards police officers have a demotivating effect on motivation for work. (Turkalj, Orlović, Milković 2016: 413)*

The opinions expressed by the respondents on the importance of some of the managers' traits (indicated in Table 3 in numbers from 1 to 12) for the success of management - were statistically analyzed and presented through several different parameters. The column  $f_{(6-7)}$  shows the frequency of respondents who find certain variables to have "high importance" for the success of police management (those who circled figure 6 or 7 in the questionnaire). In the column  $\%_{(6-7)}$ , the absolute frequency of the respondents from the previous column is presented as a relative frequency or proportionate participation of respondents with such an opinion in the total population of respondents (106 respondents participated in this research). In the next three columns, the table shows the mean values of the expressed opinions of the respondents about the levels of importance of individual variables: the column  $M$  shows *the arithmetic mean or average value*, column  $M_c$  shows *the median or central value* and the column  $M_o$  shows *the mode or the dominant value*. The last column *Rank* includes the positions of individual variables that are ranked in twelve levels (rank 1-12) by the degree of their importance. The ranking criterion of the variables was the level of the arithmetic mean ( $M$ ) of the expressed opinions of the respondents for each variable.



**Table 3.** Managers' traits and the success of management – the perception of heads of police stations

	<b>Managers' traits (abilities and personality traits)</b>	<b>f</b> <b>6-7</b>	<b>%</b> <b>6-7</b>	<b>M</b>	<b>M<sub>e</sub></b>	<b>M<sub>o</sub></b>	<b>Rank</b>
1	<i>Verbal communication – success in oral expression in individual or group situation</i>	69	65.8	5.61	6	6	7
2	<i>Written communication – the ability to clearly express ideas in writing</i>	57	54.3	5.30	6	6	12
3	<i>Leadership – success in assuring the acceptance of ideas and leading groups and individuals in achieving tasks and goals</i>	67	64.5	5.62	6	6	6
4	<i>Social sensitivity – the ability to perceive and respond to the needs of others; sensitivity in judging personal influence on others</i>	53	50.5	5.41	6	6	11
5	<i>Planning and organizing – the ability to successfully set the appropriate direction for oneself and/or others to achieve a specific goal with appropriate use of human and material resources</i>	74	70.5	5.76	6	6	4
6	<i>Analytical skills – the ability to detect problems, provide relevant information, identify possible causes and suggest an alternative course of actions</i>	62	58.1	5.55	6	6	9
7	<i>Stress tolerance – the ability to act and to achieve results under pressure and obstacles</i>	68	64.8	5.64	6	6	5
8	<i>Creativity – the ability to generate, hear, and / or accept imaginary solutions and innovations</i>	59	56.7	5.47	6	6	10
9	<i>Determination – the ability to make decisions, judgements and to undertake actions</i>	84	80.0	5.97	6	6	1
10	<i>Flexibility (adaptability) – the ability to modify the approach and style of behavior in order to achieve the goal or ability to adapt to the changing needs and situations</i>	67	63.8	5.60	6	6	8
11	<i>Decision making – the ability to make decisions by using logic or judgment</i>	79	75.2	5.90	6	6	2
12	<i>Intelligence – general ability of dealing with problem situations</i>	75	71.5	5.80	6	6	3

**Source:** author's own data

From the data presented in Table 3, it can be concluded that the vast majority of respondents (50.5% to 80.0% of them) believes that each of the relevant twelve variables is of “high importance” for the success of police managers. In case of nine variables, the arithmetic mean is above 5.0 (in case of the remaining three, it is slightly lower than that), suggesting the dominant perception of operational police managers of the high importance of all relevant variables for the success of police management. This conclusion is supported by the fact that the total arithmetic mean of all twelve variables amounts to 5.64 (minimum = 1, maximum = 7), which is the result approximately 19% lower than the absolute maximum. In addition, the median and the mode are at the level of

importance 6, and the maximum is 7 (minimum is 1). Although differences in the perceived importance of individual variables are not significant (there are no large discrepancies) it is necessary to emphasize for illustrative purposes that the three highest ranked variables were *determination, decision making, and intelligence*, while the last three variables were *creativity, social sensitivity and written communication*.

Data obtained by means of this research are relevant in the context of organization and management in the police system, as well as in the context of the functionality of police practice. Data collected are of particular significance given the professional characteristics of the respondents. Respondents are heads of police stations, i.e. operational police executives in fundamental organizational units in the police system. This type of research model is by its very nature an “*empirical introspection*”. The model is determined by indicated characteristics of respondents and by the focus of the research on identifying individual traits of managers and assessing their importance for the success of management in the police practice.

In addition to the general (organizational) context, *the empirical introspection of managers* is important in an individual context. “To be able to manage others, we must first learn to manage ourselves and to understand our own motivations, perceptions, strength, and limitations. We also need to have a sense for management, a desire to explore and risk and the ability of constant learning from everyday experience. From this point of view, knowing oneself is critical for business success and satisfaction” (Denhardt et al. 2002, according to Marčetić 2007: 147).

### **3.2. SELECTION OF MANAGERS IN THE CROATIAN POLICE SYSTEM – LEGAL AND IMPLEMENTATION FRAMEWORK**

In accordance with *the Police Act (Official Gazette 34/11, 130/12, 89/14, 151/14, 33/15, 121/16; Article 43)* police officers’ positions are classified into three categories – *executive police officers* and *senior and junior police officers*. Positions of executive police officers include planning, organizing, managing, and monitoring work processes in the police and routing, coordinating and supervising police officers.

In accordance with *the Regulation on Classification of Positions of Police Officers* (Official Gazette 129/11, 82/12, 140/13, 32/15, 40/15, 115/15, 11/17, 102/17, 129/17, 5/18, 66/18, 109/18), the classification of the positions of police officers is determined within the categories of positions of executive, senior and junior police officers, as well as standard criteria for each category, sub-category and sub-category level of a position (Article 1). Standard criteria for classifying positions are the following: degree of complexity of tasks, education, personal police profession, level of responsibility and authority for making decisions and a degree of independence in work (Article 2).

Positions within the category of executive police officers are classified into four sub-categories as follows: 1. *Chief Executive*, 2. *Senior Executive*, 3. *Executive*, 4. *Junior Executive* (Article 6). Depending on the sub-category to which a certain managerial position belongs, it is compliant with the “strictness” of standard criteria that must be met by officers claiming or already being appointed to a particular managerial position.

*The Police Act* regulates the selection of police executives pursuant to Chapter 9 “Appointment and Dismissal of Executive Police Officers” (Article 58-62). Job vacancies of executive police officers (police managers) are announced through *public vacancies* (general police director) or *internal vacancies* (other executives). The Ministry of the Interior announces public and internal vacancies by virtue of previously indicated provisions of *the Police Act* and *Ordinance on the Internal Order of the Ministry of the Interior* (No. 511-01-152-OGR-2458/12 of 28 July 2012 and Amendments to Ordinance of 29 April 2013, 26 October 2013, 2 December 2013, 21 February 2014, 16 June 2014, 5 May 2015, 6 November 2015, 24 March 2016, 2 May 2016, 13 March 2017, 20 September 2017, 2 November 2017, 29 December 2017, 15 January 2018, 9 February 2018, 1 March 2018, 27 April 2018, 29 June 2018, 1 August 2018 and 13 December 2018. This Ordinance generally includes a job description of police officers’ positions, the required level, and type of qualification for each position, the required police officer’s personal traineeship and coefficient of position for the calculation of basic salary.). Techniques, mechanisms, and rules for the implementation of the competition are regulated by *the Regulation on Announcing and Conducting a Public Competition and Civil Service Internal Advertisement* (Official Gazette 78/17).

Candidates applying for internal advertisements or public competition must: (a) *meet formal conditions* (application, CV, certificate on level of education, work

experience, police profession), (b) *take test* (assessment of knowledge, abilities and skills) and (c) *attend an interview* (identification of interests, professional goals, motivation for work, work experience and results of work done so far).

Candidates are selected by a committee, whose president and four members are appointed by the Minister among the executive, senior and junior police officers, as well as trade union representatives at their proposal (Police Act, Article 60). After the procedure has been carried out, the Committee ranks applicants according to the total number of points earned on a test and an interview (Regulation on Announcing and Conducting a Public Competition and Civil Service Internal Advertisement, Article 15).

With regard to the above-mentioned, it is necessary to point out certain lack of transparency in regulations and in practice in relation to the following four key factors in the procedure of selection of candidates for managerial positions in the Croatian police:

(1) *Committee for selection of candidates.* The Police Act or any other legal or subordinate regulations does not include an (elaborated) methodology for appointing members of the committee in question, nor have they arranged their necessary competencies to qualify them for the performance of the relevant duty. The Regulation on Announcing and Conducting a Public Competition and Civil Service Internal Advertisement (Article 8) lists very general criteria on the characteristics of members of the committee: "Members of the committee shall be appointed among officials with necessary education and professional knowledge for assessing knowledge, abilities, and skills of candidates in public competition procedure."

(2) *The content of tests.* The above-mentioned Regulation (Article 11-12) states that "Assessment of candidates' knowledge, abilities, and skills, as well as results in the work so far shall be performed by means of a test and an interview the Committee conducts with candidates. ... In case of an internal advertisement, testing consists of an assessment of knowledge, abilities, and skills important to do the job." This phrase is too general and, in the absence of other regulations/provisions that would regulate the subject matter more precisely, it is not uncommon in practice that assessment of knowledge of candidates competing for completely different/diverse executive positions is conducted by tests with the same questions. Questions are focused on one area exclusively (law / legal regulations) and are often contingent, unimportant and irrelevant in terms of content.

(3) *Conversation-interview*. The above-mentioned Regulation (Article 14) states that “By means of a conversation with candidates, the Committee shall determine the knowledge, abilities and skills, interests, professional goals and motivation of candidates for civil service work, as well as the results achieved in their work so far.” This case also does not include more precise regulations/provisions on how to determine the mentioned qualities of candidates. In addition, members of the committee should have the appropriate professional competences and professional qualifications to be able to successfully carry out the tasks involved, and they often do not have it. The relevance of conversation-interview as a selection method for managers is also problematic due to its shortness that results in subjectivism, generality, and superficiality.

(4) *Ranking*. The above-mentioned regulation (Article 15 and 17) states that „upon conducted interview, the Committee shall rank applicants according to the total number of points earned on a test and an interview... The Committee shall submit to the head of the body a report on the conducted procedure, signed by all members of the Committee. The ranking list of the candidate is enclosed to the report...“. In this case, the lack of transparency is explicitly shown in the absence of an appropriate provision regulating that the first candidate should be appointed to the executive position for which he competed, and if there are justified obstacles for that, the next candidate on the list should follow and then the one after him/her. By omitting this, there is a room for improvisation and manipulation “disguised” by the right of discretionary decision making.

Selection of managers in the police is carried out in the manner and by methods regulated by the positive legal regulations. This is mainly a bureaucratic procedure, which is characterized by discretionary decision making. The actual situation is still better than it was a few years ago because there are a legal framework and prescribed procedures required for the tasks of identification and selection of managers.

### **3.3. RESEARCH RESULTS – STRENGTHENING THE SYSTEM OF SELECTION OF MANAGERS IN THE POLICE**

By comparing the indicated characteristics and parameters of the procedure of identification and selection of managers in the Croatian police and the content and results of the conducted empirical research (survey) – there is a significant discrepancy in the content of managerial traits evaluated in the existing

procedures of selection of managers and traits evaluated by the respondents in the questionnaire (which represent managerial potential in the US companies). For example, three traits in the questionnaire chosen by respondents as the most important (determination, decision making, intelligence) are not at all included in the current procedures of selection of managers in the police.

It is necessary to improve the system of identification and selection of managers in the police both in terms of content and form. With regard to content, the main orientation can be the results obtained as a part of this research, whose aim was to identify those managerial traits which are confirmed as useful and important in the police practice.

Empirical valorization or revalorization of some managerial traits is of fundamental importance for the procedure of selection of future managers. Taking into account opinions of experienced operational managers on the importance of certain managerial traits for the success of management is important in the context of designing and improving the system of selection of managers. Preference of managerial traits confirmed in practice when evaluating candidates for managerial functions can be called a model of “*preferential selection*”.

When it comes to forming, the existing simplified and elementary methods should be enhanced by other standard and specific methods of selection of managers.

One of the methods and techniques of professional selection are psychological tests (Sikavica, Bahtijarević-Šiber, Pološki Vokić, 2008: 689). Considering the content of the tasks, activities and psychological traits that provoke - the tests are usually divided into four major groups: ability tests, personality tests, knowledge and skills tests, interest tests.

Bahtijarević-Šiber (1999: 476) classifies the following as standard methods: professional and work biography, intellectual ability testing, personality, and interest questionnaires, projective techniques, behavioral and situational interviews, assessments of superiors and colleagues. She classifies the following as specific methods: situational judgment tests – selection using simulation and complex processes of evaluation of individual potentials (“Assessment Centres”).

*Selection of police executives and the manner and efficiency of their managing of police officers and organizational units are of key importance for the (dis)functional-*

ity of the police system. The intensity of negative discrepancy between the required (assumed, expected) and actual levels of knowledge and abilities of police management is proportionate to the certainty and intensity of the emergence of stress among police officers. ... Stressors with the highest perceived intensity are the unjust and dishonest manner of selection and appointment of executives; the lack of professional knowledge and skills and the lack of praise/reward for (extremely) well-done tasks. (Orlović, Labaš, Gudelj, 2015: 113-114)

In addition to improving the system of selection of managers, it is important to develop adequate managerial potentials in employees in the police system. As police managers are generally recruited from internal sources (existing human resources), the selection procedure will be more successful if the quantitative and qualitative levels of contenders competing for certain managerial positions are higher. The focus of educational activities in the police on the system of identifying and developing preferential (confirmed in practice) managerial competencies (knowledge, skills, abilities) in police officers can be called a model of “*educational anticipation*”.

Regarding the education of police officers in the field of management, two subordinate acts are particularly relevant: *Ordinance on Police Education and Regulation on Classification of Positions of Police Officers*.

Ordinance on Police Education (Article 2) stipulates that the Police Education Plan shall be drawn up for each calendar year and shall consist of three parts: (1) Plan of education, specialization, professional training and training conducted by the Ministry for the need of police officers, (2) Plan of conferences, symposia, fairs and professional meetings held outside the Ministry in the Republic of Croatia or abroad, where the Ministry sends its police officers, and (3) Plan of meetings held by individual divisions for their own needs.

Regulation on Classification of Positions of Police Officers (Article 7-10) stipulates that police officers interested in executive positions must meet certain criteria (standard criteria), including “education”. In accordance with the above-mentioned, those interested in positions in the category of *chief executive* and the *senior executive* must have completed a training program for the performance of tasks of executive police officers of *high level*. Those interested in a position in the category of the *executive* must have completed a training program for the performance of tasks executive police officers of *medium level* and



a position in the category of *junior executive* requires completion of the relevant training program of the *lower level*.

The above-mentioned Regulation (*Article 24, Police officers with work experience in management affairs*) stipulates that a police officer who has at least *ten years of work experience in police affairs* on the date of entry into force of this Regulation or who has spent at least *five years in executive positions*, is not required to complete the training program for the performance of tasks of executive police officers in accordance with the provisions of this Regulation.

The quoted provision implies the assumption that accrued work experience in executive or managerial affairs in a given period annuls the need for professional training on management issues. Work experience is certainly to be respected and valued but in some realistic frameworks. In the context of management, the Regulation made ad-hoc differentiation between experienced officers and those who lack experience, which can be considered as reasonable and justified to a certain extent and at the time of the adoption of the Regulation. However, an additional problem is that even several years after the Regulation entered into force (2011), there have been no training programs for managerial positions, although many managerial positions have been filled up with staff regardless of whether they had prescribed years of work experience or not.

#### 4. CONCLUSION

Management has a special role and is of great importance in the police system, as well as in all other systems. Generally, management consists of two key dimensions: personal and institutional. Personal dimension of management is demonstrated through responsibility and contribution of managers to meeting the goals of the organizational units they manage. The success of police managers depends on their professional knowledge and skills, but also on their personality and individual traits (abilities and personality traits).

The objective of this research was to determine the perception of operational police managers (respondents) of the importance of individual traits of managers for the success of management in the police at the operational level. Managers' traits (12 of them), evaluated by the respondents, related to overall management in the private and public sector. The obtained data were considered separately and in the context of the existing system of identification and



selection of managers in the Croatian police with the aim of providing the possibilities for its development and improvement.

Regarding the above, the respondents expressed their opinion *in accordance with their own knowledge and work experience*, stating that each of indicated traits has an important role for the success of police managers in managing organizational units of the police, primarily in case of police stations as fundamental police organizations. Differences in the perceived level of importance of particular traits/variables were not significant, there were no major discrepancies. Owing to providing of information and illustration, we point out that three first-ranked variables are: *determination, decision making, and intelligence*, while the variables ranked as the least important are: *creativity, social sensitivity, and written communication*.

*The Police Act* regulates the selection of police executives pursuant to Chapter 9 “Appointment and Dismissal of Executive Police Officers”. Candidates applying for internal advertisements or public competition must: (a) *meet formal conditions* (application, CV, certificate on level of education, work experience, police profession), (b) *take test* (assessment of knowledge, abilities and skills) and (c) *attend an interview* (identification of interests, professional goals, motivation for work, work experience and results of work done so far).

By comparing the characteristics of the existing system of identification and selection of managers in the Croatian police and the content and results of the conducted empirical research (survey) – there is a significant discrepancy in the content of managerial traits evaluated in the existing procedure of selection of managers and traits evaluated by the respondents in the questionnaire. In terms of form, the existing system is, in fact, elementary and bureaucratized and needs to be re-examined and developed by implementing a set of standard and specific methods of selection of managers that have been confirmed in the practice of other systems in both private and public sector.

In given context, the meaning of this research is realized by identifying the importance of individual managers’ traits in the police practice (empirical introspection), by valorising the identified managerial traits in the procedure of selection of future managers (preferential selection) and by highlighting and promoting development of appropriate managerial potentials in employees in the police system (educational anticipation).

Personal dimension of management should be systematically and permanently explored, analysed and studied with the aim of developing an appropriate quantum of knowledge and awareness of the subject matter and their proper application in procedures of identification, selection and education of managers in all organizations, especially in large, complex and important organization, such as the police.

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# EFFECTIVENESS OF ACTIVE EMPLOYMENT MEASURES IN SUPPORTING SELF-EMPLOYMENT IN FEDERATION OF BOSNIA AND HERZEGOVINA

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## **Abstract**

*Active labor market policies help the unemployed to get into employment as quickly as possible and to the job that best suits their qualifications by providing them with the support, they need for a successful return to the labor market. Their main goal is to increase opportunities for employment of job seekers and to improve the matching of jobs by which these policies provide a contribution to employment and GDP growth and at the same time reducing unemployment and dependency on unemployment benefits. In 2015, the Federal Employment Institute implemented a number of active employment measures, including the active measure of self-employment in the Federation of Bosnia and Herzegovina called "Start up 2015". This measure included co-financing of costs of starting a business for 593 unemployed persons from this entity of Bosnia and Herzegovina. The purpose of this paper is to point out the effectiveness of this measure in supporting self-employment and contributing to positive macroeconomic effects. Evaluation of the effectiveness of active measure of self-employment is made on the basis of conducted primary research and analyzed through components related to sustainability of supported businesses, effects on income of beneficiaries*

*of the measure, the creation of new jobs through additional employment and cost-benefit analysis of the measure. The paper finishes with recommendations for improvements for further implementation of the measure.*

**Keywords:** active labor market policies (ALMPs), self-employment, employment, public employment services (PES), Federation of BiH

JEL Classification: J08, J21

## 1. INTRODUCTION

According to European Commission (2016), the main goal of active labor market policies (ALMPs) is to increase the employment opportunities for job seekers and to improve matching between jobs (vacancies) and workers (i.e. the unemployed). ALMPs in this way provide a contribution to employment and GDP growth, and at the same time reducing unemployment and dependency on unemployment benefits. Most of the public employment services in the European Union but in other countries also use the similar design of ALMPs that include: counseling and job-search assistance, subsidies to employers, direct employment/job-creation schemes and training.

For EU member states, ALMPs constitute a central part of their European Employment Strategy, which defines employment as one key objective of a joint economic policy, and while such active policies have been in use for many years in most countries, there is a growing awareness of the need to develop scientifically-justified measures of the effectiveness of different ALMPs (Kluve, 2006, pg.4).

Active labor market programmes includes all social expenditure (other than education) which is aimed at the improvement of the beneficiaries' prospect of finding gainful employment or to otherwise increase their earnings capacity, and this category includes spending on public employment services and administration, labor market training, special programmes for youth when in transition from school to work, labor market programmes to provide or promote employment for unemployed and other persons (excluding young and disabled persons) and special programmes for the disabled (OECD, 2008).

In line with positive practices, the Federal Employment Institute implements a range of active employment measures that are implemented through various forms of support in employment, self-employment, preparation for the labor market and vocational education and training in accordance with the needs and requirements of the labor market as well as relevant laws and documents, es-

pecially with the Strategy for strengthening the mediation function in public employment services in Federation of Bosnia and Herzegovina.

Federal Employment Institute implemented a number of active employment measures in 2015, including the active measure of self-employment “Start up 2015” which included co-financing of costs of starting a business for 593 unemployed persons from Federation of Bosnia and Herzegovina. The results of the primary research related to the sustainability of supported businesses, effects on income of beneficiaries of the measure, the creation of new jobs through additional employment and cost-benefit analysis of the measure are used for estimation of effectiveness of the measure. The research and evaluation of the measure were implemented within the Youth Employment Project (YEP).

Evaluation of the active employment measure can be done at all stages - at stages of identification, creation, implementation, and measurement of results. The authors of this paper made an impact assessment of the measure since the evaluation was done in the stage of results measurement in order to determine the net impact of the measure. The results of the net impact of the measure for beneficiaries have been assessed in comparison with the appropriate group (control group), what enabled measurement and comparison of the achieved effects with what would happen if the measure was not implemented. For this purpose, the authors applied econometric analysis, which compares the differences in the data pairs of the beneficiaries of the measure and the selected control group members i.e. authors applied the matching method by similarity.

One of the objectives of the research are is to determine how many beneficiaries of the measure kept their businesses open six or twelve months after the end of the measure. The additional objectives of the analysis are to review the financial effect of the measure Start up 2015 through the prism of improvement of the financial situation of the beneficiaries, as well as the cost-benefit analysis of the measure from the Federal Employment Institute point of view. Ultimately, the final objective of the research but also the evaluation is to provide a contribution to improving the procedures and processes of implementing active self-employment measure by giving recommendations that are consisting part of the paper.

## 2. ACTIVE LABOR MARKET POLICIES

Public Employment Services exists to provide social security to unemployed persons during the unemployment period, but their primary purpose

is to link supply and demand, i.e. unemployed persons and employers, which is achieved through modern tools and active labor market measures (Markuš and Umihanić, 2014. pg.3). According to International Labor Office (2003, pg.3), active labor market policies are policies that provide income replacement and labor market integration measures to those looking for jobs, usually the unemployed, but also the underemployed and even the employed who are looking for better jobs. ALMPs typically include labor market training, job creation in the form of public and community work programmes, programmes to promote enterprise creation, and hiring subsidies. ALMPs are usually targeted at specific groups facing particular labor market integration difficulties: younger and older people, women and those particularly hard to place such as the disabled. (ILO: GB.288/ESP/2, 2003).

The success of ALMPs depends not only on expenditure levels but most importantly on the design of the measures and the way they are implemented. Counselling and job-search assistance are mostly useful for short-term unemployed and include advice combined with a range of potential interventions. Subsidies to employers are relatively costly and are typically targeted at the most disadvantaged groups for whom other measures have proved ineffective. Direct employment/job-creation schemes are typically targeted at medium and long term unemployed to avoid perverse employment effects on the short term unemployed, through participants who might otherwise have found “real” jobs, being held off the labor market during the period of participation. Training is usually found to have the strongest positive long-term effects, but it is expensive (EC, 2016, pg. 6).

Based on positive practices, the Federal Employment Institute as an authorized institution for implementation of the active employment measures in the Federation of BiH implements different sets of ALMPs including the ones intended for employers as well as for unemployed individuals. The first group of measures is implemented for the purpose of satisfying demand of employers for workers of a certain profile and occupation, while other groups of measures are implemented with the aim to improve the labor supply of the Federation of BiH. When defining the measures, Federal Employment Institute takes into account the needs and requirements of the labor market as well as of compliance with the relevant strategic documents in the area of labor and employment. Special attention is paid to the diversity and needs of cantons in the Federation of BiH, and the available funds for the implementation of the ALMPs.



Some of the active employment measures implemented by the Federal Employment Institute include: Program of co-financing of the employment and gaining the first employment experience, Program of employment program and self-employment of Roma people, Program of co-financing of start-ups, professional orientation (professional information, training program for active job search etc.), program of preparation for job (training, vocational training and specialization), public works programs and joint programs with other institutions.

### 3. ACTIVE SELF-EMPLOYMENT MEASURE START UP 2015.

Active employment measures in 2015, the Federal Employment Institute defined and implemented in line with the Law on mediation in employment and social insurance of unemployed persons in Federation of Bosnia and Herzegovina („Official Gazette of Federation of Bosnia and Herzegovina“, no. 41/01, 22/05 and 9/08), Strategy for strengthening the mediation function in Public Employment Services in the Federation of Bosnia and Herzegovina and 2015 Annual working plan of the Federal Employment Institute. Support was provided to target groups of unemployed people identified by the aforementioned strategic document as more hardly to employ, especially young people and women. The realization of active employment policy measures was aimed at recruiting the persons from the unemployment register in the Federation of Bosnia and Herzegovina with special social and gender sensitivity in order to strengthen their competitiveness in the labor market, to prevent long-term unemployment and to create the conditions for acquiring the first job experience. Part of the ALPMs in 2015, was Program of co-financing of self-employment named Start up 2015. Planned funds for this measure were 2.640.000 BAM, and Federal Employment Institute implemented this program in cooperation 10 cantonal public employment services.

The aim of the program was to encourage at least 600 people from the unemployment register in the Federation of BiH for self-employment as well as employment of other unemployed persons, with support to the development of social entrepreneurship.

As a target group/beneficiary of the funds were defined persons from the unemployment register in the Federation of BiH before submitting the application for the program, regardless of the level of education and age, which would upon approval of the funds, register and maintain the small business for at least 15 months.



Measure was defined in a way that Federal Employment Institute would transfer the incentive funds to the beneficiaries after registration of small business (craft or limited liability company) in the number of obligatory contributions determined depending on the field of business activity, for the duration of 15 months, after the beneficiary provide proof that he/she paid these contributions. In the case of employment of an additional person, Federal Employment Institute would transfer incentive funds in monthly payments in the number of mandatory contributions of employees' salaries. Also, for the purpose of business start-up costs (registration fees, materials, equipment etc.), Institute transferred incentive funds in the amount of 200,00 BAM. For the purpose of implementation of the measure and collecting applications, the Federal Employment Institute published a Public call through the media and the website [www.fzzz.ba](http://www.fzzz.ba), which remained open until the expenditure of funds, i.e. until the signing of contracts in the value of available funds determined by cantons. Review of allocation of funds by cantons and the level of implementation of funds are presented in Table 1.

**Table 1.** Program Start Up 2015 - Allocation of funds by cantons and level of allocation

Canton	Participants of the control group (No of unemployed persons at the time when the call was opened)	TOTAL (Planned)	TOTAL (Allocated)	Level of allocation of funds (%)
Una Sana Canton	45.251	297.517,13	301.501,00	101%
Posavina Canton	5.378	105.478,52	112.156,00	106%
Tuzla Canton	98.215	544.642,64	560.842,00	102%
Zenica Doboij Canton	70.017	411.153,59	382.561,00	93%
Bosnian Podrinje Canton	3.797	96.329,56	43.368,00	45%
Central Bosnia Canton	42.917	276.142,86	223.011,00	81%
Herzegovina Neretva Canton	33.135	238.520,01	177.040,00	74%
West Herzegovina Canton	9.157	130.899,62	60.569,00	46%
Canton Sarajevo	70.579	415.643,27	237.464,00	57%
Canton 10	8.159	123.672,79	103.384,00	83%
TOTAL	386.605	2.640.000,00	2.201.896,00	83%

**Source:** Federal Employment Institute, author's creation

The total amount of allocated funds were 2.201.869,00 BAM, which is ca. 83% of the planned amount. The total planned number of beneficiaries was 600, while the actual number of beneficiaries was 593. The average cost per beneficiary was 3.746 BAM.

## 4. EVALUATION OF ACTIVE MEASURE OF SELF-EMPLOYMENT START UP 2015

### 4.1. METHODOLOGICAL FRAMEWORK

According to Corbanese & Rosas (2009) in net impact estimation, the outcomes of program participants are judged in relation to an appropriate comparison (control) group. These authors explain that measurement of net impact includes the impact on employment and earnings and that is needed in order to estimate whether the programs were adequately designed, targeted, sequenced and administered.

Econometric analysis was conducted for the purpose of net impact estimation of participation in the program. This analysis compares the differences in the data pairs of the beneficiaries of the measure and the selected control group members, more specifically, the pairing method by relatedness was applied. The general demographic characteristics of the beneficiaries were known. In order to satisfy the objectives of the analysis, a similar member of the control group was identified satisfying at least five basic criteria (PES, qualification, sex, age and period of job search/period spent at unemployment register of the Federal Employment Institute). Econometric analysis indicated the effects of participation in the program for each participant, by direct comparison of differences in data pairs of beneficiaries and carefully selected member of the control group. Thus, for each participant in the program/beneficiary of the measure, at least five potential individuals for pairing within the control group were identified. After pairing the members of these two groups, the difference between them was measured.

A qualitative part of the research, which was conducted for further accepting/rejecting defined hypotheses, was realized using the questionnaire and in the form of interviews with beneficiaries of the self-employment measure and members of the control group, with attempt to include less important, unformed

or disguised attitudes about the measure and the services provided by the PES, all based on the research objectives. The survey was conducted on a sample of beneficiaries, but also on randomly selected members of the control group, i.e. unemployed persons who were on the unemployment register of the Institute in the period when the active self-employment measure was implemented. The questionnaire of the International Labor Organization (ILO) was used as the basis for the creation of questionnaire, and additional questions from the Labor Force Survey were included, which was additionally adapted and modified in accordance with the requirements of ALMP Start up 2015. The survey questionnaire contained questions about income before 2015 and after 2015 as well as questions about subjective evaluation of the program.

In the assessment of the net impact of the measure Start up 2015 several research questions were defined:

- ✦ How many beneficiaries of the measure have retained their business after the end of the measure?
- ✦ What are the effects of the measure on the household members of the beneficiaries?
- ✦ Does the measure contribute to additional employment of other persons on the unemployment register?
- ✦ Do the benefits outstrip the costs of the measure and is the investment in the active measure justified?

Based on the methodological framework and research objectives following hypothesis were defined:

- ✦ H1: An active self-employment measure encourages employment with a significant percentage of beneficiaries who have retained small business for 6 or 12 months after the end of the measure.
- ✦ H2: Active measure of self-employment affects the income of the beneficiary's family.
- ✦ H3: Active measure of self-employment has a positive impact on additional employment.
- ✦ H4: Benefits of the ALMP overcome its costs, and investment in the implementation of the measure is justified.

H1: The starting point for the individual analysis were the data from the database of public employment services in which beneficiaries of the measure,

as well as unemployed persons, were registered and by which the trends and relevant individual changes could be identified over time or reference period. A large number of data (more than 146 variables) are stored in the public employment service databases, which measure different interactions between job seekers and service providers (bureaus). All persons in the database are marked with ID<sup>1</sup> numbers, so the cases (episodes) of persons who are registered or removed from the register can be tracked. In this particular case, beneficiaries of the measure have been removed from the register at the beginning of the use of the funds, and in case of eventual closure of business, were registered again. Therefore, for the purpose of accepting or rejecting H1, it was necessary to conduct an analysis of the duration of integration of the beneficiaries of the measure on the labor market.

As a first step, out of two tables “asset effects” and “passive effects” a new table was made containing the total actual episodes of unemployed persons. A real episode of unemployed persons is the time period that passes from the time of the beginning of the use of the measure until the eventual return to the register. Returning to the register is an undesirable outcome of the measure, and the share of those beneficiaries in the total number of beneficiaries was used to determine the effectiveness of the measure. To prove this hypothesis a comparative analysis of the data was used, in a way that statistical indicators were compared as the average effect of the measure for two different periods. As referent periods, indicators of beneficiaries which maintained the status of employed person 6 and 12 months after the end of the measure were used. To prove this hypothesis, the results of the analysis of the net impact were calculated using the propensity score matching - PSM.

H2: In proving this hypothesis, the results of the online questionnaire, filled out by beneficiaries of the Start up 2015 measure, were used. According to clearly defined criteria, it was necessary to assess the improvement of the overall socio-economic situation of the individuals during and after the use of a specific measure. The questionnaire was used to evaluate the subjective perception of the beneficiary about changes in lifestyle standards or quality of life, as well as to evaluate the current business situation in the case of those beneficiaries whose businesses were still active and in which beneficiaries are still employed,

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<sup>1</sup> In order to protect personal data, a unique “key code” was generated for each person, which is monitored through all episodes and has a function of individual registration number.

providing an insight into the improvement of the socio-economic situation of each individual beneficiary. The qualitative part of the survey was implemented using a questionnaire for beneficiaries of the measure and by using the method of dubious interviews with the employees of the PESs.

H3: The indicator of the success of measure's outcome relates to whether the beneficiaries employed additional staff during the use of the measure and to what extent. So, the questionnaire contained questions related to this issue, and used statistical tool for this hypothesis was a statistical comparative analysis of the results.

H4: For the purpose of the analysis of benefits of the measure and determination in which extent the costs and investment in implementation of the measure were justified, authors used partial cost-benefit analysis, which presents determination and comparison of the cost of the measure for one individual and expense of the unemployed person which is on the unemployment register, as well as ratio of the costs of the self-employed person. Calculation included average annual costs of fees for the unemployed person and the average cost for health insurance which is different depending on a canton, so the average value of 8,00 BAM was taken into calculation.

In its original form, the database of the Federal Employment Institute contains information about people who were unemployed for a certain period of time. For the purpose of defining the database of the control group, only those individuals who were unemployed at the beginning of the certain month were selected. Conditions for the beneficiaries were defined in a way to allow monitoring of the duration of use of the measure. Creation of the input bases in this way enabled pairing with a double from the control group, which at the same month was on the unemployment register. The pairing procedure for each month referred to:

- the case of a group of beneficiaries of the measure - persons who started to use the measure in a certain month
- the case in the control group; persons who did not use the measure (with control related to participation in other measures) and at the same time which were unemployed on the first day of the given month.

In order to control variations in the labor market at the year level, exact matching at month and year levels were applied. This, besides the closest approximate values of the sum of the propensity of participation, implies the ap-

plication of the conditions under which the person in the control group must be unemployed in the same month as the person who participated in the measure to which this match-pair belongs.

Through the econometric longitudinal model, labor market outcomes were tracked for both groups. To measure the net impact of the measure, the authors applied the method that allows post hoc evaluation of the net impact of the measure based on propensity score matching – PSM method. Within the model, the probability of employment or unemployment (depending on the type of dependent variable) is simulated according to the formula:

$$e(X_i) = \Pr ( z_i = 1/X_i)$$

for  $z_i = 1$ , for beneficiaries and  $z_i = 0$  for the control group;  $X_i$  – covariance observation vector and<sup>te</sup> observations.

Since the PSM is the probability model, it is defined through binary variables 0 to 1. The general logic of the model was to identify a set of variables of persons who participated in the Start up 2015 measure which affect the possibility of inclusion in this measure.

Pairing of data was based on the assumption that, at a time when the co-financed and funded persons entered in some of the ALMPs, it is possible to identify a set of their similars which, according to the selected characteristics available in the used database, could use the analyzed Start up 2015 measure but they have not done so.

#### 4.2. RESULTS OF THE ANALYSIS

The analysis included 593 beneficiaries of the self-employment measure. In relation to gender, 41% of the beneficiaries were women, while the rest of 59% of beneficiaries were men. Only 2% has left the program. The measure included 33% of persons between 24 and 35 years old and 15% of 19 to 24 years old.

The extent of the analysis for all reference years is defined by 12 months after the nominal duration of the measure (15 months). In addition to showing the average effect of the measure on total data, paired data provided a comparison and interpretation of the average effects of the measure at the year of its implementation.

H1: *An active self-employment measure encourages employment with a significant percentage of beneficiaries who have retained small business for 6 or 12 months after the end of the measure the measure can be accepted since 52% beneficiaries retained their working status 12 months after the end of the measure. More precisely, out of 593 beneficiaries, 411 of them were still employed after 6 months and 310 of them after 12 months.*

For the purpose of the analysis, two logistic regression models were used. These two models have the same set of independent variables and various dependent variables. In each model, the dependent variable referred to the outcome of the measure - the status of a person in the labor market. Employment status is a variable used as a dependent variable. For the purposes of econometric analysis, logistic regression was used. People who were employed were assigned a binary value of 1 and a non-working person was assigned a binary value 0. In the second model, as the main independent variable, the value 1 was used for the persons who used the measure and belonged to the beneficiaries group and 0 for persons who did not use the measure and belonged to the control group.

In the estimations of the model, the indicator of belonging to the beneficiaries or control group was used as the main independent variable. Namely, the statistical significance of this variable was used to estimate the statistical significance of the effect of the measure. Other independent variables were used as control variables and were included in the model, with the aim of further testing the significance of the measure effect test.

The set of independent variables were the predictors of the outcome of the intervention previously used in the matching process, and the measure underestimation indicator (coded as 1 = beneficiaries group, 0 = control group). Systematically, on the basis of simulations implemented using the econometric model of logistic regression,  $\beta$  coefficients of the model from sample distribution were obtained, defined by the standard error of the logistic regression model. For each of the models, two types of simulations were performed, one for the beneficiaries group and in which the binary value of 1 was assigned for the affiliation indicator. The second simulation was performed for the control group, for which the binary value assigned was 0. For each model, other independent variables were set at the average values of the analyzed data set. The next step in the econometric analysis was to estimate the difference between the expected probabilities of employment/unemployment between the beneficiaries and control group.

In Table 2, the distribution of “scoring” was compared to similarity before pairing and after pairing between the control group and the beneficiaries group. The “total data” column shows the arithmetic mean of the scores according to the likeness of the beneficiaries of the measure and the control group which in this column implies all observations in the database that have not entered the ALMPs in the given model.

The other parameters in this column are: the standard deviation of the scores according to the preference within the control group (SD control), the difference between the arithmetic mean treated and the control group (average of the differences), and the standardized difference between the arithmetic mean of the two groups (st. average of the differences). The standardized difference of the arithmetic means was obtained as the difference between the treated and control group divided by the standard deviation of the control group and represented a sort of reduction of pair-matching bias according to the formula:

$$\text{The standardized difference of the arithmetic means TOTAL DATA} = \frac{\bar{x}_T - \bar{x}_C}{s_C}$$

$\bar{x}_T$  = average of the aimed variable (score depending on the preference or predictor of the logistic regression model) in the beneficiaries group,

$\bar{x}_C$  = average of the aimed variable (score depending on the preference or predictor of the logistic regression model) in the control group

$s_C$  = standard deviation of the aimed variable (score depending on the preference or predictor of the logistic regression model) of the control group

The same set of data is also presented in the next column (paired data), with the difference that the data only concerns paired bases. The last column (reduction) offers an amount of data bias reduction after implementing the pairing algorithm. The second subset of the “reduction” column represents the reduction percentage of the standardized difference of arithmetic means after the application of the pairing procedure.



**Table 2.** Support to self-employment – Rating of pair-matching quality – distribution of bias scores

	Total data					Paired data					Reduction	
	Average - beneficiary	Average - control group	SD of the control group	Average - difference	SD difference	Average - beneficiary	Average - control group	SD of the control group	Average - difference	SD difference	Average - difference	SD difference of averages
2015	0,005	0,000	0,000	0,001	1,6487	0,001	0,001	0,001	0,000	0,0145	97,8746	97,1457

**Source:** Federal Employment Institute, Federal Tax Office, Authors' creation

As can be seen from the previous table, the pairing quality is high regarding the distribution of bias scores. Thus it can be concluded that the members of the control group within the base of all the unemployed persons at the moment of the initiation of the measure, by their characteristics, corresponding to the members of the beneficiaries group.

In each model, the standardized difference of the arithmetic means before pairing was consistently higher than after pairing. Sample distributions of these differences and 95% confidence intervals were made through simulation. Reliability intervals that do not include value 0 are statistically significant, regardless of the positive or negative sign. In case that the range of intervals at a certain moment got the value of 0, the effect of the measure was not statistically significant.

Confidence intervals were calculated for each model at the level of each of the analyzed object for 12 months after leaving the intervention. The table below shows the obtained intervals.

**Table 3.** Beneficiaries of the measure and members of the control group at the employment register

	Beneficiaries of the measure	Pair-matched members of the control group
Startup 2015	593	972
State on the employment register of the TAX office after six months	69%	31%
State on the employment register of the TAX office after twelve months	52%	27%

**Source:** Federal Employment Institute, Federal Tax Office, Authors' creation

On the basis of the final results, it can be concluded that the level of the measure's implementation is 98%, that is, withdrawal from the measure of the beneficiaries is very small, only 2%.

Distribution of the confidence intervals for the employment outcome in the sixth month after the end of the measure, reviewed in relation to total data, indicates that the impact of self-employment measure on employment rates is statistically significant at the 95% interval. The average effect in the sixth month after the end of the measure is 0.379 and the lowest limit of the interval is 0.359.

in the self-employment aspect, the average impact of the measure on employment is high and it is on the level of 52% 12 months after the end of the measure, while for the members of the control group the employment rate has remained at the approximately equal level of 27%.

H2: *Active measure of self-employment affects the income of the beneficiary's family* is accepted, although the survey showed that this impact is not significant, but that there was the certain impact on the financial situation of the beneficiaries of the measure. More in-depth analysis of the impact would include additional data from the tax office and the amount of the money invested in the business by the beneficiary. Cca. 57% of beneficiaries stated that before 2015, they had a very bad financial situation, while 50% rated the financial situation as moderate. At the same time, 25,12% of beneficiaries of the measure stated that their financial situation before 2015 was relatively good and only 35,11% said they had a good financial situation. Although the number of beneficiaries whose financial situation improved after 2015 was more than 10 %.

H3: *Active measure of self-employment has a positive impact on additional employment* is accepted since, in addition to 593 employed through the implementation of the measure, 130 other persons were employed. Besides 593 employed persons, additional 130 persons were employed by the beneficiaries of the measure, out of which 50% of those who had additional employment, employed one person, while 2% of them employed more than one person. The interesting indicator is that out of 130 additionally employed, 78% of them were employed after the end of the measure.

H4: *Benefits of the ALMP overcome its costs, and investment in the implementation of the measure is justified* is accepted since the funds for 2,6 beneficiaries should be spent in order for one beneficiary to be employed.

For the purpose of accepting/rejecting this hypothesis, the cost-benefit analysis was used. Table 4. show the cost rates per employed beneficiary of the measure Start up 2015.

**Table 4.** The cost rates per employed beneficiary of the measure Start up 2015

<b>Total spent funds for implementation of the measure</b>	<b>2.221.584,72</b>
Number of beneficiaries	593
Average cost per beneficiary	3.746
The net impact of PSM 12 months after the end of the measure	0,38
Absolute net (Number of beneficiaries * PSM net impact)	225
The unit cost of the measure by achieved impact, ie by employed (total spent funds, divided by absolute net)	9.873
The cost rates per employed beneficiary (how many unit costs per beneficiary should be spent to employ one beneficiary 12 months after the end of the measure)	2,6

**Source:** Federal Employment Institute, Federal Tax Office, Authors' creation

Table 4 shows that total funds for the measure were in the amount 2.221.584,72 BAM and that average costs per one beneficiary was 3.746 BAM. In order to compare the cost of the measure per one individual, beneficiary of the measure and cost of the unemployed person which stays on the unemployment register, and the ratio of the costs of the self-employed person, authors calculated how much the unit cost per beneficiary should be spent for one beneficiary to be employed 2 months after the end of the measure. It can be concluded that it was necessary to spend the amount of the cost of 2,6 self-employed people so that one person can be employed. To this calculation, we add the fact that the average cost of receiving certain remunerations as the unemployed person at the unemployment register is 4,632 BAM, so the Public Employment Services should have higher interest for the proactive inclusion of the unemployed persons in the use of active employment measures especially self-employment measure.

It should be emphasized that within the survey authors also conducted a certain estimation of satisfaction with the measure by the beneficiaries. The results show that 54,22% of beneficiaries stated that they were satisfied with the implementation of the measure, while 50% of them were satisfied with the reporting process. At the other hand, 82,17% of participants of the control group stated that they were not offered to use the measure. On the basis of this, it can

be concluded that Federal Employment Institute had partial success inadequate communication of the measure, which implies greater involvement of counselors in the process.

## 5. RECOMMENDATION FOR IMPROVEMENT OF EFFICIENCY AND EFFECTIVENESS OF THE MEASURE

Based on the results presented above, authors provide a set of recommendations which implementation would contribute to the higher effectiveness and efficiency of the start-up measure as active employment measure of the Federal Employment Institute, thereby contributing to the creation of new jobs and new employment in the Federation of Bosnia and Herzegovina.

*Recommendation 1: Introduce continuous control of databases of PES and state at the employment register of tax offices.*

Establishment of the regular monitoring system of the employment data within the databases of PES and tax offices would contribute to more effective monitoring and evaluation of ALMPs, while huge time-wasting on a collection of information by cantonal employment offices would be avoided. Besides this, monitoring of these data would contribute to more effective planning of new ALMPs with the final objective of providing a contribution to new employment.

*Recommendation 2: Improve procedures of application, implementation, and reporting of ALMPs.*

Although over half of beneficiaries of the measure stated that they were satisfied with the application procedures, implementation, and reporting related TO the implementation of the measure, 22% of respondents stated that they were not satisfied with the mentioned aspects. As it is a significant share, it is necessary to further consider the reasons for the expressed views and to improve these procedures. Special attention should be paid to the promotion of the public call and distribution of the information. Procedures of the monitoring and reporting should take in consideration the needs and requirements of the people who do not have the advanced IT skills.

Recommendation 3: *Self-employment measure should have pre and post activities in order to contribute to greater employment and survival of supported businesses in the market.*

Since only 130 additional persons were employed by the beneficiaries of the measure, as well as that the certain percentage of beneficiaries left the measure, this implies the need for continuous improvement of the measure including pre and post activities. The entrepreneurial process starts with the decision of the entrepreneur to become an entrepreneur, including the business idea generation process (Baringer & Ireland, 2008). The process continues with the validation of the business idea (through feasibility analysis and creation of a business plan) then starting a business and further development of the business. Looking from this aspect, self-employment measure covers only the step of business start-up process which implies the need for ensuring support in business idea validation process and support in development of established business, which can be done through entrepreneurial education before the financial support and mentoring services during the business start-up process but as well after registration of the business, in order to provide contribution to better entrepreneurial and managerial competencies of business owners/beneficiaries of the measure, but as well as to higher employment and sustainability of the established businesses. This would also contribute to less drop out rate of the measure.

Recommendation 4: *Parallel monitoring and evaluation of ALMPs*

Parallel monitoring of the multiple ALMPs provides opportunities to contemplate and compare effects of every individual measure, but also to measure the average cost per beneficiary, which can provide additional information about the costs of the measure and whether it was more efficient in relation to other implemented ALMPs.

## 6. CONCLUSION

Active labor market policies have become one of the main approaches and instruments for providing support to unemployed persons to find a job at the same time improving the matching of jobs. These policies have a significant role in providing a contribution to employment and economic development of the country. There are several forms of ALMPs focused on different groups and different outcomes. Most of the active employment measures differentiate in target

groups (youth, vulnerable groups etc.) or field (public works, self-employment etc). Based on positive practices, the Federal Employment Institute in 2015 among other active employment measures implemented active self-employment measure called Start up 2015 with the aim to support unemployed persons to ensure employment through starting their own business.

Analysis showed that this measure provided a contribution to employment since 52% beneficiaries retained their working status 12 months after the end of the measure and that additionally 130 persons were employed as a result of the implementation of the measure. Measure positively affected the income of the beneficiaries, and its benefits overcome its costs ie. investment in the implementation of the measure is justified since the funds for 2,6 beneficiaries should be spent in order for one beneficiary to be employed. These results showed that the measure was effective, but for better higher effectiveness and efficiency of the start-up measure as active employment measure of the Federal Employment Institute it is necessary to introduce continuous control of databases of PES and state at employment register of tax offices, improve procedures of application, implementation and reporting of ALMPs, introduce pre and post activities in order to contribute to greater employment and survival of supported businesses in the market and to ensure parallel monitoring and evaluation of ALMPs.

ALMPs in Federation of Bosnia and Herzegovina experience increasing interest by unemployed persons as well as employers and provide positive effects on employment. With the implementation of suggested recommendations and another improvement of the measure, their positive macroeconomic effects will be higher in the forthcoming periods.

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# MANAGEMENT SYSTEM OF THE NOTARY PUBLIC SERVICE

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## **Abstract**

*The notarial service deals with preparing and issuing public documents, verifying private documents, storing documents and various valuable items and other affairs. By doing these duties, public notaries take care of the legal security of the affairs and collect and store certain archival material in their archives. Archival material often has an important historical, political and scientific significance and is important for the preservation of legal and cultural heritage, but it can be a precious source of other information. In order to keep the legal security at a high level and to preserve legal and cultural heritage more efficiently, it is necessary to have a good organization and management in each notary public office and the notary public service in general. The organizational structure of the notary public service, as well as the division and manner of work, will be presented in this paper. Today, owing to modern technology, the management can be even more effective, and the notary public service becomes an important database holder that can manage it for the purpose of general social and notarial service benefits. Through the knowledge management related to the notary profession and the knowledge related to modern technology, the*



*notary public service has the potential to make an even greater contribution to the preservation of legal security and cultural heritage.*

**Keywords:** *notary public service, management, knowledge, experience*

JEL Classification: M10, M19

## 1. INTRODUCTION

The Notary Service consists of the official drafting and issuing of public documents on legal affairs, statements and facts on which the rights are established, the official certification of private documents, in receiving documents for safekeeping, money and valuables for their submission to other persons or public bodies, and, when demanded by courts or other public bodies, other procedures defined by law (the Public Notaries Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 2). Through the compilation of public documents and their preservation, the notary public service contributed enormously to the preservation of legal and cultural heritage in their archives. (Gagro, 2018, 117).

The Notary Service has been gradually developed and improved through its twenty-five years of experience and it is today in position to contribute to society through acquired knowledge and experience today by providing first and foremost legal certainty and offering new solutions that will speed up individual procedures and increase their efficiency (enforcement procedures, land registry procedures, procedures relating to companies, legacy proceedings ...).

## 2. MANAGING A PUBLIC NOTARY OFFICE

### 2.1. MANAGEMENT IN GENERAL

Each public notary office has a formal organizational structure based on the Public Notary Regulation and the Public Notary Act, which specifies the schedule of works, hierarchy, management, and the conduct rules that are primarily determined by the Notary Code of Ethics. (Gagro, 2018, 88). The Act stipulates that public notaries are independent and independent holders of public notary services, who have the capacity of public trust. They perform their service as a sole occupation over time for which they are placed. (Public Notaries Act, Official Gazette 78/93, 29/94, 162/98, 16/07 and 75/09, Article 2). The

Act stipulates that public notaries are the autonomous and independent holder of public notary services, as persons worthy of public trust. They perform their services as a sole occupation over the period for which they have been appointed for office work. A public notary is the leading person in the notarial office and vested with the highest authorities arising from his appointment. However, in spite of the high degree of centralization, there is also a high degree of decentralization that can be determined by a public notary directly by employing a public notary assessor. A public notary assessor may perform all activities that are legally authorized to be performed by a public notary (unless his or her activities are limited at the request of a public notary). (Gagro, 2018, 89).

A public notary shall be appointed by a decision of a minister responsible for justice affairs on the basis of an announcement for positions. The Croatian Notaries Chamber is responsible for appointing a notary public on the basis of the Ministry of Justice. (the Public Notaries Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and order 75/2009, Article 14, paragraphs 1 and 2). Only after appointment, the public notary shall become the hierarchically highest person who makes decisions in the notarial office (manager) and shall be responsible for the work of the office (Gagro, 2018, 89). Following the vertical hierarchy order, in addition to the Public Notaries Act public notary, the public notary office may have employed notary assessors, advisers, and apprentices at law, and it can be said that they are informal holders of the horizontal organizational (office) units. (Gagro, 2018, 89). The scope of work of public assessors, advisers and apprentices are determined by the Public Notaries Act (the Public Notaries Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 126).

A public notary runs the office respecting strictly the formal organization based on Notary Public Regulation, the Law on Public Notaries Act and the Code of Public Notary Ethics. Along with a strictly formal organization, there is also a social and social informal organization of the office manager that is based on the creation of quality interpersonal relationships among employees and which indirectly affect the quality of the formal organizational structure of the notary public office. (Gagro, 2018, 88).

Public notaries are obliged, based on the service needs and according to their assessment, to employ assessors, advisers and apprentices at law from the ranks of capable and valuable lawyers to develop and improve the notary public ser-

vice. A public notary must ensure satisfactory working conditions at the office taking care of the professional staffing of employees. The notary public is obliged to enable and encourage assessors, advisers, and apprentices at law to acquire a comprehensive and thorough knowledge of the public notary practice and knowledge. In particular, a public notary must endeavor to make assessors, advisers, and apprentices as future notaries, to adopt and preserve the principles of public notaries' ethics in equal measure as they acquire professional practice and knowledge. A notary public is obliged carefully and in accordance with the law and the rulebook to allocate tasks to the assessors, advisers, and apprentices as well as to employees; supervise their work, take care of their status especially in the performance of their tasks and relations with clients. It is forbidden to conclude any contract on the participation in profit or on the partnership between public notaries and assessors, advisers and apprentices as well as any other persons. A public notary is obliged to make efforts to solve any disputes between the public notary and assessors, advisers and apprentices in a peaceful and dignified manner, either personally or through the bodies of the Chamber. In the case of an assessor, adviser, and apprentice of another public notary, the notary public will first contact the other notary directly for a peaceful solution of the dispute. (The Code of Public Notary Ethics, Official Gazette 55/2011, points 49 - 53) .

It has previously been mentioned that a public notary assessor may perform all tasks that are legally authorized to be performed by a public notary, from which it can be seen that a public notary is equated with a public notary with full authority, and thus a public notary has the option to physically disengage from certain segments of office activities (legacy proceedings, companies, enforcement cases ...). However, such comfort should not lead to the complete relaxation of public notaries as the service provider in terms of the discontinuation of training, the loss of control over the work of the office and ultimately the question of his or her authority. The wealth of experience and knowledge gained during the years of work is the basis of the public notary services and the source of knowledge for assessors (future notaries). It is important to point out that, in order to avoid relaxation of public notaries to cease their training and, above all, to regulate the rules of conduct in the service by the Code of Public Notary Ethics which lays down the basic principle of the public notary ethics, i.e. the public notary performs his or her service conscientiously, fairly and impartially in accordance with the Constitution and the laws of the Republic of

Croatia. In carrying out his or her profession, the public notary has to acquire and strengthen the trust of clients and at the same time of the judicial and other bodies in front of which they perform, with his or her knowledge and behavior. A public notary is obliged to conscientiously fulfill the duties deriving from the notary public service and to preserve the reputation of the public notary service in performing the service and in private life. By his or her own behavior he or she shall serve as an example of humanity, respect for human rights and human dignity. In doing the public notary service, a public notary acts impartially and without prejudice or adherence to race, color, religion, nationality, age, marital status, sexual orientation, social and property status, political commitment, and any other diversity. A public notary is obliged to preserve his or independence in order to protect impartiality. A public notary is obliged to protect the interests of the clients by means that are in accordance with the laws and dignity of the public notary profession, guided by impartiality, good practices, conscience and the rules of public morality. In their documents and speech in official activities and generally in public, private or public performances, a public notary should take into account professionalism and general culture. A public notary may not accept jobs that are not compatible with his or her vocation and which could adversely affect his or her independence and good reputation as well as the honor and reputation of a public notary. Performance of tasks that, pursuant to regulations, may only be performed by public notaries, assessors, advisers, and apprentices may not be transferred onto persons who are not authorized to do so. A public notary may not refuse taking over of the task entrusted to him or her by the competent authority, except for the reasons set forth in the Public Notary Act. A public notary may not agree on an item or part of an item as a prize to which his or her official acts refer to.

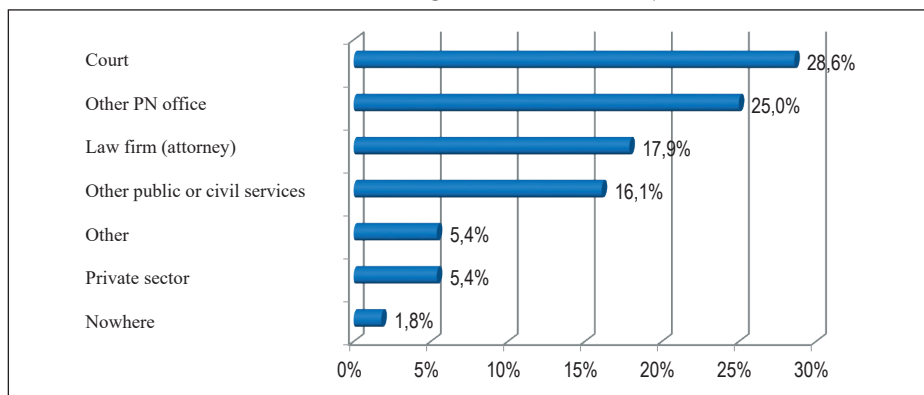
A public notary is neither in a position to emphasize his or her prior service or duty to obtain clients nor in any way keeping a client in the belief that he or she is, therefore, able to provide the requested legal aid or service more effectively for that purpose. A public notary has to refresh, expand and improve his or her legal and general education uniformly so that he or she does not ignore any legal field within the jurisdiction of a public notary. A public notary takes care of acting out of the service and in the public place as it fits the public notary service and not diminishing the personal reputation and trust of citizens in the public notary. (Code of Public Notary Ethics, Official Gazette 55/2011, point 1.- 16.)

## 2.2. KNOWLEDGE MANAGEMENT

Through the process of gaining knowledge in the public notary service, and such knowledge does not have to be directly related to the profession, new ideas and solutions are created that enhance the service itself and contribute to the common good. Every notary public should be a *worker of knowledge* because it only ensures the future of the service. (Gagro, 2018, 39).

As an individual, every notary public through lifelong learning and experience becomes an increasingly knowledgeable worker transferring it to his or her employees (assessors, advisers, and apprentices at law and other employees) and users of public notary services can recognize the public notary as a resource of knowledge used for legal security of all jobs, they conclude either private or for economic purposes. (Gagro, 2018, 41).

**Table 1.** Job position before opening own public notary office



Source: (Gagro, 2018, 128).

Workers of knowledge of the Croatian Chamber of Notaries are 334 public notaries who, in order to work as public notaries, had to undergo long and formal training (to complete law school, pass judicial and public notary exam). According to a survey carried out among public notaries, the data presented in Table 1 show that 25% of subjects gained practical knowledge and experience in another public notary office, 28.6% of subjects worked in courts, as attorneys or in law firms 17.9% and in other public or civil services 16.1%.

Obtained data show that the public notary holders together have enormous knowledge and legal experience that can be directed towards the advancement of the service and transfer it to the new generations, where the Croatian public notary academy plays an important role.

Public notaries in the Republic of Croatia are connected to the central information system of the Croatian Notaries Chamber through the new central web application e-Notar. Such a system enables the public service to create its own databases (registers) and linking with external databases. The e-Notar application is a new application, officially introduced on 1 January 2018 and the result of the knowledge and experience of public notaries. The application has the ability to be customized.

In order to communicate quickly and get quick answers to some of the issues that arise during everyday business activities, the public notary assessors have, through Viber's application, created the informal group "JB - help each other". This group currently consists of 240 participants sharing knowledge and experience in giving each other answers to the questions asked and present various findings. (Gagro, 2018, 37).

The importance of the wide range of knowledge from various fields can be seen from a survey conducted on a sample of 36 notaries in the Republic of Croatia where the knowledge and skills needed for public notary job are examined and all the activities performed by public notaries and need to know to perform.

**Table 2.** Knowledge groups and skills needed to perform a public notary job

NAME OF KNOWLEDGE AND SKILLS GROUPS	Number of listed knowledge and skills	Number of employers who listed a knowledge or skill	MANNER OF GAINING KNOWLEDGE AND SKILLS			NEED FOR KNOWLEDGE AND SKILLS IN 5 YEARS		
			Educ.	Both	Work exper.	Educ.	Both	Work exper.
Legal knowledge	96	34	20%	4%	75%	0%	53%	46%
Communication skills	30	19	7%	3%	90%	0%	53%	47%
Responsibility and integrity	13	10	8%	15%	77%	0%	38%	62%
Computer skills	11	8	27%	9%	64%	9%	9%	82%
Organization skills	10	3	20%	0%	80%	0%	50%	50%
Literacy	7	7	57%	0%	43%	0%	57%	43%
Social skills	6	4	0%	0%	100%	0%	100%	0%
Making decisions and HR management	4	3	0%	0%	100%	0%	50%	50%
Emotional stability and control	2	2	0%	0%	100%	0%	0%	100%
Statements referring to several knowledges and skills	2	2	0%	0%	100%	0%	0%	100%
Statements not referring to several knowledges and skills	2	3	14%	0%	86%	14%	43%	43%
<b>TOTAL</b>	<b>183</b>	<b>36</b>	<b>17%</b>	<b>4%</b>	<b>78%</b>	<b>1%</b>	<b>50%</b>	<b>49%</b>

**Source:** (Dekra zapošljavanje d.o.o., Analiza o standardu zanimanja, Javni bilježnici, Izvještaj o istraživanju, 7)

Subjects listed a total of 183 required knowledge and skills that they considered necessary for performing various key jobs at the workplace of a public notary. Answers received are categorized into 10 content categories. One category also contained those statements that referred to a greater number of knowledge and skills. Table 2 shows the values that point to the percentage of subjects who consider that the categories of different pieces of knowledge and skills are acquired through the education and work experience and their assessments of whether the need for certain knowledge and skills will be smaller, greater or equal in five years. Subjects most often included knowledge and skills that are categorized into a group of legal knowledge. The group contains 96 items of knowledge and skills by 34 subjects.

Most subjects believe that this group of knowledge and skills is gained through work experience. They also emphasize the importance of communi-

cations skills for everyday work. They also believe that communications skills are generally gained through work experience. Responsibility and integrity are considered necessary for the work of public notaries. They believe that the need for responsibility and integrity in work will be even more pronounced in the future. The knowledge and skills group that can be classified under the name of computer skills is listed 11 times by 8 subjects participating in this survey. Most subjects believe that this group of knowledge and skills is primarily acquired during practice (work). Almost all subjects agree that the need for these skills and skills will be greater in five years. Seven categories of organizational capability contain 10 items, 3 subjects give some of the answers that can be classified in this category. Most of the respondents believe that this group of knowledge and skills is gained solely through work experience. A similar percentage of subjects believe that the need for this group of knowledge and skills will remain the same and be greater in the future.

Other categories that contain a smaller number of listed items are also shown in Table 2. If we focus on total percentages, we can notice that subjects estimate that all groups of knowledge and skills are primarily gained through work experience. Given the assessment of future importance, 50% of subjects believe that knowledge and skills will be needed to the same extent, while 49% of them estimate that the need for knowledge and skills will be greater in the future. (Dekra Employment d.o.o., Occupational Standards Analysis, Notaries Public, Research Report, 8).



**Table 3.** Knowledge groups and skills performed a public notary job

NAME OF KNOWLEDGE AND SKILLS GROUPS	Number of listed knowledge and skills	Number of listed key task	Number of employers who listed key task	IT IS EXPECTED TO ADOPT KNOWLEDGE AND SKILLS THROUGH			NEED FOR KNOWLEDGE AND SKILLS IN 5 YEARS		
				Educ.	Both	Work exper.	Educ.	Both	Work exper.
General statements on public notary job	37	13	15	8%	0%	89%	0%	27%	70%
Communication with clients and state bodies	36	14	13	11%	0%	89%	0%	53%	47%
Drafting legal documents	32	19	15	27%	0%	73%	0%	52%	48%
Legacy proceedings	19	6	8	16%	26%	58%	0%	68%	32%
Certification and solemnization of documents	17	13	13	22%	17%	61%	6%	50%	44%
Enforcement procedure	17	7	10	17%	0%	83%	6%	72%	22%
Legal analysis	9	2	1	67%	0%	33%	0%	56%	44%
Archiving/safekeeping	8	4	3	0%	0%	100%	0%	75%	25%
Managing operations of public notary office	5	4	2	0%	0%	100%	0%	0%	100%
Statements referring to several knowledges and skills	3	2	2	0%	0%	100%	0%	0%	100%
<b>TOTAL</b>	<b>183</b>	<b>84</b>	<b>36</b>	<b>17%</b>	<b>4%</b>	<b>78%</b>	<b>1%</b>	<b>50%</b>	<b>49%</b>

**Source:** (Dekra zapošljavanje d.o.o., Analiza o standardu zanimanja, Javni bilježnici, Izvještaj o istraživanju, 9)

Subjects listed 84 items of key business tasks, which were later categorized into 10 content categories presented in Table 3. For work as a public notary, subjects listed 13 items that can be categorized into a group called general statements on notarial work. A total of 15 subjects listed a key task that can be attributed to this group because of its contents. The statements categorized in this group mostly referred, according to the subjects, to solving legal problems and to all the activities defined by the Public Notary Act.

They believe that employees at this job place should gain the knowledge and skills required to perform jobs covered by this group by work experience. A part of subjects also lists key tasks that can be categorized as a group titled as communication with clients and government bodies that contains 14 key business

tasks. The group of key tasks of drafting business documents includes 19 items by 15 subjects. A group of key tasks conducting legacy proceedings includes 6 items by 8 subjects. Other key job categories are listed in Table 3. Subjects generally state that knowledge and skills for all key business groups are mostly acquired through work experience.

They believe that only the knowledge and skills required to carry out key business activities from the legal analysis group are those that are primarily gained during education. Almost the same percentage of subjects believe that the need for the knowledge and skills required to perform these key business groups will remain the same and be greater in the future. (Dekra Employment d.o.o., Occupational Standards Analysis, Notaries Public, Research Report, 10).

### 3. MANAGEMENT OF THE CROATIAN NOTARY PUBLIC CHAMBER

#### 3.1. MANAGEMENT IN GENERAL

Pursuant to Article 173 of the Public Notary Act, the Croatian Public Notary Chamber was founded when at least fifty public notaries were appointed and started working at proposal by the Minister of Justice, and the founding assembly convened and chaired by the President of the Supreme Court of the Republic of Croatia as proposed by the Minister of Justice.

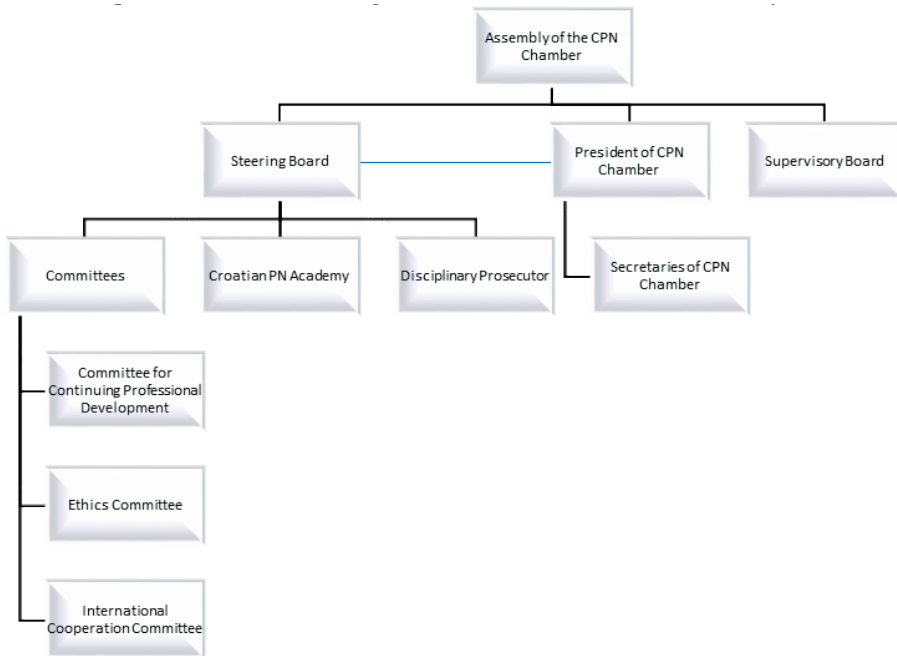
It can be said that Article 3 of the Statute of the Croatian Notary Chamber refers to the Management Chamber. The Chamber shall in particular:

- 1) Preserve the reputation, honor, and rights of public notaries;
- 2) Supervise the work and conduct of public notaries, officers in charge and public notary deputies, assessors, advisers, and apprentices in accordance with law;
- 3) Care for permanent professional developing of public notaries, assessors, advisers and apprentices and in this regard establishes and promotes various forms of professional and scientific cooperation with the ministry of justice (hereinafter: the ministry), courts, Croatian bar association, administrative bodies, faculties, lawyers' associations, etc.;
- 4) Establish the rules of public notary ethics and care for its development;

- 5) Monitor and study relationships and occurrences, including the situation in the judiciary and the administration that are of interest for the organization, position and work and the improvement of the public notary service;
- 6) Promote material, historical and other interests of the public notary service;
- 7) Care of the position and rights of retired public notaries and assessors and other persons employed in the public notary offices;
- 8) Establish and develop cooperation with other public notary chambers and international organizations of public notaries and lawyers;
- 9) Perform other tasks stipulated by law, by-law, by this statute or by other general acts of the chamber. (Statute of the Croatian Notary Chamber, Official Gazette 64/2014, 69/2014 and 33/2015, Article 3).

The bodies of the Chamber are the Assembly, the Steering Board, the President, the Supervisory Board, the Croatian Public Notary Academy, the Ethics Committee, the International Cooperation Board and the Disciplinary Board. The Statute stipulates that the Chamber may also establish other bodies and determine their competence to perform preparatory activities under the jurisdiction of the permanent bodies of the Chamber. The Steering Board may appoint occasional committees. (Statute of the Croatian Notary Chamber of Commerce, Official Gazette 64/2014, 69/2014 and 33/2015, Article 4.).

**Figure 1.** Schematic presentation of the management structure of the Croatian Notary Chamber



Source: <http://www.hjk.hr/O-Komori/Ustroj-Komore>

Figure 1 shows the structure of the management of the Croatian Notary Chamber. The Assembly of the Chamber is made up of all notaries registered in the Chamber's Registry, ten public notary assessors and five advisors. The Assembly is the highest body of the Chamber because it elects directly the management of the Chamber for a period of three years, i.e. the Chamber Assembly, members of the Management Board and the members of the Supervisory Board. It may be said that the Assembly Chamber also represents the management of the Chamber as it decides on the election of the above-mentioned bodies. (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 141, paragraph 1).

The Steering Board appoints the Expert Council of the Croatian Public Notary Academy, which is responsible for the management of knowledge of the Croatian Public Notary Chamber.

Supervision over the work and behavior of public notaries, performers and public notary deputies, and assessors, and apprentices shall be conducted by the Steering Board and the President of the Chamber. (the Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009 Article 141. paragraph 1.).

The Supervisory Board consists of three members, who elect the President among themselves. The Supervisory Board is obliged to review the Chamber's cash operations and the final financial statement at least twice a year. It submits a report to the Chamber Assembly on his or her work each year and proposes to give a discharge to the old Steering Board when electing a new one. (Statute of the Croatian Notary Chamber, Official Gazette 64/2014, 69/2014 and 33/2015, Article 20, paragraphs 1 and 2)

The Ethics Committee consists of at least five members, who elect the President among themselves. Ethics Committee:

- As the first-instance body it decides on violations of the Code of Public Notary Ethics;
- Establishes the draft of the Code of Public Notary Ethics, organizes and conducts a discussion on this draft and submits a draft of the Code to the Steering Board for a referral to the Assembly for adoption;
- Monitors the state of implementation of the rules of the public notary ethics and establish proposals for measures for improving public notary ethics;
- Organizes various forms of educational and scientific work (counseling, seminars, forums, round tables etc.) on the public notary ethics independently or in cooperation with the Steering Board and the Croatian Public Notary Academy and other relevant institutions,
- Performs other tasks related to the promotion of the public notary ethics in accordance with the conclusions and recommendations of the Assembly and the Steering Board. (Statute of the Croatian Public Notary Chamber, Official Gazette 64/2014, 69/2014 and 33/2015, Article 21, paragraph 1 and 2.)

### 3.1. KNOWLEDGE MANAGEMENT

Intellectual capital is the largest capital owned by the Croatian Public Notary Chamber and is contained in the knowledge of all members (notaries) and

innovations. Investing in knowledge and creating solutions (innovation) paves the way for the future of the service and leaves no room for any competition. (Gagro, 2018, 19).

The creation, transfer, and application of knowledge in business and production processes and knowledge management are one of the most important tasks of modern organizations. The continuous increase in knowledge and maximum use of knowledge of all employees becomes an imperative not only of development but the survival of organizations. Therefore, successful knowledge management becomes the greatest challenge of organizational managers and human resources management (Bahtijarević – Šiber, 2014, 219).

For the purpose of transferring the knowledge and for the training of its members, the Croatian Notaries Chamber on 17 May 2008 issued a Decision on the Establishment of the Croatian Notaries Academy (HJA). (Gagro, 2018, 36).

Pursuant to the Code on the Work of the Croatian Public Notary Academy, its main features involve: professional training of chamber members, elaboration of scientific concepts for professional and educational conferences and seminars intended for further professional development, participation in drafting expert opinions and guidance on legal proposals, organization of seminars for judicial and public notary exams, the implementation of professional training of other employees in the public notary offices, cooperation with universities, polytechnics, as well as cooperation with other professional organizations in the country and abroad, organization and development of various forms of professional and scientific training, publishing and information technology education. (Ruždjak, 2016., Zbirka proposal o javnom bilježništvu, Pravilnik o radu Hrvatske javnobilježničke akademije, članak 2. stavak 3.).

From the data in Table 2 based on the survey conducted, it is apparent that the public notaries have supported the initiative to develop and run the e-public notary practice. With the help of the five-degree Likert scale, subjects could express their own degree of agreement with each of these statements, including the initiative to develop and maintain e-public notary practice with a score of 4.036. It is also evident that (4.164) largely support encouragement of the establishment of national registers and their interlocking. (Gagro, 2018, 134).

Linking national registries through the central notary public e-mail application (e-Notar) would allow access to information from one place.

**Table 4.** Supporting the initiative for the development and management of e-public notary practices and the establishment of national registers and their linking

	I fully disagree	I disagree	Neither agree nor disagree	I agree	I fully agree	Arithmetic mean
Initiate development and maintain the register of e-public notary practices	7.3	5.5	5.5	40.0	41.8	4.036
Encourage the establishment of national registers and their links	7.3	1.8	10.9	27.3	52.7	4.164

**Source:** The authors, according to the data from Table 9, which outline the claims on activities within the jurisdiction of the Croatian Notary Chamber (Gagro, 2018, 134)

The Croatian Public Notary Academy is working on a project to develop an electronic collection of public notary practice that would be accessible through the closed page of the Croatian Public Notary Chamber and new e-Notar application. Such an electronic collection will greatly contribute to equality of acting and further acceleration of the notarial business.

The Academic Council and the President of the Academy are the bodies of the academy and are appointed by the Chamber Board. The Professional Council shall establish the Committee for Continuing Professional Development, which shall have at least five members appointed by the Steering Board at the proposal of the Expert Council.

The Board for Continuing Professional Training deals with topics related to the public notary profession and legal issues, participates in drafting expert opinions and guidelines regarding legal proposals, for the Steering Board for certain issues important for the way of handling and harmonizing the practice of public notaries, preparing draft circulars and, at the request of the Expert Council or the Steering Board, performs other tasks within the competence of the Academy (Ruždjak, 2016. Zbirka propisa o javnom bilježništvu, Pravilnik o radu Hrvatske javnobilježničke akademije, Article 7, paragraph 3.).

## 4. THE MINISTRY OF JUSTICE AND CROATIAN PUBLIC NOTARY CHAMBER

### 4.1. THE RELATIONSHIP BETWEEN THE MINISTRY OF JUSTICE AND CROATIAN PUBLIC NOTARY CHAMBER

With regard to decision making related to the public notary service, it should be noted that certain key decisions are also made by the Minister of Justice. The public notary shall be appointed by a Minister responsible for Justice Affairs on the basis of an announcement for positions. (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 14, paragraph 1). It has already been mentioned that the Croatian Public Notary Chamber was founded when at least fifty public notaries were appointed and started working at proposal by the Minister of Justice and the founding assembly convened and chaired by the President of the Supreme Court of the Republic of Croatia (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, article 173.). The places of public notaries in the Republic of Croatia shall be determined by the Ministry on the basis of the opinion of the Chamber, the Courts of the Republic of Croatia and the competent county authority, taking into account that at least one notary public in the area of each court as determined by law. (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 16, paragraph 1).

The Ministry of Justice also decides on the termination of the notary public's office and issues a decision on dismissal of public notaries and temporary removal from office. Reasons for termination of service are set out in Article 19, for dismissal under Article 21, and temporary removal from service under Article 21 of the Public Notary Act. (Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009).

Legal and subordinate legislation define the powers of the Ministry of Justice in terms of control of the work of the public notary service, so it can be said that the Minister of Justice is included in the management of the public notary service since he or she appoints and dismisses notaries and supervises the work of the notary public service.

The Ministry of Justice ex officio or in case of any complaints from interested persons may determine the inspection of the performance of the Chamber,



individual notaries public, officers in charge, public notary assessors and apprentices and take the necessary measures to eliminate and sanction the irregularities determined. (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 140, paragraph 1).

The Minister may dismiss the Steering Board and dismiss the Chamber President if he or she finds serious irregularities in the work of these bodies, or if, even after a reminder, these bodies do not fulfill its legal obligations. In its resolution, the Minister will set a deadline for the election of the new Steering Board and the President of the Chamber and will appoint a trustee among the public notaries in the Republic of Croatia, who will perform the affairs of these bodies until their performance is taken over by the newly elected bodies. (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 140, paragraph 5).

The Chamber is obliged to submit to the Ministry every year a report on its work and its views on the state of the public notary service, in relation to the situation in the judiciary and the administration and on the measures that should be taken to improve this situation. (Public Notary Act, Official Gazette 78/1993, 29/1994, 162/1998, 16/2007 and 75/2009, Article 138).

The aforementioned shows that legal powers of the Ministry of Justice (minister) relate to planning, organizing, managing human resources, management, and control within the public notary service and therefore it could be said that the minister of justice is also a manager in the notary public service.

Management is a process of forming and maintaining an environment in which individuals, working together in groups, efficiently realize the chosen goals. (Wehrich & Koontz (1998), 4). The previous definition of the management of Wehrich and Koontz, when applied to the public notary service, suggests that the management of the public notary service is a synergy reflected in the work of every public notary, the President of the Croatian Notary Chamber and the Minister of Justice. Each public notary manages the work of his or her office and also has the opportunity to participate directly in the Assembly of the Croatian Notary Chamber in making important decisions and choosing the management (President of the Croatian Notary Chamber).

#### 4.2. THE RELATIONSHIP BETWEEN THE MANAGEMENT CONTRACT AND THE LEGAL AND SUBORDINATE REGULATIONS ON PUBLIC NOTARY SERVICE

In private sector, the organization of work, powers and duties and the method of management are mainly regulated by a commercial contract on business co-operation or a management contract or the manager of a company is defined by a contract of employment concluded with the employer. There is no official form of such contracts, such contracts can be seen as a kind of business status under which specific rights, obligations, and responsibilities in relation to a project or company management are delegated to one or more persons. The contract is a common 'task' for entrepreneurial risk holders (investors, owners) and managers as occupational risk holders. It can be said that such a contract is a sort of synthesis of the power of management and guidance or a document that builds a partnership between those who have a certain business vision and the willingness to invest money and a manager who accepts a professional challenge to realize that business vision. In principle, the contract on the employment of a manager is actually a contract of partnership between those who are owners of a business idea and those who believe they are capable of turning that idea into a good business result. For this reason, a management contract is defined by the act of free entrepreneurial will of both parties, a document that provides a professional synthesis of the power of money, the power of knowledge and power of partnership. At the same time, the management contract should specify the rules of the game between the involved protagonists and predict the overall scenario for each possible outcome of business cooperation, including the possibility of termination of the contract.

There are no management contracts or other similar contracts in the public notary service that would correspond to these descriptions, i.e. the Public Notary Act, Statute, and Rulebook are applied instead of these contracts. The mentioned contracts determine and govern the manager and his or her obligations, powers and rights in the private sector, while in the public notary service a public notary is determined as a manager by law and thus his or her powers, obligations and rights are regulated by law and other regulations.

## 5. CONCLUSION

The structure and manner of management in the public notary service are described herein. Obviously, the management of the public notary service is largely determined by the Public Notary Act, the Statute of the Croatian Notary Chamber, the Code of Public Notary Ethics and Rulebooks. A public notary is not the only manager in this sector, there is an elaborated hierarchy of management, all for the purpose of effectively and properly performing the notary business. Thus, the public notary independently manages the office and his or her employees, but he or she has the Notary Chamber over him or her that monitors and improves his or her work. The chief manager of this organization is the Minister of Justice.

As with any other organization, knowledge and monitoring trends is very important for public notaries as well. Thus, the development of information communication technology and data management in the public notary service can greatly affect the effectiveness of the notary public service in a positive way and make the public notary service recognizable in terms of its contribution to increasing the efficiency of other state services and improving legal and economic security.

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# THE IMPACT OF CHANGES IN TAX REGULATIONS ON THE SALE OF PASSENGER CARS WITHIN THE CAR MARKET OF THE REPUBLIC OF CROATIA

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## **Abstract**

*The authors have reviewed the car sales market of the Republic of Croatia and have placed an emphasis on global changes, such as the accession of the Republic of Croatia to the European Union, access to a common European market and the impact on the developments within the car market. The authors have also examined how the constant changes to the tax regulations for the import of passenger cars to the Republic of Croatia from the EU member states affect the trends within the market of new and used passenger cars in the Republic of Croatia. The change in the structure of the cars is shown in such a way that the ratio of new and used vehicles has reached the ratio 2 to 7 in favor of used vehicles, which results in reduced quality of the vehicles and detrimental impact on road safety.*

*Keywords:* passenger cars, import, common European market, tax regulations

JEL Classification: H20, H29

## 1. INTRODUCTION

We are increasingly talking about disruptions in certain industries, and the globalization is certainly one of the foundations that would make such a thing happen. We will limit ourselves in this paper to the area that the globalization itself created in the automotive industry in the Republic of Croatia although the changes to the overall industry at the global level are significantly higher. The main focus is on the segment of sales of new and used passenger cars and the impact of tax regulations and global movements on them. Market recovery and free movement of goods since Croatia's accession to the European Union have created the preconditions for easier import of passenger cars from other EU member states. In the segment of trade of new and used vehicles, as well as the changes and harmonization of legislation, there is a significant change of trends in the purchase of used vehicles at the expense of new vehicles, which ultimately affect the need to adopt market participants to continue to operate successfully.

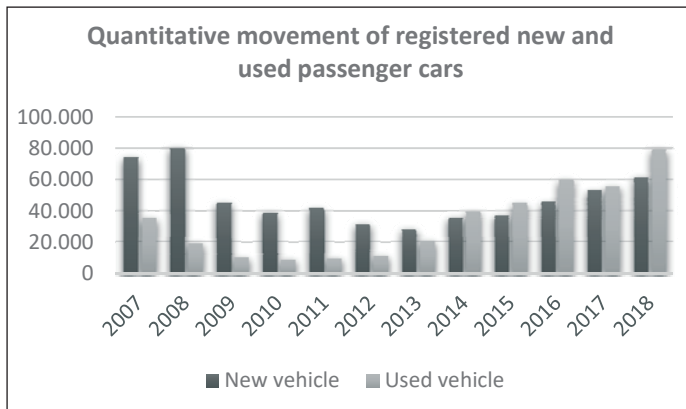
## 2. THE ANALYSIS OF THE SEGMENT OF SALES OF PASSENGER CARS

We can say that changes occurred in the segment of the sales of passenger cars with Croatia's accession to the European Union because of the harmonization of regulations with the European acquis, and particularly after the abolishment of customs when Croatia joined the common European market, which led to easier import of used vehicles from other EU member states, thus changing the structure of registered vehicles in the Republic of Croatia since July 1, 2013.

In fact, by joining the EU, Croatia becomes a part of a single market and changes the procedure for import of used vehicles, ie, it adjusts to the EU standards. At the time of the import, the vehicle is not registered at the border crossing, but it is necessary to request a calculation of a special tax on motor vehicles. Also, EUR1 document is no longer needed for all vehicles that were registered within the EU territory.

Constant changes in the tax regulations related to the sale of new and used passenger cars lead to various market upheavals. Thus, at the announcement of tax changes on passenger cars, consumers are beginning to calculate which option is preferable – to buy immediately or wait until new tax regulations come into force. As such changes are often made without notice to car importers, it is difficult to make long-term plans for the sale of new and used cars.

**Graph 1.** Quantitative movement of registered new and used passenger cars



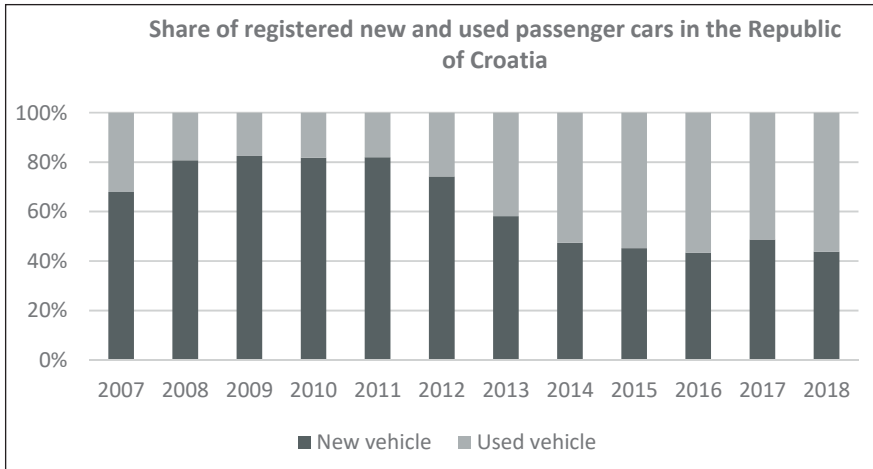
**Data source:** Center for Vehicles of Croatia, graph by the authors (Center for Vehicles of Croatia, 2019)

Since Croatia joined the EU in the mid-2013, the end customers can in Croatia easily purchase and register all vehicles purchased in an EU member state. This resulted in a fact that there were almost double the number of registered used cars in Croatia in 2013 than in the previous year. The growth trend has continued practically to date, and in the last five years, the import of vehicles has increased almost seven times. At the same time, it is evident that the new car market has only doubled. Consequently, this leads to an aging fleet of vehicles within the territory of the Republic of Croatia and bad road safety situation, where according to the latest statistical indicators Croatia holds the very bottom of the chart among other EU countries.

According to the data shown in Graph 2, it is evident that Croatia's accession to the EU in 2013, the number of newly registered new cars has decreased significantly in relation to the number of newly registered used cars. This infor-

mation also speaks about a tax policy that disassociates the acquisition of new vehicles and has a bad impact on the state of road safety.

**Graph 2.** The share of registered new and used passenger cars in the Republic of Croatia



**Data source:** Center for Vehicles of Croatia, graph by the authors (Center for Vehicles of Croatia, 2019)

### 2.1. CHANGES IN PROCEDURE AND TAX REGULATIONS WHEN IMPORTING PASSENGER CARS IN THE REPUBLIC OF CROATIA

New vehicle type approvals are granted as of September 1, 2017, under the World Harmonised Light Vehicle Test Procedure (WLTP), which is a new and more realistic test method for measuring fuel consumption and CO<sub>2</sub> emissions. As of September 1, 2018, the WLTP replaced the current test procedure, the so-called new European driving cycle (NEDC). Due to more realistic test conditions, fuel consumption and CO<sub>2</sub> emissions measured according to the WLTP process may, in many cases, be greater than the values measured under the NEDC (Volksawagen Croatia, 2019).

Changes occurred in the vehicle homologation procedure in the European Union as of September 1, 2018, which has led to the price increase of almost all new cars on the market in the Republic of Croatia.

At that time, a new vehicle WLTP protocol-based certification was introduced instead of the former NED system that was used. According to the pro-

to col, the fuel consumption measurements are much more objective and approximate to the actual consumption of the vehicle in daily traffic. This has also led to an increase of CO<sub>2</sub> emissions to the atmosphere.

Since the CO<sub>2</sub> emission into the atmosphere is one of the main factors for calculating Special Tax on Motor Vehicles (PPMV), this has led to an increase of the PPMV amount largely as an amount increase.

The procedure for calculating the Special Tax on Motor Vehicles was last changed as of January 1, 2019, when a new PPMV calculation is used.

## 2.2. DIFFERENCES IN THE PPMV CALCULATIONS FOR THE IMPORT OF USED DIESEL AND GASOLINE ENGINE PASSENGER CARS TO THE REPUBLIC OF CROATIA FROM OTHER EU MEMBER STATES

In order to understand the difference in the special tax on motor vehicles regarding the fuel type, we will show a sample of several German middle-class vehicle manufacturers in both diesel and gasoline versions, with the same engine power and the level of equipment.

**Table 1.** the difference in the PPMV calculations on an example of 2 vehicles of a higher middle-class from the same manufacturer, with the same engine power and the uniform market price, but different fuel type.

Used car - Diesel	Used car - Gasoline
Vehicle age: 12 months	Vehicle age: 12 months
Audi A4 2.0 TDI / Diesel / 2.0l / 110 kW/150 KS / Man. 6 st. pr. / 4-door 111g Co <sub>2</sub> New car price: 263.705,06 HRK	Audi A4 1.4 TFSI / Benzin / 1.4l / 110 kW/150 KS / Man. 6 st. pr. / 4-door 131g Co <sub>2</sub> New car price: 252.048,38 HRK
Eco component 3.455,00 HRK	Eco component 9.620,00 HRK
Value component 6.959,35 HRK	Value component 6.143,36 HRK
Total 10.414,35 HRK	Total 15.763,36 HRK
Used vehicle reduction - 23,96 %	Used vehicle reduction - 23,96 %
Final price <b>7.919,06 HRK</b>	Final price <b>11.986,44 HRK</b>

**Source:** Calculation made by the authors based on the prices from the Customs table (Ministry of Finance, Customs Administration, 2019)



It is apparent from the table that the PPMV for a vehicle that is one year old, from the same producer in the gasoline option is more expensive by 51% than the diesel vehicle. Therefore, the import of used diesel cars costs less at the end since it has fewer CO<sub>2</sub> emissions than a gasoline version. Cars in the diesel version spend on average up to 2 liters of fuel less on 100 km. Therefore, it is much cheaper to import a diesel car.

When importing a used car from EU member state, there are additional costs that must be met in the procedure conducted by the competent customs administration according to the place of residence of the person importing the car to the Republic of Croatia.

The expenses are shown in table 2. As can be seen from the table, the amount depends on a lot of variable components, but we can say that when importing a 1-year old medium class car, with the 110kW engine power, the cost is about 14.000,00 HRK. The amount will be slightly lower for diesel cars than for gasoline cars.

If the car is purchased from a private person that is not in the VAT system and does not include VAT on the bill, it is necessary to pay an additional administrative fee of 5.500,00 HRK for this vehicle.

**Table 2.** Average cost of importing a used car from the EU

Cost of importing vehicles from the EU to the Republic of Croatia	Amount
1. Transport cost Costs vary depending on the transport type and purchase location.	min. 2.500,00 HRK
2. Issuance of the manufacturer's certificate If the vehicle doesn't already have a valid COC document	400,00 HRK
3. Homologation	695,00 HRK
4. Waste management fee = vehicle mass x 0,60 HRK / kg (average passenger car weighs about 1000kg)	600,00 HRK
5. A special tax on motor vehicles (PPMV), by Customs calculation (Ministry of Finance, Customs Administration, 2019) PPMV = PNV - UMANJ x PNV where:  PPMV: Special tax amount PNV: Special tax for a new car according to CO <sub>2</sub> (eco component) and sales price of a new car (value component) UMANJ: Value reduction rate for a used car Calculated on the basis of an average PPMV calculated from Table 1	9.952,75 HRK
TOTAL	14.147,15 HRK

<p>6. Administrative fee          If the car is purchased from a person abroad, who is not in the VAT system (mostly natural persons)          This is an option if a car is purchased directly from a natural person without an intermediary          Calculated based on a 1-year old car with 110kW engine power from Table 1</p>	<p>5.500,00 HRK</p>
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**Source:** author's calculation

Given that the above-mentioned inflow of used cars is very high and places the citizens of the Republic of Croatia in an unequal position on the common European market, future citizens of countries such as the Federal Republic of Germany will not pay the above-mentioned allowances, and those same cars without VAT fee can be purchased on the common EU market.

For example, when purchasing a new car in the Federal Republic of Germany, citizens pay a special tax on motor vehicles in accordance with the CO2 emission levels. Since the citizens of the Republic of Croatia pay the tax again on such vehicles when importing from EU member state, they go through double taxation, which places the residents of one EU-member country in an unequal position than residents from another EU-member country.

Since this tax has a discouraging effect on the import of new cars to the Republic of Croatia, which has the latest safety standards, the citizens are mostly opting for older cars with safety components that are obsolete, and in this way, the state has a negative effect on the road traffic safety. Since the Republic of Croatia is at the bottom among EU-member states when it comes to road safety, instead of proposing additional restrictive legal measures, the state could, through PPMV, stimulate the purchase of newer cars by reducing the amount of taxes for cars equipped with the latest security components. In this way, they would multiply the import of newer used cars that have better safety standards and would indirectly increase road safety in the Republic of Croatia.

### **2.3. IMPACT OF CHANGES IN TAX REGULATIONS ON THE SALE OF NEW PASSENGER CARS ACCORDING TO BRANDS**

In the last few years, the tax regulations in the Republic of Croatia related to the import of new and used passenger cars from other EU member states have changed frequently. Such changes have a turbulent effect on the changes in the automotive market.

Table 3 shows that due to the changes in the PPMV calculations, there has been market turbulence on the market for the sale of new cars in the Republic of Croatia related to the car brands. Certain car brands have emerged as a result of a PPMV calculation change, such as Škoda, Suzuki, Hyundai, Ford and Audi, due to the changes in tax policies which resulted in sales decrease in the January and February of 2018, while other brands such as Dacia, Seat, Fiat, and Volvo show an increase due to the same tax changes.

Given the frequent changes in the tax regulations in this sector of passenger cars' sales, it is very difficult for sellers to make long-term plans, as well as for the customers who have difficulties in following constant changes.

**Table 3.:** changes in market shares for new cars in the Republic of Croatia due to PPMV calculation changes

Vehicle brand pc.		1-2/2018		1-2/2019		difference		
		Share (%)	pc.	Share (%)	+/- pc.	+/- (%)	+	
1.	VW	1069	14,69	1264	18,02	168	15,33	3,33
2.	ŠKODA	1021	13,68	786	11,20	-235	-23,02	-2,48
3.	SUZUKI	648	8,68	493	7,03	-155	-23,92	-1,66
4.	RENAULT	491	6,58	461	6,57	-30	-6,11	-0,01
5.	DACIA	313	4,19	415	5,92	<b>102</b>	<b>32,59</b>	1,72
6.	HYUNDAI	453	6,07	369	5,26	-84	-18,54	-0,81
7.	PEUGEOT	293	3,93	309	4,40	16	5,46	0,48
8.	TOYOTA	259	3,47	301	4,29	42	16,22	0,82
9.	OPEL	466	6,24	299	4,26	-167	-35,84	-1,98
10.	SEAT	197	2,64	299	4,26	<b>102</b>	<b>51,78</b>	1,62
11.	MAZDA	236	3,16	273	3,89	37	15,68	0,73
12.	KIA	231	3,10	239	3,41	8	3,46	0,31
13.	CITROEN	214	2,87	194	2,77	-20	-9,35	-0,10
14.	FORD	437	5,86	184	2,62	-253	-57,89	-3,23
15.	AUDI	278	3,73	173	2,47	-105	-37,77	-1,26
16.	FIAT	123	1,65	169	2,41	<b>46</b>	<b>37,40</b>	0,76
17.	MERCEDES	126	1,69	159	2,27	33	26,19	0,58
18.	BMW	185	2,48	154	2,19	-31	-16,76	-0,28
19.	NISSAN	120	1,61	110	1,57	-10	-8,33	-0,04
20.	VOLVO	49	0,66	81	1,15	<b>32</b>	<b>65,31</b>	0,50
21.	JEEP	18	0,24	69	0,98	51	+++	0,74
22.	HONDA	55	0,74	56	0,80	1	1,82	0,06
23.	MINI	41	0,55	36	0,51	-5	-12,20	-0,04
24.	MITSUBISHI	30	0,40	34	0,48	4	13,33	0,08
25.	LAND ROVER	9	0,12	19	0,27	10	+++	0,15

26.	INFINITI	5	0,07	19	0,27	14	+++	0,20
27.	SMART	21	0,28	13	0,19	-8	-38,10	-0,10
28.	PORSCHE	17	0,23	11	0,16	-6	-35,29	-0,07
29.	SUBARU	9	0,12	10	0,14	1	11,11	0,02
30.	JAGUAR	4	0,05	9	0,13	5	+++	0,07
31.	ALFA ROMEO	13	0,17	5	0,07	-8	-61,54	-0,10
32.	BENTLEY	0	0,00	2	0,03	2	+++	0,03
33.	LEXUS	2	0,03	1	0,01	-1	-50,00	-0,01
34.	LANCIA	1	0,01	0	0,00	-1	-100,00	-0,01
35.	TESLA MOTORS	1	0,01	0	0,00	-1	-100,00	-0,01
<b>Total</b>		<b>7462</b>		<b>7016</b>		<b>-446</b>	<b>-5,98</b>	

**Source:** Promocija Plus Marketing Analysis and Statistics of Croatian Car Market (Plus, 2019)

When determining the PPMV amount for used cars, the customs officers have an objective right to determine the value of a vehicle according to the base amount of the basic model or to include any additional equipment in the calculation that they deem necessary to valorize. Such calculation of the PPMV amount leads the customs officials to a position where a high level of corruption is possible, and such a procedure should be avoided in the future as the calculation should be known before the import of the vehicle. In this way, a person importing a vehicle from an EU member state cannot plan the cost of the vehicle itself.

**Table 4.** New Passenger cars – market shares January 2017, January 2018 & January 2019

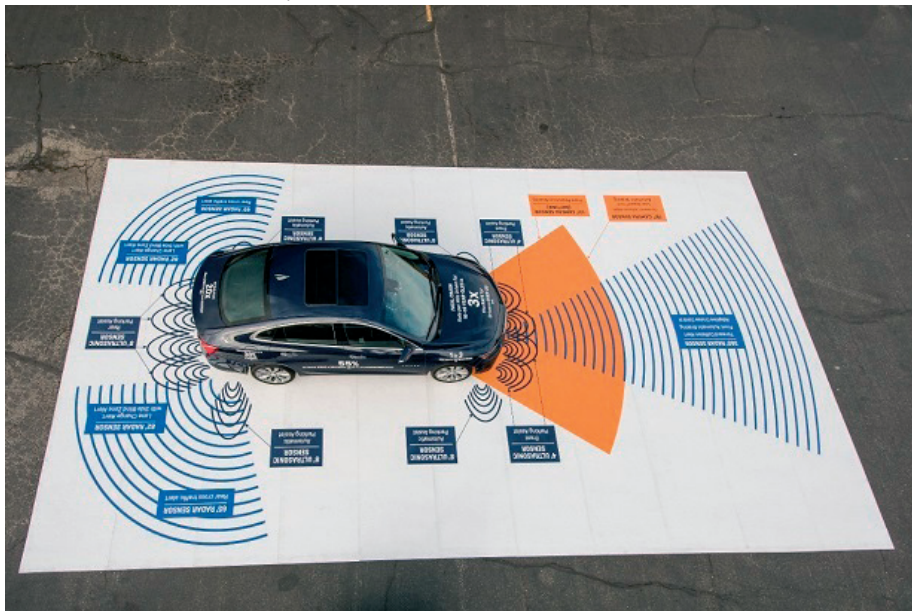
	MAKES	2017		2018		2019	
		I		I		I	
		Units	%	Units	%	Units	%
1	Volkswagen	416	14,68%	536	14,46%	722	20,57%
2	Škoda	247	8,72%	521	14,06%	395	11,25%
3	Suzuki	161	5,68%	289	7,80%	215	6,13%
4	Renault	169	5,97%	270	7,29%	247	7,04%
5	Opel	136	4,80%	200	5,40%	204	5,81%
6	Hyundai	173	6,11%	195	5,26%	181	5,16%
7	Dacia	90	3,18%	180	4,86%	147	4,19%
8	Ford	129	4,55%	174	4,70%	157	4,47%
9	Peugeot	146	5,15%	147	3,97%	127	3,62%
10	Audi	103	3,64%	146	3,94%	100	2,85%

11	Toyota	159	5,61%	141	3,80%	130	3,70%
12	BMW	118	4,17%	129	3,48%	108	3,08%
13	Citroen	118	4,17%	122	3,29%	93	2,65%
14	Mazda	87	3,07%	118	3,18%	71	2,02%
15	Kia	113	3,99%	114	3,08%	89	2,54%
16	Seat	93	3,28%	111	3,00%	127	3,62%
17	Nissan	80	2,82%	64	1,73%	95	2,71%
18	Fiat	63	2,22%	59	1,59%	98	2,79%
19	Mercedes	82	2,89%	50	1,35%	45	1,28%
20	Mini	15	0,53%	33	0,89%	48	1,37%
21	Honda	15	0,53%	29	0,78%	8	0,23%
22	Volvo	36	1,27%	21	0,57%	27	0,77%
23	Mitsubishi	5	0,18%	16	0,43%	19	0,54%
24	Smart	4	0,14%	11	0,30%	16	0,46%
25	Jeep	24	0,85%	9	0,24%	3	0,09%
26	Alfa Romeo	27	0,95%	6	0,16%	16	0,46%
27	Porsche	5	0,18%	5	0,13%	7	0,20%
28	Subaru	6	0,21%	3	0,08%	4	0,11%
29	Infiniti	0	0,00%	2	0,05%	4	0,11%
30	Jaguar	4	0,14%	2	0,05%	1	0,03%
31	Lancia	2	0,07%	1	0,03%	3	0,09%
32	Land Rover	5	0,18%	1	0,03%	2	0,06%
33	Lexus	0	0,00%	1	0,03%	1	0,03%
34	Others	2	0,07%	0	0,00%	0	0,00%
<b>TOTAL</b>		<b>2833</b>	<b>100%</b>	<b>3706</b>	<b>100%</b>	<b>3.510</b>	<b>100%</b>

**Source:** Promocija Plus Marketing Analysis and Statistics of Croatian Car Market (Plus, 2019)

As shown in Table 4, changes in tax laws affect differently different car brands. Changes in tax regulations are commonplace in January, so in 2019, there has been a change in tax regulations in the form of different PPMV calculations.

Picture 1. Built-in safety in cars



Source: web2carz, 7 Cars Built for Urban Living [available at <https://www.web2carz.com/autos/buying-and-selling/7441/7-cars-built-for-urban-living> access April 13, 2019]

Because of the different PPMV calculation and the different exposure of the Co2 emission level to the atmosphere, there is a reduced demand for those car brands where, according to earlier calculations, the Co2 discharge was shown to be smaller than in the most recent WLTP measurements, and after January 2019 a different calculation of the special tax on motor vehicles where the limit from which is the value component of tax calculated from the value of the car which is 150.000,00 HRK. That is in accordance with the author's research badly defined limit if we take in consideration that newly-made vehicles above-mentioned amount have a lot of built-in safety components (as in Picture 1) and if the limit was shifted to 250,000.00 HRK it will be better for buyers of the cars and for safety on roads. Such a calculation would seem much more enthusiastic for buyers to buy much safer vehicles and the amount of PPMV would be much smaller for them. Such a calculation would have a positive effect on road traffic safety as there would be more cars on the roads with the latest security standards.

### 3. CONCLUSION

It is evident that Croatia's accession to the European Union has brought about significant changes in the local market. The changes are mostly reflected in the changes in trends where the share of used cars in 2013 was 3 to 2 in favor of new cars, which has changed with the accession to the EU on behalf of used cars with the ration 7 to 5. In any case, since the recession period that has affected the global market to date, the import of passenger cars has increased considerably. The companies certainly cannot plan their long-term strategy by analyzing the local market exclusively. In the segment of vehicle sales, it is noticeable that the adjustment of legal regulations can also have a huge impact on the entire industry.

Permanent changes in the tax regulations affect the constant turbulence on the market, which leads both passenger car buyers and sellers leads to constant market changes, and none can make long-term plans, which also affects the decision to purchase a vehicle. It is especially worth noting that in the calculation of the special tax on motor vehicles the limit of value component is set at 150,000.00HRK and all vehicles that had minor price is not used to calculate the value component of the tax. Setting this limit so low leads customers into the situation to buy worse vehicles so they would not have to pay higher taxes because of the higher value of the purchased vehicle.

The increase in the number of used cars has a negative impact on the state of road safety since due to large PPMV benefits, the customers often decide to purchase older cars where their duties are significantly lower. It would be necessary to align the tax policy with the road traffic safety and CO<sub>2</sub> reduction policies, and accordingly subsidize the purchase of new or newer vehicles with better safety standards and smaller CO<sub>2</sub> emissions, which would, on the other hand, lead to better environmental protection due to newer and safer cars operating in traffic.

In future research on this topic, attention should be paid to the possibility of calculating an adequate limit for the value component of a special motor vehicle tax that would encourage buyers to buy safer cars and that will affect safely on the roads of the Republic of Croatia. It should also be studied further how certain changes to laws or tax regulations have on the economy, before the adoption in the regulations.



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## TOURIST SATISFACTION AS A TOOL IN DESTINATION PLANNING – EMPIRICAL STUDY OF DESTINATION RABAC

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### **Abstract**

*Tourism in Rabac started to develop in the 1960s, similar to other parts of Istria and since then it has acquired the name 'The Pearl of the Kvarner Bay'. Today the destination Rabac/Labin is a well-known tourist destination. Rabac/Labin, together with Poreč and Novigrad, is one of the chosen destinations for testing of indicators of sustainable tourism in the project MITOMED+. The aim of the paper is to test if the same aspects of tourism satisfaction can be a useful tool for different destinations. The field research was carried out in the period between July and September 2017, in all three destinations. The paper presented the specificity of the tourist destination Rabac/Labin. In total 639 questionnaires from beach users in Rabac were collected. The questionnaire had more questions but, in the paper, tourist satisfaction was presented. Tourists evaluated 10 aspects in the destination as well as their overall satisfaction with the destination. The results have shown that there are some differences in satis-*

*faction levels but, generally, tourists were satisfied with the destination Rabac. The obtained results can help managers and local stakeholders to achieve a high quality of offer and services in the destination and use tourist satisfaction as a helpful tool in future destination management.*

**Keywords:** *destination management, tourist satisfaction, destination Rabac/Labin, destination aspects, Istria County*

JEL Classification: L83, Z32

## 1. INTRODUCTION

There is a debate in the world about the importance of measuring tourist satisfaction with destinations in order to get valuable information for maintaining destination competitiveness in the market and to efficiently develop sustainable tourism. The number of tourists in Istria destinations increases every year; consequently, there is a need to improve and extend the quality of the offer in order to meet future tourist demands. Istria is one of the most famous destinations in Croatia and Rabac is the most popular destination on the east coast of the Istrian peninsula. According to the data from e-Visitor, in 2018 there were 216,000 tourist arrivals and 1,246,928 overnight stays in Rabac. Most visitors were from Germany, Austria, the United Kingdom, Italy, Slovenia, and the Czech Republic. Since the tourism industry will inevitably grow in the future it is important to respect and preserve the natural boundaries and limits of the destination and to plan future development according to the principles of sustainable development.

In the framework of the MITOMED+ project, a set of indicators was developed for measuring the performance of the destination related to sustainability. The indicators were developed on the basis of ETIS (European Tourism Indicators System). The overall satisfaction with the destination is one of the leading predictors of long-term success of destination management. The aim of the paper is to test if a different destination could use the same set of questions for the evaluation of tourist satisfaction with different aspects of the destination. By collecting opinions and suggestions directly from tourists, visitors and local residents, destination managers can discover the main disadvantages and advantages of the destination. Local stakeholders in tourism can get useful information from the field and use it as a management tool for future planning.

## 2. LITERATURE REVIEW

There are an extensive number of researchers who have intensively studied overall tourist satisfaction and satisfaction with various attributes of a destination, such as beaches, scenery, accommodation, cleanliness, climate, nightlife, local cuisine, natural attractions, accessibility, shopping, safety, etc. (Alegre & Garau, 2011; Chi & Qu, 2008; Yoon & Uysal, 2005; Alegre & Cladera, 2006; Alegre & Garau, 2010) or satisfaction with the chosen destination (Della Corte et al., 2014; Truong & Foster, 2006; Kozak & Rimmington, 2000; Pandža Bajs, 2015; Naidoo et al., 2010; Aktaş et al., 2009; Hui, Wan & Ho, 2007). Also, Dolincar et al. (2013) emphasized that there are many measures of satisfaction in tourism: “satisfied with...; pleased with...; delighted about...; quality of the stay was...; positive to return in the future...; enjoyed myself...; feel good about...; the choice to attend was a wise one...; made the correct decision...; exactly what I needed... Wang (2016) summarised studies about visitors’ satisfaction measurement as a tool for tourism destination management as one of the most important indicators of destination performance and future planning of tourism activities. Some researchers have explored how satisfaction is changing over time considering different attributes of the destination and overall satisfaction within different groups of tourists (Soldić Frleta, 2018; Bernini & Cagnone, 2012). Recently Soldić Frleta (2018) has conducted researches with tourists and visitors in the cities of Rijeka and the Opatija Riviera comparing the differences between results over two years. The results have shown that there is a significant statistical difference between the satisfaction of tourists with the elements offered in the two destinations and their overall satisfaction with them in two different years. There are always tourists who have already visited the destination or those who have come for the first time with various desires and expectations. Given the above, it would be worthwhile to evaluate the satisfaction of tourists every year. By examining tourist satisfaction, managers may find out which elements of their offer they could improve in the upcoming season. Alegre & Garau (2010) suggest that it is necessary to consider how the destination’s positive and negative aspects influence tourists in order to get the accurate situation of a destination and to identify negative factors and correct them. Overall satisfaction affects tourists’ inclination to revisit the destination, as well as to recommend it by word of mouth or word of mouse. It is proved that higher overall tourist satisfaction positively affects destination loyalty. If tourists are satisfied, there is a higher possibility that they will visit

destinations again and recommend them to others (Yoon & Uysal, 2005; Chi & Qu, 2008; Hui, Wan & Ho, 2007; Gallarza & Saura, 2006; Oppermann, 1998; Kim & Brown, 2012). Satisfaction and destination image have a significantly positive effect on tourist behavioral intentions (Chen & Tsai, 2007) and the level of overall satisfaction has an effect on future behavior in mature and less mature destinations (Kozak, 2001). Valle et al. (2006) confirmed that tourist satisfaction is an element that certainly contributes to destination loyalty intention. Alegre & Cladera (2009) suggest that the level of satisfaction is the main determinant of tourists' intention to return to the destination.

There are different segments that affect tourist satisfaction in the destination. For coastal destinations whose main products are the sun and sea, the attributes which mostly affect overall tourist satisfaction are scenery, beaches, climate, quality of the accommodation, quality of the environment and urban setting and cleanliness of public areas (Alegre & Cladera, 2006). Several authors have emphasized the importance of the cleanliness of the destination as a factor that has an influence on tourist satisfaction (Della Corte et al., 2014; Alegre & Garau, 2010). In nature-based destinations, the natural landscapes/scenery environment is the main factor affecting the tourist satisfaction (Kim & Brown, 2012). Leisure services as a prediction factor influencing the overall satisfaction were confirmed in the research conducted among tourists in Rimini (Bernini & Cagnone, 2012). Kim & Brown (2012) have determined two main factors influencing behavioral intention; the previous experience and the nature-based experience. Regarding the emotional experience with the destination, Prayag et al. (2015) concluded that the emotion of positive surprise significantly predicts tourist satisfaction. Satisfaction also depends on the various cultures of tourists, so it is possible to study satisfaction with regard to nationality. Kozak (2001) investigated the differences between satisfaction levels of two nationalities that visited the same destinations. Aktaş et al. (2009) concluded that accommodation services have the largest influence on Russian and German tourists' holiday satisfaction when visiting the same destination - Alanya.

Dodds & Holmes (2019) conducted research at rural and urban beaches with beach tourists and have confirmed that satisfaction with facilities and beach characteristics has a positive impact on overall satisfaction. Alegre & Garau (2011) confirmed that beaches are the factor in a destination which has the greatest influence on overall satisfaction. Important factors that influence the sun, sand and sea tourism products are accommodation, easy access to informa-

tion or a simple holiday to arrange, cleanliness and hygiene, security, tranquillity, scenery, and prices in line with budgets. Top factors with the positive impact on overall satisfaction emerged in the penalty-reward analysis and those are accommodation, beaches, and scenery (Alegre & Garau, 2011).

Given the differences and specifics in destinations and customer wishes, it is necessary to identify the factors that most affect overall tourist satisfaction. Moreover, it is necessary to adapt the development strategies and the management of the destination by investing in those factors to compete with future tourist demand. Tourists have a different degree of satisfaction with certain aspects of the destination that further affect overall satisfaction. It is assumed that a lower rating of certain aspects will not affect the overall impression of the destination if most aspects are satisfactory. Furthermore, continuous tourist satisfaction monitoring will enable better destination management. Neal & Gursoy (2008) suggest tracking the satisfaction or dissatisfaction of tourists at all stages of their travel (pre-trip, at the destination and with the return trip services) to get accurate results on overall satisfaction or dissatisfaction with travel and tourism services offered.

### 3. METHODOLOGY

The aim of the research was to find out the level of tourist satisfaction with various aspects of the destination of Rabac in order to identify and improve the tourist destination offer. The usefulness of the survey is based on valuable information for tourist managers for future management planning in improving the defective aspects.

The research was carried out in three different destinations in Istria County for the requirements of the European project MITOMED+ (Models of Integrated Tourism in the MEDiterranean Plus) whose main goal is to enhance sustainability and responsibility in Maritime and Coastal tourism in the Mediterranean area.

The secondary data in the paper was collected from the Croatian national tourist information system e-Visitor and from the Labin - Rabac Tourist Board.

For the purpose of research, the questionnaire was designed according to ETIS 2016 (European Tourism Indicators System) sample survey for visitors. The survey was conducted among beach users in Rabac/Labin by appropri-

ately trained interviewers in the period between July and September 2017. The beaches where research was conducted were Maslinica, St. Andrea, Lanterna, and Girandella beach. The questionnaire was offered to tourists in six different languages and those were: Croatian, Italian, German, Slovenian, English, and Russian.

The first set of questions concerned information like: how tourists find out about the destination, how many kilometres they travel to reach the destination, what method of transportation they used to travel to the destination and use during their stay in the destination, the main purpose of their visit to the destination and the main reasons why they chose to visit the destination. The respondents had to mark one or several of the questions offered. The second and main part of the questionnaire involved questions about aspects of the destination. The respondents had to give one grade for every aspect from 1 to 5 on the 5-point Likert scale. If they were completely dissatisfied, they marked the grade 1 or grade 5 if they were completely satisfied with that aspect. The respondents rated the following aspects of the destination Rabac: cultural events, nightlife, sports activities, tourist attractions, facilities for children or the elderly, information availability at the destination, accommodation quality, destination cleanliness, local cuisine, reasonable prices and overall satisfaction with the destination. The third set of questions involved in the evaluation of the beach facilities and conditions, but this set was not used in this research. The final part related to the socio-demographic characteristics of the sample. In the paper, data about tourist satisfaction with the destination was analyzed.

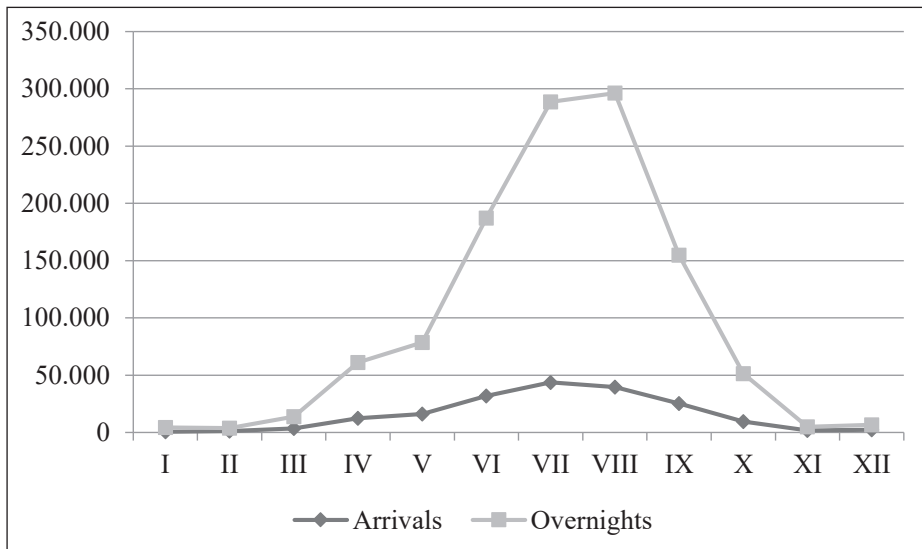
The total number of collected questionnaires was 639. The data were analyzed within the SPSS (22) programme and descriptive statistics for the presentation of the results were used. The Principal Component Analysis (PCA) was used and detailed in the results.

#### 4. TOURISM IN RABAC

The village of Rabac is situated on the east coast of the Istrian peninsula, on the Kvarner Bay. Rabac belongs to the municipality of Labin and is located south-east of the town of Labin. The area of Rabac settlement is 564.13 ha. According to the last census of 2011, Rabac had 1,390 inhabitants. Rabac has beautiful surroundings, landscapes, and nature with stunning clear blue sea and clean beaches. For that reason, it proudly carries the name "The Pearl of the

Kvarner Bay". Intense development of tourism and building began in the 1960s. Today, tourism is a dominant economic activity that employs a large number of inhabitants of the village of Rabac. Rabac is a well-known, popular and desirable destination for tourists. Tourist demand for this destination grows year after year followed by investments of local tourism stakeholders. All involved stakeholders in tourism, from local communities, tourist boards, hoteliers and locals to accommodation providers have made a joint effort to make Rabac one of the leading destinations on the eastern coast of Istria. The quality of the offer in Rabac is constantly rising. Among visitors, for years now, the most numerous have been Germans and Austrians followed by English and Italians. Considering the official data of the national information system e-Visitor, the most numerous overnight stays in the destination of Rabac in 2017 were realised by tourists from Germany (368,700), Austria (175,964), United Kingdom (82,000), Italy (73,033), the Czech Republic (72,450) and Slovenia (58,673). Also, the number of tourist arrivals reached the figure of 187,874 tourist arrivals and 1,151,458 overnights. The number of tourist overnights according to the type of facility which was realized in hotels was 784,158, campsites 170,928, household facilities 173,834, other accommodation facilities 13,888, commercial accommodation 1,142,808 and non-commercial accommodation 8,650. The average length of tourist stay at the destination was 6.13 days in the year 2017. Figure 1 shows the number of arrivals and nights spent by tourists in 2017 in Rabac. The highest number of arrivals was recorded in the month of July (43,740) and the highest number of overnight stays per month in August (296,218). From Figure 1, the high seasonality of tourism is clearly visible, as well as that most arrivals and overnight stays were realized in the peak season (July and August).

**Figure 1.** Tourist arrivals and overnights in 2017 in the destination of Rabac



Source: e-Visitor, 2018

The annual occupancy rate of commercial accommodation in 2017 was 36.8%. The highest rate was recorded in the peak season. In July the occupancy rate was 108.59% and in August, 111.47%. As is mentioned on the official website of the Labin – Rabac Tourist Board, Rabac has the capacity to accommodate 11,000 foreign visitors and beachgoers from Labin and its surroundings in one day.

## 5. RESULTS

### 5.1. CHARACTERISTICS OF THE SAMPLE

In the total sample, there were more women (61.16%) than men (38.84%). Although the research involved all respondents' listed age categories, most of the respondents belonged to the age group from 25 to 54 years old (69.12%). In regard to the type of residence, most of the respondents were tourists (85.03%) who stayed in hotels (41.37%) or private accommodation (31.28%) (Table 1).



**Table 1.** Characteristics of the respondents

Gender (n = 636)	Share (%)	Number
female	61.16	389
male	38.84	247
Age group (n = 638)		
15 - 24	16.46	105
25 - 34	22.41	143
35 - 44	26.18	167
45 - 54	20.53	131
55 - 64	8.93	57
> 65	5.49	35
Type of residence (n = 628)		
local resident	3.66	23
house/apartment owner	7.48	47
tourist	85.03	534
weekend visitor	0.64	4
excursion visitor	3.18	20
Type of accommodation (n = 585)		
hotel	41.37	242
private accommodation	31.28	183
camp	15.90	93
private house/apartment	10.94	64
sea tourism harbor/marina	0.17	1
hostel	0.34	2

**Source:** Field research, between July and September 2017 in Rabac

The survey was filled in by tourists and visitors from 27 different countries. Most respondents were from Germany (35.85%), followed by the same share of tourists from Croatia (11.64%), Austria (11.64%) and Italy (11.32%). The other shares of respondents regarding the country of origin are shown in Table 2.

**Table 2.** Country of origin of the respondents (n = 636)

Country	Share (%)	Number
Germany	35.85	228
Austria	11.64	74
Croatia	11.64	74
Italy	11.32	72
UK	6.60	42
Netherlands	4.72	30
Slovenia	4.25	27
Sweden	2.67	17
Czech Republic	2.04	13
Poland	1.73	11
Slovakia	0.94	6
Hungary	0.94	6
Norway	0.79	5
Russia	0.79	5
Ukraine	0.63	4
Belgium	0.47	3
Switzerland	0.47	3
Macedonia	0.31	2
Serbia	0.31	2
USA	0.31	2
France	0.31	2
Romania	0.31	2
Denmark	0.31	2
Other	0.64	4

**Source:** Field research, between July and September 2017 in Rabac

On average, the respondents traveled 773.6 km to reach the Rabac destination (SD=522.9, mode=600 and median=660).

According to the TOMAS (summer 2017), the most usual method of transportation of tourists in Croatia is a car, 64% and plane, 14%. Similar results were obtained by the study in Rabac. Istria is already known by tourists as a car destination. Most of the respondents used a personal, friend`s or company car (75.82%) to travel to the destination of Rabac. Air travel was in second place with a share of 14.76%, followed by bus or coach 9.26% and the remaining share of transport was small. Concerning the intention of using transport by respondents in the destination, most of them answered that they would use the car, 64.98% of them (personal, friend`s or company) or that they would walk, 51.42% which is to be expected, considering that Rabac is a small village and

that everything is within reach. The share of other means of transport in the destination was small.

Considering the way of gathering information about Rabac the answers from the respondents were as follows: the most common answer on how they find out about the destination Rabac was from the Internet (41.32%), they had previously visited the destination (39.43%) or by the recommendation of friends/family (29.18%). Tourist brochures/flyers represented 8.52%, from a tourist information center, 5.21%, from newspapers/magazines, 3.47% and from social networks, 2.84%<sup>1</sup>.

### 5.2. TOURISTS' MAIN REASONS FOR CHOOSING THE DESTINATION OF RABAC AS A HOLIDAY DESTINATION

Respondents could mark several answers as their main reason for choosing to visit the destination of Rabac and the most common answers were because of the beach (74.65%), clean sea (72.3%) and nature (53.83%). The reason indicated as “peace and quiet” was represented by a share of 32.08%, followed by accommodation quality (30.05%), host hospitality (20.97%) and accessibility (18.62%). Other reasons and shares are listed in Table 3.

**Table 3.** The main reasons why respondents had chosen to visit the destination of Rabac (n = 639)

Reasons for a visit to the destination	Share (%)	Number
Beach	74.65	477
Clean sea	72.30	462
Nature	53.83	344
Peace and quiet	32.08	205
Accommodation quality	30.05	192
Host hospitality	20.97	134
Accessibility	18.62	119
Destination popularity	11.58	74
Cultural richness	10.02	64
Entertainment and recreation	9.86	63
Sport	8.14	52
Something else	8.14	52
Special event	0.94	6

**Source:** Field research, between July and September 2017 in Rabac

<sup>1</sup> The respondents could choose more than one offered answer.

According to the official results of assessments on sea bathing water quality at the beaches in the year 2017 and 2018, the quality of the sea on the beaches in Rabac was excellent (Source: [http://baltazar.izor.hr/plazepub/kakvoća\\_detalji10](http://baltazar.izor.hr/plazepub/kakvoća_detalji10)).

Almost a hundred percent of the respondents, more precisely 97.17% of them, mentioned holiday, free time and recreation as the main purpose of their visit to the destination of Rabac. Others stated as their purpose for arrival as follows: visiting friends and family (6.93%), shopping (3.46%), business and professional trip (2.05%), health and medical care (1.26%), education and training (0.47%) or something else (1.57%).<sup>2</sup>

### 5.3. TOURIST SATISFACTION WITH THE DESTINATION OF RABAC

In general, tourists are very satisfied with the destination of Rabac (Table 4). A large number of tourists are satisfied or completely satisfied with the destination cleanliness (average=4.25, SD=0.86), followed by their overall satisfaction with the destination (average=4.22, SD=0.73), accommodation quality (average=4.09, SD=0.91) and local cuisine (average=4.09, SD=0.84). The worst-placed elements, although they were still satisfied with them, were sport activities (average=3.75, SD=0.85), nightlife (average=3.55, SD=0.87) and cultural events (average=3.51, SD=0.79). Comparing the results with those obtained in Poreč, the difference is in the average score and in the order list of satisfaction with individual aspects, although it is important to note that the results were very similar. In Poreč, overall satisfaction had the best score, followed by destination cleanliness, local cuisine and accommodation quality. Worst-placed were facilities for children or the elderly, nightlife and cultural events (Brščić et al., 2018).

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The respondents could choose more than one offered answer.

**Table 4.** Tourist satisfaction with different aspects of the destination of Rabac

Aspects of destination	Relative frequency (%)					Aggregate score (out of 5)	
	totally unsatisfied	unsatisfied	neutral	satisfied	completely satisfied	average	SD
Destination cleanliness	1.62	3.24	7.77	43.37	44.01	4.25	0.86
Overall satisfaction with the destination	0.65	1.96	8.50	52.94	35.95	4.22	0.73
Accommodation quality	1.47	5.07	13.58	42.88	36.99	4.09	0.91
Local cuisine	1.00	3.16	15.45	47.01	33.39	4.09	0.84
Information availability at the destination	0.52	4.36	23.00	44.77	27.35	3.94	0.85
Tourist attractions	0.70	5.09	25.79	49.82	18.60	3.81	0.82
Facilities for children or the elderly	0.57	4.76	31.62	41.52	21.52	3.79	0.85
Reasonable prices	1.97	6.07	24.59	48.03	19.34	3.77	0.90
Sports activities	1.58	3.51	31.58	44.56	18.77	3.75	0.85
Nightlife	1.60	8.01	36.30	41.64	12.46	3.55	0.87
Cultural events	1.06	4.96	46.37	37.17	10.44	3.51	0.79

**Source:** Field research, between July and September 2017 in Rabac

#### 5.4. PRINCIPAL COMPONENT ANALYSIS (PCA)

In order to test the usefulness of testing tourist satisfaction with the different attributes of the destination and possibilities to summarise the results, the Principal component analysis (PCA) was performed. Principal component analysis (PCA) serves to extract a set of new variables called principal components. The PCA was conducted with 11 different variables to further analyze the tourists' level of satisfaction, but in the final factorial design, 10 variables were used. The variable "Information available at the destination" was excluded since it cannot be explained by the extracted/specified principal components. The same variable was also excluded from the PCA in the research conducted in the destination of Poreč (Brščić et al., 2018).

From Principal component analysis (PCA) two components were extracted (KMO=0.899, Bartlett's Test  $\chi^2$  sig. 0.000, satisfactory reliabilities, Cronbach alpha >0.884) with eigenvalues greater than 1 and explaining 61.59% of total variance. The results of the PCA are shown in Table 5.

**Table 5.** Principal Component Analysis (PCA) results, tourist satisfaction with the destination

Value	Pattern Matrix Component	
	1	2
Destination cleanliness	.929	
Accommodation quality	.832	
Overall satisfaction with the destination	.741	
Local cuisine	.737	
Reasonable prices	.614	
Nightlife		.852
Cultural events		.809
Sports activities		.795
Tourist attractions		.678
Facilities for children or the elderly		.648
Factor statistics		
Eigenvalue	4.944	1.215
Variance %	49.436	12.151
Cumulative variance %	49.436	61.587
Cronbach alpha	0.845	0.834
Mean	4.084	3.664

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalisation.a

a. Rotation converged in 3 iterations

The first emerged component includes the following aspects of the destination: destination cleanliness, accommodation quality, overall satisfaction with the destination, local cuisine and reasonable prices. The second component includes the variables: nightlife, cultural events, sports activities, tourist attractions and facilities for children or the elderly. The first component can be described as “destination quality” and the second one as “destination offer”. A similar situation has been confirmed in the research conducted in the destination of Poreč, where the same components have been extracted but with different strengths of correlation among variables (Brščić et al., 2018). Thus, the obtained results demonstrate that the components “destination offer” and “destination quality” can be used legitimately in the following researches.

In the performed research, tourists were asked to evaluate whether the destination sufficiently invests in sustainability initiatives at the destination of Rabac and most of them responded positively (78.52%). It is important that further

initiatives by all stakeholders involved in tourism base tourism development on sustainability so that tourists will recognize and be satisfied with that fact in the future.

## 6. CONCLUSION

The results of the field research showed that tourists in Rabac mostly find information about the destination of Rabac through the Internet, followed by tourists who had previously visited Rabac and those who came by family or friend's recommendation. By the increasing use of the Internet, tourists can get information more quickly and, instead of recommending by word of mouth, people more often use the word of mouse. Considering a large number of Internet users, this can greatly affect the destination image in terms of positive or negative criticisms of tourist satisfaction with the aspects of the destination and of their further choice of destination to visit. Those who had previously stayed at the destination could better detect the improvements made to aspects of the destination. On the other hand, first-time visitors could give an accurate account of the present situation, without additional expectations. Most of the respondents were repeat visitors or had come on recommendations from family or friends. Satisfied tourists will probably return to this destination and spread good recommendations among other tourists who then become first-time visitors. Kozak and Rimmington (2000) proved that if tourists are satisfied with a destination, they are more likely to revisit it and to recommend it to other people.

Tourists mentioned as their main reasons for visiting Rabac for a holiday free time and recreation and the main attractions were the beaches, clean sea, and nature, which are the main elements of sun, sand and sea destinations. Tourists were satisfied or completely satisfied with the destination cleanliness which also confirms the justified name of Rabac as the "Pearl of the Kvarner Bay". In further management of the destination, emphasis should be placed on the preservation of nature and its most valuable natural resources, i.e. beaches and the sea, and maintaining the cleanliness of the destination at the same level or even better. Overall satisfaction is listed in second place regarding the average grade which is different in comparison to the same study conducted in Poreč, where the overall satisfaction was rated with the highest grade (Brščić et al., 2018) but the rate is still very high (4.22 on average).

In order to reduce the number of variables, the PCA was conducted and two components emerged. The first, “destination quality” included the aspects: destination cleanliness, accommodation quality, overall satisfaction with the destination, local cuisine, and reasonable prices, and the second one, “destination offer” involved the aspects: nightlife, cultural events, sports activities, tourist attractions and facilities for children or the elderly. The conclusion is that destination offer and destination quality can be used as variables that can serve as reduced variables for measuring tourists’ satisfaction with the destination. Similar results were obtained conducting the same research but in a different destination in Istria, in the town of Poreč (Brščić et al., 2018).

In the final conclusion, the measure of tourist satisfaction with attributes in the destination and overall satisfaction is particularly important for the positioning and branding of the destination in the future. Therefore, destination managers should conduct field research on tourists’ satisfaction to obtain an informative tool for successful planning of future development.

## LIMITATIONS

It should be noted that in the group of respondents there were probably respondents who had just arrived or had spent only a few days at the destination. Furthermore, there is a tendency for respondents to differently evaluate their satisfaction with the individual aspects of the destination at the beginning and at the end of their holidays.

Another limitation of the study could be that surveys were carried out exclusively on beaches with beach users and there is a possibility that results would be different if the survey had been carried out with tourists in a different location, for example in the village.

The results may also be different between first-time visitors and repeat visitors, so it would be good to track the development of satisfaction of the same visitors, although it is quite complicated to follow the same group of tourists.



## FUNDING

The research was carried out within the project Interreg Mediterranean “Models of Integrated Tourism in the MEDiterranean Plus” – MITOMED+ (1MED15-3.1-M23-295).

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# HEALTH MANAGEMENT: CASE STUDY OF CLINICAL HOSPITALS IN CROATIA

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## **Abstract**

*The Croatian health system is a topic that has occupied Croatian media space for a long time, that is often politicized and that is an obvious problem for the country, mostly because of its debts, to which no adequate solution has been found yet. However, there is one solution – increased financial resources aimed at settling debts for the past period and financing future liabilities. How to achieve this depends on the government that defines the allocation of health care resources and the cost of health services, but it also depends on health care institutions doing business rationally. The Croatian health system is most similar to the Bismarck financing model. It is based on the model of compulsory social health insurance which represents the health system financed by the employees and their allocations for health care for the entire nation. Thus, it is easy to conclude that health care resources are largely limited and, in the future, they will be even more limited if the number of employees decreases in the years to come. Under these conditions, the Croatian health care system operates only within the framework it can “cover” financially and transfers liabilities in the future period. This paper will present financial management in health care, especially by using an example of large hospitals in Croatia, i.e. clinical hospitals, and give an overview of the largest financial indicators of these hospitals.*

*The purpose of the paper is to present a financial management model of the hospitals with the aim of finding solutions to the financial improvement of hospital operations by retaining the same or increase the quality of services and health workers guaranteed by the Health Care Act.*

**Keywords:** health management, hospitals, financial management

JEL Classification: I19, M10

## 1. INTRODUCTION

Health systems, both in the world and in Croatia, have faced disproportionate revenues and operating expenses for years. Increasing costs over time are part of medical development and advancements in medical technology on the one hand, and population aging on the other (European Commission, 2017). In each country, health care represents a large system that imposes a heavy burden on national finances, creating and accumulating debts. Many experts have tried to respond to this, but given the current trend leading to an increased debt of the health system, it can be concluded that all methods seem to be unsuccessful. The Croatian health care system is categorized into the Bismarck model of financing, i.e., financing mainly from compulsory health insurance contributions based on salaries of employed citizens. Hence it is a social security model that represents a relatively inexpensive model of paying for or financing health care and widespread use of health services at relatively low prices (World Bank, 2004). There is a problem here with the price and the cost of that service. Namely, the price of the service is often lower than the cost of the service in question, which inevitably generates a constant increase in costs. This mode of functioning is best seen in the business operation of hospitals, especially clinical hospital centers that offer comprehensive health care services to the entire population. According to the Health Care Act (Zakon o zdravstvenoj zaštiti, Official Gazette 100/18), health care activities are carried out at primary, secondary and tertiary levels and at the level of clinical departments. Clinical hospital centers are tertiary-level health care institutions, which include specialist and conciliary health care services and health care services provided to patients in hospitals as well as the provision of the most complex forms of health care services. Why do the biggest hospitals generate losses? The answer lies in the way the price of the service is set. For the purposes of research, we will analyze the operation of several clinical hospital centers in the Republic of Croatia in order to explain in

detail the problem of the unsustainability of the system of clinical hospital centers, as well as the need for financial state intervention with the aim of reducing their accrued liabilities. The main aim of this paper is to answer the question of how to improve the economic viability of hospitals without reducing the scope and amount of services.

## 2. HEALTH CARE FINANCING AND CONSUMPTION

Health care financing in developed countries can be identified through the following three well-known systems: “*systems that are predominantly privately financed, systems that are predominantly financed by the state budget and systems that are predominantly financed by extrabudgetary sources, the so-called social security funds.*” (Mihaljek, 2014, p. 30) The Croatian health care system can be classified as a combination of the Bismarck and the Beveridge financing models, that is, as stated above, a model that is mainly financed by compulsory health insurance contributions based on salaries of employees, which is additionally supported by budgetary resources. In other words, as most health care resources come from compulsory contributions, it can be concluded that the Bismarck financing model prevails in Croatia. This is an extremely socially sensitive way of health care financing, which contributes to health care and the preservation of the health of all groups within the population. Namely, for a relatively low cost of a health care service, a patient in Croatia may receive a wide range of health care services (Vončina, Rubil, 2018). In Croatia, the central authority, i.e., the Croatian Health Insurance Fund (hereinafter referred to as the CHIF), pools the health insurance resources. The CHIF revenue includes contributions for compulsory health insurance, which account for 80% of total revenue and are made up of the contribution rate for compulsory health insurance amounting to 16.5% of gross salary, as well as pension contributions, i.e., 3% for pensions above HRK 5,664; budget revenues realised pursuant to Articles 72 and 82 of the Compulsory Health Insurance Act, which comprise contributions for compulsory health insurance of unemployed persons, revenues from the excise tax on tobacco products, contributions for compulsory health insurance of insured persons who have been deprived of liberty pursuant to a decision of the competent court, additional contributions to pension beneficiaries in accordance with the pension insurance legislation and under the Act on the Rights of Croatian

Homeland War Veterans, and revenues for supplementary health insurance for which the cost of the insurance policy is covered by the state budget. Generally speaking, health care revenues consist of revenue from contributions, revenue from the budget, revenue by special regulations and other revenues.

Health expenditures are tied to three groups of health care expenditures: health care expenditures for compulsory health insurance, health care expenditures for supplementary health insurance and expenditures for workplace health protection and occupational diseases – specific health protection. In 2017, these expenditures accounted for 88% of total CHIF expenditures (the Croatian Health Insurance Fund, 2018). The CHIF allocates the funds obtained to health care institutions pursuant to health care contracts, and ultimately shows positive business results, i.e., an excess of revenue over expenditures. On the other hand, depending on the health service they provide, health care institutions show either positive or negative business results, while clinical hospital centers in the Republic of Croatia almost always show negative business results, with the exception of situations where they receive significant financial assistance from the government with a view to meeting their obligations to suppliers. This is how these institutions run into the largest debts in the health care sector, which brings us back to the beginning of the debate and the fact that the price of the service offered by the hospital is lower than the actual cost of that service. Namely, the prices of services are defined by the CHIF and hospitals do not have any impact on that. More precisely, the prices of services are defined within the DTG (diagnostic and therapeutic group) coefficient relating to hospital medical care of patients suffering from acute illnesses (inpatients) and patient diagnosis, i.e., the cost of treatment is included in diagnosis and treatment within DTP (diagnostic and therapeutic procedures in specialist and conciliary health care) coefficients pertaining to day hospital patients, or the so-called outpatients. The cost of treatment is defined by a procedure or a service provided to a patient (e.g. a check-up) and the DHT (days of hospital treatment - chronic and prolonged treatment) coefficient referring to the price per day that a patient spends in a hospital, and after a certain number of days a patient spends in a hospital, which is defined by the DTG procedure or diagnosis.



### 3. FINANCING OF CLINICAL HOSPITALS AND CLINICAL HOSPITAL CENTRES

Clinical hospital centers in Croatia are financed on average by more than 90% of total revenue by the CHIF. The basic document on the basis of which provided services are paid to hospitals is a Contract for the Provision of Hospital and Specialist and Consiliary Health Care Services, based upon which all medical procedures at any medical facility within the hospital are contracted and the monthly maximum financial limit of the hospital is defined. On a monthly basis, if a hospital sends an invoice for payment for services rendered within the limit, the defined amount of the limit is transferred directly to their bank account. This amount is also called the hospital budget or hospital health care. What precedes is the contracting procedure, i.e., the period of time within which hospitals offer their proposals referring to types of services and the number of services they offer, and the CHIF decides whether to accept them or not. Upon acceptance, the aforementioned Contract for the Provision of Hospital and Specialist and Consiliary Health Care Services is signed. With the maximum funding limit available for the provision of hospital and specialist and conciliary health care services from compulsory health insurance, hospitals as health care facilities provide funds for particularly expensive medicines, explantation, transplantation, interventional cardiology, interventional neurology, cochlear implants, and transfusion medicine (CHIF, p. 11, 2018). These are the so-called non-limited CHIF funds as hospitals call them. In addition to this, the CHIF is required to allocate funds to hospitals based on the supplementary health insurance of patients who have that insurance, funds for accidents at work and occupational diseases and health care of foreign insured persons in the Republic of Croatia. The additional revenue that hospitals can earn from the CHIF are revenues based on key performance indicators (KPIs) and quality indicators (QIs) in hospitals that provide treatment of patients with acute illnesses. Performance indicators that were valid until December 2018 were determined on the basis of the average length of stay in the hospital and the total number of cases in specialist and conciliary health care per health worker. Quality indicators that were valid until December 2018 were determined on the basis of a general mortality rate, the percentage of day hospital treatments, and the percentage of treatments with reserve antibiotics in relation to the total number of cases. Out of a total of five indicators, hospitals could get 1% per indicator, i.e., a total of 5% of the hospital limit in case all criteria are met (this refers to how many



services hospitals have invoiced in a month, below or above the agreed limit, under the condition that if they have invoiced the number of services above the agreed limit, only a percentage of the contracted limit is acknowledged). Since January 2019, the situation regarding the key performance indicators (KPIs) and quality indicators (QIs) is fundamentally different. Namely, the indicators are evaluated in the following way: based on the complexity of individual cases in the total number of cases (diagnostic and therapeutic groups), the average length of acute hospital treatment per case, the average length of acute hospital treatment due to acute pancreatitis, the percentage of same-day surgery of inguinal/femoral hernia repairs, the total number of cases treated in specialist and conciliary health care per one health worker, the percentage of day hospital treatments, the number of hospital readmissions within 30 days regardless of diagnosis, the percentage of patients treated with restricted antibiotics, a general mortality rate, a mortality rate due to acute myocardial infarction and a mortality rate due to stroke. The maximum possible amount available on the basis of key performance and quality indicators is 3% of the contracted limit. However, the dynamics of payment made by the CHIF to hospitals for hospital and specialist and conciliary health care during a month is an additional issue that defines the financial performance of hospitals, i.e. their dynamics aimed at settling current liabilities (Bogut, Vončina, Yeh, 2012). As shown in the text, the CHIF revenues are divided into several types, so payment is made in several phases. The first is a model based upon which funds allocated for hospital and specialist and conciliary health care are distributed; these funds are paid according to the 90:10 principle, i.e., 90% of the hospital budget, i.e., the hospital limit, is paid immediately at the beginning of the current month, and the remaining 10% on the basis of the provision of health care services. Other funds are then paid for additional health insurance, workplace injuries and the so-called non-limited items. In addition to the CHIF revenue, hospitals also make money from providing services to other health care providers, from direct funding by the budget (central or local), from patient participation payments, and from other revenues that make up a very small, almost insignificant share of total revenue. In any case, the share of the CHIF revenue in most large hospitals accounts for about 80% of total revenue (or even more in some hospitals), which means that hospitals are literally dependent on the CHIF and their contractual obligations with the CHIF.

## 4. HOW AND HOW MUCH DO HOSPITALS SPEND?

Expenditures of clinical hospitals and clinical hospital centers make up a larger amount compared to realized revenue. Hospitals do not have enough funds to cover expenditures and by applying the balanced budget principle they plan to have fewer expenditures or higher revenue than expected. Due to insufficient revenue to cover current year expenditures, hospitals do not plan to cover the deficit transferred from previous periods (State Audit Office, p. 14, 2018). As shown in the previous chapter, hospitals do not directly affect the definition of their own revenue, so it can be said that they do not affect their own expenditure either.

The largest share of hospital expenditures are expenditures for medicines and medical supplies (i.e., material costs) and expenditures for salaries paid to employees (i.e., labor costs). Clinical hospital centers and clinical hospitals provide wide-ranging health care and can definitely not anticipate in advance or plan their costs for patient treatment or define the number of patients seeking medical care (European Commission, 2018). Precisely for this reason, it is difficult to predict an extraordinary situation and consequently consumption of medicines and medical supplies. On the other hand, expenditures on medicines and medical supplies are not accompanied by a proportional increase in labor or an increase in revenue for services rendered. This means that an increase in the hospital spending limit would cause medicine expenditures to grow up to twice as much as the increased limit. There is mostly an increase in expensive medicines that are paid especially as non-limited CHIF items. However, there is a significant increase in the consumption of “ordinary” medicines and medical supplies.

Furthermore, the pay scale system, i.e., salaries paid to employees, is established pursuant to the basis used for the determination of the salary system for civil and public servants and employees based on the Collective Agreement for Civil Servants and Employees and the Agreement on the Basis for the Determination of Salaries in Public Services and is therefore subject to changes at national level. For example, in December 2017, the CHIF and the hospitals entered into a contract offering hospital and specialist and conciliary health care, which also raised the limit to the hospitals. As early as 2018, a limit increase in most hospitals was canceled by increased expenditures for staff salaries as a re-

sult of a rise in the basis used for the determination of salaries in public services, which grew by 6% in 2018.

The next major expenditures burdening hospitals are current and investment maintenance. Most of the hospitals are located within old and dilapidated buildings requiring frequent and necessary repairs, i.e., urgent and immediate repair works. On the other hand, the advancement of technology requires accommodation in renovated and refurbished buildings, so whenever new equipment is purchased, it is necessary to make changes to existing facilities. Hospitals see the purchase of equipment or capital investments as great but unattainable resources they can barely afford (Cylus, Thomson, Evetovits, 2018). When purchasing modern medical equipment, clinical hospitals and clinical hospital centres almost always depend on additional revenue sources, whether these are budgetary funds or resources provided by the Ministry of Health, or with the approval of the Government of the Republic of Croatia, these might be general budget funds originating from sources from general revenues and receipts. Such funds of the Government of the Republic of Croatia are planted directly in the state budget and as such, they are allocated to hospitals. Another possibility of financing the purchase of capital equipment for the purpose of providing health services of the highest quality in hospitals are the EU grants. Namely, funding is currently possible through the Operational Programme Competitiveness and Cohesion 2014-2020, within which calls for tenders are issued enabling hospitals to have the opportunity to participate in these tenders with the aim of procuring equipment or renovating, upgrading or building additional hospital capacities. The Ministry of Health is also an eligible applicant within the aforementioned programme and its grant scheme, so it can procure equipment needed in hospitals through projects within its area of competence. This is, of course, one of the most valuable ways to reduce expenses and use otherwise insufficient funds for equipment procurement that greatly facilitates hospital financial operation and improves the quality of their services.

Financially speaking, public hospitals are general government budget beneficiaries. From an accounting point of view, revenues and expenditures are not calculated according to the same principles, which results in a discrepancy between revenue calculated on the basis of the contractual relationship and the costs calculated according to the principle of their origin, regardless of their payment (Vrhovec et al., 2014). This is particularly reflected in monitoring hospital operations on a monthly basis and showing monthly outcomes. It is

often the case that after delivery of high-value goods or equipment the invoice is settled and makes expenditure for the current period (a 'period' implies here a month as hospitals are obliged to submit their operating reports to the CHIF on a monthly basis), and revenue related to that equipment, if it is funded by the Ministry of Health, is transferred to the hospital in the following month, or vice versa. In this case, business results are presented unrealistically at the end of the month. The same example can be seen when you make a donation for a specific purpose; expenditure is shown a month or even two months after donation revenue. Hence, for hospitals, the most realistic overview of business operations is given at the end of the year, i.e., when the annual financial statement is adopted.

Special attention should be paid to liabilities, especially arrears. This topic is perhaps most current when it comes to the finances of clinical hospitals and clinical hospital centers. In some hospitals, arrears are growing even over a year. The amount of liabilities depends on the size of the hospital, but it is certainly the amount that the hospitals cannot cover by means of their own resources (McIntyre, Kutzin, 2016). The largest and oldest liabilities relate to obligations to suppliers of medicines and medical supplies. As stated at the beginning of the chapter, in the Audited Financial Statement of Health Care Institutions performed by the State Audit Office it can be seen that due to insufficient revenue to cover the current year's expenditure, hospitals do not plan to cover revenue loss carried from earlier periods. In that case, if hospitals planned to do that, they would not have sufficient revenue to cover the salaries paid to their employees in the current year and further material expenditure necessary for their operation. In the last two years (i.e., 2017 and 2018), the government of the Republic of Croatia intervened several times and by reallocating a surplus from certain positions in the state budget, it let additional funds be paid to hospitals for the purpose of settling hospital liabilities to suppliers of medicines and medical supplies. Thanks to Croatian government interventions, business results of clinical hospitals and clinical hospital centers at the end of the year were more favorable than expected during the year.

The costs of clinical hospitals and clinical hospital centers are large, far greater than the costs of some other public institutions and systems in the Republic of Croatia. Media attention is increasingly focused on hospitals, primarily through the primary medical context of quality and service delivery, while financial discourse, though immensely important and inseparable, is often subordinated to, or hindered by, political relations and the current social and social context.

## 5. INSUFFICIENT REGULATION OF LABOR LAW STATUS OF HEALTH WORKERS AS THE ADDITIONAL FINANCIAL BURDEN ON HOSPITALS?

An (in) a sufficient number of health workers is a controversy that has been around for a long time between the competent ministry, the Croatian Medical Chamber, the unions involved, the media and the public in Croatia. A brain drain of medical doctors and other medical professionals is a topic permanently discussed in health circles, media and newspapers. Most observers and professionals would agree that currently, we do not have enough health care professionals, primarily medical doctors, nurses and medical technicians (Čipin, Smolić, Vlah Jerić, 2017). Recent lawsuits filed by medical doctors, final judgments and new financial liabilities imposed on hospital budgets have undoubtedly confirmed numerous system deficits, indisputably also those referring to human resources, their (in)adequate workload, as well as their planning in the public health system. Excessive overtime of medical doctors and other medical staff not only represents the financial burden on hospitals, but it undoubtedly confirms that there are not enough employees in the system. Moreover, maintaining the existing quality of services and health care is only possible by imposing an additional burden on the current number of employees. However, on the basis of current trends, undeniable (e)migration of young medical doctors, retirement of nearly 4,000 medical doctors in the next decade, and tough and long-lasting education and training of medical doctors, the normal functioning of the national health system could become seriously questionable in the next decade (Čipin, Smolić, Vlah Jerić, 2017, p. 366).

(E)migration of medical doctors in Croatia, Europe, and the world is not a novelty (Tjadens, Weilandt, Eckert, 2013), but the lack of appropriate national strategies and real long-term strategic human resources management in the health system is definitely a serious national deficit, the consequences of which will be felt. Warnings about the brain drain of the highly educated labor force, especially medical professionals, which was modeled on Poland, after full membership of the Republic of Croatia in the European Union (Kovács, Vinković, 2011, pp. 355-362) have obviously not been taken seriously in political circles. Although the focus of this paper is not on (e)migration of medical doctors, it is impossible to ignore their interconnectedness and interdependence with the

workload of existing health workers and the accumulated total overtime hours in clinical hospital centers, clinical hospitals, and *pro future* hospitals. Overtime hours and their inadequate calculation and payment are the subjects of a few hundred lawsuits before the Croatian courts, which threaten hospital budgets and their long-term financial (in)stability. Although it is possible to give several legal opinions on the calculation of overtime hours and the interpretation of the provisions of the collective agreement in question, it is generally almost impossible to pay out hours worked as overtime less than regular working hours, i.e., not to add related allowances for a salary increase or the labour cost per hour. Quite simply, this would mean that a person is a medical doctor, a specialist, and a subspecialist, who works in special working conditions, only when they work regular full-time hours, while for any hour worked in excess of their full-time workload, they are no longer either specialists or subspecialists, and they do not work under special working conditions. The experiences of similar court epilogues let us draw a conclusion, with a rather high degree of security, that hundreds of lost lawsuits will result in an additional and significant burden on hospital budgets. However, it is even more complicated to see if and when this harmful practice will be stopped?

In addition to recent lawsuits, the issue of insufficiently regulated labour law status, primarily of medical doctors, is also hidden in the fact that there are no precise standards and rules stipulating how many patients medical doctors, specialists or subspecialists are required to examine and treat on a single day, i.e., in their full-time working hours. The absence of such legislation results in the unequal and unbalanced workload of individual medical doctors working in the same department and facility at a hospital, which leads to demotivation in the workplace, reduced productivity, and job dissatisfaction that can fuel the desire to leave the country. No less important, the absence of the representativeness of the Croatian Medical Union, i.e., the lack of necessary legal amendments to the relevant regulations, is still an open question, the answer to which would finally allow the union gathering medical doctors to negotiate working conditions of medical doctors, and not the union/s that *inter alia* gather non-medical staff employed in the health care system. Although this problem seems easy to solve, putting this topic on the agenda has obviously been delayed by the issue of complex political and interest relations, which in turn leads to further disruption of the medical profession with far-reaching and very harmful social consequences.



## 6. HOW TO IMPROVE FINANCIAL EFFICIENCY

An occasional increase in hospital budget or hospital limits is not enough to improve hospital financial performance and reduce losses. As already stated, an increase in the limit also generates an increase in material expenditures, in particular of medicines and medical supplies, which in turn causes increased hospital workload aimed at reaching the assigned limit. Also, increased workload means increased mechanical wear of medical equipment, which is later reflected in more frequent services and increased maintenance costs. As an umbrella institution for control of invoiced services by hospitals and payment of financial resources to hospitals for the services provided, the CHIF defines both the payment model and the price of the service in question. Namely, payment to hospitals is defined, as mentioned above, based on the DTG (diagnostic and therapeutic groups), DTP (diagnostic and therapeutic procedures) and DBL (days of hospital treatment) coefficients. DTG is something that is unique to the health system, i.e., the definition of DTG itself is complex. The definition and clarification of DTG from the CHIF Handbook for Health Workers read: "Payment by DTS is a payment per episode, the episode being the period from hospital admission to hospital discharge. The duration of the episode may vary. It may last from one to many days, and all costs incurred during this period are included in the price. This means that all health care services are included in the episode and there is only one payment per episode. This approach is usually referred to as per-case payment (the CHIF Handbook). Further in the text in the handbook, it is stated that not all operating costs of tertiary level health care facilities, such as clinical hospital centers and clinical hospitals, are not covered by DTG pricing, such as capital costs, medical staff training costs, costs of teaching and the like (the CHIF Handbook). What is not mentioned and it makes the foundation of all costs, is the depreciation cost. Hence, in its Handbook on DTG, the CHIF itself states that there is a disparity between the actual costs of clinical hospital centers and clinical hospitals. DTG is also designed to cover unplanned medical treatment, extended treatment, etc. However, it covers the costs of extended treatment resulting from the treatment itself, but only those costs are foreseen by the DTG Handbook. The aforementioned costs remain uncovered. The described problem itself imposes a solution for hospitals to achieve financial efficiency and stability, i.e., to include all costs in the price: material costs, salaries, depreciation, and other operating expenses.

It can be concluded that the health system itself is not completely defined in a way that covers all costs this health system generates. However, there is room for hospitals to rationalize their business operations with the aim of reducing costs. An example of such a business operation is to monitor both costs and invoiced services on a daily basis. Such monitoring will certainly not lead to positive business results of hospitals, as it is almost impossible without changing the health care financing model or without the help of the Government of the Republic of Croatia through financial assistance that is occasionally provided to health care institutions. What institutional management can do is, with due care and diligence of a prudent businessman, to manage the system by controlling medicine consumption on a daily basis, stockpiling and tracking invoiced realization of all constituent units within the hospital (constituent units imply here both a medical and a non-medical part of the hospital). In other words, it is necessary to define the spending limits that a certain constituent unit can spend on a monthly basis. There are, of course, unforeseen cases occurring in health care, and because of them, these spending limits can be exceeded, but such cases should be timely reported and controlled by responsible persons. Also, control of invoiced realization implies the monitoring of the realization of services provided in the hospital with the aim of achieving the hospital monthly limit contracted with the CHIF to ensure maximum monthly level revenue. On the other hand, the monitoring of the invoiced realization does not apply only to the monthly limit, but it also includes non-limited items paid to the fullest extent they are made in (with the exception of those invoices returned by the CHIF due to illogical services rendered to patients).

In the contracting phase, for the purpose of signing the Contract for the Provision of Hospital and Specialist and Consiliary Health Care Services and obtaining a higher monthly limit, hospitals contract their maximum or 100% capacity. In order to improve their financial position or increase efficiency and possibly do business with smaller deficiencies, at least one small portion of capacity (e.g. 10%) could be left for hospitals to offer their services at market prices, without waiting lists, or to offer high standard services (Briš-Alić, Harc, Vida, 2018). There would certainly be enough demand for such services because there are patients who find waiting lists unacceptable and have enough financial resources to cover costs incurred for necessary health care personally and directly. In the absence of such solutions, these patients currently seek medical treatment in private clinics. Given that clinical hospital centers and clini-



cal hospitals offer the highest level of health care possible, such patients would probably be delighted to receive their services whenever possible.

At this point, we deliberately omit the option of increasing participation as an additional source of revenue for hospitals as it often refers to vulnerable groups of citizens and patients. Although most vulnerable populations are wholly exempt from participation, it should not be forgotten that participation does not have a long-term effect on increasing the financial stability of the health system. However, more rational treatment and investment in primary health care, both at the infrastructure level and at the level of human resources management and improvement, may have significant financial effects at the secondary and tertiary levels of health care.

## 7. CONCLUSION

Both decision makers and the scientific and professional public at national, European and global levels are concerned with conscious spending and the need for spending control in hospitals. Mechanisms have been activated that focus on ever greater and more stringent spending control, but unfortunately, the system still does not allow full-scale hospital financial performance, neglecting that hospitals are the largest health system cost generators (European Commission, 2018). Without increased revenue, it is difficult to achieve positive business results.

Funds allocated to hospitals by the CHIF account for around 80% of their total revenue, which is also a limiting factor for additional revenue generation. Through the aforementioned Contract for the Provision of Hospital and Specialist and Consiliary Health Care Services hospitals precisely define health procedures, specific facilities and working hours. Such contracting leaves little room for hospitals to earn more money in the commercial market, all the more so because almost all clinical hospital centers and clinical hospitals are burdened with long waiting lists. On the other hand, in case of exceeding the maximum monthly limit with the invoices issued to the CHIF, the CHIF is not obliged to pay therefor. In other words, hospitals whose employees work too much sometimes risk additional cost increases without having the possibility to compensate for those costs through realized revenue. Limits set to hospitals should be based on objective indicators such as a number and type of surgery, a number, and type of outpatient examinations, and the like, i.e., on comprehensive costs

of all types (Vehovec et al., p. 188, 2014). Namely, the price of a service defined by the CHIF does not include depreciation costs. Thus the question arises as to whether the hospitals that generate losses are really inefficient or the funding system is inefficient, i.e., whether these are predetermined sources of inefficiency on both sides. The problem lies in normative health care planning, i.e., a broad right to health care based on the “all rights for all” model (Vehovec et al., p. 188, 2014). It is indisputable that something must change in the health system. Will it be correcting the DTG or DTP prices, which is, in any case, a smaller revenue generator, in order to increase revenue while maintaining the same level of costs, or will costs be reduced by fixing the prices of medicines and medical supplies? No less important, a more rational approach is needed to increase the indication for medicines listed on the medicine list. The current intention of the Ministry of Health aimed at increasing the number of day hospitals and same-day surgeries or ambulatory surgeries, and consequently reducing the number of inpatients to avoid additional lying costs, can yield results, but only in interdependence with all critically observed and mentioned mechanisms. However, regardless of hospital efforts and plans, if the price of a service does not include all economic parameters, hospitals will undoubtedly continue to generate losses. A comprehensive approach to the problem that will not ignore all of these interdependent factors, followed by the necessary normative interventions of autonomous and heteronomous character, and an adequate approach to human resources responsible for the normal functioning of the health system may bring light at the end of the tunnel.

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# MODERNIZATION OF TAX ADMINISTRATION AND TAX REFORMS (CASE OF KOSOVO)

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## **Abstract**

*Kosovo as a new state with the purpose of the fulfillment of obligations for the operation of the government and other state institutions has developed a simple and emergency policy for generating the public revenues, where besides the donations the funds were also collected by applying different taxes. During the first post-war years, Kosovo did not have any fiscal policy which will trigger economic sustainability and provision of conditions in order for the country to have a rapid economic development on the way of strengthening of the domestic*

economy. An increased diligence for the modernization of Tax Administration of Kosovo (TAK) and implementation of fiscal policies was enabled only after the Declaration of Independence in 2008, where the first tax reforms commenced, and for the first time took place the application of the Strategy for long-term development, modernization and better delivery of services to taxpayers.

Through this paper, we will try to analyze many factors of tax reforms and TAK modernization; a paper that will be based not only on theoretical data but through the comparison of theoretical data with those of the field, we will try to give an overview of the impact of these tax reforms on the increase of Kosovo's budget and the impact of TAK modernization in providing the best services for taxpayers. In order to see how these changes were appreciated and how the respondents evaluate TAK services and what other reform changes are considered as feasible and acceptable, which at the same time would have an impact not only in the increase of budget but also in TAK, through modernization, making the fulfillment of revenue collection plans more effective and efficient, and at the same time affecting the wider extension of the tax basis, but also making the compliance of tax obligations for taxpayers easier.

**Keywords:** Tax Administration, Tax Reforms, Kosovo

JEL Classification: H20, H71

## 1. INTRODUCTION

Tax reforms in Kosovo contributed largely to the increase of revenues, and the same time the TAK organization through modernization contributed to better service delivery to taxpayers, whereas application of electronic platforms influenced largely in easing filling returns, payments, an increase in the number of taxpayers filing their taxes.

Therefore, given the fact that there are various opinions on the tax reforms that were applied in Kosovo, especially after 2008, they were associated with a better organization of TAK, increase on a number of inspectors, better services and reduction of informal economy and collections of arrears, an increase of service efficiency for taxpayers. Therefore, we consider that these are some of the issues that shall undergo research, and raise clear objectives over these issues, or otherwise, the necessity for researches in this field.

Today, we are witnessing that the Tax Administration should develop a voluntary filling system, minimizing the risks of tax evasion by establishment of a modern, suitable organization and always in service to taxpayers, to enable easier and efficient compliance of tax obligations, which will also have an impact in the reduction of informal economy in Kosovo, thus enabling opportunity for loyal, equal and reliable activity for all.

The purpose of the study, which we are willing to undertake, respectively the application of tax reforms in Kosovo since its Independence in 2008 until now, is to give a scientific contribution not only to compare the effects of those reforms in the increase of Kosovo's budget, but the provision of services to taxpayers as well. How our respondents evaluate the provision of call center services, education, transparency, and equal treatment, also potential suggestions for other positive impacts which could influence better compliance of tax obligations, reduction of risks, reduction of the informal economy and better taxpayers' coverage base.

Through scientific facts, empirical comparisons of various tax reforms that have been applied in other countries and organizations of Tax Administrations, we will try to give our suggestions on the impacts that the application of reforms and the organization of Tax Administration (TA) could have in the future, the application of which could be implemented in Kosovo as well.

So, although our primary goal, through this study, is to contribute to the interested parties from Kosovo, whether state institutions, businesses or other stakeholders, so that the findings from the empirical researches, which we will carry out, we hope, are applicable in Kosovo and to have a positive impact for the readers of this paper, but naturally, our intention is for this paper to make it helpful for stakeholders abroad, where they could accept the facts from this research or disprove them with other scientific facts.

## 2. LITERATURE REVIEW

The conclusion from almost all tax experts is that modern tax administrations are concerned with a stronger focus on taxpayers, specialization of personnel, independence from the ministries and politics, fight against corruption among tax administration staff and this should also reduce tax revenue collection costs and help to prevent tax evasion. The efficiency of a tax system is not

determined only by appropriate legal regulation, but also by the efficiency and integrity of the tax administration (Bird, R.M. 1990).

The major administrative reforms were undertaken in different countries in South America like Bolivia, Chile, Columbia, and Uruguay, or in Europe, Spain and Portugal provide encouraging examples. In each case, new management was instituted with a new organizational structure and a more professional staff (Harberger, A. 1989).

These improvements resulted in the successful implementation of the tax reform program and in a dramatic improvement in tax collection. Such successes show that under the right conditions, the efficiency of the tax administration can be increased in a relatively short period of time. These improvements resulted in the successful implementation of the tax reform program and in a dramatic improvement in tax collection. Such successes show that under the right conditions, the efficiency of the tax administration can be increased in a relatively short period of time.

According to Tanzi, V., Pellechio, A. (1995) the main tasks of tax administration involve:

- information and instruction to taxpayers,
- registration, organizing and processing tax returns (input of data, processing declarations, and payments),
- coercive collection (closely connected with registration, accounting and return processing),
- control and supervision (discovering lacking and insufficient tax returns and controls of books and papers in tax administration offices or business activities and books of taxpayers, while routine check-ups had already been done in the registration, accounting and return processing department),
- legal services and complaints (taking cases to court, defending tax administration in court, explaining procedures which are or are not in accordance with the law).

A good tax system is an output of good tax policies, legislation, the efficiency and integrity of tax administration (Kaldor, 1980). All this with the justification that practices around the world show that revenue collection is more effective when taxpayers make voluntary compliance and this is achieved when they trust and respect the tax authority, as well as consider it to be highly competent.



### 3. GENERAL OVERVIEW OF TAX ADMINISTRATION OF KOSOVO AND THE REFORMS AFTER THE YEAR 2008.

TAK mission is to collect taxes and contributions in order to support the economic development and well-being of Kosovo's citizens. Success is measured if the expected government revenues are collected to secure important government services, largely through voluntary taxpayers' compliance with Kosovo tax laws and if employers pay the required contributions for pension savings and other contributions for their employees. (Handbook on taxes in Kosovo 2007)

To implement its mission and vision, TAK has chosen its values, namely: Professionalism, Integrity, Honesty, Efficiency and Effectiveness, Service Excellence and Transparency. These values should be applicable in how Tax Authority treat the taxpayers and the various partners they work with.

Besides the main purpose of revenue collection, TAK develops numerous activities based on the 2015-2020 Strategic Plan, as well as other annual and periodic plans by providing better taxpayer services, increasing professionalism and transparency, better perception on integrity and honesty towards increased voluntary payment of taxes. Certainly, TAK's achievements in addition to internal staff are also related to activities carried out with other local and international institutions that are providing expertise and professionalism to keep TAK in step with its modern system organizations.

In 2016, TAK developed a Functional Organizational Structure, which for the most part complies with best international practices. In recent years, TAK has invested heavily in the establishment of the electronic system, which provides online and cost-effective services to taxpayers. A robust performance management system has been developed with Annual Plans for Addressing Risks and an annual operations planning process.

The online Electronic Data Interchange (EDI) is advanced, secure and suitable for application for tax filing for taxpayers. The EDI system is available for each taxpayer to Declare and pays tax liabilities for all types of taxes, correction of tax declarations, and the possibility of paying unpaid liabilities and access to the history of their declarations. Other electronic services are available through the TAK web site, such as: obtaining tax certificate, reporting for purchases



over 500 Euros, download of tax declaration for taxpayers declaring in manual form, etc.

Currently, Kosovo has ten agreements for the elimination of double taxation, which have an important role in the factors that guarantee, favor and stimulate international economic and trade relations. These bilateral agreements also play a role in the development of tax cooperation, the protection of taxpayers from double taxation, the prevention of tax evasion, the elimination of discrimination and the provision of administrative assistance.

From June 2016, the agreement with Albania is in force for the creation of a Joint Training Centre (JTC), which is aimed at increasing the professional capacity of the financial institutions of both countries. In addition, in September 2012 TAK has signed a cooperation agreement with Albania's General Directorate of Taxation, whose purpose is to exchange experiences and implement procedures simplifying cooperation.

Also, Kosovo has an agreement with the Government of the United States of America, the Foreign Account Tax Compliance Act (FATCA), which is in force since 2015. This agreement is binding for financial institutions to report through the Tax Administration of Kosovo on the financial accounts of American citizens to the US Internal Revenue Service.

In December 2016, a Cooperation Agreement was signed with the Estonian Tax and Customs Board in order to exchange experiences in the field of information technology, tax compliance, and professional capacity building for taxes and customs.

Specifically, TAK receives support through training and seminars on professional development by The Organization for Economic Co-operation and Development (OECD) centers in Ankara, Budapest, and Vienna, as well as by Center of Excellence in Finance (CEF) in Ljubljana, Slovenia.

The following are the most important Departments in TAK through main pillars, achievements and at the same time the identification of needs for further modernization are:

- Taxpayer Education Department
- Information Technology
- Call Centre and
- Auditing and Enforcement Collection

### 3.1.1. TAXPAYER EDUCATION DEPARTMENT

Tax Administration of Kosovo, as a responsible authority for administration of tax legislation, all its activities and efforts are focused on the enhancement of voluntary compliance of tax obligation by taxpayers.

The Department of Taxpayer Service and Education (DTES) is one of the most important sectors helping TAK to accomplish its mission on tax compliance.

The role and responsibilities of the DTSE are:

- Taxpayer education and information on their rights and obligations,
- Drafting of explanatory procedures in order for the taxpayers to be easy and simple on the application of Tax Legislation,
- Development of policies, programs, and procedures related to taxpayer services at the central level and regional level, and the coordination with common activities.

To accomplish its role on taxpayer education and information, DTES has undertaken a variety of activities and actions, which have provided a continuous education of business/taxpayers, and on the enhancement of tax voluntary compliance.

From the following table, it can be seen a great number of activities that are in function of taxpayer education providing advice and instructions for the tax voluntary compliance.

**Table 1.** DTES activities performed during 2017

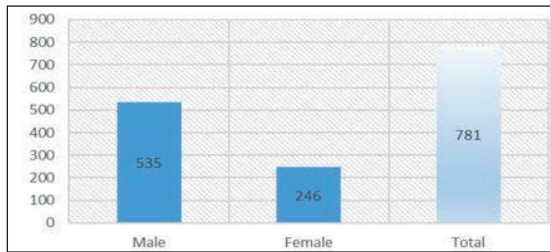
Description	No. of visits
Refund visits	2
Compliance - Education	2
Compliance - Collection of information	70
Compliance - Documentation credibility	98
Compliance - Observation	154
Compliance - Visits with the police	68
Compliance - Issuance of fiscal numbers	2
Compliance - Contacts in the office	25
Other visits	740

Source: Tax Administration Report for 2017

TAK staff plays a substantial role in the accomplishment of the company's objectives, and in the successful performance evidenced throughout these years. TAK pays special attention to their welfare, health, working conditions and pro-

professional development and advancement. Currently, TAK has 781 employees. From a gender perspective, 535 or 68% of all staff members are male, whereas 246 or 32% are female. Fig 1.

**Fig 1.** The number and gender structure of the employees



**Source:** Tax Administration Report for 2017

TAK continuously take care of staff capacity building and through the department of training organizes permanent various courses to lift the professionalism among its staff.

During 2017, technical support for staff training was realized and provided. From TAK, as well as local and international organizations, 58 pieces of training were organized from different fields of tax legislation, where 542 officials attended, 10 seminars and study visits/workshops were held, where 57 officials participated. There were also provided two pieces of training, for external audiences (for other institutions), a number of participants were 58.

As can be seen from Table 2., the revenues are increased year after year and mainly after the changes in fiscal policy, with implementation at the end of 2015. (IMF Country Report No. 18/368)

**Table 2.** TAK Revenue Collections in euro

	2015	2016	2017
Total revenue collections	921,111,584	1,051,545,348	1,130,984,511
Corporate Income Tax (CIT)	74,287,060	92,532,989	96,010,532
Personal Income Tax (PIT)	102,840,335	113,488,895	121,709,573
VAT - gross domestic collections	155,153,654	180,363,401	196,635,189
VAT - collected on imports	455,297,499	513,660,063	556,897,693
VAT - refunds approved and paid	(24,703,833)	(17,928,329)	(31,279,026)
Pension contribution	133,533,036	151,500,000	159,731,524
In percent of total tax revenue collections			
Total tax revenue collections	100%	100%	100%
CIT	8.29%	8.95%	8.73%
PIT	11.47%	10.98%	11.07%
VAT - gross domestic collections	17.31%	17.45%	17.88%
VAT - collected on imports	50.79%	49.70%	50.64%
VAT - refunds approved and paid	(2.76%)	(1.73%)	(2.84%)
(Pensions contribution)	14.90%	14.66%	14.52%
In percent of GDP			
Total tax revenue collections	15.44%	17.03%	17.15%
CIT	1.28%	1.52%	1.50%
PIT	1.77%	1.87%	1.90%
VAT - gross domestic collections	2.67%	2.97%	3.07%
VAT - collected on imports	7.84%	8.46%	8.68%
VAT - refunds approved and paid	(0.43%)	(0.30%)	(0.49%)
Pensions contribution	2.30%	2.50%	2.49%

Source: Kosovo Ministry of Finance

### 3.2 INFORMATION TECHNOLOGY

It is obvious that the information technology used within the Tax Administration is unprecedentedly advanced with European-level programs that help the administration on the one hand but also helps the taxpayer on the other hand. Undoubtedly, TAK is in trend with developments in the electronic information system, it includes information systems that are routine such as the website, intranet, communication through online publications and other forms of exchange within and outside the institution.

EDI (Electronic Data Interchange) - application for the use by the taxpayers - is the abbreviation of the word electronic declaration or E- Filing. EDI is a modern, fast and simple way to declare the tax. This system allows the taxpayers to create an online account with TAK, through which it is possible to complete and submit tax declarations. This electronic platform has been operational since August 2011. Initially, it was available to declare and pay Value Added Tax (VAT) only for businesses in the Large Taxpayer Unit - since the beginning of 2013, all taxpayers were enabled to declare and pay the tax via electronic filing.

This new system of information has created many facilities not only for Tax Administration and tax inspectors but also for businesses.

Before the implementation of a system for electronic filing, all tax returns were filled out manually in three copies and have been submitted at the commercial banks, together with payments. Since the completion of tax returns was

manual, the technical errors were investable, during the completion, commercial banks processing and in the end manual processing or recording into the information system of Tax administration. Through this process, with a range of chain actions are subject most of about 60 thousand taxpayers, as much as they are active in Kosovo.

Through these processes, all taxpayers file and pay tax obligations on a regular timely basis for all tax types. The development of a system for electronic filing came as a demand of time. Therefore, it is correct to say that these systems enabled both the enhancement of collection and have facilitated the work, efforts and time for the taxpayer, making better services for them, which certainly the filing and payments were increased as a result of this advancement of information technology system.

Electronic filing, as much as has easy the TAK work, it has helped more taxpayers to comply with the obligation for filing and payment of taxes. That is proven also with the level of the usage of the system by taxpayers and professionals/accountants, which are the most active community on interactive communication with TAK. It is worth to mention that after the digitalization of all tax returns, the level of usage has achieved the amount of 96% of all taxpayer that actively file and pay tax obligations.

As it can be seen on the Tab. 3, once the electronic filing started in 2012, there were totally 296 521 electronic declarations, which number is increasing year after year to reach the number over 2 million electronic declarations in 2018.

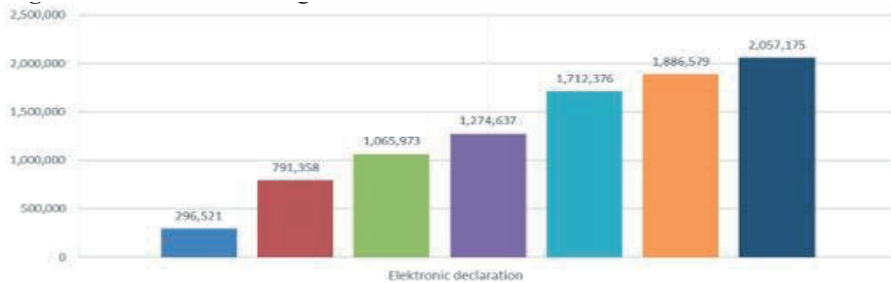
**Table 3.** Electronic Tax Filing (2012 – 2018)

	2012	2013	2014	2015	2016	2017	2018
Electronic Tax	296 521	701 350	1 065 073	1 374 637	1 710 376	1 886 670	2 027 175

**Source:** Tax Administration of Kosovo

Electronic filing through the years and a rapid increase of absorption by taxpayers for electronic filing it is shown on Fig. 2.

**Fig 2. Electronic Tax Filing**



Source: Tax Administration of Kosovo

### 3.3 AUDITING AND ENFORCEMENT COLLECTION

Thanks to a high-level technology system, it is achieved the possibility that audit case selection to be done electronically based on risk. For all tax, types are applied to many variables, which are taken into consideration in case selection of taxpayer for an audit. The case selection for audit based on risk analysis is still a small percentage. Therefore, a number of cases are selected according to regional evaluation where they consider that risk exists or there are requests by other institutions, as it is prosecution, etc., but that sometimes makes the selection to be of narrow interests (requests by competition to make pressure on a business, political party interests, but it could be also corruption elements. Another wonder that is noticed is that audits are lasting too long and a number of audits are very small. From the following table 4, it can be seen that the average of audit per inspectors is only 5.73 per year.

**Table 4. Average of audit per inspectors**

No	Regions	Additional tax	Structure	Number of audits	Number Inspectors	Average of tax per audit	Average tax per inspector	Average of aud per inspect
1	LTM	22,458,713	42.3%	105	20	213,893	1,122,936	5.25
2	PRISHTINE 1	4,917,278	9.3%	165	28	29,802	175,617	5.89
3	PRISHTINE 2	3,111,304	5.9%	144	27	21,606	115,233	5.33
4	PRISHTINE 3	5,372,725	10.1%	169	25	31,791	214,909	6.76
5	GJILAN	4,485,801	8.4%	174	29	25,780	154,683	6.00
6	FERIZAJ	4,277,744	8.0%	129	27	33,161	158,435	4.78
7	PRIZREN 1	1,671,643	3.1%	135	19	12,383	87,981	7.11
8	PRIZREN 2	1,673,998	3.1%	126	19	13,286	88,105	6.63
9	PEJË	1,705,051	3.2%	138	9	12,355	189,448	15.33
10	GJAKOVË	529,410	1.0%	66	24	8,021	22,059	2.75
11	MITROVICË	2,950,847	5.6%	93	25	31,730	118,034	3.72
TOTAL:		53,154,493	100.0%	1,444	252	36,811	210,931	5.73

Source: Audit Department of TAK

As we explained above the case selection for audit is not made only based on risk analysis that could be considered as the best method for audit case selection (it is fair and provides best results).

Before the debt taxpayer cases selected for enforcement collection, TAK applies taxpayer telephone calls from Office of call centers. Call Center Cases in the system are disaggregated by priority. The priorities are based on the date and the value of the debt. Taxpayers with debt, missing declarations in a priority-based system automatically reach the application of the Call Center and these cases are automatically tasked to the employees as work cases. Using the details of the assessment officials determine the origin of the debt.

After telephone calls and if they did not succeed then the stuff passed to enforce collection of the department.

Department of Enforcement Collection, which is based on laws and at the moment when the conditions are met for the beginning of enforcement collection it starts the implementation of the law and all necessary steps are undertaken to collect debts. From the different publications by TAK itself, but also by other institutions, notably by IMF publication, it can be noticed that this department needs development and professional building to be able to reduce debts.

**Table 5.** General debts until 31.12.2017

Regions	No. of cases	Tax		Pensions		Total of debt (without pension base)
		Base	Penalty + Interest	Base	Penalty + Interest	
1	2	3	4	5	6	7=3+4+6
LTD	137	3,862,978	2,199,690	566,241	77,292	6,139,961
PRISHTINË 1	7762	26,408,563	36,095,313	4,841,415	5,519,429	68,023,306
PRISHTINË 2	4105	13,041,585	13,093,231	2,623,825	1,670,170	27,804,986
PRISHTINË 3	4807	15,693,377	17,569,463	2,747,406	2,279,030	35,541,870
GJILAN	4794	10,627,998	15,661,865	2,024,686	2,384,283	28,674,146
FERIZAJ	5078	11,384,571	15,886,199	2,282,426	2,100,509	29,371,279
PRIZREN 1	4131	9,083,514	11,287,650	2,210,544	1,991,925	22,363,088
PRIZREN 2	4068	9,103,289	16,187,737	2,063,011	2,295,153	27,586,178
GJAKOVË	2569	4,180,493	4,564,355	1,517,454	978,896	9,723,744
PEJË	4493	7,742,378	12,543,086	1,809,360	1,483,491	21,768,955
MITROVICË	4352	7,136,669	8,223,439	2,475,715	2,000,347	17,360,455
<b>Total:</b>	46296	118,265,414	153,312,028	25,162,084	22,780,525	294,357,968

**Source:** Report of TAK 2017.



## 4. METHODOLOGY, DATA ANALYSES AND FINDINGS

With empirical data from evidences of 50 practical cases from large, medium and small taxpayers in Kosovo, we will analyze impact of tax reforms on budget growth, the increase of the fillers, the wider extent of tax burden on one hand, and improvement of the services of taxpayers through the modernization of TAK electronic filing platform on the other hand, and education service and the call center for tax debts.

It is well known that the application of research methods will be very important since only after problem definition it is necessary to determine which type of research should be done. Causative research, which aims to identify the cause and effect of the relationship between variables and which research includes both investigative and descriptive research can be applied to our research. This research gives us the opportunity to explain how one phenomenon can affect the other one.

For example, changes in tax base had the effect of increasing or decreasing tax filling, the tendency to tax evasion or the reduction of this tendency, business orientation in sectors with lower tax rates such as product orientation by standard 18% in those with a low rate of 8%, etc.

Building on the statistics extracted from TAK for each tax individually, the main focus of this chapter will be on the income tax changes for the last three years, tax declarations, number of declarations, and the impact on revenues from tax rate changes. Also, a detailed analysis will be made in order to highlight what the results of these reforms on the Kosovo budget were. At the same time, a comparison will be made on the impact of modernization of TAK through enhanced staffing, implementation of technological platforms, especially e-filing, and their impact on the better performance of TAK on revenue collection, but also in streamlining efforts of TAK staff on the one hand and of business on the other. An analysis of these findings will be elaborated below.

We will also extract the data from the questionnaire, the responses and the recommendations given by the respondents, to draw conclusions on the fiscal policy and Tax Administration.



From the comparison of results, it can be seen that tax revenues have been increased every year, but it is important that impact on the tax revenue increase was by the implementation of fiscal package started on September 2015.

This year the Government has implemented the changes of fiscal policies as defined by the Government programme. In this context, the Government has put into the function the VAT reduced rate of 8% for a certain number of basic products and it has increased the VAT standard rate to 18%. In addition, in order to stimulate the competition within the domestic market and to reduce fiscal evasion, the changes have been made on the VAT law to reduce the threshold from 50,000 euro to 30,000 euro. (Kosovo Public Finance Management Reform Strategy 2019)

With the aim to provide indirect incentives for the private sector, which is facing difficulties to access finances and the high cost of capital, the fiscal reform includes also an exemption of VAT on importation of production lines and inputs for local producers. Similarly, IT equipment's are exempt from VAT on the border, and the VAT reduced rate it is put into a function for pharmaceutical products. At the same time, these goods are exempt from Customs duties, and this has regulated the competition in the market.

It is true that the change of fiscal policies of 2015, especially the increase in VAT rate from 16% to 18% had increased the tax revenues. But also it should be evaluated the professional buildings and technological advancement in TAK.

#### 4.1 ANSWERS FROM THE QUESTIONER

The selected respondents for the questioner mainly are owners and accountants of the companies from different sectors. These businesses are spread; not only in one town, but some of them have branches in other towns of Kosovo. The selected businesses are traders, producers and service providers of different activities, such as food, textile, construction, etc. We consider that based on their answers the size of some companies exceeds 10 million annual turnovers, but also professionals, mainly accountants and financial officials that were answering to the questioners, which are experts who have very good knowledge on fiscal policies and general tax problems, which they face on daily basis. That makes us believe that their answers are focused on the main problems and the same should be taken seriously.

On the question “Main remarks according to your consideration, mention only those that you consider foremost? The collected answers and more frequent and most important can be listed as Informal economy; corruption; Delay of reimbursement; Bad debt; Fiscal incentives for domestic production; The reimbursement procedure; VAT payment at the border; very rare controls; High-interest rates.

And the answers on what should be improved for a favorable and adequate fiscal policy as well as an effective Administration? Fighting Informal economy; Enforcement of the law; Reduce Bureaucratic procedure; Reduce of tax rates generally; Less procedure for tax refund; Implementation of regulation to collect VAT only within the country (not on import); To reduce Customs barriers; To increase number of Audits; Tax exemption in the first 3 years for start-ups and favoring businesses that invest in increasing employment and domestic production.

The following are the analysis of 4 from 10 questions of the questioner considering as most important and they provide a clear orientation of the respondents’ opinion. So, on the question, do you consider that actual fiscal policy led in Kosovo is a problem for the private sector? 50% of respondents answered that it could be considered as a problem, 38% are considering as a medium problem, and 6% assess it as a small problem.

Also, on the question that the Informal economy in SME sector consequently is of high tax norms? 50% agree, 34% medium, 16% are considering that high rates have a low effect.

Are the taxes and tax norms high in Kosovo? 28% do not consider that rates are high, 58% consider medium-high, and 12 % think that rates are high.

60% of respondents consider that Fiscal policy especially incentives for SME is not adequate and is a problem that is worth to be taken into consideration by policymakers.

Also, 48% consider that a problem is also Limited access in finance and high-interest rate for SME, where 36% consider this as a medium problem, and 8% consider as a small problem.

## 5. CONCLUSION

Based on the findings from the survey and the result from statistical analysis of the data presented above and also based on the experiences of other countries, we consider that in order to increase the efficiency of the tax administration, the following actions are needed.

Improvements are possible in the areas of organization and performance management, compliance risk management, enforcement of tax filing, debt collection, and tax audit.

The management should carry out an analysis of the TAK organizational structure to identify opportunities for reducing current inefficiencies, including by identifying tasks that can be quickly centralized such as;

- establish a performance management framework at each of the strategic and operational levels,
- high level of management regularly should monitor a set of performance indicators,
- develop a plan with a clear timeline to reduce the level of tax debt. This can be achieved by stronger management of debt collection activities, automation of standard actions like issuance of debt notices, and regular write-off uncollectible debt.

Enforcement of tax filing department should introduce the requirement for all taxpayers who are registered for a tax type, to file a tax return for every tax period during the time of their registration for that tax type, even if there is no tax liability to pay.

The audit program should be reformed and strengthened. Implement an automated audit case selection and allocation system.

- introduce targeted, industry-specific campaigns to mitigate key risk sectors,
- review and strengthen enforcement processes used to identify and target high-risk noncompliant taxpayers,
- redesign regional structures to create distinct capabilities focusing on compliance visits and audits respectively,
- increase the number of audits by better specialization and efficiency of tax auditors, and by redirecting resources that were freed up through reducing the number of low-value compliance visits,

- adopt a formal process to deal with audit requests received from third parties as an input in the TAK risk management and audit case selection system.

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# MANAGEMENT IN THE FUNCTION OF DEFINING STRATEGIC GOALS OF THE TAX ADMINISTRATION

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## *Abstract*

*This paper will present the role that management functions may have in an administrative organization of a state institution, and how it affects the tax policy that needs to be adjusted to modern trends. The aim is to show “business activities” of the Tax Administration in a new European environment, which need to be organized in line with segmentation of its development through organizing, planning, management, and control. Namely, changes have been introduced in the organizational structure and the model of organizational management in order to further improve the performance of basic functions in the internal organizational structure, management, and business activities of organizational entities. Organizational structure and functional orientation of organizational entities have been adjusted to the principles of rationality and elasticity in the process of adjustment to the current state and new challenges.*

**Keywords:** management, strategy, Tax Administration, human resources

JEL Classification: H20, M10

## 1. INTRODUCTION

Nowadays, management is of great importance for managing different organizations, both private companies, and civil services, profit and non-profit organizations. Management is one of the keys levers of a successful business in

a company (Collins & Devanna, 1999., p. 98). Every company has a unique set of resources and limited opportunities, hence there is not only one best answer regarding the content, process or context of strategic management.

## 2. MANAGEMENT FUNCTIONS IN THE TAX AUTHORITY

### 2.1. PLANNING

Planning is the most basic managerial function, it includes the choice of the mission and goals, as well as actions needed for realizing them. Planning directs an organization towards the future (Sikavica et. al. 2008., p.24).

Planning is a process of defining what a certain organization wants to accomplish (goals) and the ways in which it wants to accomplish it (strategies and plans), which starts by determining the current position of the organization (Sikavica et. al. 2008., p.139). It provides answers to the three basic questions: Where are we now? Where do we want to go? How do we intend to accomplish it?, but also answers to more concrete questions such as: what needs to be done, who is going to do it, where is it going to be done, when is it going to be done and how is it going to be done; planning is concerned with goals, what needs to be done and ways how to do something.

Organizational success is the primary objective of planning and it helps to achieve goals. Planning is done in order to direct the organization better, to achieve greater flexibility, better work coordination, minimize risks and uncertainty, to be oriented towards the future and changes, to have better control, develop managers and other participants in planning and achieve better time management at the individual level.

Plans are categorized in different ways and on various grounds; in terms of time frames there are short term, medium term, and long term plans; in terms of the scope of activities there are strategic, tactical and operative plans; in terms of frequency of usage there are permanent and one-time plans; regarding the way of planning there are inside-out, outside-in, top-down, bottom-up and situational plans. Planning is, as a management function, especially connected to the function of control. Statements that direct an organization represent a vision and a mission. A vision is a complete idea of the future image of an organi-

zation and the paths towards its realization, and it answers the question – what do we want to accomplish, i.e. be in the future. A vision is a foundation for developing a mission statement, which means that one first needs to determine a vision, and then the mission of an organization. A mission is a starting point for all organizational existences, by defining the direction in which an organization wants to go, goals emerge, as well as strategies and plans of an organization as a prerequisite of effective planning. Vision and mission exist within a framework of organizational values to which they are connected and represent concepts determining an organization. (Bubble, 2006., p.123). Hence, after the vision is familiar and the mission had been set, the goals of the organization are defined which will direct it by pointing out priorities, facilitate making decisions and represent the foundation for assessing what had been achieved. Basic characteristics of goals are represented by an acronym of the word SMART as specific, measurable, aligned, reachable, time-bound.

Tax Administration has been successfully carrying out its task for 25 years and has accomplished an impressive level of expertise and professionalism. Some of the values and ethical principles it has been following are according to the Ministry of Finance of the Republic of Croatia, Institute of Public Finance, Strategy of Tax Administration 2016-2020: application of regulations – Tax Administration will act in accordance with applicable legislation and expects the same legally bounded behavior from the taxpayers, fair, just and impartial conduct. Tax Administration employees are impartial, selfless, reliable and respect the principles of professional ethics in cooperation with the taxpayers. They perform their tasks free of any improper influence, efficiency – Tax Authority has a strong organisation, supported with quality information system enabling us to be effective in achieving the set goal - collection of budget revenues, professionalism – Employees and management have the necessary expertise, provide quality services to taxpayers and encourage voluntary compliance, readiness to cooperate – Knowledge and experience is shared with colleagues, taxpayers, and other stakeholders. Tax and other regulations within the competence of the Tax Administration are applied to all taxpayers under the principles of equality and transparency. The strategy of the Tax Administration for the period 2016 - 2020 is a foundation for operative planning for the period 2016 - 2020. It is a basic document for measuring and assessing accomplishments during and at the end of the set time period. It encompasses the overview of the mission, vision, and value of the Tax Administration, all the strategic goals that need to be



achieved in the mentioned period, it describes the current state of affairs as well as expected improvements and in the end the way of tracking and assessing the results that had been achieved.

Top-down planning bottom-up planning and negotiation planning are considered as traditional ways of planning, while participatory planning is a modern way of planning. Quality strategic management steers an organization towards the future, anticipates and introduces changes, and acts proactively in the modern operating conditions and is critical to the long-term successfulness of an organization. Analysis of the external (business) and internal environment (strategic abilities of the organization) is an integral aspect of the analysis of the strategic situation of an organization. The best known and most widely used method for the analysis and summarising the key issues from the business environment and strategic abilities of the organization with potential influence on the development of a strategy is SWOT analysis, also called internal and external analysis. It has been developed as a means of analyzing the relation between internal advantages S - strengths, W-weaknesses, O- opportunities, and T- threats. It facilitates the comparison of external opportunities and threats and internal advantages and weaknesses.

### 2.1.1 Swot Analysis of The Tax Administration

#### Strengths

- Taxpayers are provided with quality e-services which enable them to comply with their tax liabilities in time and with acceptable costs
- All the IT services are easily available to the taxpayers, they are completely free, well documented and safe to use, including a quality help from Tax Administration Help desk
- Taxpayers can find quality and up to date information on the Tax Administration website and get them via the Call center.
- Efficient data exchange between public administration bodies (G2G) through the OIB system.

#### Weaknesses

- It is difficult to monitor the IT systems which are located with the external partners,

- Insufficient tracking of key performance indicators
- Lack of IT experts
- They do not have their own Disaster Recovery Centre

### Opportunities

- Continuous education of officials (including e-learning) with the aim of strengthening the competencies
- Strengthening of organizational culture and ethical principles
- Implementation of modern IT solutions which enable a higher level of automation of business processes and leave time for the officials to do the tasks regarding analysis and control.
- Using IT technology to simplify the tax procedure and reduce costs for taxpayers
- Further development of the Intranet webpage as a basis for formal and structured information and knowledge exchange among the officials.
- Further improvement of data exchange between the public administration bodies with the aim to reduce administrative costs and improve the services provided to taxpayers
- Improvement of the risk management system

### Threats

- Inability to adequately praise expert officials, and especially inability to hire an IT expert due to a great difference in pay between the real sector and public administration
- High dependence on external partners in IT support for core business processes
- Lack of resources for implementation of planned modernization
- Insufficient coverage of systematized workplaces.

## 2.2. ORGANIZING

Quality of organizing is manifested through the existence or non-existence of dysfunction in an organization. Organizing represents a continuous and uninterrupted process, while the organization is a state resulting from the process

of organizing. The role of a backlink in the process of organizing is extremely important because it enables continuous updating of the organization. The function of organizing is extremely important because it is the basic mechanism through which the managers accomplish their goals. (Jurković, 2012.,p.46). As the highest level and desired goal of every organization, achievement of the self-organization is in the very nature of an organization, as is to choose the best way to organize. In the process of organizational development, a formal organizational structure is established which is developed as the result of the process of organizational development and represents the “backbone”. Next to the formal one, in every organizational structure, there is also the real (objectively existing) organizational structure which develops spontaneously in the process of functioning of a formal organizational structure. The discrepancy between the formal and the real organizational structure is due to the change of each element. Hence, it is more difficult to recognize an informal organizational structure that is linked to people and their activities within an organization.

Key basics of organizing are differentiation as the division of the overall task of the organization into tasks and subtasks, and integration as the allocation of tasks divided in this way to respective organizations. The same bases represent two different processes, which need to be unique (Fox, 2001.,p.67). Factors determining the appearance of each organization constitute the dimension of an organization. Fundamental elements of the process of organization are: division of tasks and specialization, hierarchy, control range, authority and responsibility, delegating, change of command, centralization or decentralization and control (Robbins, 2009.,p.134) All these elements are key in the process of organization because they make up the very functioning of management.

The Croatian tax system is based on principles of equality and fairness, whereby all the citizens are obliged to participate in paying public expenditures in line with their economic abilities. The scope of work of the Tax Administration is in detail determined by the Tax Administration Act (NN-115/2016). The scope of work comprises proposing changes in tax policy, preparing of draft laws and other regulations in order to improve the tax system and more effective tax and contribution collection. The Tax Administration provides expert opinions and explanations in individual cases on application of regulations from the scope of work of the Tax Administration, participates in the work of the European Union institutions for the purpose of implementation of the common tax policy and performs administrative cooperation with the EU member

states and third countries, participates in the preparation and conclusion of international treaties and cooperates with international organizations. Electronic business is an important goal of the Tax Administration since it contributes to a further decrease in indirect costs of taxation. In order to increase the percentage of usage of electronic services, especially the e-taxation system, the Tax Administration promotes the advantages of the said system through publishing the information on the website and targeted media releases. Apart from the further improvement of the existing electronic services, the plan is also to develop a new possibility – increasing the number of electronic forms and establishing two-way communication in the system. Tax Administration has been operating since 1994 as an administrative organization within the Ministry of Finance under the name of the Ministry of Finance – Tax Administration. The Tax Administration is managed by the Director General who is a state official on the position of Assistant to the Minister of Finance. The Director-General manages the work of the Central office with the help from the Deputies and Assistants, who are at the same time Sector managers within the Central office. Territorial organization – The headquarters of the Tax Administration is in Zagreb, and there are 22 Regional Offices classified into 4 categories and 96 Local offices classified into three categories according to the territorial principle (National Tax Journal of Ministry of Finance of the Republic of Croatia, Institute of Public Finance, Strategy of Tax Administration 2016.-2020., p. 7)

### 2.3. MANAGEMENT

Communication is an immediate connection to the performance of all managerial functions, it is included in all activities, tasks, functions, roles, and behaviors. In order for it to contribute to the success of an organization, it must be efficient and effective, efficient in spending less time and resources and the effective information received is identical or similar to the one that had been sent. The motivational system represents the totality of motivational factors, incentive measures and motivation strategies, which are consciously and systematically incorporated into the work and organizational situation to motivate people through: attracting and maintaining the most quality people, encouraging quality work and achieving high standards of success, encouraging creativity, improvement, changes and business improvement, ensuring identification of the organization and interest in its ongoing development and success. Communication is an immediate connection to the performance of all managerial functions,

it is included in all activities, tasks, functions, roles, and behaviors. In order for it to contribute to the success of an organization, it must be efficient and effective, efficient in spending less time and resources and the effective information received is identical or similar to the one that had been sent. Ultimately, the goal of the communication process is to create an understanding on the part of the recipient.

Management and leadership in the Tax Administration are regulated by the Regulation on the internal organization of the Ministry of Finance (National Tax Journal, Strategy of Tax Administration 2016.-2020., p. 7) as well as by the Tax Administration Act (NN-115/16). The Tax Administration is managed by a Director General who also manages the work of the Central office, assisted by Deputies and Assistant Directors. The General Director of the Tax Administration can have two Deputies. The Deputy Director, who is authorized by the Director-General, in the event of a Director's General inability or absence, performs all the activities of the Tax Administration, as well as other tasks entrusted to him by the Director-General. The work of the Sector in the Central office is managed by Assistant Directors. Assistant Director is responsible to the Deputy Director, Director General and the Minister of Finance for his work and the work of the Sector he is managing. The work of the service in the Central office is managed by the Head of Service who is responsible to the Assistant Director for his work as well as the work of the Service. The work of the Department in the Central office is managed by the Head of Department who is responsible to the Head of Service for his work as well as the work of the Service. The work of the Regional offices is managed by the Head of Regional office, who is responsible to the Deputy Director, Director General and Minister of Finance for his work and the work of the Regional office. The work of the Service in the Regional office is managed by the Head of the Service who is responsible to the Head of the Regional office for his work as well as the work of the Service. The work of the Department in the Regional office is managed by the Head of Department who is responsible to the Head of the Service for his work as well as the work of the Service. The work of the Local office of the Regional office is managed by the Head of the Local office who is responsible to the Assistant Head and the Head of the Regional office for his work as well as the work of the Local office. Head of Local office is assisted by Assistants to the Head of Local office and they are responsible to the Head of Local office, Assistant to the Head of the Regional office and the Head of Regional office for

their work as well as the work of the Local office. Work of the Department in the Local offices of the Regional offices is managed by Heads of Department who are responsible to the Head of Local office for their work as well as the work of the Department.

#### 2.4. CONTROLLING

In the management process, control is the last function that links, i.e. integrates the entire management process by comparing what has been achieved to what had been planned. The purpose of control is represented through four principles in a way that helps the organization adapt to changes in the environment, limits the accumulation of errors, facilitates coping with organizational complexity and minimizes costs. (Rouse, 2005.,p.54, Lamza-Maronić, 2008., p.34)

An effective process of control consists of four core activities by means of setting performance standards, measuring actual performance, comparing actual activities to the performance standards that had been set and assessing deviations and performing corrective actions.

There are various types of controls, but in management, they are divided according to (Sikavica, 2008.,p.134):

- + object as control of performance and standards,
- + focus as forward, parallel and backward control,
- + time horizon as a long-term, mid-term and short-term control,
- + the controlling entity as self-control organization, managers, specialized organizational units and as independent institutions,
- + resources that are being controlled as control of financial, material, human and information resources,
- + business functions that are being controlled as control of research and development, procurement, production, marketing, human resources management, accounting, and finance,
- + the hierarchy of planning as strategic, tactical and operational control,
- + management hierarchy as total control, area control, and site control.

Effective control helps managers decide in which direction they should develop their business, how to steer it, and how to create systems that support it, while ineffective control results in lack of focus, poor steering, and poor overall performance. The basic criterion for determining the efficiency of a control system is how much it facilitates the achievement of organizational goals, and the individual and specific criteria that make a control system capable of achieving organizational goals. The criterion that the control system must satisfy in order to be successful are thus diverse (Bubble, 2011., p.67):

- ♦ the control system must be linked to the desired results,
- ♦ performance standards must be realistic and feasible,
- ♦ control must be comprehensive,
- ♦ control must be objective,
- ♦ control must be effective – accurate,
- ♦ an effective control system provides timely information,
- ♦ it is important that the control system is economical,
- ♦ an effective control system is flexible,
- ♦ if the control system is not understandable to all employees in the sense of implementation, it is unlikely that it will be successful.

Finally, the control system involves the implementation of corrective actions, since the system that does not include the development of corrective action programs is not only incomplete but also unsatisfactory. There are two basic approaches to control, bureaucratic and decentralized, and the basic difference can be seen in the responsibility for control which in the first case lies with the managers, inspectors and specialized organizational units, while in the second approach the responsibility for control lies with all employees.

Strengthening the financial management and control systems is a prerequisite for the successful implementation of all set strategies that aim to achieve the ultimate goal – *modern and efficient Tax Administration*.

Through its activities, the Tax Administration contributes to the realization of state budget revenues, but through its transparent business, it also contributes to preventive actions and the reduction of the risk of corruption. The anti-corruption strategy is a part of the National Anti-Corruption Programme and many activities envisaged in the Programme are being carried out, such as awareness raising regarding the harmfulness of corruption, training of officials, and increased trans-



parency through the use of the Internet. In the forthcoming period, the Tax Administration will with increased attention take measures for tackling corruption.

By the decision of the Government of the Republic of Croatia of 25 June 2008, the Ministry of Finance established the Budgetary Control Section in the State Treasury, the Directorate for State Budget Execution, as an organizational unit in charge of performing anti-corruption activities, in accordance with the Action Plan with the Anti-Corruption Strategy. Tax Administration is responsible within the scope of its responsibility for the implementation of measures from the Action Plan in the Ministry of Finance.

In order to strengthen the accountability and transparency of the work of the Tax Administration and increase the efficiency of detection and prosecution of criminal offences, the European Commission approved the project Strengthening of Tax Administration in the Fight against Corruption from the IPA 2008 programme (National Tax Journal, Strategy of Tax Administration 2011.-2015., p. 28)

In the Tax Administration, internal audit and internal supervision are carried out for the purpose of business auditing, i.e. controlling the legality of work and the proper application of the regulations in order to equalize the conduct of the Tax Administration officials and to prevent, detect and determine the violations of the law and professional rules by the Tax Administration officials (National Tax Journal, Tax Administration Act, 2016., p. 13)

### **3. STRATEGIC GOALS OF THE TAX ADMINISTRATION AS MANAGEMENT TASK**

#### **3.1. PLANNING OF BUSINESS CHANGES**

Tax Administration Strategy for the period 2016 - 2020 elaborates the strategic goals that are linked to the strategic plan of the Ministry of Finance for the period 2016 - 2018. The main strategic goals, i.e. the scope of application, are (National Tax Journal, Strategy of Tax Administration 2016.-2020., Zagreb, 2016., p.10):

- Fair and efficient collection of public revenues:



- ✦ Collecting public revenues is the most important goal that needs to be achieved in a way that everyone pays the tax owed, and that officials treat everyone equally and transparently
- Protection of companies and financial interests of the Republic of Croatia and the European Union:
  - ✦ By making sure that tax regulations are consistently applied and by taking measures to detect, prevent and combat tax frauds, the Tax Administration strives to collect budget revenues and reduce the tax gap. It uses modern tools aided by IT tools for timely detection of potential risks. Development and the beginning of the application of the risk management system will result in efficient and timely detection of risky taxpayers
- Tax Administration focus on cooperation and partnership
  - ✦ As a modern organization, it promotes the development of the relationship of trust between the taxpayers and the Tax Administration, based on the partnership with taxpayers and on the publicly published Charter on Cooperation. We raise the level of satisfaction of taxpayers when the officials act in accordance with the Charter and by constantly increasing the quality of services.
- Improving efficiency in using the available resources of the Tax Administration:
  - ✦ The Tax Administration sets the effectiveness in performing its tasks as a strategic goal, the administrative capacity of the Tax Administration is used in a way that will make it possible to achieve the best results. The overall capacity is primarily comprised of employees and their expert knowledge and professionalism, followed by the financial resources that need to be rationally used for financing the necessary improvements, an information system that covers all core business processes, and modern IT equipment. Modern IT and communication equipment will be used for more efficient solving of all tasks.

### 3.2. HUMAN RESOURCES MANAGEMENT

Human resource management can also be defined through fundamental differences between personal and human resources functions:

Human resources management objectives (Sikavica, 2008.,p.165, Bahtijarević-Šiber, 1999.,p.68):

- ✦ Business objectives – to ensure the right number of employees, the right quality, at the right time, in the right place and in the right way, to take advantage of their potential for achieving organizational goals, increase the organizational competitiveness and performance (to achieve better results with the help of people)
- ✦ Economic goals – the ultimate economic goals are to increase productivity and profitability, reduce total costs, ensure competitiveness, and increase overall organizational performance (to earn more money)
- ✦ Social goals – satisfying the needs, expectations, and interests of employees, improving their socio-economic position and the use and development of individual opportunities, ensuring the ability of permanent employment and raising the quality of working life (better working environment, they cannot be dismissed due to the personal situation)
- ✦ Objectives of flexibility and continuous changes – creating and maintaining the flexible and adaptable potential of all employees, reducing resistance to changes and accepting them as a way of living and acting, and increasing the sensitivity of the human resources of the organization to quantitative, qualitative and structural changes (reducing resistance to changes).

Factors influencing human resource management are external factors – economic system, institutional conditions, labor market, the culture of the society, technology, and internal factors – management, organization size, business strategy, type of activity, technological equipment, the life cycle of an organization, organizational culture.

Strategic goals of human resources management as a task in the Tax Administration, elaborated in the Human Resources Management Strategy for the period 2016 - 2020 (National Tax Journal, Strategy for Human Resource Management 2016.-2020., Zagreb 2016., p.3) refer to: realistically defining the need for new employment, shortening the selection process and skills evaluation, increasing the level of satisfaction and reducing the frequency of sick leave usage, introducing a performance measurement system, digitalization of personal records of Tax Administration officials, strengthening the competence of

the tax officials, learning culture and good cooperation with taxpayers, business processes informatization.

Specific values of human resources management in the Tax Administration include:

- **Transparency:** human resources management process must be based on fully open communication channels and on the continuous availability of all relevant information. The principle of transparency must be applied at all hierarchical levels.
- **Orientation towards goals and the achieved performance:** the system for measuring efficiency and rewards must be based on transferring goals from the highest hierarchical level to the individual level of each official. This approach will help achieve a much higher level of employee dedication to achieving their own goals, and thus the overall objectives of the Tax Administration.
- **Protecting the dignity and integrity of the employees:** in cases when the physical or psychological integrity of the officials is at risk, the Tax Administration applies procedures to maximize the protection of officials.
- **Compliance with legal regulations:** Human Resources Management Strategy has been developed based on the existing legal regulations, i.e. taking into account all the rights and obligations of the Tax Administration as the employer and a Tax Administration official as the employee.
- **Professionalism:** Tax Administration officials and management have the necessary professional knowledge and skills to professionally perform tasks, but these skills need to be further strengthened and developed through continuous and systematic professional training in order to achieve even greater levels of openness, transparency and better cooperation with the taxpayers
- **Protection of the dignity and integrity of the Tax Administration officials:** in cases when their physical and/or psychological integrity is at risk, all the necessary legal and psychological protection must be provided to the Tax Administration officials

## 4. CONCLUSION

Based on all management functions that have been classified as planning, organizing, managing and controlling, the Tax Administration as an administrative organization within the Ministry of Finance takes account of them. The above mentioned is based on the strategies adopted by the Tax Administration for the period 2016 - 2020 for the purpose of achieving its strategic goals, which primarily refer to the highest possible collection of public revenues by means of a simple tax procedure, the correct application of tax regulations, low costs of tax compliance and good cooperation with taxpayers.

One of the main goals of the Tax Administration is to join the best European tax administrations regarding quality and efficiency in the collection of public revenues for which it is responsible; quality services provided to taxpayers and successful combat against tax evasion. In that sense, it is important to set a series of tasks and to accomplish them in order to abandon the popular opinion that the state administration is a place where non-professional staff work.

From the perspective of officials in the Tax Administration, it can be said that most of the strategic goals that had been set have been achieved, but in order for the Tax Administration to achieve results at the level of European tax administrations, some of the key difficulties such as low wages and associated employee corruption need to be solved. Officials are the most valuable resource of each organization, including the Tax Administration, and a just system of rewards and advancements needs to be established in order for them to be motivated to further invest in their knowledge and expertise. All this should contribute to the change of public perception of the Tax Administration, which should be regarded as a partner by all taxpayers in exercising their rights and obligations on the basis of mutual trust, cooperation, and respect.

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# PREDICTION OF PASSING RATE OF AN UNKNOWN CANDIDATE IN LOCAL ELECTIONS BASED ON CAMPAIGN BUDGET AND PRE- ELECTION SURVEYS

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## **Abstract**

*The elections are a race where the winners become not the best ones, but those who are the most capable of acquiring the support of a bigger part of voters. New candidates on the political scene are in a much harder position when it comes to finding their way to the media and media space, and the fact that they are reserved mostly for existing political actors has a significant impact on the starting positions of the election race.*

*The financial strength of an individual and a group, i.e. political option, as well as access to the media greatly influence the electoral outcome. The biggest challenges for new candidates, not coming from the established political options,*

*who compete for political positions, are the collection of financial resources, budget estimates, and access to the media.*

*It is estimated that for a serious political campaign for a mayor in the city of Osijek, a minimum of 1,000,000 HRK is required, while at the same time the Act on election promotion (Political Activity and Election Campaign Financing Act, Narodne novine 24/2011) states that the maximum investment amount may be 600,000 HRK in case of elections in Osijek. Therefore, the question arises as to whether the costs of pre-election promotion shown are correct and true?*

*It is explained to what extent the amount of money invested in a political campaign can provide a better result. It is also explained how big are the chances of success for new political candidates who do not have the support of large parties.*

**Keywords:** *political campaign, pre-election promotion, pre-election poll, local elections, mayor of Osijek*

JEL Classification: D72, K16

## 1. INTRODUCTION

New candidates on the political scene are in a much harder position when it comes to finding their way to the media and media space due to the fact they are reserved mostly for existing political actors. It is important to distinguish two types of new political actors, i.e. new political candidates fighting for political positions on the local and national political scene. The first type is new political candidates coming from established and well-known political parties, while the other type is new independent candidates, unknown or less known, without a political platform in their background a larger number of citizens is familiar with.

New candidates coming from or in front of established and commonly known political options can gain media coverage much easier, due to the financial strength of these options, their media influence, and connections with journalists. On the other hand, candidates who are independent, or who do not come in front of well-established, well-known political parties, are very difficult to overcome the media blockade because they mostly have to deal with:

- journalists who ignore them
- media space overcrowded with political (known) actors

- + media who ignore them because of potential threats to existing active politicians
- + media who are uninterested due to the insufficient financial strength of the candidate, which prevents them from paying expensive media coverage

Other challenges faced by all political actors, but affecting new political options and new political independent candidates the most are:

- + a proper budget estimate for the implementation of quality and complete electoral campaign
- + Difficulties in fundraising through donations
- + The problem of statutory constraints on donations

**HYPOTHESIS 1:** Can the prediction be made, based on the publicly announced budgets, about the outcomes of elections for the Mayor and the result of the election for members of the City Council?

**HYPOTHESIS 2:** Can a new political candidate at the local level on a territory of a single city, who does not have a well-known political party in his background, achieve the electoral threshold?

## 2. THE LEGAL FRAMEWORK FOR FINANCING LOCAL ELECTIONS

Citizens, but also the media themselves, often point out that political parties, candidates for mayors and prefects, as well as parliamentary candidates often spend much more financial resources than the amounts officially reported by Political Activity and Election Campaign Financing Act.

Political campaigns, i.e. pre-campaigns often begin months, sometimes even a few years before the official and legal start of the campaign. The cost of presenting an individual to the general public requires significant finances. For a clearer positioning in the public eye, it is necessary to combine the continuous or at least regular presence of candidates in the following media:

- + daily newspapers
- + local / national portals
- + local / national television
- + social networks (Facebook, Instagram ...)



Not every media release necessarily has to be paid. Sometimes the media, out of their need to fill in the empty media space, publish interesting news and stories that are not paid regardless of the fact that they also promote a particular person by publishing it. Much effort is needed for this form of presentation because such news should be:

- ♦ actual
- ♦ new
- ♦ interesting to the general public

A large number of such news cannot be independently designed by any of the candidates for a future political campaign if there is not a bigger political party with their administration to support them. Therefore, the biggest challenges of a better presentation to the general public face new and independent candidates who are planning or already officially fighting for certain political positions in the Republic of Croatia.

For example, in Glas Slavonija’s daily newspaper it is necessary to allocate 7,750 HRK with VAT for only one interview, which is more than one average monthly paid off net salary in Croatia in the first half of 2018, amounting to 6,237 HRK (Croatian Bureau of Statistics, 2019.).

**Figure 1.** Advertising prices and formats - Glas Slavonije

NEKOMERCIJALNI OGLASI		
FORMAT	ponedjeljak - četvrtak	pet/sub/blagdan
1/1	6.200	9.800
1/2 JP	4.900	7.600
1/2	3.700	6.100
1/3	3.500	5.600
1/4	2.200	3.400
1/8	1.300	2.100
st/cm	49	75

boja: +20%

Poseban smještaj: određena stranica, duplerica: +30%

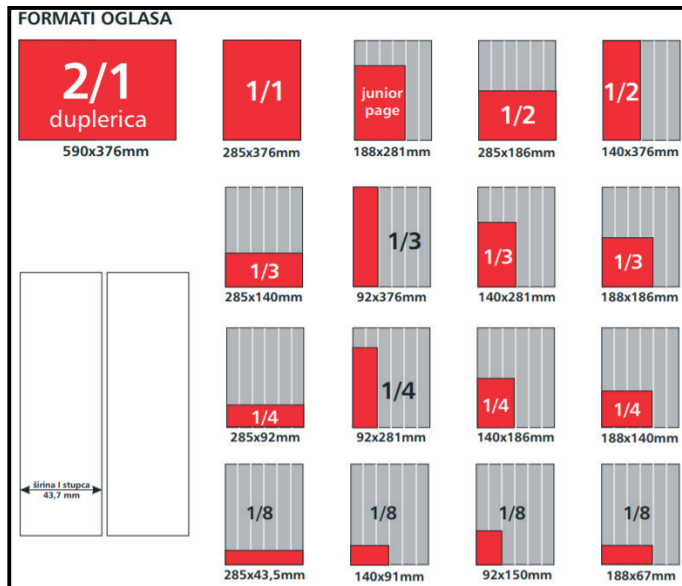
Grafička izrada oglasa: +10%

Humanitarne akcije i akcije šireg društvenog značaja (nekom. oglasi): - 50%

Na sve navedene cijene obračunava se PDV. Cjenik u primjeni od 1. veljače 2012.

**Source:** Glas Slavonije, 2019, Advertising prices and formats

**Figure 2.** Formats of paid advertisements – Glas Slavonije



**Source:** Glas Slavonije, 2019, Advertising prices and formats

### 2.1. LEGALLY ALLOWED DONATIONS TO POLITICAL PARTIES, LISTS OF VOTERS' GROUPS AND CANDIDATES FOR REPRESENTATIVES IN THE CROATIAN PARLIAMENT AND THE EUROPEAN PARLIAMENT

The laws of the Republic of Croatia allow political actors to collect donations only until the legal end of the election campaign.

An amount of 30.000 HRK is the maximum amount that any natural person can donate during the calendar year. This amount refers to donations to one political option; one independent representative in the unit of local and regional local government whether it was elected from the list of voter groups or from an independent list.

In legal entities, the amount is somewhat higher. Legal persons can donate the amount up to 200.000 HRK in a calendar year, but only if this amount goes to a political party or a candidate for the president of the Republic of Croatia. The maximum amount of donations for candidates for MPs (Members of Parliament) in the Croatian Parliament and in the European Parliament is 100.000 HRK. The third option for donations is the donation of a legal entity to a list of voters and a candidate for local and regional elections (county elections),

which can not exceed the amount of 30.000 HRK in the calendar year (State Electoral Commission of the Republic of Croatia, 2019, Donations and Donation Limits).

## 2.2. LEGAL CONSTRAINTS ON THE TOTAL COST OF ELECTION PROMOTION IN THE REPUBLIC OF CROATIA

Arranging the legal framework for electoral promotion is a prerequisite for normal, transparent and equitable functioning of political campaigns. Croatia as a relatively young country has plenty of room for progress in checking the transparency of spending financial resources in electoral campaigns. Political analysts, as well as the media themselves, periodically calculate the cost of election campaigns (e.g., for certain mayoral candidates) because it is a smaller and easier-to-see area - one city. The calculation is done in such a way that the number of "jumbo" posters of a candidate, the duration of promotion on those posters, the approximate number of distributed leaflets, the number of media appearances, the number of political gatherings, the approximate number of distributed promotional material (lighters, pens, caps, t-shirts, etc.). Then these figures are multiplied by the realistic prices of these services and products. In the end, the amounts they come to are much higher than the officially presented amounts that are reported to the State Electoral Commission as the actual cost of electoral advertising.

The eligible costs of election promotion are as follows:

- ♦ 8 million HRK in the election of the president of the state
- ♦ 1.5 million HRK per electoral constituency for the Parliament
- ♦ 1.5 million HRK for the election of MP (Member of Parliament) for the European Parliament
- ♦ 1 million HRK for the election of the mayor of Zagreb and councilors
- ♦ 600,000 HRK for the election of the mayor of a big town and a perfect
- ♦ 250.000 HRK for the election of municipal mayors, mayors, and councilors in cities and towns with more than 10.000 inhabitants
- ♦ 100.000 HRK for the election of municipal mayors, mayors, and councilors in towns and cities of 3.001 to 10.000 inhabitants
- ♦ 50.000 HRK in elections for municipal mayor, mayor, and councilor in cities and places of up to 3.000 inhabitants (State Electoral Commission of the Republic of Croatia, 2019, Limitation of the total amount of electoral campaign expenses)

### **2.3. THE LEGAL OBLIGATION TO REGISTER AND PUBLISH REPORTS ON DONATIONS AND ELECTION PROMOTION COSTS**

Political Activity and Election Campaign Financing Act stipulates that, before or after each election, the State Electoral Commission should get the submitted reports on donations to political parties and candidates for certain political positions as well as cost statements. Also, the Act stipulates that reports should also be published on the official websites of political parties or candidates participating in the political contest.

No later than 7 days prior to the regular elections, political parties or candidates are required to submit a Report on received donations for electoral advertising financing as well as an Election campaign expense report to the State Electoral Commission.

No later than 30 days after the political party elections have been held, candidates are required to submit to the State Electoral Commission a financial report on election campaign with data on revenues of election expenditures and sources of funding (State Electoral Commission of the Republic of Croatia, 2019, Publication of reports during electoral campaign).

## **3. PREPARING THE PROJECT OF A POLITICAL CAMPAIGN ON THE EXAMPLE OF A NEW CANDIDATE, KRISTIJAN ŠIMIČIĆ**

On the example of the new and publicly unknown candidate for the mayor of Osijek in the elections held on May 25, 2017, based on the conversations and the collected information, we will try to identify the challenges and issues of appearance and presentation of a new political participant who, on one hand, had the motivation and practical knowledge while, on the other hand, had no easily accessible resources and had no political experience nor experience of managing a political campaign.

Kristijan Šimičić as a candidate for the mayoral elections in Osijek held in May 2017, and also as the holder of the list for the election of city councilors, in 2016, gathered a group of trustworthy people with whom he started the project of political pre-campaign, and later the campaign itself. The team from the early phase of the project was presented with the project time frame:

- Pre-Campaign Organization: June 2016 - April 2017

- ♦ campaign organization: April 2017 - May 25, 2017, and election of the mayor

Prior to joining the political arena, information on the political scene in Osijek, political competitors, and the political atmosphere were gathered and the estimation was that it was a moment for political affirmation and risk-taking. The first co-workers were presented with a vision of the project, projections of the financial frameworks, the profile of people needed in the team and the political market they want to win. The project at that point received its framework and further realization could have started with implementation.

### 3.1. ORGANIZING PRE-CAMPAIGN: JUNE 2016 - APRIL 2017

During the period of 10 months prior to the official launch of the campaign for the mayor of Osijek, a framework plan for pre-campaigning, campaigns, and all activities for the Mayor and members of the City Council of Osijek held in May 2017, was created.

### 3.2. GATHERING OF THE CRUCIAL SUPPORT GROUPS FOR MAYORAL ELECTIONS

At the very beginning of the planning, groups we wanted to receive support at the elections from were identified. The target groups were:

- ♦ private entrepreneurs and craftsmen
- ♦ professors, teachers and school principals
- ♦ current high school graduates (18 and 19-year old) residing in Osijek
- ♦ university students residing in Osijek
- ♦ retired people residing in Osijek
- ♦ Croatian Homeland war veterans residing in Osijek
- ♦ workers (working class) residing in Osijek
- ♦ Religious groups in the Osijek area

Each target group had several individuals who publicly supported Kristijan Šimičić as a candidate for the mayor. Kristijan, as a potential candidate for the Mayor, personally met those individuals and presented them with his vision of the development of the city, himself as a person, his accomplishments and the team he had gathered up to then. The vast majority of the people with whom the candidate spoke voiced personal support to the new person's appearance on

the political scene. The smaller number of people he was talking to was reserved because they were unable to perceive a clear plan and program for the elections that were to be done together with all those who expressed support. Namely, the goal of the pre-campaign was to involve as many participants as possible in the program design and strategy for upcoming elections.

### 3.3. MEDIA PRE-CAMPAIGN

The media campaign was set up to present new candidates to the public through social events in the Osijek area via web portals, magazines, newspapers, social networks, television, and radio.

#### 3.3.1. Social events

The attendance at social events in Osijek, where media and citizens are present, is very important if voters are to be noted. Kristijan as a candidate for the mayor of Osijek visited all available events one year before the election, and in some, he participated as a speaker in order to present himself to the citizens even more.

Manifestations he attended as a guest or as a speaker are:

- Forming a strategy for the development of medical tourism in Slavonia and Baranja
- Antique fair in Osijek
- Humanitarian Action 'Good things will come back to those who do good things'
- Presentation of the book 'Prodano'
- Participation at the 5th Regional Conference of Businessmen in Vinkovci
- Commemorating the 25th anniversary of the famous 'red Fićo' in Osijek
- The opening of the Osijek Cultural Summer 2016.
- Cultural Artistic Event 'Slavonijo u jesen si zlatna' (Slavonia, during autumn you are golden) in Tenja
- Conference 'Business Caffe – Osijek'
- Panel Discussion 'Eviction from Croatia' in Vukovar
- Visit Ovčara – the place of the largest organized massacre of the Homeland War

- ♦ Davis Cup finale in Zagreb
- ♦ 'Career booster conference for young people' at the Faculty of Economics in Osijek
- ♦ the Faculty of Economics in Osijek - panel 'Youth and Entrepreneurship'
- ♦ Domestic matches of the Football Club Osijek
- ♦ Commemorating the fall of Vukovar
- ♦ The festive evening of UBH 'Prsten' (Ring)
- ♦ The evening of the Association 'Šokačka grana'
- ♦ Dinner with the Deputy British Ambassador in Croatia, Peter Clements
- ♦ Panel discussion with demographer Stjepan Šterc 'Are we heading towards a classical demographic breakdown?'
- ♦ New Year's Concert at HNK (The Croatian National Theatre) Osijek
- ♦ Setting up of the bust of Blessed Alojzije Stepinac in Osijek
- ♦ Carnival riding in Tenja
- ♦ A Round Table for entrepreneurs of the Entrepreneurs Magazine
- ♦ The manifestation of the Association 'Šokačka grana' 'What did our elders eat'
- ♦ Presentation at AIESEC as alumni
- ♦ Conference of the Croatian Association for Public Relations 'Who is staying in Slavonia'
- ♦ Humanitarian action "Let's make a difference Osijek"

### 3.3.2. Web portals, magazines, and newspapers

Web portals, magazines, and newspapers are media that give importance to every individual appearing in them, either as positive or negative news.

The candidate acquainted several journalists who agreed to help him with the publication of articles about him, his life, etc. The important thing was to post some positive news about Kristijan and his life every 2-3 weeks. The stories about business success, the importance of family and faith in Kristijan's life, business plans and so on are on portals:

- ♦ Sib.rtl.hr
- ♦ Poduzetnik.com.hr
- ♦ T-portal.hr
- ♦ Priznajem.hr
- ♦ Samopozitivno.hr

- + Liberal.hr
- + Narod.hr
- + Večernji.hr
- + Poslovni.hr

Also, in magazines and newspapers:

- + magazine Poduzetnik
- + newspapers 7-dnevno
- + newspapers Večernji list
- + newspapers Glas Slavonije

Candidate, through the portal, magazine, and newspapers, promoted his future associates who were successful in entrepreneurship, to get the public to know them better during the pre-campaign, so they could later come to a conclusion that the mayor candidate gathers successful young people around him.

### 3.3.3. Social networks

The appeal of social networks to voters and people in general nowadays is changing the image from earlier years, where social networks from aids in communication with voters (Haramija, 2014, 459) move to a decisive 'trigger' of the media exposure of the candidates.

That application was best emphasized by Donald Trump in the United States Presidential elections (Wells, 2016). He used social networks to present all the relevant details of his life in order to make himself as much acquainted as possible. Also, through Facebook, with targeted sharing of acquaintances' posts on his profile, he wanted to present the promotional announcements of his future political associates in order to better acquaint them with the voters as well.

The goal of using social media in the pre-campaign was to present the candidate as he really is to all the voters in Osijek because the key to the political campaign and the pre-campaign was to get more citizens to get to know the candidate.

### 3.3.4. Television and radio

Television is an incredibly powerful media service that has been used both in the pre-campaign and in the campaign. The television broadcasted success-



ful business stories about successful projects, investing in other entrepreneurs, guest appearances on local television through commentary on current economic topics, emigration, and so on. Television and radio stations which broadcasted various reports are:

- ✦ NOVA TV
- ✦ RTL
- ✦ Osječka televizija
- ✦ Slavonska televizija
- ✦ HRT Radio Osijek
- ✦ HKR

Examples of Šimičić's advertising campaign during the pre-campaign and the campaign for the mayor of Osijek:

- ✦ portal article 'Only positive no matter what' <http://www.samopozitivno.com/kristijan-simicic-osjecani-poduzetnistvom-mijenjaju-perspektivu-osijeka/> (access date: 23.09.2018.)
- ✦ news in the national television news program: Nova TV - Dnevnik <https://www.youtube.com/watch?v=Bjf0wytOCNU&t=8s> (access date: 23.09.2018.)
- ✦ "Topic of the Day" on local TV: Slavonska televizija
- ✦ [https://www.youtube.com/watch?v=aqPvZvaJVeo&t=53s&index=7&list=PLeSw\\_lilR3-UVehAJcQLeFBuZ7P-YdGxa](https://www.youtube.com/watch?v=aqPvZvaJVeo&t=53s&index=7&list=PLeSw_lilR3-UVehAJcQLeFBuZ7P-YdGxa) (access date: 23.09.2018.)
- ✦ [https://www.youtube.com/watch?v=v9I1X0bYzIw&list=PLeSw\\_lilR3-UVehAJcQLeFBuZ7P-YdGxa&index=5](https://www.youtube.com/watch?v=v9I1X0bYzIw&list=PLeSw_lilR3-UVehAJcQLeFBuZ7P-YdGxa&index=5) (access date: September 23, 2018)
- ✦ [https://www.youtube.com/watch?v=TIPnBQYQZfw&list=PLeSw\\_lilR3-UVehAJcQLeFBuZ7P-YdGxa&index=3](https://www.youtube.com/watch?v=TIPnBQYQZfw&list=PLeSw_lilR3-UVehAJcQLeFBuZ7P-YdGxa&index=3) (access date: September 23, 2018)
- ✦ Use of social network for humanitarian action: 'Let's Make a Difference' Osijek <https://www.facebook.com/lmdosijek/videos/108796296322652/UzpfSTE2NTAxNzMzMTk6MTAyMTEyNjg3MTk0Mjc2NzQ/> (access date: 23.09.2018.)
- ✦ communication through a website of the local significance: Portal SIB.hr <http://sib.rtl.hr/predstavljamo/gospodarstvo/283-kristijan-simicic-student-poduzetnik.html> (access date: 23.09.2018.)

- ✦ Communicating through a website of the national significance: Portal NAROD.hr
- ✦ <http://narod.hr/hrvatska/kristijan-simicic-zaposljavanje-ljudi-je-motiv-koji-me-pokrece-u-poduzetnistvu>
- ✦ <https://narod.hr/croatia/mrs-poduzetnik-kristijan-simicic-ulazi-utrku-gradonacelnika-grada-osijeka> (access date: 23.09.2018.)

### **3.4. CAMPAIGN ORGANIZATION - APRIL 2017 TO 25.5.2017. AND THE MAYORAL ELECTION**

The pre-campaign was aimed at presenting Kristijan Šimičić to a large number of people through social networking, television, newspapers, portals, magazines, participation in various events, round tables, conferences, etc. It also sought to gather as many quality people as possible in his team, the emphasis being on young and successful entrepreneurs in Osijek. After that, the part of the campaign started where Kristijan's candidacy for the mayor was publicly announced.

For the purpose of the campaign, an electoral headquarters were formed, a collection of the signatures for the candidature for the mayor was organized and the lists for the City Council were compiled. The creation, printing, and distribution of all printed materials, as well as various public events, followed. Cooperation, interviews, guest appearances on portals, magazines, newspapers, televisions, radio stations were also organized, as well as a press conference. Also, there has been a production of content (photo and video) and their release on social networks such as Facebook, YouTube, Instagram, etc.

The campaign ended on the day of the election, and the results are presented in section 4.1.

## **4. INVESTIGATING THE VOTER'S PREFERENCE AND THE IMPACT OF FINANCIAL RESOURCES INVESTED IN THE CAMPAIGN**

Data on voter preferences were collected several months before the election for the mayor of Osijek and the election for members of the Osijek City Council. The issue of the data put forward is that in the preliminary election polls there can never be all the actual candidates due to late and numerous applications.

#### 4.1. ELECTIONS FOR THE CITY COUNCIL OF OSIJEK

The City Council elections were held on May 21, 2017. Most of the candidates for the mayor were at the same time the holders of lists for the election of city councilors. Below we provide analysis of collected data.

**Table 1.** Elections for members of the Osijek City Council - comparison of the results of the survey and official results and the number of funds collected and spent

*** The official date of the election on May 21, 2017.							
PARTIES WHICH WERE OFFICIALLY IN THE ELECTIONS	SURVEY FOR THE MEMBERS OF CITY COUNCIL (TRAVANJ 2017 - RTL (PROMOCIJA PLUS))	REAL ACHIEVED OUTCOME ON THE CITY COUNCIL OF OSIJEK ELECTIONS	PLANNED NUMBER OF COUNCILORS ACCORDING TO THE SURVEY BY PROMOCIJA PLUS-a (out of 35 councilors who are elected with two additional members of national minorities)	NUMBER OF COUNCILORS ACHIEVED	DIFFERENCE PLANNED-ACHIEVED	COLLECTED AND REPORTED FUNDS	REPORTED SPENT FUNDS
AKCIJA MLADIH (Youth Action)- AM, PROMIJENIMO HRVATSKU(Change Croatia) - PH, "BANDIĆ MILAN 365 - STRANKA RADA I SOLIDARNOSTI" (Bandić Milan 365 - Party of Labour and Solidarity- NAPRIJED HRVATSKA! - PROGRESIVNI SAVEZ (Forward Croatia - Progressive Alliance) - NAPRIJED HRVATSKA!, STRANKA DEMOKRATSKE AKCIJE HRVATSKE (Forward Croatia - Party of Democratic Action of Croatia) - SDA Croatia	NOT MENTIONED IN THE SURVEY	1.06%	0	0	0	2,500.00 HRK	79.70 HRK
BIRAJ BOLJE (Choose Better)	NOT MENTIONED IN THE SURVEY	7.4%	0	3	3	27,000.00 HRK	29,730.00 HRK
BLOK UMIROVLJENICI ZAJEDNO - BUZ (Bloc Pensioners Together - BUZ), HRVATSKA STRANKA UMIROVLJENIKA – HSU (Croatian Party of Pensioners - HSU)	NOT MENTIONED IN THE SURVEY	2.66%	0	0	0	12,300.00 HRK	12,225.31 HRK

DEMOKRATSKI SAVEZ NACIONALNE OBNOVE – DESNO (Democratic Alliance for National Renewal - DESNO)	1%	6.49%	0	2	2	84,700.00 HRK	87,814.60 HRK
GRADANSKA OPCIJA GRADA OSIJEKA - GOGO, PAMETNO (Civic Option of the City of Osijek - GOGO, SMART)	3%	3.42%	0	0	0	10,450.65 HRK	10,442.31 HRK
HRVATSKA DEMOKRATSKA ZAJEDNICA - HDZ (Croatian Democratic Union - HDZ)	26%	22.78%	12	10	-2	- HRK	154,664.05 HRK
HRVATSKI DEMOKRATSKI SAVEZ SLAVONIJE I BARANJE - HDSSB (Croatian Democratic Alliance of Slavonia and Baranja - HDSSB), HRVATSKA SOCIJALNO - LIBERALNA STRANKA - HSL (Croatian Social Liberal Party - HSL), AKTIVNI BRANITELJI I UMIROVLJENICI HRVATSKE - ABU HRVATSKE (Active Defenders' and Pensioners Party - ABU of Croatia)	10%	7.52%	4	3	-1	86,800.00 HRK	82,520.00 HRK
KANDIDACIJSKA LISTA GRUPE BIRAČA (The List of Group of Voters) - DANIJELA LOVOKOVIĆ (SAVEZ SLAVONIJE I BARANJE) (Alliance of Slavonia and Baranja)	2%	5.26%	0	2	2	10,000.00 HRK	- HRK
MOST, the Bridge of Independent Lists	7%	11.53%	3	5	2	216,533.37 HRK	236,062.17 HRK
ODRŽIVI RAZVOJ HRVATSKE - ORaH (Sustainable Development of Croatia - ORaH), SLOBODNA HRVATSKA - SH (Free Croatia - SH), STRANKA HRVATSKI VIDIK – SHV (Croatian Aspect Party - SHV)	NOT MENTIONED IN THE SURVEY	0.65%	0	0	0	1,580.00 HRK	1,490.60 HRK
KANDIDACIJSKA LISTA GRUPE BIRAČA (The List of Group of Voters) - JAROSLAV PECNIK	NOT MENTIONED IN THE SURVEY	1.43%	0	0	0	3,808.00 HRK	3,807.72 HRK
SAMOSTALNA DEMOKRATSKA SRPSKA STRANKA – SDSS (Independent Democratic Serb Party - SDSS)	NOT MENTIONED IN THE SURVEY	1.27%	0	0	0	8,700.00 HRK	8,612.16 HRK

SOCIJALDEMOKRATSKA PARTIJA HRVATSKE - SDP (Social Democratic Party of Croatia) - SDP), HRVATSKA NARODNA STRANKA - LIBERALNI DEMOKRATI - HNS (Croatian People's Party - Liberal Democrats - HNS), HRVATSKA SELJAČKA STRANKA - HSS (Croatian Peasant Party - HSS), AKTIVNI NEZAVISNI UMIROVLJENICI – ANU (Active Independent Pensioners - ANU)	23%	23.23%	10	12	2	73,872.66 HRK	133,180.37 HRK
STRANKA UMIROVLJENIKA – SU (Pensioners Party - SU)	NOT MENTIONED IN THE SURVEY	1.43%	0		0	- HRK	- HRK
ŽIVI ZID (Human Shield)	3%	3.79%	0		0	1,000.00 HRK	1,000.00 HRK
OTHERS	1%		0				
INDECISIVE	16%		8				

**Sources:** Hrvatska danas, 2019, Poll in Osijek (the City of Osijek - elections, 2019, Final results for the members of the Osijek City Council)

The table shows a comparison of the survey on RTL television conducted by the Promocija plus Agency (Hrvatska danas, 2019, Poll in Osijek) in April 2017, just over a month before the official elections and the actual results for the members of the Osijek City Council (City of Osijek - Elections, 2019, Final Results of Elections for the members of the City Council of Osijek). The table lists the planned and realized number of councilors based on the percentage of surveyed results and actual results. The table also presents the official data on the collected and reported financial resources and official data on the amount of spent funds in the electoral campaign (State Electoral Commission of the Republic of Croatia, 2017, Report on Election Campaign Financing Supervision on Elections for Mayor and Deputy Mayor of Osijek).

The table shows that the political option of Biraj Bolje (established two months before the election of the Mayor of Osijek) led by the mayoral candidate Kristijan Šimičić was not even listed in the Promocija plus Agency's survey. In the elections for the City Council, the List won 7.4% of the votes and three councilors in the Osijek City Council, with the spent amount of 29,730.00 HRK.

Democratic Alliance for National Renewal (DESNO) led by the former mayor of Osijek Anto Đapić got 1% of the voters' support in the poll, while in the elections for the City Council, with the spent amount of 87,814.60 HRK, achieved a score of 6.49% by winning two councilors.

The list of MOST, the Bridge of Independent Lists received 7% of support and won 11.53% with 236.062,17 HRK spent in elections for City Councils. They spent the largest amount of all the other lists in Osijek and achieved a growth compared to the 4.53% poll, which provided them with up to five councilors instead of three councilors which they would win with 7% support.

The next list that invested the most money on the election of the counselor is the Croatian Democratic Union, which spent a total of 154,664.05 on and won 22.78% of the votes in the Osijek City Council elections, although polls only one month before the election showed that they would win 26 %. Despite the investment of a significant amount of money in the campaign, the Croatian Democratic Union lost 3.22% of the votes compared to the results of the pre-election poll.

#### **4.2. ELECTIONS FOR MAYOR OF OSIJEK**

Elections for the Mayor of Osijek were held at the same time as elections for members of the Osijek City Council. Below is the analysis of the collected voter preference data based on the pre-election poll, then on the election results and on the funds invested in the election campaign.

**Table 2.** Elections for the mayor of Osijek - comparison of the results of the survey and official results and sums of collected and spent financial resources

*** Official Election Date May 21, 2017						
POLITICAL PARTY	CANDIDATE	SURVEY FOR THE MAYOR - MARCH 2017. NOVA TV - IPSOS	SURVEY FOR THE MAYOR - APRIL 2017. RTL (PROMOGIJA PLUS)	RESULTS ACHIEVED AFTER 1. ROUND OF ELECTION FOR THE MAYOR OF OSIJEK	COLLECTED AND REPORTED FUNDS	REPORTED SPENT FUNDS
SOCIJALDEMOKRATSKA PARTIJA HRVATSKE - SDP (Social Democratic Party of Croatia) - SDP), HRVATSKA NARODNA STRANKA - LIBERALNI DEMOKRATI - HNS (Croatian People's Party - Liberal Democrats - HNS), HRVATSKA SELJAČKA STRANKA - HSS (Croatian Peasant Party - HSS), AKTIVNI NEZAVISNI UMIROVLJENICI – ANU (Active Independent Pensioners - ANU)	INDEPENDENT CANDIDATE - IVICA VRKIĆ	27.9%	34%	37.05%	124,750.00 HRK	223,536.03 HRK
BIRAJ BOLJE (Choose Better)	KRISTIJAN ŠIMIČIĆ	NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY	7.09%	80,500.00 HRK	78,603.75 HRK
BLOK UMIROVLJENICI ZAJEDNO - BUZ (Bloc Pensioners Together - BUZ), HRVATSKA STRANKA UMIROVLJENIKA – HSU (Croatian Party of Pensioners - HSU)		NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY		- HRK	- HRK
DEMOKRATSKI SAVEZ NACIONALNE OBNOVE – DESNO (Democratic Alliance for National Renewal - DESNO)	ANTO ĐAPIĆ	5.7%	6%	8.79%	18.09 HRK	18.09 HRK
GRADANSKA OPCIJA GRADA OSIJEKA - GOGO, PAMETNO (Civic Option of the City of Osijek - GOGO, SMART)	MIROSLAV VANEK	3.3%	NOT MENTIONED IN THE SURVEY	2.67%	1,000.00 HRK	937.50 HRK
HDZ	IVANA ŠOJAT	18.5%	14%	17.17%	116,935.80 HRK	259,237.45 HRK
HDSSB	DRAGAN VULIN	12.6%	10%	8.91%	105,982.00 kn	102,212.00 HRK
SNAGA SLAVONIJE I BARANJE (Power of Slavonia and Baranja)	THE LIST OF GROUP OF VOTERS DANJELA LOVKOVIĆ	7.5%	7%	6.04%	84,700.15 HRK	84,154.63 HRK

MOST, the Bridge of Independent Lists	MIROSLAV ŠIMIĆ	9.9%	11%	9.18%	50,000.13 HRK	42,625.91 HRK
ODRŽIVI RAZVOJ HRVATSKE - ORaH (Sustainable Development of Croatia - ORaH), SLOBODNA HRVATSKA - SH (Free Croatia - SH), STRANKA HRVATSKI VIDIK – SHV (Croatian Aspect Party - SHV)		NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY			
THE LIST OF GROUP OF VOTERS - JAROSLAV PEČNIK		NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY			
SAMOSTALNA DEMOKRATSKA SRPSKA STRANKA – SDSS (Independent Democratic Serb Party - SDSS)		NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY			
STRANKA UMIROVLJENIKA – SU (Pensioners Party - SU)		NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY			
ŽIVI ZID (Human Shield)		NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY			
AKCIJA MLADIH (Youth Action)- AM, PROMIJENIMO HRVATSKU(Change Croatia) - PH, "BANDIĆ MILAN 365 - STRANKA RADA I SOLIDARNOSTI" (Bandić Milan 365 - Party of Labour and Solidarity- NAPRIJED HRVATSKA! - PROGRESIVNI SAVEZ (Forward Croatia - Progressive Alliance) - NAPRIJED HRVATSKA!, STRANKA DEMOKRATSKE AKCIJE HRVATSKE (Forward Croatia - Party of Democratic Action of Croatia) - SDA Croatia	JURICA JUKIĆ	NOT MENTIONED IN THE SURVEY	NOT MENTIONED IN THE SURVEY	0.71%	23,466.83 hrk	23,466.83 HRK

**Sources:** Hrvatska danas, 2019, Poll in Osijek (the City of Osijek - elections, 2019, Final results for the Mayor of the City of Osijek)

The table shows a comparison of the Mayor's election polls on NOVA TV television channel, conducted by the IPSOS Agency in March 2017, and surveys on RTL television channel, conducted by the Promocija plus Agency (Hrvatska danas, 2019, Poll in Osijek) in April 2017. and the real results achieved in the first round for the Mayor of Osijek (City of Osijek - Elections, 2019, Final Results for the Mayor of the City of Osijek).

In addition, Table 2 shows planned and realized result based on the percentage of surveyed and actual results. Also, the table shows officially published data on collected and reported financial funding as well as official data on the amount of spent funds in electoral advertising (State Electoral Commission of



the Republic of Croatia, 2017, Report on the Election Campaign Financing Supervision on Mayoral Elections and Deputy Mayor of the City of Osijek).

The former mayor of Osijek Anto Đapić was a candidate for the Democratic Alliance of National Renewals - DESNO, whose polls forecasted 5.7% and 6%, and he won 8.79% of the elections, although only 18.09 HRK was spent in the entire campaign, i.e. that amount has been reported to the State Electoral Commission.

Since it is common practice that candidates and parties simultaneously run as list holders for the City Council and also as mayoral candidates the money for election promotion is spent for both lists and promoting themselves. So, an individual promotion is done with every kuna invested in promotion, regardless of whether it is a promotional cost for the mayor or members of the City Council.

Table 2 shows that candidate for mayor Kristijan Šimičić, who had been nominated in front of the newly established political option of Biraj Bolje (Choose Better) was not listed as an option in polls one month prior to the election, and in the elections achieved a score of 7.09% after spending 78,603.75 HRK on pre-election promotion.

Ivan Vrkić held the Mayor's office from 2013 to 2017. He was formally an independent candidate in the 2017 election, although officially supported by the Social Democratic Party, the Croatian People's Party, the Croatian Peasant Party, and Active Independent Retired People's Party. Putting in question the form of 'independent candidate' is also manifested by the fact that Ivan Vrkić was also the holder of a list for elections in the City Council in front of the Social Democratic Party, the Croatian People's Party, the Croatian Peasant Party, and the Active Independent Retired People's Party. Although Ivan Vrkić's polls indicated that he would win 27.90% and 34% of support, he made 37.05% of the support. Interestingly, in the financial statements, it is shown that Ivan Vrkić collected 124,750.00 HRK for the political pre-election promotion while he spent 223,536.03 HRK, so he spent 98,786.03 HRK more than he had collected. It is important to note that Ivan Vrkić entered the second round of elections for the mayor of Osijek and in the second round won over the candidate of Croatian Democratic Union Ivana Šojat.

The survey prediction for HDZ candidate Ivana Šojat showed 18.50% and 14%, while she managed to get 17.17%, thus entering the second round of may-

oral elections. The HDZ list showed that the amount of 259,237.45 HRK was spent for the pre-election promotion of their candidate, while the collected amount was smaller than the spent one, ie 116,935.80 HR. So, HDZ candidate spent 142,301.65 HRK more than what they collected. Ivana Šojat won 33.87% in the second round, while Ivan Vrkić won 62.74% and became Mayor for another four years (City of Osijek - 2019, Final Results for the Mayor of the City of Osijek).

HDSSB candidate Dragan Vulin, whose polls forecasted 12.6% and 10%, won 8.91% with the amount of 102.212,00 HRK spent for pre-election promotion.

#### **4.3. THE EFFICIENCY OF FUNDS USE**

It is difficult to estimate how much the candidates for mayors and lists of city councilors actually spent on electoral promotion. Part of the money not shown in the financial statements is mostly spent before the official start of the campaign, while part of the money is not shown at all, and is invested directly by political sponsors. For example, we can list numerous articles on portals that have promotional purposes (interviews, etc.) and are paid for, but this is mostly not mentioned in financial reports. There is a need to keep in mind the volunteer work of many campaign participants, not included in the costs, which is why it is difficult to estimate the actual costs of the campaign.

### **5. INFLUENCE OF ESTABLISHED POLITICAL OPTIONS ON ELECTION RESULTS**

The final results of each election are the best-placed elements present in the electoral race that follow a particular candidate. First of all, a good candidate who can be accepted by the general public is needed for a good result. Better results are achieved by candidates with stronger and more established political options in their background, such as HDZ, SDP, MOST or HNS because they have a significant base of members, a significant voter base and easier access to campaign money since they receive money from the state budget same as all parliamentary parties do. Established parties and their candidates have easier access to the media and automatically appear in surveys, which provides them with free promotion across the general public. All in all, the candidate who suc-

ceeds in arranging as much detail as possible with the good communication of his plan and program has a better chance of better results.

From the tables (Table 1 and Table 2) that we have shown in this paper, it is apparent that MOST, the Bridge of Independent Lists with a large budget invested in the campaign compensated for poor efficiency. On the other hand, previously unknown political option of Biraj Bolje (Choose Better) and a new, publicly unknown candidate for mayor Kristijan Šimičić have managed to achieve excellent results with regard to the circumstances of the election with high efficiency. The HDZ, SDP, and HNS with the candidates in front of them have shown that they could count on a significant base of their existing voters whose votes were directed to candidates who had their political support and who automatically entered the second round of mayoral elections.

## 6. CONCLUSION

The political strategists think that for a serious political campaign in Osijek, a candidate who wants to become a mayor of Osijek should invest a minimum of 1,000,000 HRK. The maximum amount for the mayor of a large city, which Osijek is, prescribed by law is 600.000 HRK. It is therefore clear that in the case of more serious candidates running for a mayor, the amounts that apply to the State Electoral Commission do not correspond to the actual spent and collected funds. The data presented and the results of the elections show that the amount of presented funds spent in the election promotion does not significantly influence the increase of the candidates' results for the mayor or City Council in relation to the pre-election surveys of IPSOS and Promocija Plus.

Directly delivering an objective and measurable conclusion is not possible because we conclude that the funds raised and spent on election promotion are not realistic and accurate, but are, as expected, considerably higher than what is shown in the financial statements.

Kristijan Šimičić entered the elections for the mayor of Osijek as a new and publicly unknown candidate. He entered a political campaign without political experience. His main goal was to enter the second round of elections for the mayor of Osijek, for which, at the estimates, was necessary to have a minimum of 18% of votes or about 7,000 votes. Pre-election surveys by agencies Promocija Plus and IPSOS did not recognize Kristijan as a possible candidate for

the second round of mayoral elections, so they did not include him in the pre-election polls.

The following initial shortcomings that the candidate met with his team are as follows:

- ♦ A candidate for the mayor was unknown to the majority of the voters in Osijek
- ♦ The number of expert associates in the electoral staff was insufficient
- ♦ Insufficient organization of the staff
- ♦ There was no sufficient voter base that recognized the candidate from the beginning of the campaign
- ♦ Insufficient connectedness of associates and sympathizers in all city districts and local committees
- ♦ The very low output of the last few election cycles - apathy among voters who were difficult to motivate at the time of voting (2017 - local elections in Osijek - 54,000 voters did not go to the polls)
- ♦ the candidate was not invited to present himself and confront the candidates on HRT, NOVA TV, and N1 television, while almost all other candidates from Osijek were invited

In addition, the advantages of other candidates running for the mayor should also be taken into account:

- ♦ All candidates who have crossed the threshold have a great political experience behind them and are well-known to the general public (Vrkić, Vulin, Miroslav Šimić, Đapić, Lovoković...)
- ♦ All candidates who have crossed the threshold since the beginning of the campaign have a stable voter base behind them
- ♦ Almost all major parties have invested multiple amounts of money into their campaigns
- ♦ All candidates who have crossed the electoral threshold have worked in the public administration or in the positions of the mayor, the deputy prefect, etc., which gives them insight into the real state of the City
- ♦ All candidates who crossed the threshold, except for Kristijan, had the opportunity to present their program on national television, i.e. HRT in the show *Otvoreno*, as well as on NOVA TV television in a confrontation show, and most of the candidates received the opportunity to present themselves in person in a confrontation show on N1 television.

The answer is that new candidates for mayors who do not have established and well-known political options in their background can cross the electoral threshold of 5%. Regardless of the media's ignorance, inconsistency in the pre-election surveys conducted by the referent agencies, with a good campaign, high-quality candidates can gain the voter's confidence.

The confirmation of this hypothesis is in the fact that since 2012 there is an increasingly important trend of providing support to new political figures and independent candidates in the Republic of Croatia. All this should ensure new political faces and options in politics. Such activities should ensure that democracy and new political games become wider by gaining new people.

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# RATIONAL DECISION VERSUS IRRATIONAL DECISION

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## Abstract

*Making right decisions - at the time when people are facing immense consequential choices - has been extremely important. How can we be sure not to make fatal mistakes? The aim of this paper is to reveal some important developments in decision making that have been taking place not only in economics but in other social sciences during the past decades, as well as to offer insight in some new discovers that have occurred. There are many questions related to decision making and behaving in the new, uncertain and dangerous environment. One of the most interesting question is – will our action be rational or irrational? Irrational behavior can be understood as a study of the transition process by which people decide for one's own choice. Naturally, this choice can result in defects, economic losses, and sometimes personal flaws such as bad choice of medicines or poor choice of economic policy.*

*According to traditional assumption of the classic economic theory, the individuals are behaving in rational way and they make rational decisions. Furthermore, irrational behavior is not just isolated to a few 'irrational individuals' but can become the dominant choice for most people in the entire society. Irrational behavior happens when people make choices and decisions that go against the assumption of rational utility-maximizing behavior. Thus, economists and policymakers must consider the potential for irrationality.*

**Keywords:** decision making, rationality, irrationality

JEL Classification: D70, D81

## 1. INTRODUCTION

Many mainstream economists in the second part of the twentieth century developed sophisticated mathematical treatments that attempted to model human behavior. Most of these were founded on a very simplistic concept of rationality, on the concept of *homo economicus*. The idea here is that we can all be represented by an economic man who is assumed to be completely informed in terms of rational choice theory (Kerjan/ Slovic 2010: 3).

The idea is to set the economic theory presented to a single economic man (*homo economicus*) who rationally behaves on the basis of complete information. This rational behavior follows the goal of maximum utility based on knowledge of economic choice and its consequences.

Slowly, psychologists and other behavioral scientists began testing this presumption of rationality, which, as noted by Herbert Simon, a social scientist that have been among most influential one in the twentieth century, permitted economists to make „strong predictions ... about behavior without the painful necessity of observing people (Simon/Stedry 1969:272). Stimulated by creative conceptual, methodical, and empirical work of Amos Tversky, Daniel Kahneman, Richard Thaler, Herbert Simon, George Akerlof, Vernon Smith, all Nobel laureates in economics, the trickle of studies challenging traditional economic of rationality became a torrent. Their contribution toward understanding the behavioral dynamics of economic decisions further contributed to what has become a revolution in thinking (Kerjan/Slovic 2010:5). Recently, new theories have been emerging, which mostly point to some human behavior that, in new circumstances, consistently deviates from the theory of rational choice and the theoretical basis of *homo economicus*.

The main goal of this article is to provide new knowledge in condensed fashion to help people make better decisions in a world that seems to become more and more uncertain.

## 2. FOUNDATIONS OF DECISION MAKING

Decision making requires alternatives. If there are no alternatives to choose from, there is no decision making. Choosing among alternatives is not a simple act but a comprehensive process of decision making. There are various models to describe this process.



## 2.1 THE MODEL OF RATIONAL DECISION –MAKING

In the world of social sciences, economics has won an enviable status in the practical interpretation of the theory of rational behavior that has been set as the core of decision-making.

Let us assume that decision makers are completely informed regarding all possible options for their decisions and all possible outcomes of their decision options. Deficiencies of this approach have become evident and Subjective Expected Utility (SEU) appeared as a response to those deficiencies by considering psychological aspects as well.

It is a traditional assumption that people are motivated by money and opportunities in order to make a profit, allowing it to create formal, often predictable models of human behavior. Sociological and political scientists have tried to build theories around the idea that all actions are based on the „rational“ character as well as the people count the possible costs and benefits before taking these actions. This approach is known as a rational choice theory.

The term rational and the concept of rationality is connected to the decision making of business people who make intuitive or rational decisions, but also many time nonrational decisions as well. Rational decision making has been often leaned to the analytical methods that companies use to come up with a fact-based decision.

Historically oriented theories of rational behavior to the classical economy of Adam Smith and refer to Max Weber’s program of sociology. They are trying to include complex social activities as easy as possible through model approaches (Barković 2009: 51). The rational choice theory has focused heavily on mathematics, converging closely with microeconomic trends.

The development of the theory of rational choice took place in several fields. In the field of policy problematic, models of voting theory and coalition have developed which in mathematical form elaborated on the set problem. In less mathematical terms, they were concerned with social movements, relations within ethnic movements, reproduction of class. These contributions have been discussed by various authors (Downs 1957, Buchanan/ Tullock 1962, Riker 1962, Hechter 1987, Goldthrope 1996, Breen/Rottman 1995). The theory of crime and the theory of marriage were set by Becker (1976, 1981). Buchanan believed that individuals in politics are trying to maximize net income as well

as doing it on the market: they follow the interest they own. For politicians it means they have to respond to the interests of their voters in order to remain in service. Buchanan believes that the legislator trades in voices to gain the benefit of the special groups to which those voices belong, and that loyalty results in state budget strain (Barković / Barković 2009: 52). For Arrow, the best decision-making mechanism other than the market is democracy. His most famous book, "Social Choice and Individual Values," which puts together a collective choice with, has sparked great interest. Arrow was the first of his fellow scientists to convincingly demonstrate that an opinion on the division of national economy from political science into the analysis of social problems was unsustainable. He explores the logical possibilities of aggregating preferences of individual voters into social decision making. The result is now known (or should be) to every student as an Arrow Paradox: Democratic majority decision-making does not always lead to logically misleading (meaning transitive) decisions. Particularly noticeable is the trend of works of those Marxists who in the theory of rational choice saw the foundation of Marx's theory of class and exploitation (Elster 1983, Roemer 1988).

The notion of rationality is differently defined by many authors. Hitt said: "Sometimes a man is compared to a rational animal. He is intelligent; he practiced thinking; he uses logic; and he argues from the scientific point of view. In fact, man is only a rational animal" (Hitt 1979: 654). Baumol speaks of the rational decision-making as the best service to the goals of the decision makers, whatever they were. Such goals may include the company's desire to maximize profit, governments to maximize the welfare of the population or some other government's desire, for example, to maximize the power of their army. The term rational does not mean either confidence or distrust towards the itself (Baumol / Blinder 1997: 51).

One of the most common, perhaps too many times mentioned words in economics, is rationality. Behavior can be rational, irrational or irrational. Rational behavior implies a situation where an individual seeks out a choice that provides him with an optimum level of benefit or utility. A certain kind of simplification of the notion of rationality occurs within managerial decision-making. If a decision is rational, that still does not mean that the decision maker will be rational in other circumstances. Managers may, in turn, be obviously rational in a decision-making situation and seemingly irrational in the other.

Many authors, especially in the field of management, agree that by behaving rationally - after careful analysis of all alternatives - one can make a decision that maximizes business satisfaction or the benefit of the decision maker. The ultimate end of the rational behavior, when it comes to economic theory, is to maximize company profits and to maximize benefits in the case of people in general (Katona 1963: 313).

## 2.2. BASIC ASSUMPTIONS OF THE RATIONAL DECISION-MAKING MODEL

The fundamental basis in the rational choice model is the optimization that can be defined in different models based upon following assumptions: (1) each individual is governed by a set of logical beliefs in the outcome of his activity; (2) individuals have preferences that sort them by type. In practice, people are expected to maximize benefits and minimize costs, (3) each alternative compares the individual with others based on their cognitive abilities, taking into account time and resources.

The limitation of a rational model is that it does not take into account factors that cannot be quantified, such as personal feelings, ethics, or altruism. The basic assumption of rational decision-making is the concept of maximizing utility that draws the roots from the traditional economic theory of “economic man”.

Most of the models applied in rational decision-making come from economics, statistics and philosophy, while psychologists have only adapted them. That is why these first theories are always discussed from an economic perspective. Early models prevail over relatively simple issues of humanistic content in which the goals set are clear and unambiguous. Such situations are solved by classical optimization methods and traditional system approaches. In practice, this is a complex market problem that is rapidly growing under uncertain circumstances, so the expression of rationality is replaced by the term “conditioned rationality”.

### Homo economicus

The concept of an economical man derives originally from the philosophy of hedonism, which claims that individuals are calculating with activities that will maximize their own interests and behave accordingly. Adam Smith relies on

this philosophy when he claims that the search for his own purpose is sufficient to justify the interaction between the buyer and the seller on the market. Adam Smith paints a man of economics (“homo economicus”), who in reality does not exist, as an essential stone-building model; he is capable of seeing his best economic interest and act accordingly. That means rationally and in his own interest. By this, one said almost all important about it.

Homo economicus is one of the most important bases of the economic model. This is a generally accepted term. Despite all this, the cause of great controversy and science has studied it, still studying it, as no other being. We can simply imagine it as a perfectly healthy human being consulted regularly with various specialists. The best thing is when he leaves the economist’s practice. Sociologists, ecologists, and physicians are diagnosed with the most diverse illnesses.

In support of the great dissonance of attitudes about homo economicus, there is a great variety of terms when collecting information about it online. The discussion is completely interesting and tense, but even homo economicus opponents, as economists, have no choice and must be introduced to homo economicus because most of the economic theories are based on that picture. Even the concepts of modern evolution, experimentation and game theory require knowledge of homo economicus. Homo economicus is best described through the form and manner of decision making. Rational in its own interest. The term “rational” can be replaced by reflection, good decision-making, and mastery. Homo economicus always decides to start from its own profit i.e. the value between profits and costs and decides on the possibility of having the highest net benefit.

### 2.3. CRITIQUES OF THE RATIONAL MODEL

The rational decision model is a very important classical approach in the field of decision theory. It provides the basis for the quantitative disciplines of economics, mathematics, and statistics. Several barriers appear:

- Criticism is targeted at unrealistic assumptions about the full information people have as well as their ability to process them at time of decision making;

- ✦ Bounded Rationality is based on the assumptions that the rationality of the individual is limited in terms of information he possesses, the cognitive limitations of his mind, and the time he has at his disposal when deciding.
- ✦ When there is a lack of ability and resources to reach optimal solutions, decision-makers often try to find a satisfactory solution instead of the optimal one.

### 3. ALTERNATIVE THEORIES OF DECISION MAKING

New theories have been emerging recently. They are challenging and criticizing the assumptions and predictions of behavior in the theory of rational choice. Some people developed models of limited rationality that they hoped would be more psychologically clear without abandoning the idea that the thinking underlies the decision-making process. Very popular criticism has been the lack of empirical bases. Experimental economics and the experimental theory of games have changed that criticism. It has been concluded that it is not an easy task to find what will replace the standard assumptions of the rational behavior found in traditional economic literature. This is so because the identified deficiency is considered in two ways - as a call for quite different resources and because there is little hope to find an alternative structure of assumptions which would be as simple and useful as the traditional assumptions about maximizing their own interest or the consistency of the election (Sen 1998: 206).

#### Prospect theory

Daniel Kahneman and Amos Tversky have developed the Prospect Theory, which focused on people selecting alternatives that involve risks but the results are already known as well. When people are making decisions, they are considering the potential value of losses and gains rather than focusing on final result. In order to do evaluation of losses and gains they are using facts which are available to them (heuristics) coming through methods and/ or systems. This theory is descriptive one. It does not predict optimal decisions but it tries to model real life-choices.

## Bounded Rationality

Bounded Rationality introduced by Herbert Simon is based on the assumptions that the rationality of the individual is limited in terms of information he possesses, the cognitive limitations of his mind, and the time he has at his disposal when deciding. Consequently, it can be assumed that decision-makers have an intention to act rationally, however to a limited extent only. The assumption of only limited rational behavior represents a serious departure from the long-standing paradigm of the so-called neoclassical theory, which allows human behavior to be best explained and predicted by the assumption of complete rationality. However, until Simon's idea of limited rationality had arrived in the mainstream of economic theory, half a century should pass. In the meantime, economic models of limited rational behavior have gained wide acceptance - more than that, they are almost in vogue (Simon 1957).

### 3.1. NON-RATIONAL DECISION MAKING

#### Herbert A. Simon

By awarding the Nobel Prize in 1978 to Herbert A. Simon, the Swedish Royal Academy of Economics awarded recognition to his work, which gave significant, almost decisive impetus in the field of organizational research. The two questions are characterized by Simon's work: "How rational is man?" And "How rational are organizations?" The first question answers Simon in such a way that he replaces "homo economicus" with a more realistic model of a man who decides: a man can penetrate cognitively only in part of his problems, while a large part must be abandoned to habitual behavior; he has to create a sophisticated environment model; he can accept information only selectively; he can in no case achieve an optimal solution, but must leave his problem "inspirational level" (Barković / Barković Bojanić 2014: 63).

#### Gerd Gigerenzer

German psychologist and investigator of risk Gerd Gigerenzer became known as an expert to the public with the book "Bauchentscheidungen". His work has an important significance for psychologists, economists, philosophers, and animal biologists. He was particularly interested in how people can learn

to live in the circumstances of uncertainty. How does society adapt the change of state from one state to another, which is uncertain? Gigerenzer has been involved in a debate with Daniel Kahneman and Amos Tversky about the heuristics and biases research program that has become one of the most interesting in the circle of psychologists. Although the debate was largely guided to be more of framing than substance, it largely revolves around the question of whether we should characterize “biased” human decisions as error or “irrationality” (Collins 2018) .

### Ward Edwards

About the same time that Simon was documenting bounded rationality 1960s and 1970s, another psychologist, Ward Edwards, began testing economic theories through controlled laboratory experiments to examine how people process information central to “life’s gambles“. Early research confirmed that people often violate the assumptions of economic rationality and are guided in their choices by noneconomic motivation.

### Role of Emotion

Emotions are the primary influencing factor for every definitive action that we make as a human being. The role of emotions in motivating behavior is also an important aspect of understanding our addictions. However, rational model often does not include emotion as a factor. On the other hand, since decisions are often including uncertainty, risk tolerance by individual becomes a factor in the model.

### Robust Decision Making

In solving problems with multiple possibilities, robustness plays an important role. Decision makers often find themselves in more uncertain situations choosing more robust than the best solutions. When it is possible to predict the future, selecting the best option is desirable, but when the future is characterized by uncertainty focusing on the best option can carry considerable risk. This approach has built the concept of robust decision-making that takes into account multiple scenarios in the future, focusing on robustness in relation to

optimal, adaptive strategies. For example, the problem of climate change and objective adaptation to it, robust decision making can be a very interesting method that provides support for adaptation decision making. Robust Decision Making tries to find robust options (“good enough”) rather than options that are supposed optimal in terms of economic efficiency. To put it differently, robust decision-making tries to find how to minimize regret, instead of maximizing expected utility (Econadapt, 2016).

## Intuition

Intuition is often seen as the last rational way of making decisions. Even today, intuition is dismissed as irrationality. Women have them, men have brains, they say. Who decides to gut feeling is not to be taken seriously. The Nobel Prize for Economics 2017, the US researcher Richard H. Thaler got because of his contributions to the psychological understanding of economic relationships. He had advanced the understanding of our behavior and our ability to make decisions in a time of social upheaval. Thaler considers intuition to be insignificant in decision-making. If you talk to Gigerenzer about it, you immediately sense that there is a war between the American and the German for the power of interpretation. “At a time when our lives are determined by calculations,” says Gigerenzer, it is obvious that those would be awarded their findings underpinned the superiority of the ratio over intuition. Intuition cannot be justified. But man should have abilities, mind and inner voice. “The art lies in recognizing each one: what will help me?” (Zeitmagazin, 2017)

Even the Greek philosophers were concerned with the dualism of reason and intuition. Intuition was considered to be the highest form of knowledge prior to the Enlightenment - though it was not man who had it, but angels and other supernatural creatures. With the Enlightenment grew skepticism: The subconscious mind was now considered a dark place where demons lurked. In the 17th century, the French philosopher René Descartes coined the phrase “I think, therefore I am”, the image of man as a cool decision machine, always to maximize the benefits. A definition that still influences our attitude towards intuition today. Sigmund Freud described intuition as the site of sexual memories and obsessions. Only the economist Herbert Simon recognized our “limited ratio” in 1956, he found that man could not make a single decision rationally (Zeitmagazin, 2017).



## IRRATIONALITY: ECLECTIC APPROACHES TO DECISION MAKING

The word eclectic means “selecting what appears to be best in various doctrines, or styles” or, more simply, “composed of elements drawn from various sources” (Webster 1997: 359). Decision making is a meeting ground for new multidisciplinary fields represented by those who pioneered them – including behavioral economics, economic psychology, behavioral finance, decision sciences, and neuroeconomics, to integrate theories and results from economics, psychology, sociology, anthropology, biology, and brain sciences. Applied fields such as management, marketing, finance, public policy, and risk management and insurance are using this new knowledge today in a significant way. It has been obvious that both economists and psychologists are interested in decision making.

It is necessary to introduce the notion of rationality for understanding decision-making. Irrationally simply means a poor adjustment to goals. How difficult it is to see the difficulties arise in understanding decision making immediately when the notion of rationality is introduced. Then it is about concepts rational, nonrational and irrational. Behavior is rational, and the decisions leading up to behavior are rational if it turns out that the behavior prescribed is well adapted to its goals whatever those goals might be. Nonrational reminds us of something else again. It reminds us that the goals themselves have to be postulated somehow in the decision-making process, except insofar as certain goals may themselves be instrumental to other goals (Simon 1993: 393).

About rationality in economics and psychology Simon thinks that he has gone through the various ways in which economists have had very explicit theories about rational behavior while psychologists spoke less about rationality and more often thinking (“good” thinking) (Simon 1993: 395).

## 4. WHY RATIONAL CONSIDERATIONS LEAD TO IRRATIONAL DECISION?

Anyone who deals with human behavior cannot ignore the concept of rationality. Rationality is differently interpreted by different people. For example, for the common people rational are one who acts rationally, for the economist, who maximizes its utility, for the philosopher, who adheres to his rules of action. All these concepts of rationality have something in common: they only explain how people usually behave, but often people act irrationally. Economists do not op-

pose this fact because their models are based on mathematical considerations and it is in the nature of irrationality to be difficult to calculate. For psychology and philosophy, irrationality is an interesting phenomenon. For example, they ask why irrationality exists and how it arises. One possible answer to this question can already be found in Freud, but it is the philosopher Donald Davidson who generalizes this approach. For him, irrational actions and decisions come about because the mind of a person can be divided into several entities that interact with each other. Irrationally, therefore, is someone who believes that he is acting on one of these mental entities, but in fact has no reason to act. But the division of mind into Davidson also allows for a different kind of irrationality, because one can model the different parts of the mind as players of game theory. These players always decide rationally, but in some cases they actually arrive at irrational game solutions (Schaller 2014). Action and irrationality are explained in the context of game theory and explained by the prisoner's dilemma.

**Prisoner's Dilemma**

The Prisoner's Dilemma takes its name from a sample story, but can actually be applied to any game situation with a similar order of preference. The initial situation of the Prisoner's Dilemma is the following: The police arrested two people who had committed a robbery. Unfortunately, the officials lack the evidence for the robbery itself, without a confession; they can send the robbers only for car theft for two years in jail. The police, therefore, suggest a robbery to the robbers. If one confesses, but the other does not, the confessed man will be released, the other will have to go to jail for ten years. If both confess, they both go to prison for five years, and if both are silent they are convicted of car theft: two years for each. Both robbers have the same utility function: freedom equals 4 benefit points, two years imprisonment is the next best option and equals 3 benefit points, five years equal 2 points, and the maximum penalty of ten years both rates 0 points (Ross 2012: 23-25). Table 1 illustrates the situation.

**Table 1** Prisoner's dilemma

		Player B	
		<b>Confess</b>	<b>Deny</b>
Player A	Confess	2,2	4,0
	Deny	0,4	3,3

**Source:** Schaller 2014

For Player A, it is clear that it's better to confess. In the best case, he is released (4 points), in the worst case he has to go to jail for five years (2 points). However, if he is silent, the best thing that can happen to him is two years imprisonment (3 points) and he runs the risk of being sent to prison by the other player for 10 years (0 points). Player B thinks the same way. The result: Both confess and go to jail for five years, so they each score 2 (Ross 2012: 25-26). Although both players have reasoned and rationally decided, they have chosen the alternative that offers the second deepest benefit. The solution of the game is the field "confess / confess". The solution of games is called equilibrium, based on physical systems where equilibrium occurs when all causal forces are in balance (Ross 2012: 32). The solution found here is the Nash equilibrium. It refers to a set of strategies in which no player can increase its utility, given all other players stick to their strategy (Ross 2012: 33). It is possible that a game has multiple Nash balances. In these cases, due to purely rational considerations, the result cannot be predicted. However, with the Prisoner's Dilemma, the solution is clear from the point of view of the Nash equilibrium. Despite the unambiguousness and the rational foundation of this solution, it does not seem completely satisfactory, because both players escaped a useful point in this way. The Pareto optimum would be reached, if both players would be silent, thus getting 4 profit points each. A solution is only Pareto-optimal if there is no other solution that better positions at least one player (Mankiw / Taylor 2010: 903). The Pareto Optimal Solution is also referred to as the social or ethical solution because it maximizes the benefits of the community rather than a single one.

The Prisoner's Dilemma shows the limits of rational thinking. Although players make a rational choice, they break their own highest rule of conduct: they do not maximize their utility. The Nash equilibrium is the second worst solution for both players, and although they know that it would be in the interests of both to be silent rather than to confess, they do not deviate from their strategy. In this sense, the solution of the game is irrational. The American scientist Richard Thaler received Nobel Prize in 2017 for his research on behavioral economics. Thaler showed how psychological factors affect supposedly rational decisions in the economy and markets. For example, Thaler was able to prove that people with falling gasoline prices do not plan the money saved - quite rationally - simply for other necessary expenses. Instead, Thaler was able to show that people instead bought more expensive premium gasoline instead. The re-

alization: People do not treat their money completely rationally and purpose-independent, but mentally allocate it to a fixed budget for specific purposes.

There are no purely rational decisions in the economy either. This was also aware of the economists before Richard Thaler. Nevertheless, the premise in economics was different for a long time: Economists assumed that people act rationally - and that assumption is close enough to reality. The pioneer of behavioral economics helped to refute this very premise. "One could say that Thaler and his colleagues are the hangmen of the "Homo Economicus model" In the late 1800s, several economists formalized the ideas of Adam "The Invisible Hand" Smith into the idea of "homo economicus," or the completely rational human that's used as the model in nearly all basic economics education. Given the vast influence economists have over policymakers and politicians, this flawed theory has been the basis for a lot of flawed policymaking.

### **Bottom of Form**

That is why multiple economists and psychologists began developing the field of behavioral economics. Daniel Kahneman, author of "Thinking, Fast and Slow" won the 2002 Nobel Prize in economics for his contributions to behavioral economics and the study of decision-making. Human irrationality is Kahneman's great theme (Kahneman 2013). He contributed to explaining why people do not behave as proposed by economic theory. Economists increasingly adopt the ideas of the behavioral school, whose "de facto" founder Kahneman is, as in reality, people in monetary and economic matters often behave irrationally and that this irrationality is foreseeable. The most significant joint work with Amos Tversky published in 1979 in the prestigious magazine "Econometrics" evolves prospect theories. They describe how people develop a heuristics or a shortcut to the choices they make available to them and identify potential "traps" and anomalies in resonance that reflect more human nature than a true perception of potential risk or gain (Kahneman 2013: 298).

The practical application of Kahneman's scientific results as well as the followers of a bourgeois school finds itself in real life: traders often give their producers a specific and probationary time by exploiting the hypothesis of the theory of the effect of possessing how people value more than they already have; some investors have begun applying behavioral theses in practice on the US stock exchanges, trying to explain to them the sudden changes in stock prices;

macroeconomists are turning to behaviorist theory to explain why, for example, less savings or why they continue to spend at the same level for some time after their income reductions and the like.

Behavioral economics is the use of psychological methods and constructs to introduce limits of computation, will power, and self-interest into economic analysis. Neuroeconomics extends upon behavioral economics by including neural data for the purpose of creating a mathematical approach to the micro foundation of economics that is neutrally measurable (Rangel/Camerer/Montague 2008/545-556).

## 5. CONCLUSION

The notion of rational decision making epitomizes the confusion and broadly changing interpretations related to the most important activity of managers in any organization. For the rational model to work magic, decision-makers must be able to articulate their basic taste and preferences and make sure they do not violate basic axioms of rational choice.

In the late 1800s, several economists formalized the ideas of Adam “The Invisible Hand” Smith into the idea of “*homo economicus*,” or the completely rational human that is used as the model in nearly all basic economics education. Given the vast influence, economists have over policymakers and politicians, this flawed theory has been the basis for a lot of flawed policymaking.

The presumption of rationality has been tested by psychologists and other behavioral scientists. As noted by Herbert Simon, an important and among the most influential social scientists, stated that it allowed economists to make „strong predictions .... about behavior without the painful necessity of observing people”. Stimulated by creative conceptual, methodical, and empirical work of Amos Tversky, Daniel Kahneman, Richard Thaler, Herbert Simon, George Akerlof, Vernon Smith, all Nobel laureates in economics, the trickle of studies challenging traditional economic of rationality became a torrent.

Their contribution toward understanding the behavioral dynamics of economic decisions further contributed to what has become a revolution in thinking (Kerjan/Slovic 2010:5). Recently, new theories have been emerging, which mostly point to some human behavior that, in new circumstances, consistently

deviates from the theory of rational choice and the theoretical basis of home economics.

In order to better improve the quality of decision making, it is important to understand the effects of various factors such as social, political and cognitive and their impact of making decisions. Further, it is important to retain the beneficial ones such as those who have high interpretative potential and can include distinct views as well as to avoid those who are detrimental such as group thinking. It is necessary to target creation of adequate cultural, structural and procession conditions to achieve this. Some progress has been already made in this direction.

We hope that this knowledge will be shared and used more broadly, we hope to see more behavioral scientists being asked to provide top decision makers with their views, or even to take on high-level positions in the public and private sectors. In doing so, they will assume this dual role of researchers/teachers and influential players in the power circles of business and public policy, as other great minds in economics have done before.

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OPERATIONS  
MANAGEMENT





# PROJECT MANAGEMENT CHALLENGES AND DIFFICULTIES AT UNIVERSITY OF ZAGREB SCHOOL OF MEDICINE: CASE STUDY

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## **Abstract**

*Project management process consists of planning, organizing, securing and managing resources to achieve successful completion of defined project goals and objectives. Each project manager deals with the primary challenges: to achieve project goals and objectives in a specific timeframe and with a limited budget. Project management is not traditionally included in the education of academic scientists, but it has been gaining more attention in recent years as universities and scientific institutions are implementing important projects that require certain project management skills and the use of project management tools. With the increasing trend in interdisciplinary collaboration, project managers play the important role in every scientific research. This also requires that the budget for further education of project managers should be implemented as a standard part of every project proposal. That is why is necessary to establish*

*a strong connection between academic scientists and project managers. Even more, that relationship should be continuously strengthened and maintained during the project life cycle. The intensive scientific activity at the School of Medicine, University of Zagreb is proven by many international and national projects that are included in the list of the most important scientific research projects in Croatia. The aim of this case study is to analyze project management challenges and difficulties in an interdisciplinary and scientifically challenging environment at the University of Zagreb, School of Medicine to assess the effects of project implementation.*

**Keywords:** project management, scientific research, challenges, difficulties, School of Medicine

JEL Classification: M10, M19

## 1. INTRODUCTION

The main goal of scientific research is to produce new knowledge independent of ideological, political, economic or any other consideration. The 21st-century economy is based on knowledge suggesting that academic researches should contribute to economic development, but also find new funding methods to achieve its goals. Croatia is a member of the European Union since 1 July 2013, which further opened the possibility of scientific researches funding from EU funds. In this way, scientific institutions that carry out scientific research accomplish productivity and competitiveness. Scientific research funding from EU funds is a new direction for scientific institutions and it's research management that applies principles, skills, and tools of project management. Typical approaches in classical project management provide a framework centered on project life cycle and rely on specific skills, processes and tools (PMI, 2008) to accomplish the goal of efficient and productive project management system. At universities and scientific institutions, the principles and skills of project management should be implemented to ensure the completion of scientific projects that contribute to the development of science, economy, and society. Earlier empirical investigations (Riol and Thuillier 2015; Perić 2011; Alves Sousa and Hendriks 2008) have examined the relevance of project management skills and tools in managing scientific research projects as well as challenges and difficulties in implementing project management into scientific research. The objective of this study is to examine basic elements of project management approach

through challenges and difficulties in project management implementation in scientific research on the example of the University of Zagreb School of Medicine (UZSM).

## 2. PROJECT MANAGEMENT

In order to understand project management, primarily it is necessary to illustrate the definition of a project. American Project Management Institute (PMI) defines a project as temporary as it has a defined beginning and end in time, and therefore defined scope and resources. A project is unique as it doesn't contain a routine operation, but a specific set of operations designed to accomplish a singular goal (Project Management Institute, 2019). To understand the definition of a project it is necessary to understand that the project has a series of activities and tasks that have an aim to accomplish specific project objectives in a certain time and with a limited budget. According to Kerzner (2017), project management is the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to complete specific goals and objectives. Furthermore, project management utilizes the system approach to management by having functional personnel (the vertical hierarchy) assigned to a specific project (the horizontal hierarchy). Reveal (2014) sums that a successful project is the one that meets all expectations of a client or a principal, i.e. the one that met all criteria:

- a) Completed on time,
- b) Goals met,
- c) Quality achieved,
- d) Budget not exceeded.

In the project, management time is one of the most important elements of success and one of the ways to achieve competitive advantage. The project itself demands time for performance. According to Hauc (2007), we can set the time for project performance in two ways:

- a) Progressive, which means we calculate the duration of specific project activities from its beginning to the end and we align calculated project duration with strategic and other requirements;
- b) Retrograde, which means that project completion deadline is set in advance – most often, that deadline is the result of adopting a strategy or

aspiration to achieve competitiveness with the fast project performance – and then some activities are planned within that framework.

Time management is surely an essential skill for project management to achieve project goals and objective. Effective project organizations know which operations make a difference in the business strategy and install methods for keeping these visible to all. At the beginning of the project, senior management needs to tell the project team organization's long- and short- term operational plans and budgets, and how the project fits into or support those. Answers may include targets related to revenue, profit, costs, cash flow, return, brand equity, customer satisfaction and retention, time to market, innovation, efficiency, output and quality. Once the project commences, the fulfillment of the goals and objectives need to be evaluated on the regular basis and reported to the project staff. In some companies, this information is displayed prominently on a “dashboard”, keeping critical issues in full sight and ensuring that resources are directed where they are most needed (Longman & Mullis, 2004).

Effective goals urge us to attend to the most critical elements of improvement: solid evidence of learning, short-time, results, common formative assessment (which reveals those short-term results), recognition and celebration of short-term results, and the all-important opportunity for teachers and students to enjoy – to “take joy” – in their work goals should be SMART: specific, measurable, attainable, realistic and time-based (Conzemius and O’Neil, 2006). According to Hauc (2007), some project goals are achieved by performing inter-related logically connected activities or activities that depend on each other in a certain way. If we haven’t defined all project goals and objectives, we also won’t be able to carry out activities necessary for their implementation.

As each project is unique, there are different approaches to quality management. According to Dunkan (1996), project quality management includes the processes required to ensure that the project will satisfy the needs for which it was undertaken. It includes all activities of the overall management function that determine the quality policy, objectives, and responsibilities, and implements them by means such as quality planning, quality control, quality assurance, and quality improvement, within the quality system. To acquire knowledge and learn about quality costs, a project quality information system should form an integral part of an organization’s approach to managing its projects. To do so, it is necessary to collect, measure and analyze quality (Barber et. al,

2000). Project cost management includes the processes required to ensure that the project is completed within the approved budget. An overview of major processes includes:

- a) Resource planning – determining what resources (people, equipment, materials) and what quantities of each should be used to perform project activities.
- b) Cost Estimating – developing an approximation (estimate) of the costs of the resources needed to complete project activities.
- c) Cost Budgeting – allocating the overall cost estimate to individual work items.
- d) Cost Control – controlling changes to the project budget. These processes interact with each other and with the processes in the other knowledge areas as well. Each process may involve effort from one or more individuals or groups of individuals based on the needs of the project. Each process generally occurs at least once in every project phase (Dunkan, 1996).

Every project needs to develop a means to add additional economic value and achieve its competitive advantage. For successful project implementation, before the start or approval of each project, it is necessary to carefully define the project financial plan and other financial sources. The definition of financial resources is a key part of every project. The success of the project is all about whether the planned financial resources are enough or there has been an increase in costs and thus a change in the financial plan (Hauc, 2007). The task of project managers is to determine the course of financial investments and, if needed, to take corrective measures and activities to ensure the successful achievement of project goals.

Each project has a life cycle or framework for managing a project. According to Buble (2010) that life cycle has five phases:

1. Initiation of a project
2. Planning a project
3. Performing a project
4. Supervision and controlling of a project
5. Closing a project

Project initiation is the first phase of the project life cycle. In this phase, we define an opportunity or reason for the project. This is the phase when we establish a project team, define goals and all project details.

According to Andersen (1996) project is a special task that has not been done before. Consequently, it is a very difficult or even impossible to know precisely at the initial planning stage what are all the activities that need to be carried out in order to complete the project, and what their cost and duration parameters are. The importance of the initiation phase of the projects is to stand out relative to other phases in the life cycle of the project.

Performing of the project is the third phase in the project life cycle. In this phase, all activities that have been planned are performed according to the schedule and the time frame of the project. This phase is also important to control the course of activities and to correct all possible deviations on time to finish the project according to its timeline and within the budget.

Project managers play an important role throughout the project life cycle. They eliminate the shortcomings in project life cycle using financial metrics or measuring customer satisfaction to create a more integrated approach to a specific project and project management.

Kerzner (2017) underlines that project manager must control the company's resources within time, cost and performance. Most companies have six resources: money, employees, equipment, facilities, materials and information/technology. The project manager doesn't control any of these resources directly, except perhaps money (i.e., the project budget). According to INTERACT no matter how good the original plan is, there will always be some deviation during implementation. This should be anticipated, and the aim of project management is to track this deviation, make sure it stays within the scope of the project, and redirect activities to get back on track. The further the project goes into implementation, the more important it is to track things systematically to avoid drifting away too much from the original outline and falling outside the scope of the project. Many of modifications will be improvements, and it is a dynamic aspect of project management with the ability to adapt to modifications that are likely to lead to success (Interact, 2019.)

Westland (2006) asserts project closure involves releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources and communicating

the closure of the project to all stakeholders. The last remaining step is to undertake a post-implementation review to quantify the level of project success and identify any lessons learned for future projects.

In general, project management is important because it ensures proper project implementation. When implementing the projects, organizations are facing new challenges and difficulties such as time, budget and resources that require project management skills and tools. Using these skills organizations can gain control over project challenges and difficulties and efficiently achieve project goals and deliverables.

### 3. SPECIFICITY OF PROJECT MANAGEMENT IN SCIENTIFIC RESEARCH PROJECTS

Project management skills and tools are an essential part of a successful project, so scientific research projects are not an exception. According to Sousa and Hendriks (2008), academic research is a timeless and innate type of knowledge-intensive work, and academic work involves knowledge creation in perhaps its purest sense.

In recent years benefit that industry could gain from research and development (R&D) projects developed and implemented by academic and scientific institutions was underlined, while in the same time Croatian scientific research projects are more often funded from EU funds, according to goals set by Europe 2020 strategy. European Commission defines Europe 2020 strategy as EU's agenda for growth and jobs for the current decade. It emphasizes smart, sustainable and inclusive growth to overcome the structural weaknesses in Europe's economy, improve its competitiveness and productivity and underpin a sustainable social market economy (European Commission, 2010).

According to the Europe 2020 strategy, the EU currently has a target of investing 3% of GDP in R&D. The target has succeeded in focusing attention on the need for both the public and private sectors to invest in R&D, but it focuses on input rather than impact. It is also clear that by looking at R&D and innovation together we would get a broader range of expenditure which would be more relevant for business operations and for productivity drivers. The Commission proposes to keep 3% target while developing an indicator which would reflect R&D and innovation intensity (Europe 2020 Strategy, 2010).



Universities and academic researchers in Croatia have obtained a significant part of the funding for most relevant R&D projects in accordance with Europe 2020 strategy but implementing project management skills and tools in academic research projects can mean a significant change in the field of scientific research management. According to Harvey et al. (2002), academic research management is an appealing yet under-researched area because traditionally academic research is standing opposite to management. Ewan and Calvert (2002) say that the necessity of managing limited amounts of public money more closely is leading governments to apply free-market principles to academic research, emphasizing 'audits' and 'accountability'. The result of these government policies is increased interest in different aspects of scientific research projects. According to Cohen et al. (1999) increase in managerial pressures in public research institutes is dealt through renegotiation of the personal and professional interest of researchers.

Skills, tools, and methods of traditional project management are standardized and mostly customized for the industries that develop new products or services. On the other hand, the aim of scientific research is to gain knowledge instead of creating new products or services so traditional project management should deal with scientific research unpredictability and that's why it is not possible to strictly follow traditional project management tools and methods even though scientific research project just like any other project has its timeline, budget, and other resource requirements. The specificity of a scientific research project is that it is not adjusted to the final product or service, but to gain knowledge. In this process, scientific research is planned and conducted using complex scientific methods with the aim to get a dataset that confirms or rejects scientific research hypothesis. According to learned from scientific research projects, during the project life cycle the project may take completely new direction than planned and it would require major re-planning that is rarely acceptable in the industry during the development of new product or service.

Singer (2011) underlines research creates or builds on either new knowledge or through disruptive innovation. Research Project Management seeks to facilitate these endeavors while mitigating unjustifiable risk. Yet, to a traditional project management practitioner, Research Project Management appears to involve either ill-defined or excessively broad scope. Funding can be conditional or its resource unstable. There are variables to consider with each of the multiple steps throughout the project. Novel tasks can be required e.g. some even

requiring a sub-project to invent a testing device or methodology, to manipulate or otherwise accomplish the step. Much of the work is dependent on if/then decision trees cited above. The higher levels of uncertainty that – while customary, accepted and even embraced in the scientific setting - would constitute an unacceptable risk in a most business setting.

Considering specificity of scientific research and the importance of project management in gaining competitive advantage, universities and scientific institutions in recent years offer different project management learning and training courses as managing scientific research project is a special discipline within project management profession.

#### 4. PROJECT MANAGEMENT AT THE UNIVERSITY OF ZAGREB SCHOOL OF MEDICINE (UZSM)

The University of Zagreb School of Medicine (UZSM) is the oldest and the largest school of medicine established in the Republic of Croatia. The decision on its foundation was made by the Croatian Parliament in January 1917. The institutional research profile represents one of the basic strategic features of this academic institution; over time, it has strengthened its position of the most significant and the largest national research institution in the field of Biomedicine. The visibility in the international academic arena has been attained by virtue of scientific contributions published in internationally recognized peer-reviewed journals, as well as by virtue of participation in European research projects. Significant changes in Ph.D. education have been implemented; within this context, the School of Medicine plays a significant role in the international scientific community (Strategy of Scientific Research of the School of Medicine University of Zagreb 2016-2020).

The Research Strategy of the UZSM is in full line with the strategic priorities declared under the national and the EU strategy, so it is to be expected that the Strategy in reference shall directly contribute to the improvement in quality and successfulness of research and increase creativity and innovativeness. High-quality research settings shall, in turn, enable a high-quality education of both researchers and students at each level of education, when it comes to doctoral and postdoctoral studies. Subsequently, a rise in the competitiveness of our researchers shall be witnessed, together with the rise in the attractiveness of Croatian research institutions, and the rise in incoming mobility of foreign

scientists and doctoral and postdoctoral students and shall be an incentive for a higher number of Croatian aboard scientists to return to their Homeland. Finally, Scientific Research Strategy of the UZSM is fully conformant and follows mainstream guidelines laid down by the most relevant Croatian and European strategic documents (Scientific Research Strategy of the School of Medicine University of Zagreb 2016-2020).

The success of UZSM can be demonstrated by several previously awarded and currently active projects which have brought funds and made top scientific research possible. Table 1 listed below is showing projects active at UZSM at the end of 2018:

**Table 1.** List of UZSM awarded funds and projects in December 2018

FOUNDING PROGRAM	NUMBER OF AWARDED PROJECTS	UZSM BUDGET
Horizon 2020	6	1.896.562,50 €
European Social Fund	3	237.373,34 €
Centers of Research Excellence	2	10.000.000,00 €
Croatian Science Foundation	29	3.696.303,80 €
ADRS Foundation	1	27.027,03 €
University of Zagreb financial support	111	372.972,97 €
European Cooperation in Science and Technology (COST) Action	1	no financing
German Academic Exchange Service (DAAD)	4	no financing

**Source:** Author's archive

To research project management challenges and difficulties at UZSM, we have put together a questionnaire that contains statements related to challenges and difficulties in managing projects using Likert scale ranging from 1 to 5 with the aim of increasing the success of project implementation in this institution. Measuring challenges and difficulties at UZSM was performed through 20 variables derived from eight project management tasks defined by Hauc (2007:232):

1. The basic concept of project strategy
2. Project charter
3. Project goals and objectives
4. Performance tactics
5. Project plan

6. Risk analysis
7. Project organization
8. Control plan

The survey was conducted among the 12 persons responsible for project management at UZSM. Table 2 shows their attitudes regarding the chosen aspects of project management challenges and difficulties that affect successful project implementation.

**Table 2.** UZSM project management staff attitudes regarding chosen aspects of project management challenges and difficulties

<b>During project management at UZSM, I face the following challenges and difficulties:</b>	<b>Mean</b>	<b>Std.Dev.</b>
When designing the project implementation plan.	2.92	0.79
When designing a project strategy.	3	0.85
When designing project goals.	2.33	0.98
When determining the purpose objectives in accordance with the project's objective goals.	2.75	1.14
When controlling project content regarding the quality of procurement.	3.25	1.22
When designing ideas and project performance documentation.	2.92	1.08
In the preparation of investment programs, tender documentation elaborates etc.	3.42	0.79
When preparing plans for achieving project goals.	2.92	0.9
In carrying out project activities that achieve project goals.	3.17	1.03
To control the achievement of the goals as foreseen by the project plan.	2.92	1
When appropriate corrective measures should be taken if a deviation from project objectives is determined.	3.33	0.98
In organizing the project implementation.	3.58	1.08
In controlling project performance.	2.92	1.08
When reporting on project implementation progress.	3.25	1.14
In organizing teams for drafting a project plan (lack of professional staff).	3	1.04
When controlling project performance according to the project plan.	3.08	0.79
When including the project plan in annual and operational business plans and annual reporting.	3.17	1.27
When analyzing the impact of risk on the goals, effects, and performance of the project.	3.17	1.27
In the preparation of preventive and curative measures to be included in the project plan.	3.08	1
When acting appropriately if deviations from the project's planned performance are noticed regarding the achievement of deadlines, cost plans, and other project parameters.	3.08	0.9
<b>Average grade</b>	<b>3.06</b>	

**Source:** Author's calculations

The findings of this research have shown average results in all observed variables (the total average grade of all the observed elements is 3.06). All given statements are graded around 3 according to a Likert scale ranging from 1 to 5. Out of the 20 researched variables, lowest average grading (2.33) achieved the designing of project goals what indicates that the least challenges and difficulties are in this part of project management tasks at UZSM. What follows is determining the purpose objectives in accordance with the project's objective goals (2.75), and then several variables graded 2.92: designing the project implementation plan; designing ideas and project performance documentation; preparing plans for achieving project goals; the control the achievement of the goals as foreseen by the project plan and controlling project performance.

In the further analysis of the results of the research somewhat higher average grade was given to all other variables and elements of challenges and difficulties in project management implementation at UZSM. The highest average grade (3.58) was given to organizing the project implementation what indicates that the greatest challenges and difficulties are in this part of project management tasks at UZSM. Such results confirm that project management challenges and difficulties that can affect successful project management implementation are present at UZSM, but they are not high and can successfully be minimized to a smaller number. The most prominent challenges and difficulties are in the fields of organizing project implementation (3.58) and the preparation of investment programs, tender documentation, elaborate etc. (3.42), while the least prominent challenge is designing project goals (2.33). The standard deviation of all variables in this study shows that data is concentrated around the arithmetic mean. As we look at values far from the arithmetic mean, we will find fewer data with these values. Such findings go in favor of the idea that it is possible to raise the level of project management skills to reduce challenges and difficulties in project implementation especially because researched elements were given average grades.

It is important to say that project management at UZSM includes both national and European sources of funding. An important difference between those two groups of funding is mostly in following different project implementation procedures and rules according to national or EU laws, and guidelines. Those differences are the most often challenges in organizing project implementation what is proven also by the highest rated variable average grade in this research (3.58). Membership of the Republic Croatia in the European Union

gives UZSM a possibility to fund the important scientific project from EU funds. Following the given opportunity UZSM has recognized the importance and necessity of quality project management as well as its challenges and difficulties. Projects are uncertain and unpredictable, so project managers are regularly dealing with challenges and difficulties. When those are significant, project management skills have greater importance. The total average grade (3.06) indicate that some of those problems are successfully solved, but some are out of the project manager's influence and require the involvement of higher instances. With good project strategies and tactics for approaching challenges and difficulties in project management tasks, the project managers at UZSM can deal with a lot of problems that are appearing during the project implementation and create a framework for successful project performance.

## 5. CONCLUSION

Project management in academic institutions and research centers often faces challenges and difficulties. UZSM is not an exception.

To write an effective project objective, idea or to assure valid project documentation proved to be the simplest part of the project management process, while the most challenging and difficult to handle is project implementation and preparation of investment programs and tender documentation. Project implementation is a key part of each project cycle, while other parts of the cycle only support implementation. In order to successfully implement its scientific projects in conditions of dynamic and unpredictable environment, UZSM needs to coordinate all project management tasks from incoming project strategy, define project goals and objectives as well as tactic and performance to project plan, risk analysis, and control plan. Successfully implemented projects should be the basis of the organization's competitiveness. That's why it is important that project management staff have all the competencies necessary for dealing with challenges and difficulties during the project implementation. Although project staff is successful in solving project management challenges and difficulties, the recommendation to improve the project performance is to assure more education in the field of managing scientific projects funded from national and EU funds, especially in the area of organizing project implementation and reporting process. Also, *intermediate bodies should enable and simplify the method of taking* appropriate corrective measures if a deviation from project objectives is

determined. In that way, UZSM will achieve successful project implementation by applying new project management skills and tools customized to perform scientific projects.

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Acknowledgments: This study was supported by European Union through the European Regional Development Fund, Center of Excellence for Reproductive and Regenerative Medicine, under grant agreement No. KK.01.1.1.01.0008, project „Reproductive and Regenerative Medicine - Exploring New Platforms and Potentials” and Center of Excellence for Basic, Clinical and Translational Neuroscience under grant agreement No. KK.01.1.1.01.0007, project “Experimental and Clinical Research of Hypoxic-Ischemic Damage in Perinatal and Adult Brain”.



# SUPPLY CHAIN STRATEGIES' IMPACT ON PERFORMANCE, COST AND FLEXIBILITY

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## **Abstract**

*The paper researches the potential use in logistics operations of the synergies between lean and agile strategies in order to increase efficiency in the supply chain and derive benefits by performance enhancement, cost reduction and overall supply chain flexibility. The author aims to provide a thorough and up to date literature review, encompassing the concepts of lean, agile and, most importantly, 'leagile'. The output of our research is a structural framework that reflects the most recent studies in the field and brings together the three supply chain strategies with their subsequent consequences in performance, cost and flexibility. The ease with which a company alternates its strategies is a determinant of the reliability of its supply chain, as well as a measure of flexibility. These two characteristics, namely reliability and flexibility, are prerequisites of a modern supply chain that is capable to turn its advantages into order winner criteria and outrun competitors offering the same product on the market. The differentiator that our research targets is logistics, if similar products in an industry segment become order winners based on the efficiency of their supply chain. While the author considers challenges through concepts that are rather theoretical, we attempt to transfer this knowledge into an operational perspective that would allow a professional in the field of logistics to draw applicable measures. The result of our work is a well-structured study on the impact of supply chain strategies and how their interchange can beneficially steer the operations of a company towards achieving competitive advantage.*

**Keywords:** supply chain, lean, agile, leagile, logistics

JEL Classification: M19, M29

# 1. INTRODUCTION

In a world where supply chains are worldwide extended affairs, the line between lean and agile strategies is becoming more and more distorted as the complex supply chains are promoting cost, quality, reliability and flexibility objectives that rely on the ability to combine the strengths of the two. The authors consider the perspective in which all the aforementioned objectives can be accomplished through both strategies or their combination and are reluctant to more simplistic views. For example, the assumption that cost is a “market winner” for a lean company and a “market qualifier” for an agile one, as expressed also by Gligor et al. (2015), represents a limited view of the two strategies’ capabilities.

In the taxonomy focused research of Purvis et al (2014), the authors outline the three existing views in specialty literature regarding the concepts of lean and agile. First, there is the view that the two strategies are “mutually exclusive” and only one of them can be implemented throughout the supply chain. Second, the view that the concepts are “mutually supportive” implies that the two concepts can coexist and combinations of the two can be running simultaneously upstream and downstream the supply chain. Third, the view that implies the concept of ‘leagility’ brings forward the idea that leanness can precede agility in the supply chain, thus achieving supply chain objectives on a larger scale. The present study attempts to display the means by which the ability to interchange between lean, agile and ‘leagile’ can yield a competitive advantage.

In addition, another interesting facet of the relationship between lean and agile pointed out in Purvis et al. (2014) extensive research is that the two concepts target the same objectives: cost, quality, service, and flexibility. It is now well-established throughout the literature (Sezhiyan and Nambirajan,2010; Soltan and Mostafa, 2015, Purvis et al., 2014) and our paper also supports the view that the combination of lean and agile can maximize efficiency and flexibility and reduce costs. As the study is a rather theoretical one, attempting to be as close to applicable approaches, it does not include empirical research. Therefore, measures of efficiency, flexibility, and cost will be largely defined.

Naim and Gosling (2011) have thoroughly researched the cornerstone paper on the topic of ‘le agility’, namely “Leagility: integrating the lean and agile manufacturing paradigms in the total supply chain” by Naylor et al. (1999). While this research reestablishes the paper as groundbreaking in the niche, the

authors have a rather limited view as the only the number of citations and indices of download are considered. Future papers, including the present one, are extending the knowledge for the concept of 'leagility' by taking the perspective from this original work to establish variations of decoupling points in 'leagility' and how different levels of lean and agile capabilities determine performance in the supply chain. Decoupling points are the levels in the supply chain where lean and agile strategies can be either changed or combined.

The present paper's objective is to illustrate within the case study section how lean, agile and 'leagile' capabilities can be employed across the supply chain in order to create productive output in the form of increased efficiency, reduced cost, and increased flexibility. We exemplify our standpoints with companies at the forefront of their industries which are leading the way with closely connected commercial and supply chain strategies. As a result, our work welcomes the trend that order winner criteria are increasingly rooted in supply chain capabilities and we support our structural framework with insights on efficiency, cost, flexibility, and reliability.

The structure of our paper starts with a literature review attempting to capture up-to-date views on the theory and application of lean, agile and 'leagile' concepts, followed by a case study that unifies the lessons learned from literature within a framework for deriving performance. The paper finalizes with a well-rounded conclusion of our proposed outline, including directions for future research that would be pursued for extending present knowledge.

## 2. LITERATURE REVIEW

The purpose of the literature review section of our paper is to gather as many perspectives on lean, agile and 'leagile' strategies, factors, output and measurements as possible. Our research will go from the foundations on which these strategies rely in order to be efficient to how they can be combined effectively to yield jointly the most benefits. This section is the foundation for our case study, where we will be able to express an informed view of a supply chain management strategy in which lean and agile coexist and point out the decoupling point in such 'leagile' strategy.

Purvis et al. (2014) contribute significantly to the literature by developing "a leagile supply network taxonomy" focused around two ideas of flexibility,

namely vendor and sourcing flexibility. The paper deals with both concepts of lean and agile from their origins to the present status in which their combination goes beyond the decoupling point of material flow. Flexibility is emphasized as the most notable competence that distinguishes between lean and agile strategies in the supply chain. The major caveat of the paper is the lack of solid empirical case study materials, as only two companies are analyzed, as well as the lack of attention given to the need for flexibility outside the organization, namely with suppliers.

Soltan and Mostafa (2015) have gathered significant literature to define lean and agile concepts, from their unique characteristics and practices to the point of their convergence. Also, the authors extract from literature the knowledge that a “decoupling point” is a prerequisite for being able to combine lean and agile strategies into a performant ‘leagile’ strategy that they conclude to be the core of a “healthy enterprise”. By employing AHP and ANP methods, the paper aims to place the decoupling point in the concept of ‘leagile’, under the assumption that this separates the focus of the company between order-oriented and planning-oriented. In the framework simulated for maximizing enterprise performance, lean focuses on waste removal and agile focus on market responsiveness, the two being interchangeable as ‘complementary’ focuses. The paper concludes that both strategies are able to lead to enterprise performance, defined through measures of competitiveness, productivity, profitability, and survival.

Myerson (2012) outlines as metrics for a performant supply chain the following: delivery reliability, responsiveness, flexibility, cost and asset management. In literature, these metrics are assigned to either lean, agile and ‘leagile’ supply chains and the author describes the implications for each measurement. First, for delivery reliability Myerson (2012) focuses on waste management, to eliminate errors in the process, but the opposite might also apply as Soltan and Mostafa (2015) show how reliability is a potential output for both lean and agile, with benchmarks differing by considering the decoupling point in ‘leagile’ supply chains. Second, responsiveness is related to a lean organization in Myerson’s work, but we can find in Gligor et al. (2015) and Soltan and Mostafa (2015) studies that market and customer responsiveness can be dependent on downstream supply chain agility that can satisfy upstream requirements. On the other hand, flexibility can measure an agile supply chain but Purvis et al. (2014) recognize the importance of flexibility in ‘leagile’ organizations, as a decoupling point where customer interest surpasses a tight scheduling plan. Last

but not least, cost measurements and efficiency of asset management are not directly attributed to neither lean or agile supply chains specifically, as the author recognizes the importance of several costs in an overall supply chain perspective.

Establishing the appropriate metrics for the organization and its supply chain is an essential process that should recur, considering the constant changes that a competitive company undergoes. While we can use the same metrics in an ongoing lean, agile or 'leagile' strategy, the benchmarks should be adjusted accordingly. Myerson (2012) proposes the SCOR model and the Balanced Scorecard as approaches that can encompass the wide array of objectives that supply chain management has to keep in focus. On one hand, the SCOR model has a closed-loop approach, encompassing the following five processes: plan, source, make, deliver and return. On the other hand, we have a Balanced Scorecard view that includes clearly defined perspectives: financial, customer, internal business processes and learning and growth.

Gligor (2016) realizes an empirical study with data from 1360 questionnaire responses from senior managers in supply chains of companies across several industries that have yearly sales surpassing 10 million US dollars. Results confirm the "negative relationship between environmental uncertainty and Supply Chain Fit" and is able to demonstrate how supply chain agility can "mitigate the negative relationship" in order to derive positive financial performance results. The author's definition of Supply Chain Fit (SCF) is based on Fisher's (1997) framework and implies "how the nature of a firm's products matches the firm's supply chain design". The most important learning from this research is that there are several implications of supply chain agility in the process of diminishing the negative impact of uncertainty on SCF. First, the author draws practitioners' attention to the fact that the degree of uncertainty must be an indicator of how much effort should be directed to gaining agility capabilities. Second, the author explains how the concept of SCF is tailored better to industries not associated with market instability as for the opposite category of enterprises it would imply continuous improvements in the SC characteristics that translate into significant financial investments.

Hartini and Ciptomulyono (2015) have constructed a literature review study on the relationship between lean capabilities and sustainable manufacturing and its impact on firm performance. The authors have identified that in the over 50 researches included for review the overwhelming majority have identi-

fied a strong and positive association of lean and sustainable manufacturing, their relationship contributing to firm performance. By far, the most interesting gap in the literature that the authors have identified is the lack of a clear way of measuring exactly how lean a supply chain is. While researchers and practitioners measure the outputs of lean strategies – from waste reduction to inventory management – there is no consensus on a scale for assessing the degree of lean capability a firm has.

Mittal et al. (2017) discuss the implementation of a “lean-green-agile manufacturing system”, a concept fitting to modern requirements and expectations in industry, which enables integration of customer feedback in the design and production flows and supports resource optimization efforts.

Chan et al. (2017) directed their research on agility through the lens of flexibility, split into strategic flexibility and manufacturing flexibility, attempting to empirically assess their contribution to agility capabilities and further to firm performance. With data from over 100 manufacturers in the fashion industry, the authors demonstrate the direct and significant relationship between strategic flexibility and supply chain agility which further impacts firm performance. Their conceptual framework works perfectly for the fashion industry since it puts together market demands for flexibility, such as short life cycles, highly volatile demand and low sales predictability. The study has a closed loop supply chain approach as the authors follow the logic in the fashion market from consumer demand and associated expectations to manufacturing capabilities and means to deliver the product on the market. Thus, agility is considered as a capability that must be reflected throughout the SC and its members in order to yield a positive impact on firm performance. The results conclude that firm performance, measured by means of operational excellence, revenue growth, customers relationships, and financial performance, is directly impacted by strategic flexibility and supply chain agility.

Shou et al. (2017) study the applicability of several supplier and customer integration scenarios, based on organizational information processing theory, aiming to measure the impact of the two integration actions on the operational performance. Starting from a comprehensive literature review of the field, the authors focus on four operational performance (OP) dimensions: quality, flexibility, delivery, and cost, that can be impacted by external integration. The empirical results, derived from the analysis of 791 firms, confirm that Supply

Chain Integration (SCI) is an “information processing system (...) and its effectiveness relies on proper and rational alignment with requirements”. In the context of choosing the supply chain strategy, the combination of an escalation between lean and agile is facilitated by the information from supplier and customer.

Sezhiyan and Nambirajan (2010) measure empirically the impact of several factors on supplier selection such as quality, delivery, price, technical capabilities, and financial position and assess the effort implied to manage the relationship with the supplier. With data from 358 questionnaires filled by logistics professionals, the paper concludes with the assumption that the dynamics of supplier selection and effort management in the relationship with suppliers' impact business performance. To further develop the idea, the present paper implies that an output from supplier selection and relationship can yield a clearer view of what strategy is feasible to apply.

Gligor et al. (2015) have found a specific niche in the research for lean and agile in the fact that the relationship between agility, cost efficiency, and customer effectiveness is not approached. The research covers the gap with an empirical study, relying on data from over 3000 supply chain managers, to test several hypotheses. The results support a direct link between agility and cost efficiency, which encourages “cost-driven firms” to move towards agile and ‘leagile’ strategies. The bottom line is that agile supply chains can subscribe to cost efficiency expectations while customer efficiency is not sacrificed.

Desmet (2018) has researched extensively the financial measures associated with supply chain strategy, focusing on the service, cost and cash perspectives in his empirical studies. The book's chapter “A shift in thinking: from agile to strategy-driven supply chains” explains the ways in which supply chain will be soon becoming “the centerpiece of strategy discussion”. While it is hard, if not impossible, for a company to outperform its competitors simultaneously in cost, service, and product, the author indicates by various example how the strategy of dominating in one area, differentiating in a second and matching competitors in the other areas has the potential to endorse a company for market leadership. Therefore, differentiation is now gaining momentum and will soon become indispensable for aspiring to be the market leader and it will be achievable only by placing supply chain at the core of strategy, rather than having it follow the commercial strategy.



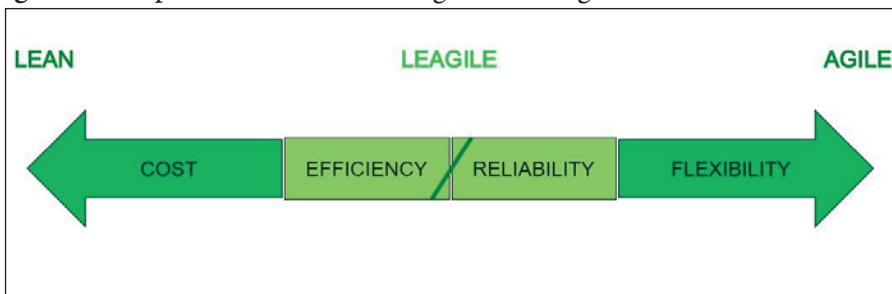
### 3. CASE STUDY

In this section of our paper, we attempt to construct a structural framework for showing how the choice of lean, agile or 'leagile' strategy is connected to efficiency, cost, flexibility, and reliability. In our framework, we present in a joint manner a collection of knowledge from the most recent literature on supply chain strategies, that we further try to exemplify with corporations that have a global supply chain.

Constructing on Desmet's (2018) assumption that a company's strategy cannot satisfy to a maximum and simultaneously requirements of cost, service, and product, we bring forward the idea that a supply chain cannot, in the same manner, be efficient, cost-effective, flexible and reliable. As a result, we propose that choice of 'leagile' in supply chain management is the equivalent of securing leadership in one, differentiation in another and market qualifying levels in the others, depending on the combination of lean and agile capabilities.

Figure 1 reflects our standing point for the four outputs in relation to the choice of strategy. Efficiency and reliability are represented rather as a middle ground in lean and respectively, agile capabilities since having a market acceptable level come as an order qualifier rather than an order winner criterion. Therefore, we choose to assign efficiency and reliability to a 'leagile' strategy area, where their combination to match market expectations can be achieved successfully. Further, the cost is highly connected to lean and flexibility to agile, which does not imply that they cannot coexist as objectives and results in a company. Our understanding from literature is that while the two outputs are highly associated with one strategy or the other, there is no conclusive empirical study to exclude either of them from achievement between the other strategy.

**Figure 1.** Outputs Related to Lean, Agile and 'Leagile'



Source: Author's design



Gligor (2016) gives the most eloquent explanation, based on vast empirical research including questionnaires applied to top management in large firms' supply chains, that the level of investment in agility has to be calibrated with the level of flexibility expected of the company by the market. While we cannot exactly transfer this argumentation to the connection between cost reduction and lean, as cost reduction cannot precisely be measured against the market, we can say that a certain level of calibration is required for 'leagility'. More exactly, we argue that for a 'leagile' supply chain, cost reduction should not endanger the flexibility of the company to the extent that it pushes it below the order qualifier criterion.

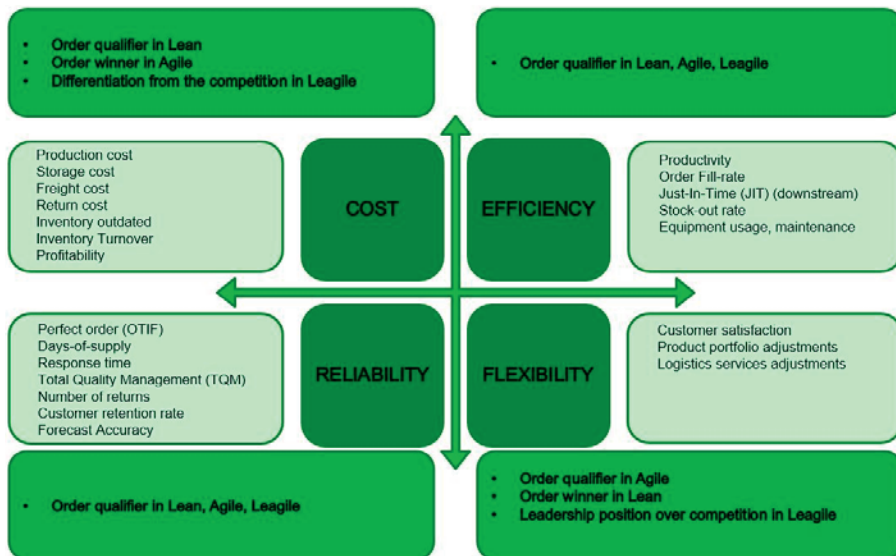
Chan et al. (2017) have concluded that there is a direct and significant impact of supply chain agility and strategic flexibility on firm performance. Throughout their study, the authors underline that agility is a capability that, if truly valuable for a company, is extended both upstream and downstream. As a result, the authors gather the literature views for several types of agility, as follows: "customer agility, operational agility, partnering agility, enterprise agility, organizational agility and supply chain agility". With an outlook on the business strategy as a whole, we argue that while a commercial strategy on its own would distribute resources and flexibility objectives to areas without considering how the resulting supply chain output would match market requirements. Therefore, a joint commercial and supply chain management strategy with lean and agile considered through the various lenses of customers, suppliers, partners, operations and business model, would distribute resources and flexibility objectives to areas that will maximize the potential for achieving order winner criteria and the competitive edge of differentiation.

These two arguments lead us to the point that there are trade-offs between the four outputs, as a supply chain cannot outperform competitors in all of them. However, with such trade-offs being attuned to market expectations, the balance between lean and agile can yield competitive advantages for the firm. A commercial strategy for the supply of a product or service of the company, aligned with its supply chain capabilities, will resonate with customers' expectations and demand. For example, Amazon is a corporation notoriously known for often trading off cost reduction for flexibility, especially upon its rising global popularity. While the company has obviously attempted to maximize cost reduction and efficiency in the downstream supply chain, namely in its internal supply chain, it has not prioritized cost reduction upstream the supply chain.

As a result, their choice of logistic services quality and customer service responsiveness has taken precedence over potential opportunities for cost reduction. In this respect, we can describe this company as a 'leagile' one as it attempted to be the market leader on cost and differentiate itself on flexibility while matching the competitors' efforts in efficiency and reliability.

Considering inputs from the research quoted in the literature review section, the authors have constructed the structural framework summarized in Figure 2. This outline can be employed by both theoreticians and practitioners as an overview of the relationships between the outputs of cost, efficiency, reliability, and flexibility, through several examples of measures, and the strategic outcome compatible.

**Figure 2.** Structural Framework for Output of Lean, Agile, 'Leagile'



Source: Author's design

In supply chain literature, the cost has been overwhelmingly associated with a lean strategy, although some of the more recent studies have focused on trying to measure the extent to which cost efficiency can be a successful outcome of an agile strategy. Additionally, the literature on the concept of 'leagile' expresses the view that cost and flexibility can coexist and that it is the choice of decoupling point that decides which is the differentiator and which grants leadership in front of the competition.

The study of Chan et al. (2017) gives a persuasive example of how an agile supply chain with high flexibility competences is an order qualifier in the industry of fashion manufacturing. What grants a leadership position in the apparel industry to companies such as the group managed by Inditex is the ability to be flexible in adjusting the portfolio to match the short life cycle and high volatility implied by the market and thus ensure customer satisfaction. A good example can be drawn also by comparing the companies' Apple and Sony responses to changes in how the market for music listening devices has changed. With the launch of the iPod, Apple has taken the leadership position in the industry segment as it was proof of their flexibility to change in order to meet new market expectations. On the other hand, despite persevering in cost, efficiency, and reliability, Sony has managed to shortly survive in the market, followed by the market deeming their Mp3 devices obsolete.

Studies explaining and quantifying reliability and efficiency as results of lean, agile or 'leagile' are not conclusive and lack in empirical research. We have decided to place them in the category of order qualifiers – outputs that the supply chain has to match its competitors – due to the nature of the Key Performance Indicators (KPI) that can be employed. While cost and flexibility can either 'make or break' a company, reliability and efficiency in the supply chain are mostly downstream objectives in supply chain management that are indirectly affecting the end customer. For example, the group of Lidl and Aldi has become successful in European markets due to their differentiation in cost and flexibility in the product range supplied, especially in the product portfolio for own brands. In this context, efficiency and reliability is not a primary focus as their outputs are ordered qualifiers, as long as their values are comparable to competitors in the segment.

To sum up, the case study attempts to employ theoretical and empirical research to explain the synergies between lean, agile and 'leagile' strategies and supply chain outputs related to cost, efficiency, reliability, and flexibility. The author's assumption, based on quoted research, is that a 'leagile' supply chain strategy with cost and flexibility interchanging as differentiator and market leader quality yields the highest competitive advantage in an overall business strategy.

## 4. CONCLUSION

To conclude, the present paper has employed a thoroughly assessed literature review with research covering several perspectives on lean, agile and 'leagile' strategies, as well as on the cost, efficiency, reliability, and flexibility supply chain outputs. As a result, our case study stands out as a well-informed assessment of the modern strategic requirements from the supply chain perspective.

The added value of our work is the connection realized between research papers subscribing to a wide array of perspectives and qualitative and quantitative results. In the context of continuously increasing the importance of supply chain strategy in the overall business strategy, we believe that only by identifying the need for either lean, agile or 'leagile' and calibrating outputs to have a differentiating and a leading position a company can succeed.

The limitations of our work lie in the absence of an empirical model to assess quantitative data from current literature or to apply our framework to one or multiple supply chain companies' data. Nevertheless, our goal of bringing forward a unified and forward-looking view has been accomplished. Our outlook for future research includes a quantitative case study to assess supply chain output, in the context of the applied strategy, through the measures noted in our structural framework. A starting point for data collection is the list of companies used as examples in this paper.

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# LOCATION ANALYSIS USING GEOGRAPHIC INFORMATION SYSTEM

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## *Abstract*

*Location is a long-term commitment for a company and choosing the location is an important strategic decision that can have a significant impact on the company's overall performance. Guided by the goal of every entrepreneur for profit-maximizing, different decision-making models have been developed with the ability to use different data to help with the decision-making process and reducing costs. By using a geographic information system (GIS) a company is able to analyze total quantitative information with regard to a particular location. GIS is an IT-based tool that allows gathering, storing and mapping of demographic data. It is an integrated system composed of computer hardware, software, data, and trained staff, all contributing to the creation of geographically informed data. The system's ability to analyze a large amount of various data and their combinations is only one of the reasons for its popularity in location analysis. The purpose of this paper is to point to the fact that for ef-*

*efficient location management it is necessary to develop a geographic information system considering all factors.*

**Keywords:** location, geographic information system, location analysis.

JEL Classification: M15, R39

## 1. INTRODUCTION

The location of a business is the environment and a specific place where it is situated. Given that choosing an appropriate location is important for the future of any business, a special location theory has been developed. Its aim is to explain and predict the decisions of a business as to the location of its facilities as well as the spatial arrangement of economic activities as a sum of individual decisions of a business. Location theorists are seeking to include the issue of space in economic theory (Karić, 2009:16).

The aim of the location decision is to achieve an appropriate balance between three related objectives (Slack, 2013:161-162):

- The spatially variable costs of the operation (spatially variable means that something changes with geographical location).
- The service the operation is able to provide to its customers.
- The revenue potential of the operation.

When the selection of the location of a business involves deciding on its external placement, the following categorization of location can be made (Karić, 2009:17):

- Macro location is the interlocal situation, that is, the selection of a location within a larger geographical area (within the national economy)
- Micro-location is the local situation, that is, the selection of a location within a particular area, such as a city or a community.

By using a geographic information system (GIS) a company is able to analyze total quantitative information with regard to a particular location.

The next section of the paper defines the terms location and locating criteria; identifies the benefits and disadvantages of global operations for a company and explains the term geographic information system. In addition, the authors give examples from past research on the possible uses of GIS in analyzing possible

locations and choosing the most appropriate location of a business. The conclusions are presented in section 4 of this paper.

## 2. LOCATION ANALYSIS

Location is a long-term commitment for a company and choosing the location is an important strategic decision that can have a significant impact on the company's overall performance. Location decisions are closely linked to the organizational strategy. For example, a company that seeks to minimize production costs will select a location where labor and raw material costs are lower or a location in the vicinity of to the target market or raw materials so as to reduce transport costs. If a company seeks to maximize its revenue, it will choose a location with high traffic flow.

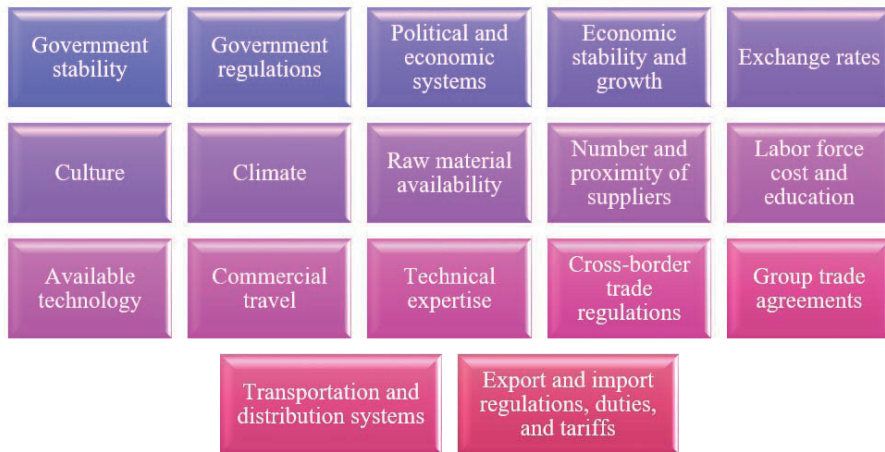
Location decisions are strategically important for several reasons. One is that they entail a long-term commitment, making it difficult to correct a sub-optimal choice. Another is that location decisions often have an impact on investment requirements, operating costs and revenues, and operations. A poor choice of location might result in excessive transportation costs, shortage of qualified labor, loss of competitive advantage, inadequate supplies of raw materials, or some similar condition that is detrimental to operations. For services, a poor location could result in a lack of customers and/or high operating costs. For both manufacturing and services, location decisions can have a significant impact on competitive advantage. Another reason for the importance of location decisions is their strategic importance to supply chains. (Stevenson, 2015:338)

Locating criteria are the means for determining the capability of the intended site based on the capabilities of each location according to the type of activity which is considered (Farahbakhsh & Forghani, 2018:3).

Some of the criteria that multinational firms must consider when locating in a foreign country are listed in Figure 1.



**Figure 1.** Multinational criteria influencing the location



**Source:** Russel & Taylor III, 2011:299

Some of the criteria that are considered when selecting the part of the country and community for a facility are summarized in Figure 2.

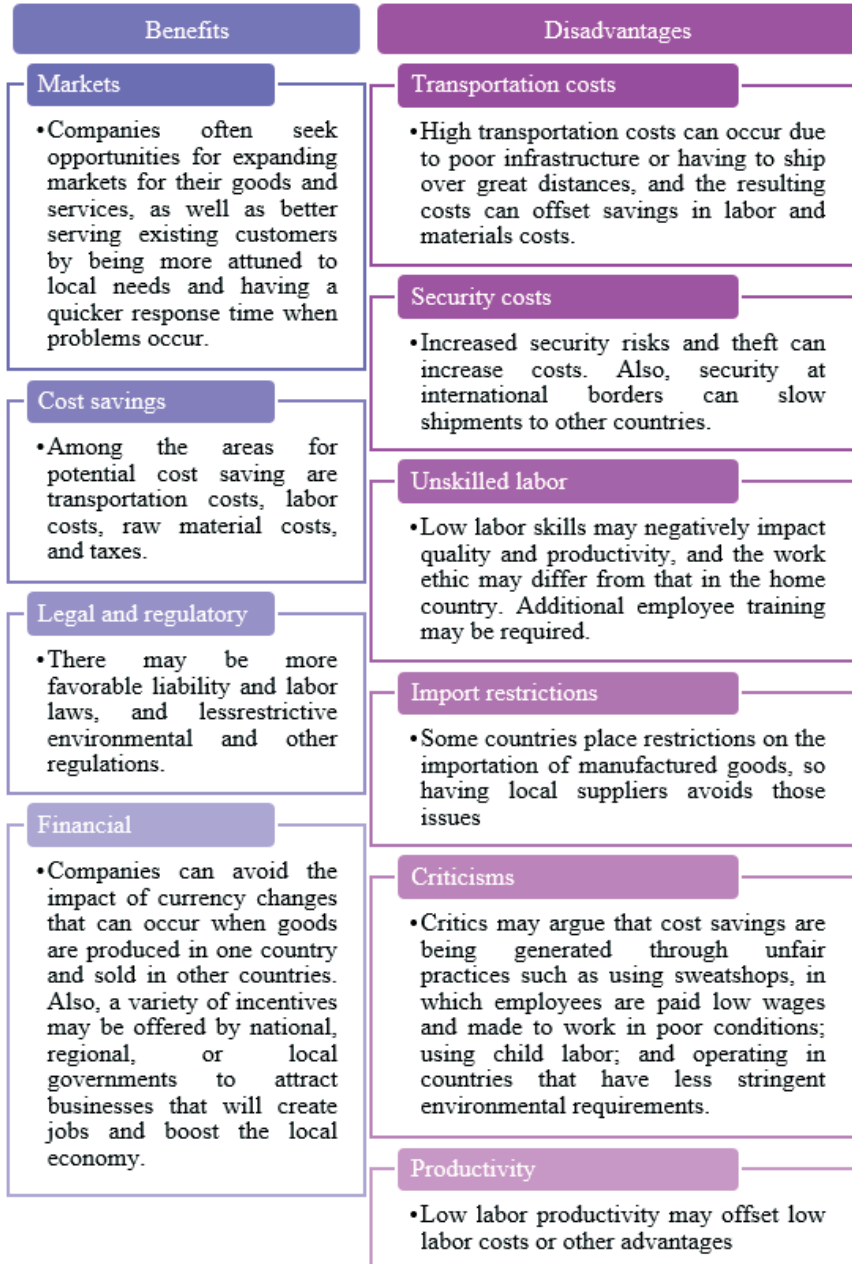
**Figure 2.** Criteria that are considered when selecting the part of the country and community for a facility



**Source:** Russel & Taylor III, 2011:300

Figure 3 shows some of the benefits and disadvantages of global operations for a company.

**Figure 3.** Benefits and disadvantages of global operations



Source: Stevenson, 2015:340-341

### 3. LOCATION ANALYSIS USING THE GEOGRAPHIC INFORMATION SYSTEM

IT development has facilitated the emergence of the Geographic Information System as a tool for analyzing possible business locations. GIS is a computerized system for storing, managing, creating, analyzing, integrating, and digitally displaying geographic (i.e., spatial) data. GIS is both a database system as well as a set of operations for working with and analyzing this data (Russel & Taylor, 2011:301).

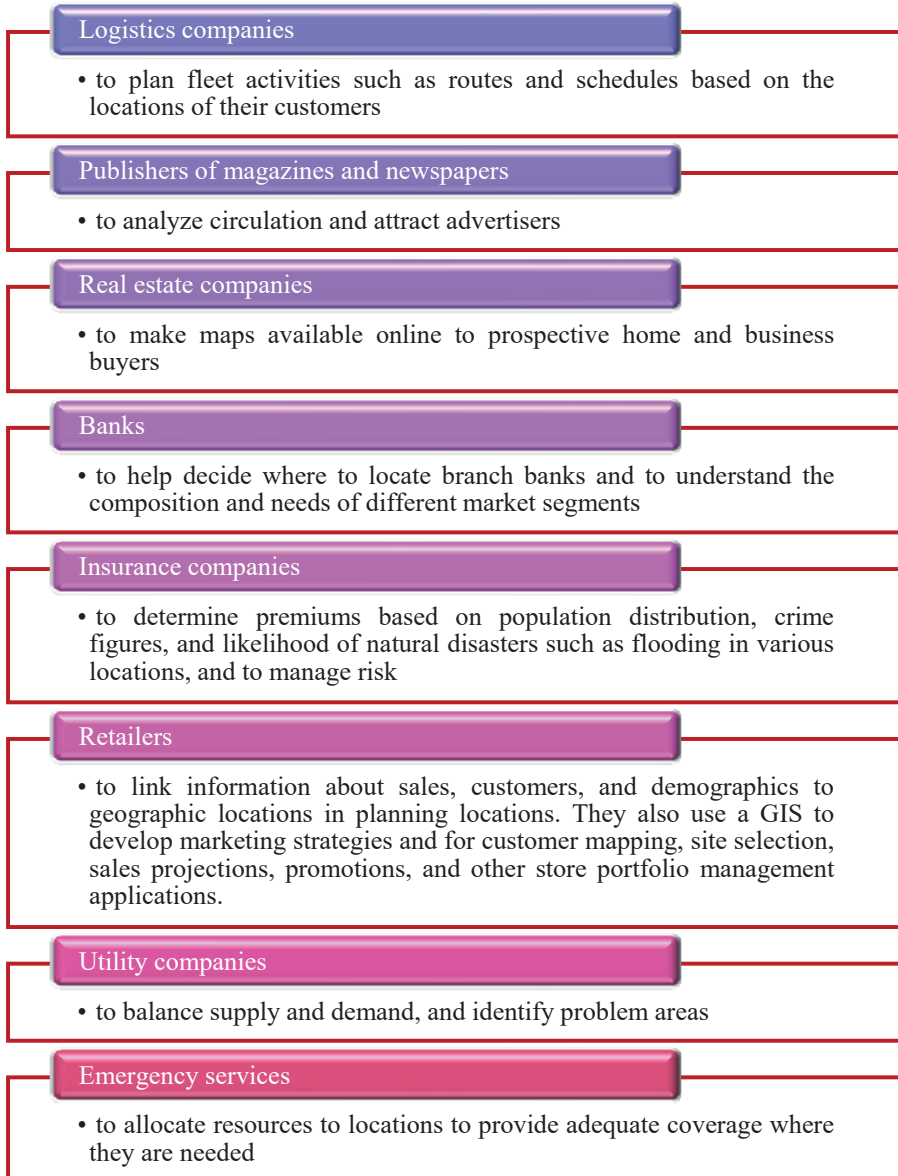
According to Holdstock (2016:147-150), first forms of GIS application can be found in the 1970s, where GIS was used for cartographic principles, map projections, urban and rural geography, physical geography, and human settlement. With further development of GIS software, GIS specialists became more common. For urban planning nowadays GIS can be used for power grid planning, water system development, public transport routes, land allocation for new buildings and planning for emergency services. In modern business, GIS can be used in many different areas, most commonly in route planning, resource allocation, and urban planning. It can also be used for analyzing the market, marketing planning, and cost analysis in project planning.

When selecting a location using GIS, a large amount of quantitative data and information about the potential locations are considered and compared against each other.

The use of GIS in choosing a business location requires making multiple different maps or layers of one map, each representing a piece of data or information characteristic of the location being analyzed. Each layer that might relate to the location selection process is precisely overlaid on the other layers so that their corresponding geographic (spatial, locations) are exactly matched to each other. The bottom layer is a geographic grid that serves as a frame of reference (e.g., latitude and longitude), to which all the other layers are precisely matched. Once these layers of data have been entered into the GIS, information about the layers can be compared and analyzed in combination. Such comparative analyses are frequently in the form of digital computer displays as well as three-dimensional graphs and displays. The GIS may provide just statistical analyses for use in the decision-making process, or it may incorporate one or more quantitative models to provide a recommended decision about a location (Russel & Taylor, 2011:301).

Figure 4 illustrates the possible uses of geographic information systems in business operations (Stevenson, 2015:350).

**Figure 4.** Possible uses of geographic information systems in business operations



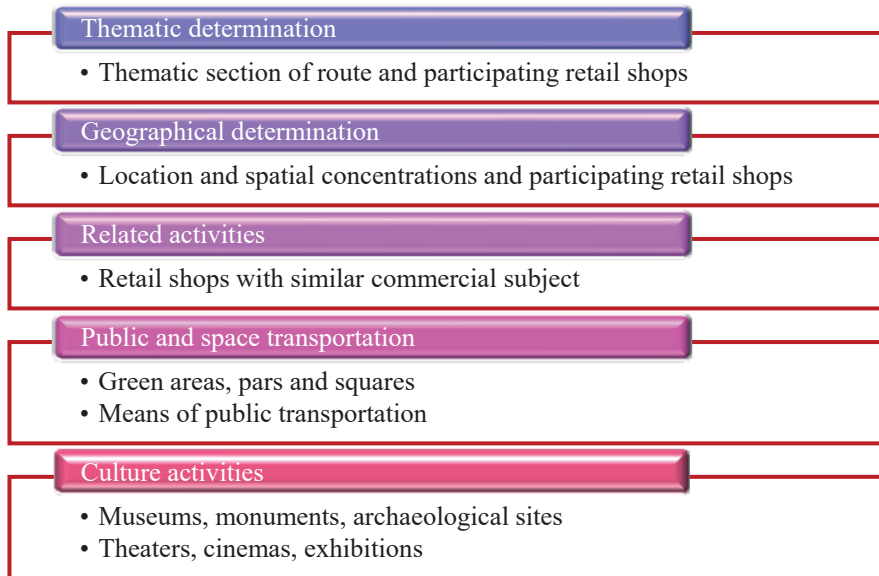
**Source:** Stevenson, 2015:350

The text that follows contains an overview of past research into the various uses of GIS in analyzing and selecting a business location.

### 3.1. Business Route Planning Using GIS Technology

Tzima et al. (2017) included spatial analysis method using GIS for the accurate delineation of routes through the combination of quantitative and qualitative criteria, to create a business route to stimulate consumption in small and medium-sized retail stores by integrating shopping with other elements of the city space. Quantitative and qualitative criteria used in the study are summarized in Figure 5.

**Figure 5.** Quantitative and qualitative criteria



**Source:** Tzima et al., 2017:277

The factors presented in Figure 5 play an important role in the process of route planning and therefore are selected as criteria for spatial analysis.

More specifically, these criteria correspond to the thematic layers which can be seen in Table 1. For the selection of the final route zone, assigning proper weights to each of the normalized criteria/layers was considered to be indispensable (Table 1).

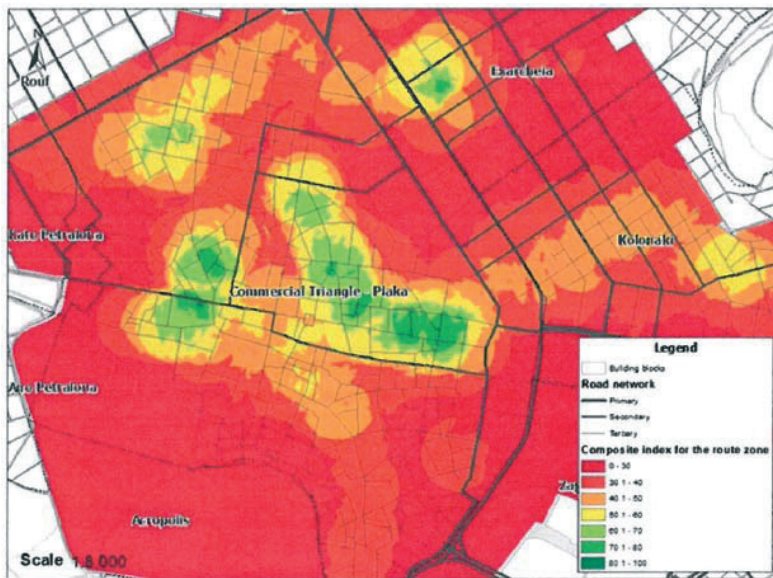
**Table 1.** Rating of criteria set

Criteria	Weights (%)
The density of retail stores of the main category	50
The density of retail stores of the supplementary category	20
Euclidean distance from green areas and squares	10
Euclidean distance from culture attractions (museums, monuments, archaeological sites), theaters, cinemas, and exhibitions	10
Euclidean distance from stations of public transport	10

Source: Tzima et al., 2017:286

These normalized values of criteria and assigned proper weights were considered for the definition of a final composite index that highlights areas with high suitability for the shopping routes. The resulting layer of the composite index is shown in Figure 6.

**Figure 6.** The composite index for the determination of the routing zone



Source: Tzima et al., 2017:287

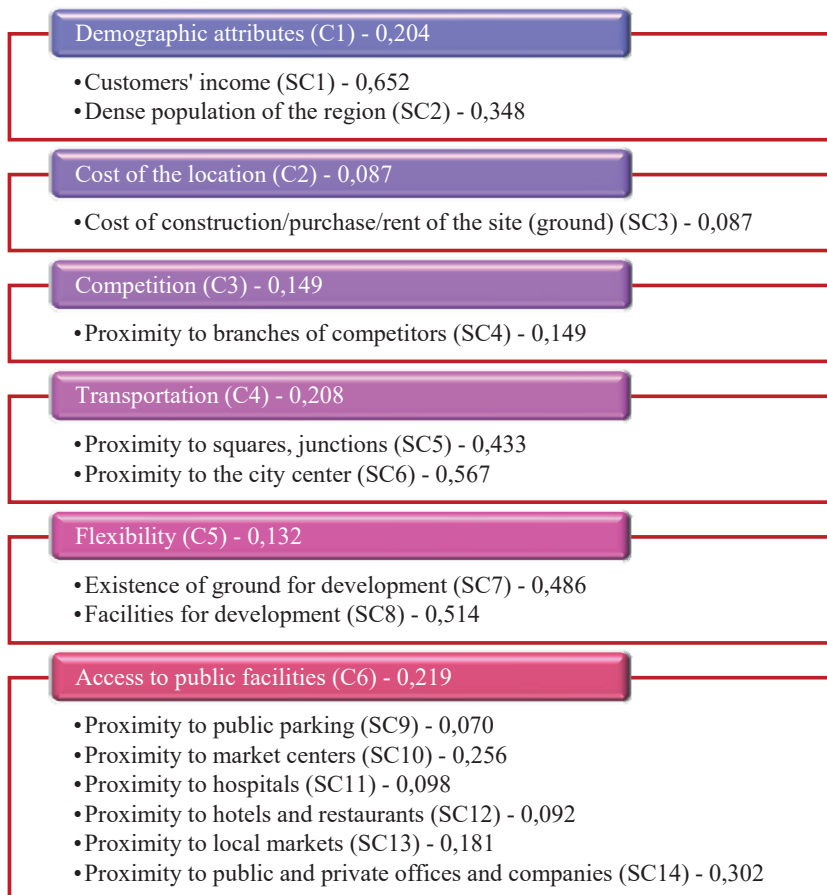
As the value of this index increases (yellow and green colors in Figure 6), the corresponding area becomes more relevant to the route; in other words, the defined criteria are met to a greater extent. On the other hand, the red areas of Figure 6 denote low values of the index and, consequently, they are not suitable for incorporating into the route (Tzima et al., 2017:287-288).

### 3.2. Selecting an optimal bank branch location

Allahi et al. (2015) provide an integrated model for selecting an optimal bank branch location using available data sources and well-established decision models, specifically Analytic Hierarchy Process (AHP), Geographic Information System (GIS) and Maximal Covering Location Problem (MCLP). That issue is highly important especially for private banks due to vibrant competition, limited budgets and high customer expectations (Allahi et al., 2015:1).

The most commonly used criteria and sub-criteria for branch location are summarized in Figure 7. Criteria and sub-criteria weights were quantified through pair-wise comparison using expert judges, via AHP (Figure 7).

**Figure 7.** Criteria and sub-criteria for a branch location

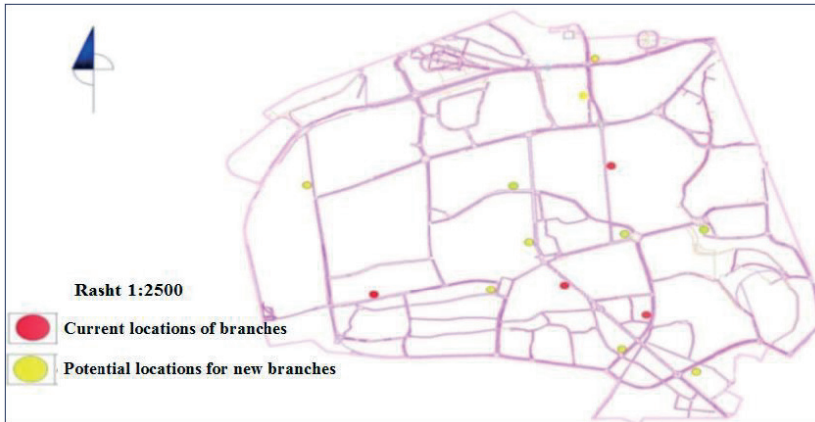


**Source:** Allahi et al., 2015:5



Critical geospatial criteria data for potential sites were determined through ArcGIS software, yielding 10 potential sites. These potential branch locations are illustrated as yellow circle points in Figure 8.

**Figure 8.** Current locations of bank branches and obtained potential points



Source: Allahi et al., 2015:6

An MCLP model was then developed to maximize demand coverage when there is a limited budget to establish new branches. These results demonstrate the efficiency and applicability of the proposed integrated method.

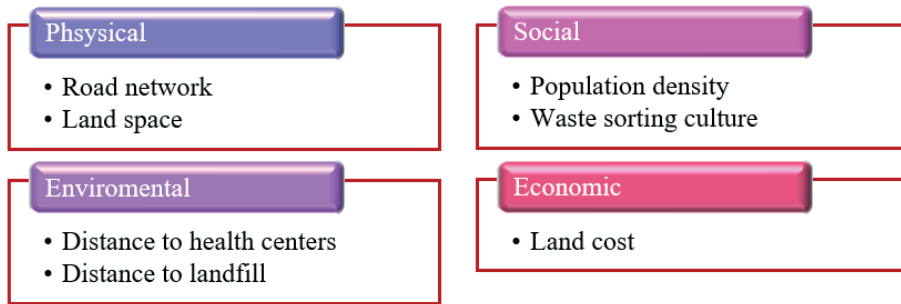
### 3.3. Sustainable location and route planning with GIS for waste sorting centers

Farahbakhsh & Forghani (2018) used GIS to present optimal locations for the construction of waste collecting and sorting centers in Kerman, Iran to prevent the loss of existing economic resources in the program context and to avoid the environmental pollution from the burial and dumping waste (Farahbakhsh & Forghani, 2018:12).

Based on the views of five groups of experts from an environmental organization, waste management organization, municipality, economics, and finance organization, and sociology, and their integration with related articles, seven criteria have been selected which can be seen in Figure 9 (Farahbakhsh & Forghani, 2018:4).



**Figure 9.** Selected seven criteria based on the views of five groups of experts

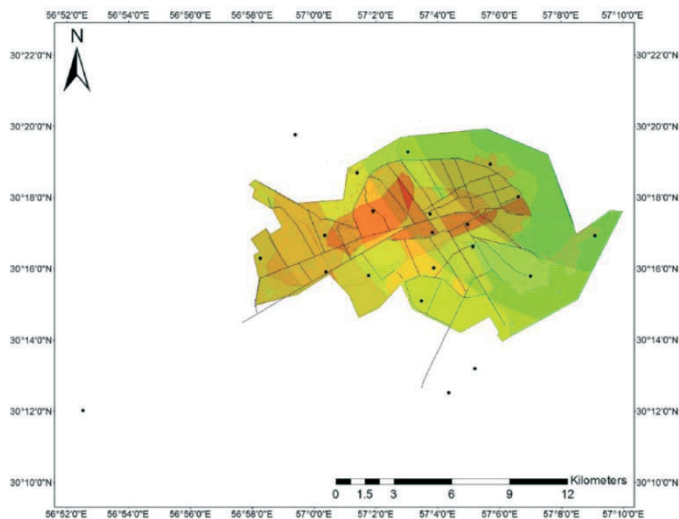


**Source:** Farahbakhsh & Forghani, 2018:4

The highest degree of importance, with a significant difference, is related to the criterion “waste sorting culture”. After weighing the questionnaire questions by AHP and determining the sample size, using the Cochran’s sample size formula, the layers related to the GIS software were defined according to four urban areas (Farahbakhsh & Forghani, 2018:4).

The final optimal map resulting from casting the maps in accordance with layers based on the weights obtained by the AHP method is shown in Figure 10. Also, 17 optimal points resulting from the final map for establishing sorting centers and four recycling plants in the city are shown in Figure 10.

**Figure 10.** Final optimal map



**Source:** Farahbakhsh & Forghani, 2018:9

After determining the optimal points for these locations, it was necessary to serve these locations effectively and efficiently from different aspects, including minimizing costs and distance traveled, reasonable service time, reducing environmental pollution, and full coverage of centers. For this purpose, by using a vehicle routing model, optimal routes for service were identified (Farahbakhsh & Forghani, 2018:13).

Some other examples of GIS usage for location analysis are given in the following part of the paper.

A study by Eunsu et al. (2015) selected the optimal locations for beverage distribution centers, considering transportation cost, travel distance, and frequency of customer visits. Bosch & Rathmann (2018) presented the first study that visualizes spatial dynamics of the expansion of renewable energies considering several technologies and side parameters including social aspects by use of web-based GIS planning tool. They showed how modern GIS planning tools can factor social, ecological and economic parameters into decision making and the ability to quickly change those parameters when considering new data. Droj & Droj (2015) created a GIS model for assessment of the property value using economic and building construction information with the spatial analysis within the city of Oradea, Romania. Using GIS to analyze existing data an assessor can easily approximate and later justify precisely how he estimated the value of a property and which factors are influencing it. Combining the information with economic, financial, and accounting information of some commercial property, the valuation process can be automated. Sanket et al. (2016) presented a model for location and capacity planning of Node B's (Base station for UMTS networks) which are decided with their configuration such as antennae type, power, azimuth, and tilting of the antenna, tower height and locating Node B's in the geographical area. The paper presented a model which would ensure network coverage for all users while planning the network optimally so that network provider should gain an advantage over the competition.

Some business case examples of using GIS for location analysis in Croatia are shown in the following text. Guberina et al. (2018) analyzed the area of activity of each firefighter station, distribution of firefighter interventions and optimal location for deployment of new firefighter stations using GIS software in the city Zagreb. The paper presented the potential for further improvement of the system and a need for creating a universal citywide geoportal that would

help optimize further interventions from emergency services. Tutić et al. (2018) for the first time performed detection of suitable terrain for foot orienteering based on geomorphology and land cover, using multi-criteria land evaluation. The paper used publicly available data and application for land evaluation. The result of the case study gave potentially suitable areas for foot orienteering in Croatia, Slovenia, and neighboring areas. Mladineo et al. (2017) proposed the creation of a Web Multi-Criteria-Analysis-based Decision Support System (DSS) for establishing efficient emergency management using GIS, basing the research on the example of the Adriatic Sea. The basic module for creating the DSS is GIS, which comprises information from different sub-systems and serves the information into the other modules of the DSS. The paper concludes that it is possible to reduce the bad decision rate using visual management in combination with Multi-Criteria Decision-Making (MCDM). Furthermore, it is possible to make the system more understandable for non-expert users. Jurišić et al. (2010) created a map of optimal vineyard using the GIS system as well as relief and satellite images, showing there is more available land for vineyards than it was previously assumed.

#### 4. CONCLUSION

The abundance of various economic, research and social data has led to GIS becoming a very powerful tool in business planning decision making. The GIS enables users to collect, store, integrate, process, analyze and display a large amount of quantitative data and information about potential locations and compare them against each other.

The use of GIS has been rising steadily and many countries now offer open access to their GIS data provided in maps and images. There is a vast amount of detailed information on a range of factors that might be relevant to location analysis. Some of these factors refer to population (density, age, income, ethnicity), and others to infrastructure (transportation resources, utilities, traffic patterns, competitor locations, educational institutions, shopping centers, recreational facilities).

Public availability of data, the existence of simple modern data analysis tools, competent people and the ability to take into account several hundred pieces of different information and their combinations has led to GIS becoming a very popular tool for decision-makers in different areas.

This paper gives an overview of the literature on some possible uses of a geographic information system by businesses and identifies different steps involved in location selection: business route planning, selecting an optimal bank branch location, sustainable location, and route planning for waste sorting centers. The presented works have used publicly available data and applications to create various models that make the location decision-making process easier for contemporary businesses as well as the ability to customize the model to suit future needs.

Examples are given of the use of GIS in Croatia in various areas, e.g., in the valuation of land which is to be used for sporting events, the analysis of land which is to be used for agriculture, and the development of an environmental risk assessment model for the Adriatic Sea.

In spite of the increasing use of GIS as a decision-making tool in different business cases in Croatia, it is evident that the benefits of this technology have not been fully exploited, and that there is room for improvement in the future, which warrants further research.

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# IDENTIFICATION OF PROBLEMS WHICH LIMIT AN INCREASE OF EFFECTIVENESS OF MANUFACTURING COMPANIES

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## **Abstract**

*Each manufacturing company strives to make the manufacturing process more effective in order to be competitive in domestic and international markets. One of the basic preconditions for achieving greater efficiency of the manufacturing process is eliminating factors that limit its growth. In order for the manufacturing company to achieve continuity in the manufacturing process, it is necessary to identify and eliminate certain problems that arise in the manufacturing process. Identification of the resulting problems is carried out by constant analysis of the manufacturing process through process flow diagrams, while different problems are resolved in eliminating the same problems. Therefore, the subject of this research identifies the extent to which the underlying problems arise in the realization of the manufacturing process and in what degree of importance they limit the efficiency of the manufacturing process. As the process of identifying and eliminating problems in the manufacturing process aims to improve and accelerate the flow of work items through the manufacturing process, the*

underlying problem of this research is to implement ways of eliminating certain problems in the manufacturing process to ensure a higher level of manufacturing process efficiency. It is precisely in science, and thus in everyday practice, that there is a lack of existing research in this area and accordingly there is a need for conducting relevant scientific research. Therefore, for the purpose of this paper, a surveying survey will be conducted in the engineering industry of the Republic of Croatia over 67 large and medium-sized companies whose aim is to identify the problems that may arise and contribute to their elimination through the implementation of business solutions in order to improve the manufacturing process. The first part of the work conceptually analyzes the manufacturing process and its basic elements. The second part of the paper will give an overview of current research and theoretical knowledge of the problems arising in the manufacturing process and their impact on the operations of manufacturing companies. In the third part of the paper, the author will present the results of the research carried out and provide solutions to the problems that arise in order to gain added value necessary to improve the manufacturing process. Concluding considerations will provide a brief overview of the problem of manufacturing process implementation. The paper represents a preliminary phase before carrying out major research that the author will carry out over the coming years in the context of implementing efficient business solutions with the aim of improving the efficiency of the manufacturing process.

**Keywords:** manufacturing process problems, business solutions, manufacturing process efficiency, machine building

JEL Classification: L69, M29

## 1. INTRODUCTION

For many years manufacturing companies in the Republic of Croatia are under the scrutiny of economic policy. The reason is that in all countries of the world, including Croatia, manufacturing companies are fundamental drivers of the national economy. However, the driving force of manufacturing companies in the Croatian economy isn't enough because of the insufficient motivating business environment, and due to internal problems, that arise in their business on the other hand. Under these conditions, the effects of manufacturing companies on the Croatian economy aren't sufficient. Besides that, manufacturing companies are increasingly operating in a very complex business environment which requires a high level of flexibility which is the basis for competitive advan-

tage. If manufacturing companies want to be competitive, both in foreign and in domestic markets, it must improve its own manufacturing process in order to accept the demands of end users more easily. There are many ways in which companies can improve their business, such as, for example, the reorganization of human resources, business processes, information flows and documents or work objects, introduction of quality management system, the introduction of various tools and techniques of management, planning or controlling of companies, identification and elimination of the problems, the implementation of new technologies and similar. This paper starts from the fact that the identification and elimination of internal problems are crucial to the continued realization of the manufacturing process, and that the quality approach of solving those problems depends not only on efficiency but also on the effectiveness of the entire company.

Manufacturing is an economic and technical function in which the task is to make manufacturing assortments, dynamics and quantity by using the available manufacturing equipment, labor, technological processes and other manufacturing resources (Mikac, T., Ljubetić, J., 2009, p. 93.). With this concept, the manufacturing can be defined as the economic and social function whose task is to manufacture a certain amount of products with an emphasis on the human factor. Because of achieving the successful realization of the manufacturing process, quality implementation of the planning process of manufacturing is very important, which according to many authors, achieves the following objectives:

- ♦ Quality application of manufacturing program and continuous performance of the manufacturing process (Osmanagic-Bedenik, F., 2002, p. 126.)
- ♦ Materials, machinery, labor and other manufacturing factors connection in order to manage the flow of materials more easily and to use workforce and other resources effectively (Józefowska, J., Ziminiak, A., 2008, p. 109.)
- ♦ At the time manufacturing of quality products at minimum cost in the required quantity (Cigula, M., 2002, p. 195).

According to Everett, Adam and Ebert (1992, p. 5), the manufacturing process is seen as part of an organization which acts with the purpose of manufacturing organizational needs. However, the question arising is what are the differences in the manufacturing process of organizations such as manufactur-



ing companies, financial institutions, and health institutions? The only difference is in the transformation process. In manufacturing companies inputs are used in the transformation process and converted into finished products and include feedback connections between all procedures within the manufacturing system. Once the products and services are manufactured they are turned into the money which requires more inputs which tries to maintain a continuous transformation process.

According to Slack, Chambers and Johnston (2001, p. 3), the manufacturing process can be defined as a set of operations through which inputs are transformed into outputs in order to meet consumer needs. In the manufacturing process, the model input-transformation-output is confirmed. Input in the manufacturing process can be classified according to Slack, Chambers and Johnston (2001, p. 3) as:

- *Transformed resources*, i.e. the resources that are transformed into semi-finished or finished products (materials, information and consumer needs)
- *Transforming resources*, resources based on which transformed resources arise (facilities and human resources).

The purpose of the transformation process in manufacturing is to use transformed resources in order to obtain finished goods. According to Slack, Chambers and Johnston (2001, p. 3), there is:

- *Materials processing* comprises operations of transforming the physical characteristics of materials,
- *Information processing* includes operations that elaborate information used in the manufacturing process,
- *Consumer needs processing* comprises operations which consumer's needs transform into finished goods.

Outputs of the transformation process are products and services that have certain characteristics such as tangibility, storability, transportability, timeliness, customer contacts, and quality.

Besides, the successful realization of the manufacturing process also depends on making quality and timely decisions by managers which are based on manufacturing plans (basic or annual, dynamics annual, dynamic sliding, quarterly, monthly or operational, forward or weekly). In manufacturing plans,

the manufacturing process is elaborated in details in a way to determine who, when and how performs a particular job. Each plan includes a certain period of time to ensure the achievement and respect of the manufacturing objectives mentioned above.

On the other hand, the effectiveness of the manufacturing process shows the results of the successful realization of the manufacturing process which shows in which direction its operations are carried out. According to this definition, the effectiveness of the manufacturing process is the ability of companies to manufacture the greatest possible amount of products. When this definition is applied, then we can talk about the overall effectiveness of the manufacturing process. In fact, in recent time, in addition to the overall effectiveness of the manufacturing process, partial, organizational and operational effectiveness is observed. Partial effectiveness examines the effectiveness of each element used in the manufacturing process. The aim of the partial effectiveness is to determine and control the effectiveness of each element of the manufacturing process. For example, if you evaluate the work of humans, then determining their effectiveness has the aim of reward with respect to the realized effect in the manufacturing process. According to Zheng et al. (2010, p. 767.), organizational effectiveness refers to a degree to which company's set of goals are achieved, while according to Ewyku (2001, p. 257-259.), operational effectiveness refers to a specific experience that enables the company better use of their inputs, for example, to reduce damages in products or to develop products as quickly as possible.

However, manufacturing companies today operate in a very dynamic business environment that puts them in front of numerous challenges and requirements that they must meet in order to be successful on the domestic and international markets. Therefore, manufacturing companies must strive to achieve a higher degree of flexibility in order to overcome all market barriers. Nevertheless, besides factors from the external environment, a company's performance is influenced by factors of the internal environment which are under the control of the companies. One of these factors is the organization of the business within the organization of the manufacturing process is the most important. Although the companies tend to use the quality organization of the manufacturing process, during the course of the manufacturing process, different internal problems can occur that cause certain distortions in its realization.

Therefore, the most important for manufacturing companies is to timely identify problems that commonly occur in the manufacturing process as well as approaches for their permanent and quality elimination. This area has not been significantly explored up to now. The reason is that in most industries, the information about the problems in manufacturing are unavailable because a large number of companies believes that it should be confidential in order to avoid negative company's perceptions in the public and thus loss of existing and potential customers in markets served. Therefore, there is a need to conduct this study in order to identify originated problems in the manufacturing process and to offer ways to resolve them with the aim of improving business, and thus achieving a better competitive position of manufacturing companies in engineering.

As previously stated, manufacturing companies have access to different business solutions that can be used as a goal to eliminate the problems in the manufacturing process, and thus to improve the manufacturing process. Today, customer' demands are more complex and should be executed in the shortest possible time so companies are forced to implement a number of business solutions in order to be flexible and competitive in the domestic and international markets. Therefore, the implementation of a number of business solutions isn't an easy job because it requires the reorganization of own business which includes changes in the current organizational approach, additional training of workers, the adjustment of workers to modern ways of performing tasks assigned, changes in the organization of jobs, reorganization of the communication process, completely different way of thinking, the reorganization of manufacturing activities, etc. However, the goal of quality implementation of business solutions is to eliminate the problems that result in the manufacturing process, whereby continuity in the realization of the same is achieved. Since with the implementation of business solutions, manufacturing companies seek to improve the manufacturing process through the elimination of problems in the manufacturing process, the subject of this research is based on identifying the degree of importance of the fundamental problems that arise during the implementation of the manufacturing process and in what degree of the importance they limit the growth of effectiveness of the manufacturing process. As it is expected, the frequent occurrence of various problems disrupts the continuous execution of the manufacturing process, In that regard, it is necessary to examine the pre-defined research subject and problem and accordingly it is necessary to achieve the following objectives:

- ✦ Identify underlying problems that occur in the manufacturing process,
- ✦ Determine which way the problems in the manufacturing process affect the efficiency of manufacturing companies,
- ✦ Offer solutions to the occurred problems by applying business solutions,
- ✦ Determine which way solving problems in the manufacturing process affects the improvement of the same.

From the research mentioned before, from literature review and analysis in the field of manufacturing it can be concluded that there is still enough room for new research. In this sense, it is considered significant, by research, to identify the degree of importance of the appearance of the fundamental problems that arise during the implementation of the numerous manufacturing processes and to present ways to resolve them through the implementation of numerous business solutions. However, it isn't an issue whether the problems in the manufacturing process are present but it is important to emphasize in which way companies approach to their solution. In this paper, the emphasis is placed on ways to resolve identified problems so in the remainder of this paper the underlying problems that commonly occur in the manufacturing process will be shown.

## 2. OVERVIEW OF THE PREVIOUS RESEARCH

During the realization of the manufacturing process, companies are often faced with numerous problems which disrupt the continuity of the process. Therefore, the companies needed to identify each generated problem and access to their permanent elimination. In order for the company to perform it successfully, it must analyze the manufacturing process constantly through process flowchart which provides detailed knowledge of the structure and reason for the cause of the problems and its impact on the business. On the other hand, companies should eliminate identified problems by applying different techniques and methods which are supported by numerous technological improvements. For this purpose, in the following paper problems that arise in the realization of the manufacturing process are stated and, in this respect, it is important to highlight that the same are differently present among industries.

Thus, in the manufacturing process, there is a problem of *over manufacturing that can't be placed in the market*. Besides the problem, Sisko-Kulis and Grubisic (2010, p. 165) the same defined as manufacturing wastage under which they

imply also the creation of documents that nobody demands, or which will not be even used for sending instructions for too many people or vice versa. In the company, the occurrence of this problem increases the number of inventories of finished goods which encumber business of the companies and make manufacturing inefficient.

Furthermore, according to Grubisic and Mateljak (2011, p. 46) in the manufacturing, there is also a problem of *high inventories of semi-finished goods in a process* which is typical for companies that have interrupted manufacturing process type. Inventories of semi-finished goods in this type of manufacturing process spend 90-95% of the time waiting to be processed which causes the occurrence of idle time of machinery, bottlenecks, waiting, extension of the manufacturing cycle, high days sales of inventory, low inventory turnover rate and the possibility of failure to meet an agreed delivery deadline. This problem companies often solve by acquiring additional capacity which will manufacture a particular product faster and which will reduce waiting, but, on the other hand, it causes an increase in operating costs which affect the growth of product prices, the decline in competitiveness, reduction of capacity utilization and a fall in operating revenues.

Zülch and Rootinger (2007, p. 273-274.) point out that in the manufacturing process problems may occur, such as various forms of waiting, the slowness or the occurrence of errors while cutting material based on prescribed dimensions as well as a jam of manufacturing equipment. Waiting for that occur during the manufacturing process are primarily related to *workers' waiting for machines or for the material and machines' waiting for workers or for the material*. With this kind of waiting, Chen and others (2009, p. 1465) emphasize *waiting for materials to be processed due to the occupation of workers or machines in the manufacturing line*, which results in the problem of manufacturing line balancing. All types of waiting mentioned above cause the extension of the manufacturing cycle, failure to comply with the delivery time, low productivity, high days sales of inventory and low inventory turnover rate. Furthermore, *slowness in material cutting* causes the extension of manufacturing process cycle time and non-compliance in delivery time, while the occurrence of *defects in material cutting* causes the fallout formation and low efficiency of the manufacturing process. According to the same authors, *delays of manufacturing equipment* caused by the delays in the execution of the manufacturing process, such as incorrect launched work orders, wrong work mode, failure to comply with the order of operations, wrong tools

assigned, an error in the machine calibration, insufficient instruction of the operation executor, wrong types or quality of raw materials, cause low productivity, increased operating costs and decrease in efficiency and effectiveness of the manufacturing company. In addition, also the same authors point out that the introduction of new technologies in the early stages cause low profitability because workers don't have experience of working with the same which results in a greater number of interruptions. When the new manufacturing equipment is implemented quality, profitability grows because the number of interruptions reduces, while at the end of manufacturing equipment life cycle profitability decreases again due to wear of the same.

Furthermore, in his article are Bouchrihi, Ouhimmou and D'Amoursu (2007, p. 319-325.) have identified that in paper production, machines often encountered with problems of *bottlenecks* which is the result of inefficient manufacturing planning, lower levels of resource utilization and high costs of machines and supplies repairation. According to Slack et al (2006, p. 34-48.) reason for the bottleneck's occurrence is a capacity incompatibility with the manufacturing process time, and weak the operation of the manufacturing process and poor permeable power of the work objects through the manufacturing process. Manufacturing bottlenecks is a manufacturing stage, that area of work, machine, facility, device or tool for the work that enables the use of all available resources completely. Process bottlenecks cause certain group delays in the processing of objects due to the queuing delay which causes an increase in manufacturing cycle time (Dennis, P., 2007, p. 35-50.). As stated in the study (Rajagopalan & Yu, 2001, pp. 366-370.) the reason for the machine delay on the object processing delay is in a situation where a machine which is at work center at the same time receives a greater number of different items that need to be processed in batches. This means that the company doesn't have sufficient capacity available. The delay of the machine in object processing results in longer manufacturing cycle which could result in sales loss and in manufacturing order (order consumers) it can cause delays, waiting and non-compliance with the delivery time. Away from bottlenecks, authors in the same article cited (Bouchrihi, Ouhimmou & D'Amours, 2007, p. 325-327.) that in the same industry the problem of *limited manufacturing capacity* often arises since they are adapted to a predetermined demand for products. This is because companies in the paper industry cannot have excess capacity because of high maintenance costs. The problem arises when demand exceeds manufacturing capacity. In that case, the

company cannot fulfill all consumers' requirements and there isn't an increase in sales, income and market share. However, the problem may also arise when the actual demand is less than the size of capacity. In that case, the company will meet all the consumers' requirements, but it will have excess capacity which increases the cost of doing business, and therefore the sale price. The increase in the products selling price causes dissatisfaction among customers which also results in the loss of sales due to falling demand for that product. The problem may also arise when the actual demand is less than the size of capacity. In this case, the company will meet all the requirements of consumers but will have excess capacity which increases the cost of doing business, and therefore the sale price. The increase in the product sale price causes dissatisfaction among customers which also results in the loss of sales due to a decrease in demand for that product.

Next problem in the manufacturing process is linked to the *obsolescence of manufacturing equipment*. Manufacturing equipment should have the characteristics determined by-products which are manufactured and processes that need to be executed. What will be its efficiency depends on the degree of its obsolescence? With newer manufacturing equipment company is able, with current manufacturing, to manufacture new, more sophisticated products. With outdated equipment, it can only manufacture obsolete products. When a company has outdated manufacturing equipment, breakdowns are becoming increasingly common which causes the same delays of the entire manufacturing plant, and thus the manufacturing cycle is extended. In addition, frequent breakdowns or manufacturing equipment failures, cause a lower level of equipment yield in manufacturing and lower level of capacity use due to frequent maintenance of the same (Catay et. al., 2003, p. 1350-1355.).

All problems previously identified that arise during the realization of the manufacturing process, are present differently in industries. Therefore, in the following paper, the results of the study will be presented in order to determine which problems are the most common obstacles for companies in increasing the efficiency of the manufacturing process. Besides, this paper will also provide business solutions with the aim of increasing effectiveness as well as the competitiveness of companies in domestic and international markets.



## 3. RESEARCH RESULTS

### 3.1. RESEARCH METHODOLOGY

Identifying problems in the manufacturing process was carried out among manufacturing companies in engineering in the Republic of Croatia. Engineering was chosen because it is a type of manufacturing business in which planning process of manufacturing activities is very complex, as well as a realization of the manufacturing process, so there is a high probability of manufacturing problems than in other industries. The survey was conducted over six manufacturing companies according to the criterion of complexity and quality of the products, the success in domestic and international markets and absolute market share. The survey was conducted among the directors or managers of manufacturing of six manufacturing companies in the period from 01. 02. 2019 to 03. 01. 2019. via questionnaire. Questionnaires were electronically sent and it consisted out of three parts:

- The first part related to the basic information about the company, such as company's legal form, ownership structure, company size according to the number of employees and type of manufacturing process according to the material course,
- The second part examined the frequency of the fundamental problems in the manufacturing process, and
- The third part related to the identification of problems that limit the growth of effectiveness

Data analysis was performed using the statistical package SPSS 17.0. The methods that were used were:

- descriptive statistics for describing variables such as the company's legal form, the ownership structure of the company, company size according to the number of employees and type of manufacturing process according to the material course,
- The mean values for the calculation of the average grade of problems in the manufacturing process for investigated companies.

The data processed were used to identify the main problems in the manufacturing process and for determining their degree of incidence. Besides that, the same data are the basis for making business solutions with a goal to eliminate or to mitigate the manufacturing problems. As stated before, the study included



fifteen fundamental problems that most frequently occur in the manufacturing process, such as: over manufacturing, high inventories of semi-finished in the manufacturing process, idle machine/ machinery / manufacturing plant, manufacturing bottlenecks, workers' waiting on machines, workers' waiting for raw materials and materials, machines' waiting for workers, waiting for materials to be processed due to the worker's occupation, waiting for materials to be processed due to the worker's occupation due to occupation of machines, slowness in materials cutting, the occurrence of errors while cutting materials, manufacturing equipment jam, limited manufacturing capacity and obsolescence of manufacturing equipment.

### 3.2. THE BASIC CHARACTERISTIC OF THE ANALYZED COMPANIES

The first characteristic analyzed was the legal form according to the criteria of the capital company. According to this criterion, in the Republic of Croatia, there are limited liability companies (Ltd.) and Joint stock companies (JSC.). In this research, both legal forms were analyzed and presented in Table 1.

**Table 1** Legal form of the companies

Legal form	Number of companies	(%)
Limited liability company (Ltd.)	3	50
And Joint stock companies (JSC.)	3	50
<b>Total</b>	<b>6</b>	<b>100,00</b>

Source: Authors

From Table 1 it can be seen that research included 3 (50%) limited liability companies (Ltd.) and 3 (50%) joint stock companies (JSC.), i.e. both legal forms have equal presence.

Second analyzed characteristic was the ownership structure of a company that was classified into six types, namely foreign private ownership, domestic private ownership, foreign and domestic private ownership, and private labor ownership, mostly state-owned and mixed ownership (state and private). The results of the research of the selected companies according to this characteristic are shown in Table 2.

**Table 2** Ownership structure of the companies

Company's size	Number of companies	(%)
Foreign private ownership	0	0
Domestic private ownership	2	33
Foreign and domestic private ownership	3	50
Private labor ownership	1	17
Mostly state-owned	0	0
Mixed ownership (state and private)	0	0
<b>Total</b>	<b>6</b>	<b>100</b>

**Source:** Authors

From Table 2 it can be concluded that 2 (33%) companies were domestic private-owned companies, 3 (50%) were foreign and domestic private-owned and 1 (17%) was a private labor-owned company. The rest of the ownership structure wasn't present in this research.

The third characteristic covered by this research was the *size of the company based on the number of employees*. According to this criterion, in the Republic of Croatia, there are three companies: small, medium and large. In this study, medium (50-249 employees) and large companies (250 employees and more) were analyzed and presented in Table 3.

**Table 3** The Company's size in engineering

Company's size	Number of companies	(%)
Medium (50-249)	3	50
Large (250 and more)	3	50
<b>Total</b>	<b>6</b>	<b>100,00</b>

**Source:** Authors

From Table 3, it can be seen that the research covered 3 medium-size companies (50%) and 3 large size companies (50%) i.e. both groups of companies have equal presence

The fourth characteristic according to which companies were analyzed was the *type of manufacturing process*. Three types of manufacturing processes are distinguished based on material flow: continuous, batch and project system and for the researched companies are shown in Table 4,

**Table 4** Companies based on the type of manufacturing process

Type of the manufacturing process	Number of companies	(%)
Continuous system	0	0
Batch system	2	33
Project system	4	67
<b>Total</b>	<b>29</b>	<b>100,0</b>

**Source:** Authors

Table 4 shows that the largest number of companies has a project manufacturing system (4 companies or 67%, while 2 companies or 33% have batch manufacturing system. The continuous manufacturing system isn't present in any researched company.

### 3.3. THE FREQUENCY OF THE FUNDAMENTAL PROBLEMS IN THE MANUFACTURING PROCESS

After analysis and based on the previous characteristics in the paper following the frequency of the fundamental problems in the manufacturing process will be presented. Fundamental problems are defined with fifteen problems that most frequently appear in the manufacturing process. Using a questionnaire, researched companies had an option to evaluate each problem according to the degree of occurrence in their company by giving graded 1 to 5, where 1= don't appear at all, 2= partially don't appear, 3= nor they don't appear or nor they do appear, 4 = partially appear, 5 = fully appear. All companies successfully answered this part of the questionnaire. The frequency of the fundamental problems will be determined by the average grade between researched companies categorizing them into two degrees: lower and higher frequency degree frequency. Lower frequency degree covers an interval of average grades 1 to 2, 5 while a higher level of frequency covers an interval of average grades 2, 51 to 5. Research results of the average value of the frequency grades of the fundamental problems in the manufacturing process are presented in Table 5.

**Table 5** Average value of the frequency grades of the fundamental problems in the manufacturing process

Problems	Average value
Over manufacturing	1,83
High inventories of semi-finished goods in the manufacturing process	1,83
Idle time of machine/ machinery / manufacturing plant	3,17
Bottlenecks	3,67
Workers' waiting on the machines	2,17
Workers' waiting for raw material or for the material	2,33
Machines' waiting for workers	2,00
Machines' waiting for raw materials and materials	2,00
Waiting for materials to be processed due to the worker's occupation	3,00
Waiting for materials to be processed due to the occupation of machines	2,67
Slowness in materials cutting	3,00
The occurrence of errors while cutting materials	2,17
Delays in manufacturing equipment	1,83
Limited manufacturing capacity	3,83
Outdated manufacturing equipment	2,50

**Source:** Authors

From Table 5 it can be seen that there are 9 fundamental problems with a low frequency of occurrence in the manufacturing process. According to the calculated average values, that category includes over manufacturing (1,83), high inventories of semi-finished goods in manufacturing process (1,83), workers' waiting on the machines (2,17), workers' waiting for raw material or for the material (2,33), machines' waiting for workers (2,00), machines' waiting for raw materials and materials (2,00), the occurrence of errors while cutting materials (2,17), delays of manufacturing equipment (1,83), outdated manufacturing equipment (2,50). When analyzing in details it can be concluded that problems with lowest average grade (1, 83) appear at least such as over manufacturing, high inventories of semi-finished goods in the manufacturing process and delays of manufacturing equipment. The highest average grade (2, 50) at this degree has outdated manufacturing equipment and it is the boundary problem between low and high degree. In order for companies to mitigate or eliminate problems of outdated manufacturing equipment it is necessary to replace the existing with modern and technologically advanced manufacturing equipment which can be achieved by using EU funds ((Module: Construction and equipping production capacity), favorable credit lines by credit institutions (mostly

state-owned) where the cost of financing should be less than 1%, combination of self-financing and credit lines assuming the exempt from payment of various tax burdens (corporate tax, etc.) at the level of own invested funds that can be refunded in one or more years (depending on the company's financial results). By applying business decision with a goal of modernization, the costs of doing the business would be decreased, productivity would be increased, inventory turnover rate would be higher, high days sales of inventory and scraps would be decreased and delivery time would be respected which means better competitive position on the domestic and international markets at the end.

On the other hand, there are 6 problems with a high frequency of occurrence. According to the calculated average values, that category includes: idle time of machine/ machinery / manufacturing plant (3,17), bottlenecks (3,67), waiting for materials to be processed due to the worker's occupation (3,00), waiting for materials to be processed due to the occupation of machines (2,67), slowness in materials cutting (3,00) and limited manufacturing capacity (3,83).

When analyzing in details it can be concluded that problems of waiting for materials to be processed due to the occupation of machines appear with the lowest frequency of appearance in the manufacturing process (2,67) while problems of limited manufacturing capacity have a high frequency of appearance (3,83) which means that it is constantly present. Problems of limited manufacturing capacity appear in the case when the company can't fulfill the overall demand for its products with the existing capacity level because it has a problem with the additional capacity increase. The problem of increasing the existing capacity level can be from a financial and spatial perspective. The financial aspect implies the value of the investment needed for realization of additional capacity taking into account company's financial capabilities, while the spatial aspect implies the possibility of extending the existing spatial infrastructure at an existing or new location. In some cases, the appearance of the problems of limited capacity can be a reason for financial or spatial investment. On the other hand, the increase in the existing manufacturing capacity causes additional costs of doing the business. Therefore, when increasing existing manufacturing capacities, the company should take into account the time period of higher demand compared to existing manufacturing capacity. If the company anticipates that the demand for existing products will be higher than the existing capacity level in the long run, then it is worthwhile investing in the purchase/ expansion of the existing manufacturing capacity, whereby it will be able to meet the increased demand

for its own products, in the long run, thereby enabling additional operating revenues to finance the costs due to the increase in existing manufacturing capacity. If company anticipates the demand for existing products will be higher than the existing capacity level in the short for the company isn't worthwhile investing in the purchase/ expansion of the existing manufacturing capacity because it will fulfill increased demand for its own products in the short run thereby enabling additional operating revenues in the short run which will be insufficient to finance the total costs due to the increase in existing manufacturing capacity. Since the expansion of manufacturing capacity is one of the tangible fixed assets that are long-term depreciated, the company will be able to finance the additional cost of doing business only in the short term (until the demand is higher than existing capacity), while the rest of the period (demand is less than existing capacity levels) the company will need to be financed from its own operations without additional operating revenues. If the company decides on expanding the existing manufacturing capacity in a situation where the demand for existing products in the short term is higher than the existing level of capacity, then there will be an increase in operating costs, increase in the selling price of the final product (if the company doesn't lower margin), decrease in income because buyers will buy the product if it is cheaper at the competition, decrease in market share, decrease in competitiveness and decrease in profit (if achieved previously) or greater loss (if achieved previously). The problem of limited manufacturing capacity when the demand for existing products in the short term will be higher than the existing level of capacity, the company solves by applying the model of subcontracting/ co-operation where the operating costs in the short term are transferred to the subcontractor. In this case, there is no need for purchasing additional capacity, there is no increase in the cost of operations and with subcontractors, it is negotiating a distribution rate of the work done. The rate of distribution of the performed work needs to be in greater value for the sub-contractor as it bears the costs for the work done, and in a lesser value for business owners, because the operating costs of the work done are transferred to the sub-contractor and exercise mostly net profit.

#### **3.4. IDENTIFICATION OF THE PROBLEMS THAT LIMIT THE GROWTH OF EFFECTIVENESS OF THE MANUFACTURING COMPANIES**

Manufacturing companies in their business constantly want to achieve a better competitive position in domestic and international markets. Achieving

better competitive position manufacturing companies seek to achieve by better organization of the manufacturing process and all other supporting activities. For that purpose, each company for measuring business success takes certain indicators of efficiency and effectiveness. Since in this paper emphasis is on the manufacturing process efficiency, in the paper following a certain limiting factor of effectiveness will be given observed through four indicators: the productivity, inventory turnover rate, the percentage of scraps and delivery time. Limitation factors imply factors that appear during the manufacturing process realization and prevent manufacturing growth and inventory turnover rate and enable scraps appearance and cause failure to complete the delivery deadline.

When identifying factors that limit productivity growth<sup>1</sup> scale with ranges from 1 to 6 was used where 1 is assigned to the most important factor, and grade 6 least significant factors. After conducting the questionnaire and processing the collected data in Table 6 the average size of the ranks of the factors that limit productivity growth is represented

**Table 6** Factors that limit the productivity growth

Factor	Average rank
Outdated equipment	5,00
Insufficient stimulation of workers	3,67
Poor quality of work organization	2,67
Insufficient skills of the workforce	3,00
Unclearly defined manufacturing tasks	4,00
Insufficient interaction between workers in manufacturing and manufacturing manager	4,17

**Source:** Authors

As presented in Table 6, according to the calculated grades of average rank, the factor that influences mostly the limitations of productivity growth is the poor quality of work organization (2, 67). Poor quality of work organization means an insufficient level of work organization in the manufacturing process which isn't consistent with the complexity level of the manufacturing process. Poor quality of work organization causes waiting for's, delays, bottlenecks,

<sup>1</sup> Productivity is an indicator that measures the output compared to the input. Most often the ratio is calculated of the final products (output) and the investment of factor (input). This indicator can also be calculated using working methods, subsistence-conditional methods and value methods. There are a total productivity and partial productivity. The company strives to achieve the greatest possible productivity indicators.

which impacts the decrease of the number of manufactured products with the existing level of the workforce or work hours which would case the lower productivity. This factor can be mitigated or eliminated by harmonizing the work organization with the complexity of the manufacturing process realization, identifying the required quantities of the corresponding work (degree of work complexity), the period during which the work needs to be performed, what is the degree of organization and level of technical equipped of the manufacturing process, what is the amount of workers necessary for the manufacturing to be realized in phases of the manufacturing process, determination of the available working time fund per worker and other documentation related to organization and systematization of workplaces, manufacturing plan in which its volume is expressed, the required amount of labor consumption and the degree of labor force qualification per unit (the normative of labor consumption), the degree of norms' enforcement (shortfall and transfer of norms), the total fund of working time per worker, for example the number of working hours of workers during the year and the level of utilization of the fund. Furthermore, other factors that limit productivity growth according to lesser importance are insufficient skills of the workforce (3.0), insufficient stimulation of workers (3.67), unclearly defined manufacturing tasks (4.0) and insufficient interaction between workers in manufacturing and manufacturing manager (4.17). In productivity, a factor that at least affects productivity growth limitation is outdated equipment (5.0). Apart from these factors, researched companies have indicated that self-management mentality of partial workers and managers, as an additional factor also affects the productivity growth of researched companies.

After analyzing productivity, in the further analysis which factors / mostly limit/inventory turnover will be examined <sup>2</sup> as the second indicator of effectiveness. When identifying factors that limit the growth of inventory turnover scale with ranges from 1 to 4 was used where 1 is assigned to the most important factor, and grade 4 least significant factors. Processing the collected data results were obtained and shown in Table 7.

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<sup>2</sup> Inventory turnover rate or activity ratio, the ratio of income from sales of products (TR) and stock. This indicator shows how many stocks reverse (turned) in a calendar year. The company strives to achieve the highest possible value of this indicator, as this affects the lower level of stock in the company, which releases a larger amount of working capital. The goal of every manufacturing company is to maximize this indicator.



**Table 7** Factors that limit the growth of inventory turnover rate

Factor	Average rank
A long period of high-value stocks standing in the warehouse	2,50
Low-quality stocks	3,33
Keeping unnecessary stocks	2,83
Long manufacturing cycle	2,33

**Source:** Authors

From Table 7 it can be seen that factor that mostly limits the growth of inventory turnover rate is long manufacturing cycle with an average rank of 2, 33. Long manufacturing cycle implies the business situation in which the company needs a longer time to manufacture the final product. If the company has a long manufacturing cycle, it will have higher days sales of inventory and low inventory turnover rate which causes longer delays of stock. In that case, manufacturing companies must maintain the same inventories which causes additional costs (insurance cost, the eventual rental costs, cooling system cost (if it is about stocks with a defined expiration date), i.e. cost of maintaining stocks functional) and inability of lowering prices of the final product, increase revenues, achieving better financial results and a better competitive position. In such situation, manufacturing companies should strive to shorten the manufacturing cycle period in such a way that, first through a flow diagram show the order of execution of manufacturing activities and decide that certain manufacturing activities will completely eliminate (activities that don't create added value and aren't necessary for execution the manufacturing), while the time for the execution of certain manufacturing activities will be shortened (activities that don't create added value, and are necessary for execution of the production and for the activities that create added value). Shortening the manufacturing cycle time companies will achieve in a way that all waiting, delays, idles and bottlenecks in the manufacturing process will be eliminated. In that way manufacturing cycle time will be shortened, days sales of inventory will be reduced, inventory turnover will be increased, maintenance stocks' costs will be reduced and prerequisites for lowering selling price will be created in order to achieve a better competitive position on the markets. Factors that have a slightly lower intensity of limiting the growth of inventory turnover are a long period of high-value stocks standing in the warehouse (2.50) and keeping unnecessary stocks (2.83). Factors that at least affect the growth of the rate of the researched companies are low-quality stocks with the calculated average rank of 3.33. Reduce the cost

of maintaining inventory and create a prerequisite for lowering the sales price of the product in order to achieve a better competitive position in the markets stocked.

Among researched companies' problems that affect the scraps' appearance<sup>3</sup> have been identified. During the identification of the factors that influence scraps' appearance scale with ranges from 1 to 8 was used where 1 is assigned to the most important factor, and 8 to the least significant factor. Research results are represented in Table 8.

**Table 8** Factors that influence scrap appearance

Factor	Average rank
Bad organization of the work	5,00
Poor/inadequate equipment	7,00
Insufficient workers' experience	4,83
Insufficient level of workers' knowledge	5,00
Overload of workers	6,00
Workers' dissatisfaction	5,17
Poor work methods	5,33
Inadequate materials and raw materials	7,00

**Source:** Authors

Table 8 shows that insufficient workers' experience (4, 83) is the factor that influences the most scrap appearance. Insufficient workers' experience refers to the engagement of the workforce in manufacturing process whose working experience hadn't reached the necessary level for producing final goods. In that case, insufficient compatibility between work experience and work process cause certain mistakes in work process which cause the existence of certain scrap product levels i.e. the number of produced products which don't correspond to the buyers' specifications or seller and company cannot place them on the market. Then decreased quantity of products is placed on the market which cases lower sales revenue than planned. Besides that, scrap products create losses for the company because they have been produced and therefore expenses and they haven't been placed on the market in order to create revenue from which expenses would be paid.

<sup>3</sup> Defect ratios or scrap ratios is an indicator of product process effectiveness because it affects the number of total produced products that meet the defined quality standards.

In order to prevent the scrap appearance caused by insufficient worker experience, it is necessary to apply a model of mentoring or additional training for a particular workplace. A company will apply mentoring when the technology and working methods in the workplace remain unchanged. If a company applies this model, it means that a worker with insufficient experience in the workplace will additionally upgrade his or her experience and knowledge from a mentor i.e. or a person assigned to him by the management or superior who previously worked in that workplace. A company can determine, according to the current level of experience and workers' knowledge, the total number of hours a worker has to take to go through a mentoring model to achieve a sufficient level of knowledge and experience necessary for work at the assigned workplace. On the other hand, additional training of employees will be applied by the company when new technologies and more modern working methods, that haven't existed in the company, have been introduced at the workplace. Then, the company will provide education that can be carried out outside of work or at work by educators specialized in the necessary knowledge in order to gain experience. Educators can be faculties, consultancy companies, centers for professional education, suppliers of new technologies, etc. Educations of gaining experience at work refer to conducting educational activities by educators in a company which is client while education of gaining experience at work implies the carrying out educational activities outside the company i.e. educator or at an agreed place. The time, place, scope, value and specialty area of education are determined by mutual agreement between the clients and educators, which is formalized by signing the contract. Of the other factors that cause scrap appearance according to the calculated average rankings, important is a bad organization of work (5.0), insufficient level of workers' knowledge (5.0), workers' dissatisfaction (5.17), poor work methods (5.33) and overload of workers (6.0). Factors that least affects the occurrence of the scandal in the research companies are inadequate materials and raw materials (7.0) and poor/inadequate equipment (7.0). In addition to these factors, the surveyed companies have indicated that the incompatibility of the top and new equipment with motivating people, as an additional factor, also affects the occurrence of scrap appearance among research companies.

In this research the importance of factors that affect the delivery time failure i.e. which factors and in what degree they affect delivery time failure to the end

user.<sup>4</sup> During the identification of the factors scale with ranges from 1 to 8 was used where 1 is assigned to the most important factor, and 8 to the least significant factor. Research results are represented in Table 9.

**Table 9** Factors that influence delivery time failure

Factor	Average rank
Errors in capacity occupancy records	5,00
Incorrect entry order (launching order)	5,00
Machine failure/ break	4,00
Delay of material processing	3,17
Bottlenecks	4,33
High stock volume in the production process	5,33
Workers' absence	2,83
Mistakes in product specification/ component	4,67

**Source:** Authors

As shown in Table 9 according to the calculated average rank the factor that influences the most delivery time failure is workers' absence (2,83). Workers' absence refers to the workers' absence from the workplace. Workers' absence can be caused by medical issues i.e. sick leave which is caused by workers' illness. Causes for illness can be because of workers' health condition and by employer's guilt. Employer's guilt can be organizational and technical nature. When it comes to organizational nature it mainly refers to different organizational reasons which had contributed to the negative relationship between work colleagues i.e. superiors and subordinates in the new organization of business. If a company has made such an organizational concept in which there is no professional communication level between superiors and subordinates it will create a negative working climate that causes a decline in employee motivation due to stress and dissatisfaction in the workplace and the occurrence of permanent illness. This will result in more permanent workers' absence from the workplace and the redistribution of workers to job openings due to sickness, which creates certain waiting times that affect the delivery time. Regarding the employer's guilt because of technical reasons, refers to disabling adequate working conditions for the worker such as usage of suitable protective clothing, newer and more modern machinery and tools and organization of the workplace according to the functional needs of workers. If an employer doesn't eliminate previously

<sup>4</sup> Delivery time or delivery lead time), as an indicator of the efficiency of the production process, implies delivery of the product according to a pre-agreed deadline. The goal of each production company is to maximize this indicator.

stated technical problems at the workplace, it can come to jeopardizing workers' health which will cause long-term absence. All previously mentioned problems at workplace that cause workers' absence company can mitigate or eliminate by constantly investing in the workers' working conditions such as the procurement of new and more modern and safer equipment, new protective clothing, changing business or organization which is adjusted to the workers' needs, faster ways of communication at workplace, involving workers in new work processes, adapting workplaces to the workers' functional needs, achieving a high level of collegiality among workers, creating new incentive measures for innovation at the workplace, applying freedom of decision making in certain stages of the work process, applying good ideas by workers and encouraging way of rewarding workers. By applying these measures companies will decrease sick-leaves and workers' absence and ensure delivery on time. Among other factors which cause delivery time failure important are delay of material processing (3,17), machine failure/ break (4,0), bottlenecks (4,33), mistakes in product specification/ component (4,67), errors in capacity occupancy records (5,0) and incorrect entry order (launching order) (5,0). Factor that influences the least delivery time failure is a high stock volume in the production process (5, 33). Beside these factors, researched companies had also pointed out delays and absence of project documentation, insufficient expertise at high level of management, poor organization of work and poor capacity planning, when the customer isn't ready to take over the product because he or she didn't complete the preparation and documentation, changes in the job specification by the clients and additional work during the project as additional factors that also affect the delivery time failure among researched companies.

#### 4. CONCLUSION

In every country as well as in the Republic of Croatia, manufacturing companies are continuous drivers of the national economy. The reason in that is that manufacturing as an economic and technical economic branch, throughout the whole year in the work process creates a continuous contribution to the national economy. Because of the nature of the work process, each country should give special emphasis to the manufacturing for the purpose of successful development, creating the prerequisites for continuous improvement. The prerequisites that each state should provide for the promotion of manufacturing activity can

be macroeconomic and microeconomic. Macroeconomic prerequisites include stimulation of monetary and fiscal policies, while microeconomic include various stimulation programs that serve for research and development and for the acquisition of cutting-edge technology in the manufacturing process. In such a business environment, manufacturing companies will become even more competitive and will even more easily place their products on domestic and international markets.

In this paper, two phases of research have been made. Besides basic data about researched companies, the first phase referred to the examination of the frequency of fundamental problems emerging in the manufacturing process. The second phase covered identification of the problems which limit the growth of the manufacturing process effectiveness which is measured with four indicators: productivity, inventory turnover, scraps and delivery time. By analyzing the collected data in the first phase of the research, it can be concluded that the lower level of the occurrence of the fundamental problems in the manufacturing process includes: over manufacturing, high inventories of semi-finished goods in a process, workers' waiting for machines or for the material, machines' waiting for workers or for the material, defects in material cutting, delays of manufacturing equipment, outdated manufacturing equipment. On the other hand, the higher level of the occurrence of the fundamental problems in the manufacturing process includes: idle time of machine/ machinery/ manufacturing plant, manufacturing bottlenecks, waiting for materials to be processed due to the worker's occupation, waiting for materials to be processed due to the worker's occupation due to occupation of machines, slowness in materials cutting, the occurrence of errors while cutting materials and limited manufacturing capacity.

In the second phase of the research, the results were that the growth limitation of the manufacturing is affected by the poor quality of work organization, inventory turnover is affected by long manufacturing cycle, scraps appearance is affected by insufficient workers' presence. On the other hand, limitations of productivity growth is least affected by the outdated equipment, limitations of the inventory turnover growth is affected by inadequate stocks, scraps appearance is affected by the poor/inadequate equipment and inadequate materials and raw materials while failing to deliver on time is least affected by high volume of stocks in manufacturing process.

On all fundamental problems identified that arise in the manufacturing process, as well as problems that limit the growth of individual effectiveness indicators and thus the overall effectiveness of the manufacturing process, companies need to work continually on their mitigation or elimination with a goal of achieving a high level of manufacturing process effectiveness, and therefore of achieving a more competitive position in markets.

This research represents the basis for future research that will be made for manufacturing companies in neighboring country Bosnia and Herzegovina. In B&H there is also a lack of this kind of research for manufacturing companies. After conducting an analysis in B&H a comparison between these two countries can be made. It will help to determine the similarities and difference of researched companies in the same industry.

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# FINANCE MANAGEMENT



# ALTERNATIVE SOURCES OF FINANCING OF COMPANIES THROUGH PRIVATE EQUITY AND VENTURE CAPITAL FUNDS IN CENTRAL AND EAST EUROPE

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## **Abstract**

*The aim of this paper is to show that entrepreneurs in Central, Eastern Europe (CEE), and Croatia are oriented exclusively toward bank financing as the basis for obtaining additional capital. Even though the Croatian market, same as the European market in general, is bank-oriented, a wider market should be aware of the existence of alternative sources of corporate financing, whether it is a variety of funds, and agencies or autonomous issuance of securities and financial derivatives.*

*The development of entrepreneurship in CEE countries over the past few years was limited due to various macroeconomic events, and the specific problems they entailed.*

*These limitations and changes have particularly affected the entrepreneurship financing opportunities, as the countries failed to develop an adequate system of financial support for entrepreneurship thus far.*

*There is a necessity of shifting to other, more sophisticated forms of finance. In this sense, it is necessary to create a stimulating environment for the development of venture capital and private equity funds.*

*CEE entrepreneurs, modeled on European Union countries, focus solely on bank financing. Bank loans still make a relatively fast and inexpensive way of financing. However, in our opinion, it is not the speed of the approval procedure that is the main reason for applying for bank loans, but rather the ignorance of entrepreneurs about alternative sources of financing that are present in the market, although still relatively unknown.*

*The third reason for this situation authors found in the fact that foreign venture capital and private equity funds in CEE countries face the same obstacles as other foreign investors, such as complex property and legal relations, corruption, networking, and poor corporate governance.*

**Keywords:** *venture capital, private equity, CEE analytics, alternative ways of finance*

JEL Classification: G24, O16

## 1. INTRODUCTION

In the non-bank (or market-oriented) financial systems, the capital market is highly developed. In such markets, many financial institutions and financial instruments are present, and a relatively small number of banks are included in the financial sector's assets. Such are the United Kingdom and the United States markets. Europe and Japan, on the other hand, rely on a bank-oriented system of financing: the large influence of banks on companies manifests in lending and shares in the ownership structure (i.e., controlling interest in Japan), and a small share of market capitalization in the gross domestic product.

Even though the Croatian market, same as the European, is bank-oriented, a wider market should be aware of the existence of alternative sources of corporate financing, whether it is a variety of funds, agencies or autonomous issuance of securities and financial derivatives. The Croatian economy has only commenced recognizing risk capital as a source of funding (Ognjenović, 2007).

According to the authors, the basic reasons for this situation are the following: the Croatian capital market stifling the development of financing companies through venture capital funds, the Croatian Government showing no interest in the development of new strategy models for the financing of SMEs,

and the ban on the advertising of investment funds. Namely, the latter hampers the growth of investments through venture capital funds, as entrepreneurs are not familiar with their existence. Because they do not advertise, companies often do not know about their existence. Lack of transparency by entrepreneurs in relation to the business activities of a company makes it impossible for venture capital funds to have a complete insight into the company's business, and therefore to invest. The poorly regulated market, complicated administration problems and the lack of quality legal support all have adverse impacts on the development of venture capital financing.

The emerging markets attract investors with the growing economic opportunities they offer. However, such growing economic opportunities are hardly the only factor that makes a country attractive for PE/VC investments. Other underlying assumptions include an infrastructure that supports the development of PE/VC market and a favorable investment climate, and that implies a meeting of numerous socio-economic and institutional conditions (Šimić, 2015).

The main support in the development of the PE / VC market was the reform of the regulatory and tax environment. It gave rise to the possibility of investing pension funds' assets, as an alternative form of assets, in PE / VC, and the development of the PE / VC industry encouraged tax relief as well. An additional boost to this form of financing is the state subsidies for risk capital.

Together with the entrepreneurs, the state should play an important role in the development of the venture capital industry, through organized education and/or incentive measures to familiarise the entrepreneurs in this form of financing.

Croatia belongs to a group of European countries whose tax and legal system is relatively unfavorable for investing in private equity capital. Compared to 2004, positive changes occurred in the tax and legal environment, but they did not significantly affect Croatia's position in the European countries' rankings. The poor rating of the tax and legal environment partly explains the low level of investment in VC/PE in Croatia, but there are also other causes of insufficient interest in these investments, which may adversely affect the emergence and development of young and innovative companies.

The main hypothesis of this paper is that venture capital and private equity (VC/PE) financing in Croatia and CEE countries is still unknown and underdeveloped. The auxiliary hypothesis is that Croatian financial market is

still underdeveloped and therefore not quite attractive for foreign investors yet. Complex administration, time-consuming procedures, and legal restrictions prevent the development of venture capital funds. When in need of additional capital, entrepreneurs (especially small and medium-sized companies) have no other options but to apply for a loan, either to a bank or to another financial institution, and to undergo a rather complicated procedure. Generally, the smaller the company, the more complicated the procedure.

The paper is organized as follows: Chapter 2 – description of the methodology used in the paper; Chapter 3- review of theories by other authors; Chapter 4 – analysis of the trend in investment activities using annual investment value in the CEE region over the last 15 years, the number of companies invested in per each CEE country, and the amount of investments in comparison with the GDP of each country; Chapter 5 – description of private market developments in Poland and Hungary as a positive example of investment trends; Chapter 6 features the discussion, and Chapter 7 contains the conclusion.

## 2. METHODOLOGY USED IN THE PAPER

This paper analyses PE/VC financing in CEE countries and Croatia in the period from 2014 until 2017, which is not receiving sufficient coverage in current research. The paper focuses on the undeveloped market, lack of understanding by the entrepreneurs, and legal constraints connected to PE/VC investments in CEE countries, with a special focus on Croatia.

For the purpose of this research, the authors used secondary data sources, processed by applying the relevant scientific and research methods the most important of which are: induction, deduction, compilation, and comparison. The main source was the World Economic Outlook Database for Central and Eastern Europe Private equity investment report. The database is statistics platform, which monitors the development of private equity and venture capital in 25 European countries. The scope and volume of private equity financing in Central and Eastern Europe and in Croatia are illustrated by means of analyses, charts, and comparisons.

The authors collected and systemized the data about PE/VC investments into CEE countries, with a special focus on Croatia in the period from 2014 to 2017. The paper tackles the level of PE/VC investments for the above-men-

tioned countries in an attempt to establish the factors that have an adverse effect on attracting of this type of capital in Croatia, and by comparing Croatia to certain comparable countries.

### 3. REVIEW OF THEORIES BY OTHER AUTHORS

While the research of financing through PE/VC in CEE countries is very well covered in various research papers, this paper will focus on the overview of the empirical literature specific to the problems like the poorly regulated market, complicated administration problems and the lack of quality legal support. In the paper titled Specificities of financing SME sector in Croatia compared to EU countries, the authors Bujan & Vugrinec (2014) show that the most common form of financing the SME sector are bank loans. According to CEPOR, small and medium-sized enterprises largely focus on traditional sources of financing (bank loans). Poor focus on non-traditional sources of financing (venture capital funds and business angels) can be attributed to the limited supply of such sources at the Croatian financial market. For some forms of financing, small entrepreneurs do not possess enough knowledge or are not familiar with the possibility of such financing at all. According to the results of their research (GEM Croatia, 2002-2011), access to finances is very limited, and a weak interest can be attributed to poor supply of risk capital and business angels themselves (Report on small and medium enterprises in the Croatia - 2012). Small and medium-sized enterprises located in Croatia usually use internal sources of financing (through payments by the owner of the capital) (Škrtić & Mikić, 2011). Bank loans are the most widely used external source of financing (Škrtić & Mikić, 2011), followed by other external forms of financing, such as leasing or factoring.

In the paper titled Attractiveness of Croatia in terms of risk capital investments, the author Šimić (2015) emphasizes low investment attractiveness of Croatia for foreign investors. The author used secondary data collected through the European PE / VC Association (EVCA) and the Global Coverage Index of Country Attractiveness for VC / PE investment (VCPE Country Attractiveness Index). Frequent changes in tax rates, complicated preparation for calculation of tax liabilities, and payment of basic taxes project a negative image of doing business in Croatia. Entrepreneurial culture and business opportunities are the worst ranking variables. Innovation, research and development, and a number of patents contribute to the attractiveness of PE/VC, while the com-



plex start-up procedure is a downside. Entrepreneurs often point out the complicated bureaucracy and ineffective administration, while on the other hand, foreign investors warn about the lack of investment possibilities. The author also emphasizes another major deficiency – the capital market in Croatia is underdeveloped. Namely, the preferred business exit strategy of risk capital investors is IPO, which requires a well-developed capital market.

According to Soloma (2013), when institutional investors decide on the allocation of their assets, they analyze a few economic parameters such as local entrepreneurial activity, size of the market, expected economic growth and legal environment by way of a questionnaire-based survey.

Authors Groh et al. (2008), in their paper, addressed the attractiveness of Central Eastern European countries for VC/PE investors by the construction of a composite index. For the index's composition, they refer to the results of numerous prior research papers that investigated relevant parameters determining entrepreneurial activity and/or the engagements of institutional investors. They aggregated the index via five different methods and received country rankings that vary only slightly, signaling a robust index calculation. They clearly identified six tier groups of attractiveness for all of our sample countries. They compared the index with the actual fundraising activities in the individual countries and revealed a reasonable correlation of both figures. The results highlighted the strengths and weaknesses of the particular economies and provided guidelines for policy improvements and institutional investors' country allocations. The attractiveness of each country depends on expectations of institutional investors from local PE and VC funds, i.e. their ability to make a sufficient number of investments with a satisfactory risk and return, i.e. the attractiveness of an individual region depends on adequate investment opportunities.

The relevant papers (Karsai, 2013) and (Malecka & Luczka, 2016) illustrate how the government can have a positive influence on the development of PE / VC. In the paper titled Venture capital and private equity industry in Hungary (Karsai, 2013), the author made conclusions based on a detailed survey of the entire VC industry between 1989 and 2010. The paper demonstrates a relatively strong correlation between the allocation of capital to VC&PE funds and the capital flow into the Budapest Stock Exchange. He emphasized how the changes in investment activities were closely related to election years. Investments were hampered not so much by the shortage of capital, but by a lack of

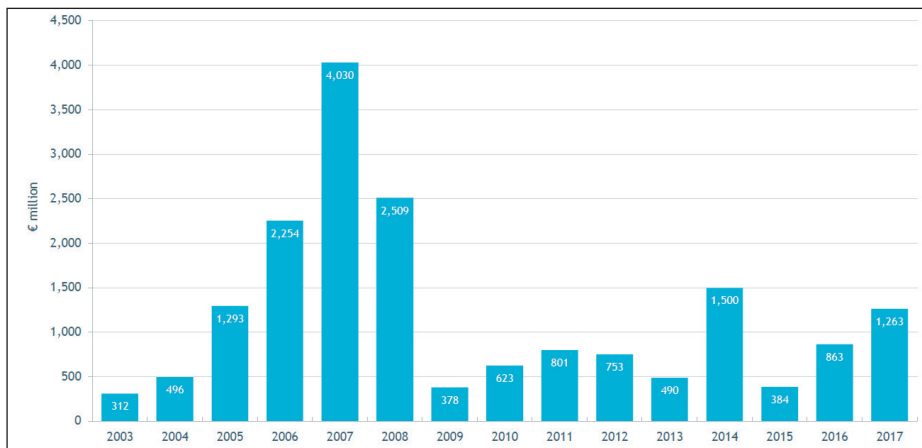
demand and attractive business plans. The article illustrates the different roles and approaches of global, regional and country VC&PE funds in Hungary.

Authors Malecka & Luczka (2016) highlighted the importance and the leading role of Poland, as a country that is the first choice for private equity investors in this region. The results presented in the article are based on the source data from annual reports and publications produced and made available by capital market institutions, and from the authors' own research on Polish entrepreneurship. They examined the scope and volume of private equity financing in Central and Eastern Europe and in Poland by means of analyses, charts, and comparisons, highlighting the importance and the leading role of Poland as a country that is the first choice for private equity investors in this region.

#### 4. CENTRAL AND EASTERN EUROPE PRIVATE EQUITY INVESTMENT REPORT

Private equity investment in CEE reached €3.5 billion in 2017, a 113% year-on-year increase and a record high level for the region. This result surpasses the previous peak in 2008 by 40%. The growth in CEE investments underlines the wider trend across Europe where total private equity investments in 2017 increased by 29% year-on-year to €71.7bn, the second highest level on record and only 4% below the peak in 2007.

**Figure 1:** Annual investment value in the CEE region, 2003-2017

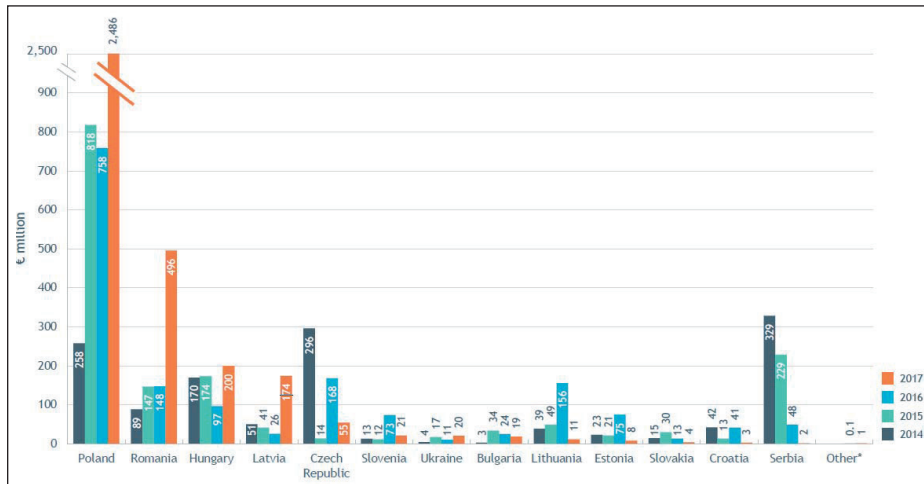


**Source:** Invest Europe/EDC for investment data. (2018)  
IMF – World Economic Outlook Database for GDP data.

The investment activity in the CEE region also manifested particularities concretized in a growth trend until 2009, but annual oscillations can be observed as well, thus in the period from 2000-2015 the maximal levels were registered in 2007 and 2008. Four countries (Serbia, Czech Republic, Poland, and Romania) made investments that represented 80% of total investments made in the CEE area in 2014 (EVCA, 2014). In addition, the main destinations of private equity financing in the CEE region in 2015 were Poland (54% of total value), Serbia (14% of total value), Hungary (10% of total value) and Romania (9% of total value). These four countries made up 85% of total CEE investments by value in 2015 (EVCA, 2015).

The total number of CEE companies receiving funding dropped by 25% in 2017 (down to 257), largely due to another annual decrease in the number of companies receiving venture capital. As in prior years, CEE private equity investments in 2017 were concentrated in a few countries. Poland remained the leading destination, with 71% of the region's total investment value, followed by Romania (14%), Hungary (6%) and Latvia (5%).

**Figure 2:** Annual investment value in CEE, 2014-2017



**Source:** Invest Europe/EDC for investment data. (2018)  
IMF – World Economic Outlook Database for GDP data.

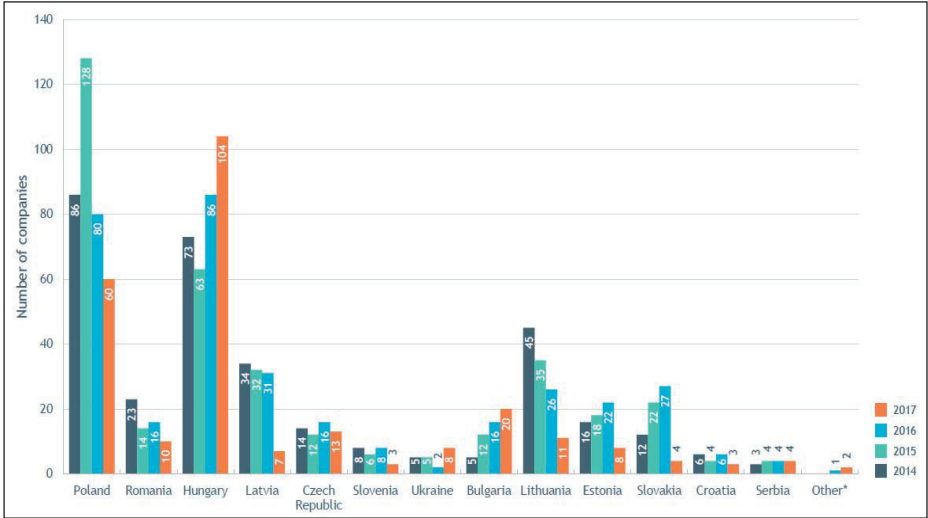
Hungary saw the largest number of companies receiving private equity investment in 2017 at 104, comprising 40% of the CEE total. Four countries (Poland, Romania, Hungary, and Latvia) combined comprised 96% of the total

CEE investment by value and 70% of the companies receiving private equity investment in 2017. Annual investment results in the region and in individual countries can be influenced by a few, but large investments. The two largest investments in 2017, both funding companies in Poland, accounted for 56% of the total regional amount invested. In comparison, the 12 largest transactions totaled this same proportion of total investments in 2016.

Only three companies were financed by PE investments in Croatia in 2017, in the total amount of EUR 3 m. It was only 0.005% of the country’s GDP. This represented a decreasing trend in comparison with 2014.

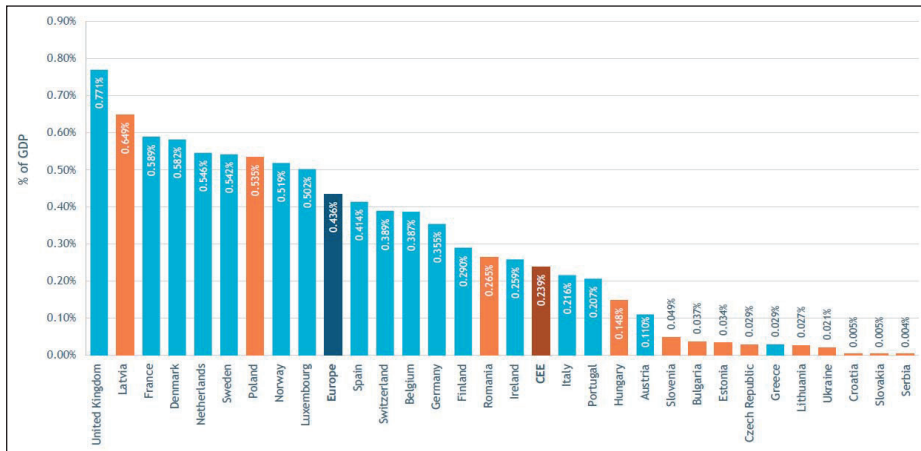
In 2007, Serbia attracted some EUR 200 million in investment in risky capital, and in the same year, only EUR 35 million was invested in Croatia. The same trends continued in 2014, 2015 and 2016 (i.e. negative trend for Croatia and positive for Serbia). In 2014, Serbia invested EUR 329 million and Croatia only EUR 42 million, while in 2017 Serbia decreased investments to only EUR 2 million, whilst in Croatia, the investments dropped to a mere EUR 3 million.

**Figure 3:** Annual investment in CEE, 2014-2017 (number of companies)



**Source:** Invest Europe/EDC for investment data. (2018)  
IMF – World Economic Outlook Database for GDP data.

**Figure 4:** Private equity investments as a percentage of GDP, 2017 (by country of destination of investment)



**Source:** Invest Europe/EDC for investment data. (2018)  
IMF – World Economic Outlook Database for GDP data.

CEE private equity investment measured as a percentage of the region's GDP increased significantly from 0.122% in 2016 to 0.239% in 2017. However, investment in CEE continues to lag behind Europe as a whole, where the average was 0.436%. Notable exceptions are two CEE countries. Latvia ranked second on this metric across all of Europe reaching 0.649% (mostly because of one large transaction), while Poland achieved the seventh best country result in Europe with 0.535% (driven by two large transactions).

## 5. DEVELOPMENT OF PRIVATE EQUITY AND VENTURE CAPITAL INDUSTRY IN HUNGARY AND POLAND

The paper Venture capital and private equity industry in Hungary (Karsai, 2013) illustrates how Hungary became the second most developed venture capital and private equity (VC&PE) market in Central and Eastern Europe. It demonstrates a strong correlation between the allocation of capital to VC&PE funds and the capital flow at the Budapest Stock Exchange.

In the initial period, the capital of investors entering the Hungarian market mainly stemmed from government resources. The presence of these institu-

tions strengthened the confidence of foreign private investors. The supply of resources from the Hungarian government budget increased significantly during 2004–2005, and in 2010, a new wave of government resources reached the VC market when Jeremie funds<sup>1</sup> were set up.

In 2010, Jeremie funds were launched. The government, in addition to its direct VC investments, intended to participate in VC investments indirectly, via hybrid funds, a tried and tested scheme in international markets. In their first year of operation, Jeremie funds reached a similar proportion in the market as private sector investments. Due to the crisis and the increasing uncertainties in the economy, the interest of private sector market players in Hungarian projects dropped. The Hungarian government tried for the first time to divert private-sector VC funds towards innovative enterprises preferred by the state through the Jeremie funds. The main purpose of the new funds was to finance innovative small start-up companies, which had been neglected by both private and public sector VC investors until then. In order to achieve its goals, the government motivated private investors also by financial incentives, i.e., by sharing the expenses and the yields of investments disproportionately (Karsai, 2012a). The state-owned Hungarian Development Bank and a Japanese private-sector investor established a special fund with a total capital of EUR 100 m jointly in 2008.

VC investments utilizing joint public and private resources represent a significant change compared to investments of funds established using public funds and managed exclusively by state-owned organizations.

The level of development in the Hungarian VC&PE sector and the role played by the sector in building a market economy is clearly indicated by the fact that during the two decades under review, 87% of the capital allocated to investments overall were raised from the private sector sources. (Karsai, 2013).

The proportion of domestic institutional investors was extremely small. It was due not only to the time-consuming character of capital accumulation and development of the financial culture but also to the shortcomings of the capital market legislation. Only after the laws changed, it became possible for these institutions to invest in the VC&PE market. From early 2006, the voluntary

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<sup>1</sup> JEREMIE (Joint European Resources for Micro to Medium Enterprises) is the European Union's development program for SMEs that offers several means of enterprise development. It was initiated by the European Commission and is financed by the European Investment Bank (EIB) and its venture capital arm, the European Investment Fund (EIF).

and private pension funds in Hungary could invest up to 5% of their assets in funds registered either in Hungary or in a foreign country as VC funds. Earlier, the statutory requirements in Hungary prohibited placing of the savings of domestic institutional investors in VC&PE funds. According to a survey made in summer 2009, the assessment of VC&PE among Hungarian voluntary and mandatory private pension funds was clearly positive (Karsai, 2010b).

By the turn of the millennium, Hungary became the center of the VC&PE industry in CEE, and even though the Polish market assumed this role in the next decade, the Hungarian VC&PE market remained a dominant player in the region. The players and the operation mechanism of the Hungarian market have grown to be comparable to the VC&PE industry in Western Europe. The positive impact of EU accession prevailed in the end, resulting in a rise in the capital raising cycle and improving the availability of the necessary loans for buyout transactions.

The paper Private Equity Market in Poland and in Central and Eastern Europe (Malecka & Luczka, 2016) showed an example of how the political transformation allowed for a re-launch and development of the most important capital market institution – the stock exchange. Today, the Warsaw Stock Exchange is the largest in Central and Eastern Europe, being among top European trading floors in terms of the number of new listings. Stock exchanges are essential for capital flows affecting not only national but also global development of economies of individual countries (see: Plókarz, 2013).

The beginning of the activities of private equity funds, both in Poland and in CEE as a whole, bears a direct connection with the changes in political systems and the related transformations that took place in the economies of these countries after communism had collapsed (Dumitrescu, 2015, pp. 186–197; Maecka, 2016, pp. 34–43; Myshlyayev, 2013, pp. 253–258).

After 1990, CEE countries began operating on a market basis, opening their borders to foreign investors. All related activities were processes, some of which implemented faster and others more slowly, with their effects being sometimes visible immediately and sometimes only after several years.

Poland attracts investors from all over the world for several reasons:

- ✦ well-developed capital market enabling IPO divestment



- modern and competitive banking sector makes it possible to obtain debt financing effectively and business support institutions ensure more efficient operations
- EU membership, guaranteeing the smooth functioning of regulations, uniformity of procedures, and ensuring international standards and investor rights protection.

As compared to the entire Central and Eastern European region, the Polish private equity market is very strong. The period of rapid economic growth in Poland and CEE countries is also linked with their accession to the European Union, which not only consolidated their economic and political position but also added credibility noticed in business by private equity funds as well.

## 6. DISCUSSION

CEE countries lag by the number of funds, the number of investments, and the size of the investments in comparison with other European countries. In addition, among the existing venture capital funds, CEE countries are not recognized as countries with great potential for development of this type of industry. General problems in CEE countries are an underdeveloped market, lack of understanding by the entrepreneurs, and legal constraints.

According to the analysis of data in the period from 2014 to 2017, Croatia showed a negative trend in attracting this type of funding when compared to other CEE countries. The PE investment to gross domestic product ratio in Croatia averages 0.005%, which is significantly less than the average of Central and Eastern Europe, which was 0.239%. Compared to CEE countries, both the number of companies invested in and the volume of investments in Croatia were negligible.

According to the analysis based on the Central and Eastern Europe private equity investment report and based on researches of other authors presented in this paper, the hypothesis that financing through PE/VC funds in CEE countries and Croatia is still rather unfamiliar and underdeveloped was confirmed.

The results obtained herein serve as a solid foundation that can be used in future scientific research, by applying a comparative analysis including the countries highly developed in terms of PE and VC investments, and attractiveness of a country for such investments.



Review of theories of other authors corroborated the auxiliary hypothesis claims that the Croatian financial market is still underdeveloped and therefore not yet attractive for foreign investors. Complicated regulatory requirements and lack of interest of the Croatian government in developing of PE/VC investments makes the Croatian market unappealing for foreign investors. Frequent changes in tax rates, complicated preparation for calculation of tax liabilities, and payment of basic taxes project a negative image of doing business in Croatia. Namely, the preferred business exit strategy of risk capital investors is IPO, which requires a well-developed capital market.

The attractiveness of each country is determined by six key elements: economic activity of the country, capital market development, taxation, investor protection scheme and corporate governance, social environment, entrepreneurial culture and business opportunities (Groh et al. 2008).

Due to a large share of non-performing loans (NPL) in the non-trading books of banks in CEE countries, the European Banking Authority (EBA) issued an NPL strategy in 2018. The strategy focuses on lowering the portion of non-performing loans and mitigating of the credit risk, which implies further restrictions on bank lending. The impact of those new guidelines on the development of VC/PE funding in the CEE countries is yet to be seen and analyzed in some future research.

## 7. CONCLUSION

Despite rapid financial development, most firms in the region still rely either on internally generated funds and contributions through informal channels (for example, loans from friends and relatives of the owner/entrepreneur), or on external financing such as bank loans.

Entrepreneurial disenchantment clearly manifests in the fact that entrepreneurs neither want to lose control over their business nor want to allow a change in management or accept all the terms of the offered partnership. Most entrepreneurs in CEE countries raise funds to start their business from their own sources. Although there are business angels in Croatia, they finance only 1.6% of initial entrepreneurial investments.

According to a survey conducted in 2008, 60.53% of entrepreneurs based in Zagreb expressed a negative attitude towards venture capital funds as a form

of financing. The main reason for this is the fear of such funds taking over the company and the loss of freedom and independence when making business decisions (Prtenjača, 2008).

Out of all CEE countries, four countries (Poland, Romania, Hungary, and Latvia) combined comprised 96% of the total CEE investment by value. Hungary had the largest number of companies receiving private equity investment in 2017, comprising 40% of the CEE total. All other CEE countries need to take extra measures for improvement of this type of financing.

A major disadvantage is a ban on the advertising of venture capital funds. Since they are not advertised, neither the owners of the existing companies nor any prospective beginners are familiar with venture capital funds, the way they operate, the way they are funded or with anything related to funding operations. People are “conservative”, and still heavily rely on bank financing. Lack of transparency by entrepreneurs in relation to the business activities of a company, poorly regulated market, complicated administration problems and the lack of quality legal support all have adverse impacts on the development of venture capital financing.

In this paper, the authors attempted to investigate positive features of risk capital (which can have positive effects on the development of the economy, GDP growth, and employment), and to point to the significance of the development of such funds. It is necessary to involve the government sector as the main driver of the development of alternative sources of investments, as we saw happening in Poland and Hungary. Encouraging investment through venture capital funds is extremely important for the development of the economy of every country, and therefore for the Croatian economy as well. The funds encourage the economy of a country from several aspects, namely: they generate new jobs, boost the competitiveness of the economy, stimulate liquidity on the capital market, and attract foreign capital.

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# Bestellpunktpolitik in der stochastischen Lagerhaltung

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JEL Classification: C61, D24

## Problemstellung

In der Theorie der Lagerhaltungsmodelle geht es um die Bestimmung der optimalen Bestellmenge  $q$  eines Lagergutes. Die Optimierung erfolgt im Allgemeinen in Gestalt der Minimierung von Kosten oder der Maximierung eines Gewinns. Ist die Bestellmenge  $q$  für ein Lagergut zu groß, dann ist zwar die Lieferfähigkeit für eine Nachfrage nach dem Lagergut hoch, aber es steigt auch der mittlere Lagerbestand und damit die Lagerungskosten. Ist die Bestellmenge zu gering, dann sinken zwar die Lagerungskosten, aber die Lieferfähigkeit sinkt ebenfalls. Damit kann es zu Fehlmengen kommen, also zu Nachfragen, die nicht mehr erfüllt werden können. Dadurch kommen Fehlmengenkosten hinzu, die durch Umsatzausfälle wegen mangelnder Verfügbarkeit des Lagerguts begründet werden können.

Die stochastische Lagerhaltung (vgl. z.B. Gohout 2009) unterstellt eine stochastische Nachfrage, die durch die Zufallsvariable  $D$  (demand) im Modell dargestellt wird. Bei einer Bestellpunktpolitik geht man von einer bekannten Lieferfrist von  $L$  Tagen aus. Die Bestellung wird bei einem — zu berechnenden — Lagerbestand  $s$  ausgelöst, dem sogenannten Bestellpunkt.

Bei der Bestimmung der Bestellmenge  $q$  und des Bestellpunkts  $s$  handelt es sich daher um ein Optimierungsproblem. Genauer gesagt sollen die Gesamtkosten einer solchen  $(s, q)$ -Politik minimiert werden. Da die Nachfrage  $D$  eine Zufallsvariable ist, stellen auch die Kosten eine Zufallsvariable dar. Da eine Zufallsvariable aber prinzipiell nicht "optimiert" werden kann, werden stattdessen die "erwarteten" Kosten minimiert.

## Modell

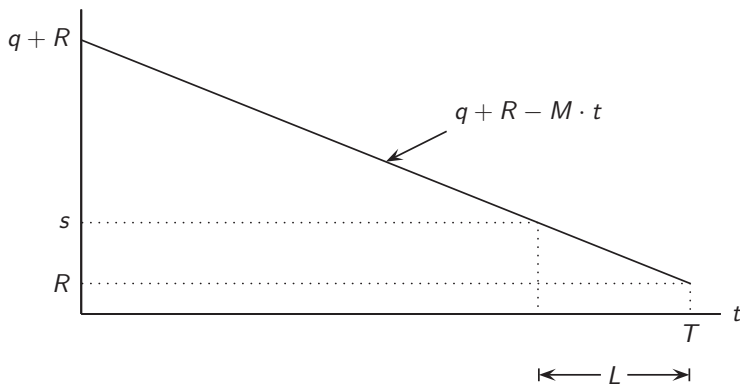
Die Fixkosten der Bestellung, also die konstanten Kosten je Bestellvorgang, die unabhängig von der Bestellmenge sind, sollen mit  $K_B$  bezeichnet werden. Die Lagerungskosten  $k_L$  bezeichnen die Kosten, die je Mengeneinheit und je Tag der tatsächlich eingelagerten Menge entstehen. Sie setzen sich aus verschiedenen Komponenten zusammen, wie etwa den Kosten für Kühlung (oder artgerechte Lagerung), den Kosten der Kapitalbindung oder weiteren ähnlichen Komponenten. Die Fehlmengenkosten, die je Mengeneinheit einer angeforderten, aber nicht lieferbaren Mengeneinheit anfallen, sollen mit  $k_F$  bezeichnet werden. Sie sind eher schwer zu ermitteln oder zu schätzen, sind aber für die Optimierung unerlässlich.

Die erwarteten Gesamtkosten sind eine Funktion der beiden Variablen  $q$  und  $s$ :

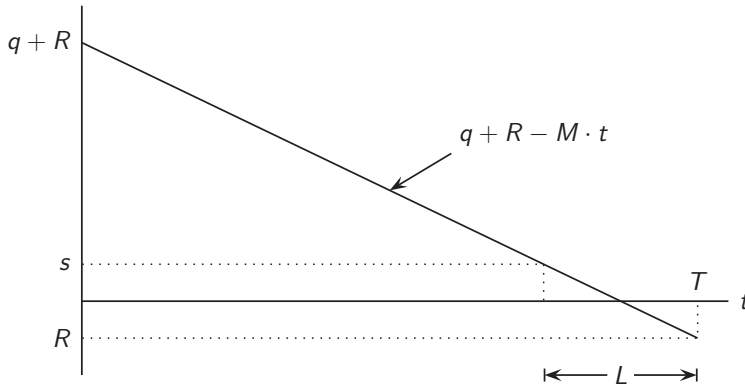
$$E(K(q, s)) = K_B \cdot M/q + k_L \cdot E(LB) + k_F \cdot E(FB).$$

Der erste Summand ergibt sich durch die gleichmäßige Verteilung der bestellfixen Kosten  $K_B$  auf den gesamten Bestellzyklus  $T$ , also die Anzahl der Tage zwischen zwei Bestellungen. Daher wäre der entsprechende Kostenanteil pro Tag  $K_B/T$ . Da  $T$  aber über die Beziehung  $T = q/M$  von der Entscheidungsvariablen  $q$  abhängt, muss dies auch in der Zielfunktion zum Ausdruck gebracht werden. Mit  $M$  wird die "erwartete" Nachfrage pro Tag bezeichnet:  $M = E(D)$ . Der zweite Summand enthält die erwarteten Lagerungskosten, indem der Kostenparameter  $k_L$  mit dem mittleren oder erwarteten Lagerbestand  $E(LB)$  multipliziert wird. Der dritte Summand enthält die erwarteten Fehlmengenkosten, indem der Kostenparameter  $k_F$  mit dem mittleren oder erwarteten Fehlbestand  $E(FB)$  multipliziert wird.

Zur Darstellung des erwarteten Lagerbestands und des erwarteten Fehlbestands müssen zwei Fälle unterschieden werden. Im ersten Fall ist die zufällige Nachfrage in der Lieferfrist  $L$  höchstens so groß wie der Bestellpunkt  $s$ . Damit ist in diesem Fall  $s \geq M \cdot L$  oder  $R := s - M \cdot L \geq 0$ , wobei  $R$  den erwarteten Restbestand zum Ende des Zyklus bedeutet. Wenn der erwartete Restbestand  $R$  beträgt und die Bestellmenge mit  $q$  bezeichnet wird, dann ist der (erwartete) Anfangsbestand gleich  $q + R$ . Der erwartete, und damit zur Geraden geglättete Lagerbestandsverlauf in einem solchen Zyklus kann wie folgt dargestellt werden:



Im zweiten Fall ist die zufällige Nachfrage in der Lieferfrist größer als der Bestellpunkt  $s$ . Dadurch ist  $R < 0$ , und es entsteht eine erwartete Fehlmenge. Der erwartete Lagerbestandsverlauf in einem solchen Zyklus kann folgendermaßen dargestellt werden:



Der mittlere Bestand in einem Zeitraum von 0 bis  $T$  für eine allgemeine Bestandsfunktion  $f(t)$  lautet:

$$\frac{1}{T} \cdot \int_0^T f(t) dt.$$

Eine einfache Rechnung und Berücksichtigung von  $T = q/M$  ergibt daher für den erwarteten Lagerbestand:

$$\begin{aligned} E(LB) &= \frac{1}{T} \cdot \int_0^T \max(q + R - M \cdot t, 0) dt \\ &= \begin{cases} (q + R)^2 / (2q) & R < 0 \\ q/2 + R & R \geq 0 \end{cases} \end{aligned}$$

Analog ergibt sich für den erwarteten Fehlbestand:

$$\begin{aligned} E(FB) &= \frac{1}{T} \cdot \int_0^T -\min(q + R - M \cdot t, 0) dt \\ &= \begin{cases} R^2 / (2q) & R < 0 \\ 0 & R \geq 0 \end{cases} \end{aligned}$$

Für die erwarteten Gesamtkosten ergibt sich für den Fall  $R \geq 0$ , also  $s \geq M \cdot L$ :

$$\begin{aligned} E(K(q, s)) &= K_B M / q + k_L \cdot E(LB) + k_F \cdot E(FB) \\ &= K_B M / q + k_L \cdot (q/2 + R) \geq K_B M / q + k_L \cdot q/2. \end{aligned} \quad (1)$$

Für den Fall  $R < 0$ , also  $s < M \cdot L$ , ergibt sich nach einigen elementaren Umformungen:

$$\begin{aligned} E(K(q, s)) &= K_B M / q + k_L \cdot E(LB) + k_F \cdot E(FB) \\ &= K_B M / q + k_L \cdot (q + R)^2 / (2q) + k_F \cdot R^2 / (2q) \\ &\geq (k_L - k_L^2 / (k_L + k_F)) \cdot q/2. \end{aligned} \quad (2)$$

Diese Kosten sind offenbar kleiner als diejenigen im Fall  $R \geq 0$ , so dass wir uns auf den Fall  $R < 0$  konzentrieren können. Die letzte Abschätzung in (2) wird für

$$R = -k_L/(k_L + k_F) \cdot q \iff s = M \cdot L - k_L/(k_L + k_F) \cdot q \quad (3)$$

zur Gleichung. Die auf diese Weise von  $s$  "bereinigte" Zielfunktion im relevanten Fall  $R < 0$  lautet:

$$E(K(q, s)) = K_B M/q + (k_L - k_L^2/(k_L + k_F)) \cdot q/2.$$

Sie wird minimal für

$$q = \sqrt{2K_B M \cdot (k_L + k_F)/(k_L \cdot k_F)}.$$

Dies führt nach (3) zu dem optimalen Bestellpunkt

$$s = M \cdot L - \sqrt{2K_B M \cdot k_L/(k_F \cdot (k_L + k_F))}$$

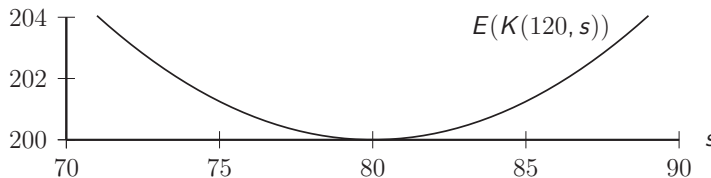
und zu den minimalen täglichen Gesamtkosten von

$$E(K(q, s)) = \sqrt{2K_B M \cdot k_L \cdot k_F/(k_L + k_F)}.$$

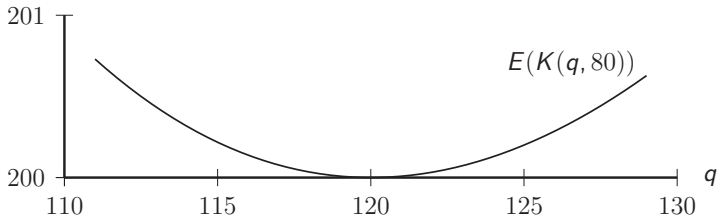
### Beispiel

Ein Lagergut soll mittels  $(s, q)$ -Politik kostenminimal bestellt werden. Die bestellfixen Kosten betragen  $K_B = 240$  €, die Lagerungskosten je Mengeneinheit [ME] und je Tag des tatsächlich gelagerten Gutes betragen  $k_L = 2$  €, und die Fehlmengenkosten je ME und je Tag einer Fehlmenge betragen  $k_F = 10$  €. Die mittlere Nachfrage nach dem Lagergut beträgt  $M = 50$  ME. Die Lieferfrist  $L$  beträgt zwei Tage.

Die kostenoptimale Bestellmenge beträgt daher  $q = 120$  ME. Der optimale Bestellpunkt, bei dem eine neue Bestellung ausgelöst wird, beträgt  $s = 80$  ME. Daraus resultieren die minimalen täglichen Kosten von 200 €. Jede Abweichung von  $q = 120$  oder von  $s = 80$  würde zu höheren täglichen Kosten führen. Wenn man die Gesamtkosten für  $q = 120$  und variable Werte von  $s$  betrachtet, erkennt man die Optimalität von  $s = 80$ :



Wenn man die Gesamtkosten für  $s = 80$  und variable Werte von  $q$  betrachtet, erkennt man die Optimalität von  $q = 120$ :



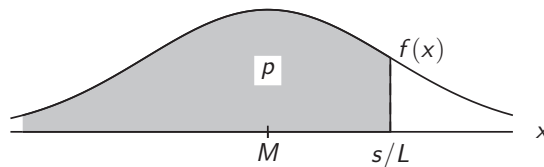
Wenn man von den Optimalwerten  $q = 120$  und  $s = 80$  simultan abweicht, kann man die Erhöhung der Gesamtkosten in der folgenden Tabelle erkennen:

s	q=117	118	119	120	121	122	123
77	200,69	200,59	200,51	200,45	200,40	200,38	200,37
78	200,38	200,31	200,24	200,20	200,17	200,16	200,17
79	200,18	200,12	200,08	200,05	200,04	200,05	200,07
80	200,08	200,03	200,01	200,00	200,01	200,03	200,07
81	200,08	200,05	200,04	200,05	200,07	200,11	200,17
82	200,18	200,17	200,18	200,20	200,24	200,30	200,37
83	200,38	200,39	200,41	200,45	200,50	200,57	200,66

### Servicegrad mit Normalverteilung

Mit welcher Wahrscheinlichkeit kann bei bekannter Bestellmenge  $q$  und bei bekanntem Bestellpunkt  $s$  die stochastische Nachfrage nach dem Lagergut in der Lieferfrist erfüllt werden? Diese Wahrscheinlichkeit wird als Servicegrad  $p$  bezeichnet. Sie hängt nicht von der Bestellmenge, sondern nur vom Bestellpunkt ab. Wenn die Dichte der zufälligen täglichen Nachfrage  $D$  mit  $f(x)$  bezeichnet wird, dann ergibt sich der Servicegrad wie folgt:

$$p := P(D \cdot L \leq s) = P(D \leq s/L) = \int_{-\infty}^{s/L} f(x) dx.$$



Häufig wird als Verteilung der täglichen Nachfrage eine Normalverteilung angenommen, was durch den Zentralen Grenzwertsatz auch recht gut begründet werden kann (vgl. Gohout 2018 oder Specht et al. 2014, S.153f.). Dann ergibt sich der Servicegrad wie folgt:

$$D \sim N(M, \sigma^2) \Rightarrow p = \Phi\left(\frac{s/L - M}{\sigma}\right)$$



mit der Verteilungsfunktion  $\Phi(\cdot)$  der Standardnormalverteilung. In unserem Beispiel ergibt sich für eine Standardabweichung von  $\sigma = 15$  der Servicegrad

$$p = \Phi(-2/3) \approx 0,252.$$

Wenn der Geschäftsführung ein geringerer Servicegrad ausreicht, dann gibt es kein weiteres Problem und die normale  $(s, q)$ -Politik ist optimal. Wenn aber der Geschäftsführung dieser Servicegrad von etwa 25 Prozent zu gering ist und sie einen Servicegrad von beispielsweise 40 Prozent garantieren möchte, dann muss der dafür erforderliche (höhere) Bestellpunkt  $s_p$  entsprechend berechnet werden:

$$p = 0,4 = \Phi\left(\frac{s_p/L - M}{\sigma}\right) \iff s_p = M \cdot L + \sigma \cdot L \cdot \Phi^{-1}(0,4) \approx 92,4.$$

Der Bestellpunkt müsste daher von 80 ME auf 92,4 ME erhöht werden. Formal handelt es sich um eine Minimierung mit Restriktion. Da sich nun der Bestellpunkt geändert hat, muss auch die Bestellmenge zur Minimierung der erwarteten Gesamtkosten angepasst werden:

$$q = \sqrt{2K_B M / k_L + (k_L + k_F) / k_L \cdot (\sigma L \cdot \Phi^{-1}(p))^2} \approx 111,12.$$

Die täglichen Gesamtkosten steigen damit erwartungsgemäß und betragen in unserem Beispiel 207,03 €.

### Servicegrad ohne Normalverteilung

Kann die Nachfrage nicht als normalverteilt angenommen werden, so kann ihre Dichte aus Beobachtungswerten empirisch geschätzt werden. Die weiteren Berechnungen des optimalen Bestellpunkts und der optimalen Bestellmenge bei gegebenem Servicegrad verlaufen analog, benutzen jedoch die empirische Dichte.

### Beispiel

Die Nachfrage nach dem Lagergut betrage in 15 Perioden:

$$48, 50, 58, 42, 45, 44, 65, 43, 46, 54, 47, 49, 51, 52, 56.$$

Für diese beobachteten Nachfragewerte führen wir nun eine empirische Dichteschätzung oder Kerndichteschätzung durch. Dafür verwenden wir den Epanechnikov-Kern:

$$K(u) := 3/4 \cdot \max\{0, 1 - u^2\}.$$

Dieser Kern hat gegenüber anderen bekannten Kernen den Vorteil, dass er IMSE-optimal ist, das heißt er hat einen minimalen Schätzfehler im Sinne des *Integrated Mean Square Error* (vgl. Rinne (2008), S. 493ff.):

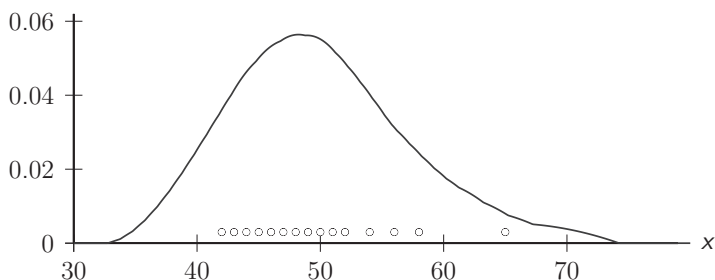
$$\text{IMSE} = \int_{-\infty}^{\infty} E\left(\widehat{f}(x) - f(x)\right)^2 dx,$$

wobei  $f(x)$  die wahre, aber unbekannte Dichte bedeutet und  $\hat{f}(x)$  die — noch anzugebende — Kerndichteschätzung. Für die Dichteschätzung muss man noch eine so genannte Bandbreite wählen. Die optimale Bandbreite lautet in unserem Beispiel  $b \approx 9,2$  (vgl. Rinne (2008), S. 497).

Damit erhält man schließlich die folgende Kerndichteschätzung:

$$\hat{f}(x) = \frac{1}{n \cdot b} \cdot \sum_{i=1}^n K\left(\frac{x - x_i}{b}\right).$$

In unserem Beispiel ist diese empirische Dichte nur in einem Teil des Intervalls  $[30, 80]$  positiv. Wir wählen also für  $x_i$  die Werte 30,0, 30,1, 30,2, ..., 79,9, 80,0. Je feiner diese Aufteilung des Intervalls gewählt wird, desto genauer wird die Kerndichteschätzung. Die Abbildung zeigt die Kerndichte und die 15 Beobachtungswerte als Kreise.



Der Erwartungswert — sowie weitere Integrale — wird hier mittels Simpson-Formel (Thomas Simpson, 1710–1761), die auch als Keplersche Fassregel (Johannes Kepler, 1571–1630) bekannt ist, approximativ berechnet. Dazu wird das Integrationsintervall  $[a, b]$  in  $n$  gleichgroße Teilintervalle  $[x_0, x_1], [x_1, x_2], \dots, [x_{n-1}, x_n]$  unterteilt. Für  $n$  wird eine gerade und nicht zu kleine Zahl gewählt. An den Stellen  $x_0$  bis  $x_n$  werden die Werte  $y_0$  bis  $y_n$  des Integranden  $f(x)$  berechnet, die hier ja durch die Kerndichteschätzung bekannt sind. Dann gilt (vgl. z.B. Gohout (2012), S. 118):

$$\int_a^b f(x) dx \approx \frac{h}{3} \cdot (y_0 + 4y_1 + 2y_2 + 4y_3 + \dots + 4y_{n-1} + y_n).$$

Dabei ist  $h = x_{i+1} - x_i$  die Breite der Teilintervalle. Die Simpson-Formel liefert eine gute Approximation des Integrals und umso besser, je größer  $n$  ist und je kleiner die Teilintervalle sind. Wenn man mit  $g$  den Vektor der "Gewichte"  $(1, 4, 2, 4, \dots, 4, 1)$  und mit  $y$  den Vektor der Funktionswerte  $(y_0, y_1, y_2, y_3, \dots, y_{n-1}, y_n)$  bezeichnet, dann ist die Summe in der Klammer der Simpson-Formel nichts anderes als das Skalarprodukt dieser beiden Vektoren.

Für die erwartete Nachfrage ergibt sich fast genau der Wert  $M = 50$  aus unserem ersten Beispiel. Damit stimmen auch die Bestellmenge und der Bestellpunkt mit den Werten der  $(s, q)$ -Politik aus dem ersten Beispiel überein. Unterschiede ergeben sich erst bei

Vorgabe eines Servicegrads. Der effektive Servicegrad für die normale  $(s, q)$ -Politik mit  $s = 80$  ergibt sich durch Anwendung der Simpson-Formel für die empirische Dichte folgendermaßen:

$$p = \int_{-\infty}^{s/L} \widehat{f}(x) dx = 0,0712.$$

Wenn der Servicegrad höher sein soll, dann kann der dafür erforderliche Bestellpunkt  $s_p$  einfach bestimmt werden, da es sich bei den Integralwerten über die Kerndichte an den Stellen  $x_i$  ja nur um endlich viele Werte handelt. So zeigt sich in unserem Beispiel, dass für  $s = 95,2$  der Servicegrad  $0,403$  beträgt und damit — in der diskreten Approximation — einen gewünschten Servicegrad von 40 Prozent gerade übersteigt.

Wenn der gewünschte Servicegrad größer ist als der effektive Servicegrad, dann ist der entsprechende Bestellpunkt  $s_p$  größer als  $s$ . Wegen (1), (2) und (3) ist dann auch die erwartete Gesamtkostenfunktion steigend in  $s$ , so dass  $s$  für die restringierte Minimierung gerade gleich  $s_p$  zu setzen ist. Eine weitere Vergrößerung des Bestellpunkts würde die Kosten unnötig in die Höhe treiben.

Die Zielfunktion ist damit nur noch eine Funktion von  $q$ . Die optimale Bestellmenge ergibt sich dann mit  $R_p := s_p - M \cdot L$  wie folgt:

$$q = \begin{cases} \sqrt{2K_B M / k_L} & \text{für } R_p \geq 0 \\ \sqrt{2K_B M / k_L + (k_L + k_F) / k_L \cdot R_p^2} & \text{für } R_p < 0 \end{cases}$$

In unserem Beispiel beträgt die optimale Bestellmenge 110,18 ME.

Die minimalen täglichen Kosten berechnen sich folgendermaßen:

$$E(K(q, s_p)) = \begin{cases} K_B M / q + k_L \cdot (q/2 + R_p) & \text{für } R_p \geq 0 \\ K_B M / q + k_L \cdot (q + R_p)^2 / (2q) + k_F \cdot R_p^2 / (2q) & \text{für } R_p < 0 \end{cases}$$

Im Beispiel betragen die täglichen Gesamtkosten 210,75 €.

### Fazit

Die  $(s, q)$ -Politik ist ein Mehrperiodenmodell der stochastischen Lagerhaltung. Die beiden Parameter werden kostenoptimal — gegebenenfalls mit einem Mindestservicegrad — berechnet und dann in künftigen Perioden angewendet. Wenn die Nachfrage jedoch nicht normalverteilt ist, dann besteht die Möglichkeit, ihre Dichte aus beobachteten Nachfragemerten zu schätzen. Für die Integrale, die bei gegebenem Servicegrad auftreten, wird dann diese empirische Dichte verwendet. Da sie nicht als integrierbare Funktion vorliegt, aber in Form von diskreten Werten, werden die Integrale durch eine Quadraturformel approximativ berechnet. Wir haben hier eine der einfachsten und zugleich genauesten Quadraturformeln verwendet, die Simpson-Formel. Die Berechnungen sind nicht schwierig und können mit einem Tabellenkalkulationsprogramm ausgeführt werden.

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## POSSIBILITIES OF APPLYING MARKOWITZ PORTFOLIO THEORY ON THE CROATIAN CAPITAL MARKET

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### **Abstract**

*In order to achieve the maximum possible profit by taking the lowest possible risk, investors build a stock portfolio consisting of a specific number of stocks which, according to the principle of diversification, significantly reduce the risk of loss. To build a portfolio, in developed capital markets investors have used the Markowitz portfolio optimization model for many years that enables us to find an optimal risk-return trade-off by selecting certain stock combinations. Despite the development of the Zagreb Stock Exchange, i.e., the central trading venue in the Republic of Croatia, the Croatian capital market is still underdeveloped. It is characterized by numerous shortcomings such as low liquidity, lack of transparency, high stock price volatility and insufficient traffic. Accordingly, the aim of this paper is to provide an insight into the functioning of the*

*Croatian capital market and to examine the possibility of building an optimal stock portfolio by using the Markowitz model. The analysis was carried out on a sample of seventeen stocks of companies listed on Zagreb Stock Exchange, which were taken for analysis on the basis of the following criteria: liquidity, affiliation to certain sectors and a positive financial result. The results have shown that underdeveloped capital markets, like the Croatian capital market, have some shortcomings that are, to a greater or lesser extent, problems in the proper application of the Markowitz model.*

**Keywords:** stock portfolio, Croatian capital market, Markowitz portfolio optimization model, risk diversification, efficient frontier

JEL Classification: G11, O16

## 1. INTRODUCTION

In recent times, entities have started to move away from traditional forms of saving in banks and invest their money in capital market instruments. The capital market is a meeting place for supply and demand of long-term securities - stocks and bonds. Regardless of the type of securities an investor invests in, each investor aims at earning profits in the future. However, they are aware of the fact that such investments carry a certain risk of loss. Given their attitude to risk, investors may be risk-averse, they may be more prone to risk or completely indifferent to risk. Taking a greater risk offers the possibility of achieving higher total returns and vice versa. When investing, investors should take into account the principle of diversification. In other words, they need to invest in a variety of different securities, thus reducing the risk of losing the funds invested.

The fundamental question is how to find a combination of securities that will allow a maximum return to be achieved at an acceptable level of risk. In 1952, Harry Max Markowitz developed a model that allows for finding an optimal risk-return trade-off by selecting a particular combination of securities. By applying the model, investors can build an optimal portfolio that will consist of those securities that promise the highest possible return at the level of risk they are willing to accept. The model is based on several basic assumptions, such as returns that are normally distributed, the existence of rational investors and the existence of a liquid and efficient market. Although there has been a lot of criticism of the applicability of the model, it has been applied in more

developed markets for many years and it is used as a basis for developing new, more complex models.

Due to numerous recent crises in capital markets, it is very important for investors to make a good investment decision in order to protect themselves from potential investment losses. The application of the Markowitz model for the purpose of finding an optimal portfolio is certainly efficient in more favorable market conditions, but its applicability is questionable in underdeveloped markets, such as the Croatian market, that do not meet the basic assumptions of the model.

This paper analyses the application of the Markowitz model to the Croatian capital market. Despite the development of the Zagreb Stock Exchange as the central trading venue in the Republic of Croatia, the Croatian capital market is still underdeveloped. It is characterized by numerous shortcomings such as low liquidity, lack of transparency, high stock price volatility and insufficient traffic. Accordingly, the aim of this paper is to determine whether, despite the aforementioned problems, the model can provide satisfactory results. The aim is also to clarify the theoretical assumptions of the Markowitz model and its applications, provide an insight into the situation on the Croatian capital market and examine the possibility of building an optimal stock portfolio by using the Markowitz model. Four research hypotheses have been set up according to the research subject.

The main hypotheses:

- The Markowitz model is applicable to the Croatian capital market.
- An increased number of stocks in the portfolio reduces the overall risk.

Auxiliary hypotheses:

- All joint stock companies whose shares are part of the CROBEX index achieved a positive financial result in 2017.
- The selected optimal portfolio will be sectorally diversified.

## 2. LITERATURE REVIEW

When building a portfolio, most investors want to take advantage of the benefits of diversification in order to achieve the expected return with the least risk possible. The key issue here is how to determine and measure the optimal risk-return trade-off. Fabozzi et al. (2002) state that the trade-off between risk and return is explained by modern portfolio theory (MPT). Harry Max Markowitz

is considered the founder of modern portfolio theory. Although the fundamentals of the portfolio model were set up in 1952, seven years later, he developed a theory according to which it is possible to achieve the optimal risk-return trade-off by selecting a certain combination of securities. Xia et al. (2000) state that the basis of the Markowitz model is to achieve the expected return of a portfolio as return on investment and variance of the expected return of a portfolio as investment risk. Accordingly, Wang & Zhu (2002) indicate that every investor has the following two goals: to maximize the expected return and to minimize portfolio risks. Therefore, the Markowitz model is a mathematical model that enables us to find such a combination of securities that will enable investors to achieve the highest possible return at the level of risk they are willing to accept. A portfolio consisting of such securities is called an efficient portfolio. An efficient portfolio is a portfolio that, among all combinations of the same level of risk, promises the highest return, i.e., the one which, of all combinations, gives the same return at the lowest risk (Sharpe; 1963, 278; Mao & Särndal; 1966, 324).

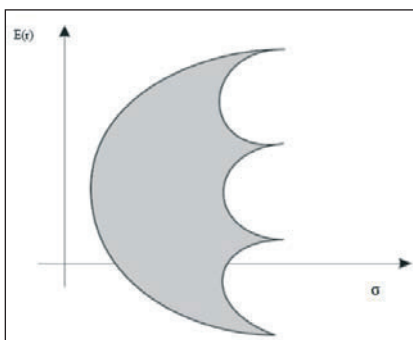
The Markowitz model (1952) is based on several basic assumptions: returns on stocks are normally distributed, investors want to maximise their economic utility, investors are rational and risk-averse, investors are well informed about all relevant facts necessary to make an investment decision, there are neither transaction nor tax costs and securities are perfectly divisible. One of the assumptions of the model is that investors are risk-averse and that they wish to maximise their profit or wealth. Steinbach (2001) explains that the final issue in the portfolio selection context is related to how investors forecast the future, which is presented by the probability of property restitution. If the investors have to choose between two securities that will enable them to achieve the same return, they will choose the one with a lower risk of loss. The investors will be prepared to assume a higher risk only if it will enable them to achieve a much higher return. Hence, when selecting a portfolio, a rational investor will always invest in the portfolio with the best trade-off between risk and return, i.e., in the one that yields a higher expected return for the same level of risk. Although the Markowitz model is one of the most significant innovations in the area of portfolio construction, his basic assumptions have been criticised. Jerončić & Aljinović (2011) criticise the assumption referring to returns on stocks that are normally distributed since they are the result of prices formed by market forces that are not random but are based on economic rules as well as investor's forecasts and expectations. This deviation from normal distribution becomes



evident during the economic crisis or exceptional economic progress. It is also considered that the assumption about risk-averse investors is not fully accurate, that investors cannot be fully informed and have at their disposal all the facts necessary to make a good investment decision. Omisore et al. (2011) point out that the theory does not take into account the personal, ecological, strategic or social dimensions of investment decisions. An obstacle to the model includes the absence of transaction and tax costs and the assumption that securities can be perfectly divisible. Nevertheless, it is undeniable that Markowitz's theory has enabled previous analyses to be supplemented by new statistical methods and that it represents a very important portfolio management tool. The contribution of Markowitz's theory is also reflected in the ability of companies to diversify their risks, i.e., to reduce the risk of an entire portfolio by increasing the number of securities, which is the fundamental principle investors must stand by when building portfolios. However, risk is reduced by intensifying diversification, so it is not desirable to form a portfolio that will consist of a large number of securities. The number of securities that make up a diversified portfolio is the subject of numerous studies (Statman, 1987; Evans & Archer, 1968).

The trade-off between risk and return is analyzed based on a probability distribution. The following two basic probability distribution parameters are applied: the expected return and variance, i.e., standard deviation. Each individual portfolio is determined by its return and risk and a certain number of securities can be used to build a portfolio. A set of portfolios given in Figure 1 is obtained by showing all possible portfolios in the coordinate system.

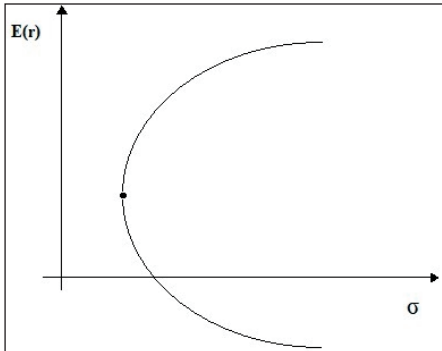
**Figure 1.** A set of possible portfolios



**Source:** Aljinović et al., 2011:135

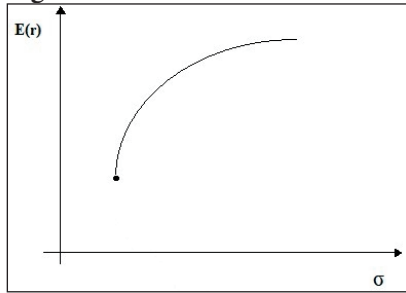
The shaded area shows possible combinations of multiple investments, and it represents the trade-off between risk and returns referring to these investments. Standard deviations and the expected portfolio returns are shown on the horizontal and the vertical axis, respectively. On the left-hand side, a set of possible portfolios is bounded by a line called a set of minimum variances.

**Figure 2.** A set of minimum variances



**Source:** Authors' elaboration

Figure 2 shows a set of portfolios that have the minimum standard deviation for a certain level of return. Given that the minimum standard deviation implies the smallest risk possible, the portfolios on the line represent the dominant portfolios that should be observed as the only ones when finding efficient portfolios. However, not all dominant portfolios are efficient portfolios. If we look at Figure 2 again, we can see a portfolio marked with a dot. This portfolio is located closest to the vertical axis and it divides the line into two parts, with efficient portfolios on the upper part of the line and inefficient portfolios on the lower part of the line, since at the same level of risk they yield lower returns. Thus, a set of efficient portfolios is located at the upper left boundary of a set of potential portfolios, and this boundary is called the efficient frontier.

**Figure 3.** The efficient frontier

Source: Authors' elaboration

### 3. METHODOLOGY

Data referring to stocks selected for analysis are downloaded from the official Zagreb Stock Exchange (ZSE) website. The choice of stocks that will form the initial sample is primarily based on the liquidity criterion. According to Jerončić & Aljinović (2011), as a rule, stock liquidity should ensure fair valuation of the stock itself, because in theory a large number of transactions the convergence of the stock price to the equilibrium price of supply and demand, which depend on investor expectations and market conditions.

#### 3.1. SAMPLE DESCRIPTION

The initial sample consists of stocks included in CROBEX, an official index of Zagreb Stock Exchange. Table A1 in the annex shows a list of stocks that were included in the CROBEX index on 19 March 2018 on the basis of a regular audit of the Index Committee and that are, as such, included in the initial sample for the formation of an optimal stock portfolio.

Apart from creating a portfolio with an optimal trade-off between risk and return, it should also be sectorally diversified. The companies whose stocks are included in the initial sample for the formation of an optimal portfolio are grouped into individual sectors depending on their main business activity. For the purpose of classifying companies into sectors based on their main activity, the Zagreb Stock Exchange uses the National Classification of Activities 2007 (OG 58/07 and 72/07). Sectors are determined based on the A\*38 intermediate-level aggregation, which consists of 38 categories. Table A2 in the annex shows that the selected stocks are grouped into twelve different sectors, indicating a high likelihood of forming a sectorally diversified optimal portfolio.

Financial statement analysis of joint stock companies was carried out with the aim of eliminating undesirable stocks, which led to a reduction in the sample to be used for the Markowitz model. In order to identify undesirable stocks, we calculated financial indicators clustered into the following five different groups: profitability indicators, activity indicators, liquidity indicators, debt indicators, and investment indicators. Consolidated annual financial statements for 2017 of all joint stock companies from the initial sample were analyzed. The results of the analysis are shown in Table 1.

**Table 1.** Financial indicators of joint stock companies for 2017

STOCK	EPS (in HRK)	ROE	ROA	Turnover ratio DI	Turnover ratio KI	P/E	P/BVPS	BVPS (in HRK)	Current ratio	Quick ratio	Debt ratio
ADPL	16.82	9.36%	5.85%	1.19	2.52	11.77	1.11	178.54	1.10	0.70	44.51%
ADRS2	18.12	3.63%	2.24%	0.32	1.02	27.04	0.78	627.13	1.16	1.04	47.80%
ARNT	20.87	5.63%	4.17%	0.39	0.87	20.41	1.40	305.28	4.98	4.95	41.50%
ATGR	82.69	12.28%	6.96%	1.87	2.41	12.34	1.51	674.76	1.47	1.11	56.11%
ATPL	58.85	14.42%	5.71%	0.41	5.17	8.12	1.18	404.87	0.24	0.18	59.06%
DDJH	-3.19	-39.54%	-5.19%	1.45	2.17	-5.24	1.96	8.51	0.77	0.42	83.84%
DLKV	0.50	5.23%	2.13%	2.95	1.81	26.70	1.40	9.56	1.19	1.05	82.06%
ERNT	51.13	28.81%	8.90%	6.97	2.41	20.63	5.96	177.12	1.10	1.10	71.34%
HT	10.55	6.39%	6.25%	0.76	1.48	14.22	0.98	153.54	2.20	2.15	20.11%
IGH	-20.34	-22.09%	-2.61%	0.83	2.12	-7.52	-1.86	-82.11	0.39	0.39	111.82%
INGR	0.95	12.02%	1.27%	0.09	0.67	4.25	0.51	7.91	0.38	0.30	87.55%
JDPL	-22.64	-14.37%	-5.19%	0.29	5.60	-1.11	0.16	156.65	0.14	0.10	63.85%
KOEI	32.59	4.35%	3.36%	2.06	1.30	19.94	0.67	966.09	2.60	2.07	33.00%
KRAS	21.87	4.57%	3.23%	1.59	1.85	17.74	0.80	484.71	1.54	1.10	44.30%
LKRI	-0.10	-0.19%	-0.14%	0.24	1.62	-460.00*	0.89	51.58	1.88	1.87	11.83%
MAIS	14.82	10.33%	6.30%	0.39	17.25	20.24	2.09	143.40	0.06	0.05	46.79%
OPTE	-0.89	-303.64%*	-10.73%	0.96	3.45	-2.18	6,466.67*	0.00	0.52	0.52	102.53%
PODR	2.63	0.82%	1.01%	1.49	1.79	121.67*	0.77	416.66	2.08	1.35	42.77%
RIVP	1.96	9.74%	4.78%	0.38	4.89	20.56	2.02	19.97	0.72	0.67	49.64%
ULPL	7.72	80.58%	0.03%	0.19	7.52	13.73	11.36	9.33	0.14	0.14	94.15%
VLEN	2.30	14.87%	11.20%	1.75	4.68	4.04	0.63	14.70	1.20	0.99	38.90%
ZABA	3.25	5.76%	1.01%	-**	-**	18.46	1.06	56.56	-**	-**	85.72%
AVERAGE	13.66	7.27%	2.30%	1.27	3.46	12.21	1.68	217.49	1.23	1.06	59.96%

\*The value is not taken into account when calculating the average due to a great deviation from other values.

\*\*Due to the specific structure of financial statements issued by Zagrebačka banka d.d., it is not possible to calculate activity indicators and liquidity indicators.

Source: Authors' elaboration based on data from Zagreb Stock Exchange d.d.

Available online at <http://www.zse.hr/default.aspx?id=36774> [Accessed: 27 June 2018]

Based on financial indicators of joint stock companies for 2017 that are listed in Table 1, the following stocks will be removed from the initial sample:

- ♦ DDJH (Đuro Đaković Grupa d.d.) - due to negative financial results, low liquidity and a high debt ratio,
- ♦ IGH (Institut IGH d.d.) - due to negative financial results, low liquidity and a very high debt ratio,
- ♦ JDPL (Jadroplov d.d.) - due to negative financial results, very low liquidity and a high debt ratio,
- ♦ LKRI (Luka Rijeka d.d.) - due to negative financial results, and
- ♦ OPTE (Optima Telekom d.d.) - due to negative financial results, an overvalued stock, low liquidity, and a very high debt ratio.

Following the analysis of financial statements and the elimination of undesirable stocks, there are 17 stocks remaining in the sample that are involved in the further process of forming an optimal portfolio.

## 4. RESULTS

In order to create an optimal portfolio by using the Markowitz model, the following variables should be calculated: the expected return on the stock  $E(r)$ , the standard deviation ( $\sigma$ ) and the variance-covariance matrix. The expected return on the stock  $E(r)$  requires us to calculate historical price change. Stock price changes are calculated on a monthly basis for the period from 1 January 2017 to 31 May 2018. As historical data are downloaded from the Zagreb Stock Exchange official website, which supplies data only on a daily basis, the average monthly prices necessary for the calculation of monthly price changes are calculated as the arithmetic means of all daily prices in a given month. The expected monthly returns on the stocks  $E(r)$  represent the average of monthly price changes for each stock.

**Table 2.** Expected monthly returns, variances and standard deviations of stocks making up a sample for the formation of an optimal portfolio

STOCK	EXPECTED RETURN	VARIANCE	ST. DEV.
ADPL	2.25%	0.00145	3.81%
ADRS2	-0.17%	0.00074	2.72%
ARNT	0.07%	0.00308	5.55%
ATGR	0.77%	0.00185	4.30%
ATPL	3.43%	0.00962	9.81%
DLKV	1.29%	0.01235	11.11%
ERNT	-0.27%	0.00177	4.21%
HT	-0.44%	0.00039	1.97%
INGR	2.89%	0.01253	11.19%
KOEI	0.12%	0.00204	4.52%
KRAS	-1.28%	0.00162	4.03%
MAIS	1.27%	0.00263	5.13%
PODR	-0.99%	0.00313	5.60%
RVP	1.29%	0.00185	4.30%
ULPL	-1.58%	0.00695	8.33%
VLEN	2.36%	0.01627	12.75%
ZABA	0.98%	0.00542	7.36%

**Source:** Excel calculation done by the authors

It can be seen in the table that 6 out of 17 companies have a negative expected return. Particularly interesting is the fact that the companies Uljanik plovdba d.d. and Ericsson Nikola Tesla d.d. with the highest return on equity (80.58% and 28.81%, respectively) have negative expected returns. However, these companies are not as risky as Brodogradilište Viktor Lenac d.d., which has the highest standard deviation of as much as 12.75%, but also the third highest expected return of 2.36%. The least risky business is the Hrvatski Telekom d.d. company with a standard deviation of 1.97%, and a negative expected return. The highest expected return of 3.43% is registered by the Atlantska plovdba d.d. company. According to average standard deviations of companies per sector, the most vulnerable and the least risky sectors are *Construction* and *Telecommunications*, respectively. The next step is to create a variance-covariance matrix.

**Table 3. The variance-covariance matrix**

	ADPL	ADRS2	ARNT	ATGR	ATPL	DLKV	ERNT	HT	INGR	KOEI	KRAS	MAIS	PODR	RVP	ULPL	VLEN	ZABA
ADPL	0.0014	0.0007	0.0002	0.0005	-0.0001	0.0018	0.0007	0.0002	0.0028	0.0010	0.0006	0.0006	0.0007	0.0003	-0.0002	0.0004	0.0005
ADRS2	0.0007	0.0007	0.0007	0.0007	-0.0008	0.0012	0.0005	0.0003	0.0025	0.0008	0.0007	0.0007	0.0010	0.0007	-0.0003	0.0010	0.0009
ARNT	0.0002	0.0007	0.0031	0.0011	-0.0006	0.0011	0.0013	0.0004	0.0031	0.0018	0.0005	0.0009	0.0015	0.0018	0.0011	0.0025	0.0019
ATGR	0.0005	0.0007	0.0011	0.0018	-0.0007	-0.0003	0.0005	0.0003	0.0019	0.0008	0.0010	0.0005	0.0011	0.0005	0.0006	0.0023	0.0023
ATPL	-0.0001	-0.0008	-0.0006	-0.0007	0.0096	0.0039	0.0015	0.0000	-0.0034	0.0000	-0.0010	-0.0008	-0.0021	0.0003	0.0043	0.0034	0.0014
DLKV	0.0018	0.0012	0.0011	-0.0003	0.0039	0.0124	0.0030	0.0013	0.0058	0.0022	0.0002	0.0037	0.0003	0.0027	0.0030	0.0040	0.0033
ERNT	0.0007	0.0005	0.0013	0.0005	0.0015	0.0030	0.0018	0.0003	0.0027	0.0013	0.0005	0.0010	0.0001	0.0009	0.0014	0.0018	0.0018
HT	0.0002	0.0003	0.0004	0.0003	0.0000	0.0013	0.0003	0.0004	0.0011	0.0003	0.0001	0.0006	0.0002	0.0005	0.0003	0.0010	0.0007
INGR	0.0028	0.0025	0.0031	0.0019	-0.0034	0.0058	0.0027	0.0011	0.0125	0.0040	0.0028	0.0034	0.0029	0.0024	-0.0014	0.0025	0.0019
KOEI	0.0010	0.0008	0.0018	0.0008	0.0000	0.0022	0.0013	0.0003	0.0040	0.0020	0.0008	0.0012	0.0014	0.0012	0.0009	0.0021	0.0013
KRAS	0.0006	0.0007	0.0005	0.0010	-0.0010	0.0002	0.0005	0.0001	0.0028	0.0008	0.0016	0.0006	0.0007	0.0003	-0.0011	0.0011	0.0006
MAIS	0.0006	0.0007	0.0009	0.0005	-0.0008	0.0037	0.0010	0.0006	0.0034	0.0012	0.0006	0.0026	0.0009	0.0012	0.0015	0.0034	0.0017
PODR	0.0007	0.0010	0.0015	0.0011	-0.0021	0.0003	0.0001	0.0002	0.0029	0.0014	0.0007	0.0009	0.0031	0.0011	0.0000	0.0021	0.0014
RVP	0.0003	0.0007	0.0018	0.0005	0.0003	0.0027	0.0009	0.0005	0.0024	0.0012	0.0003	0.0012	0.0011	0.0019	0.0013	0.0028	0.0017
ULPL	-0.0002	-0.0003	0.0011	0.0006	0.0043	0.0030	0.0014	0.0003	-0.0014	0.0009	-0.0011	0.0015	0.0000	0.0013	0.0069	0.0070	0.0038
VLEN	0.0004	0.0010	0.0025	0.0023	0.0034	0.0040	0.0018	0.0010	0.0025	0.0021	0.0011	0.0034	0.0021	0.0028	0.0070	0.0163	0.0056
ZABA	0.0005	0.0009	0.0019	0.0023	0.0014	0.0033	0.0018	0.0007	0.0019	0.0013	0.0006	0.0017	0.0014	0.0017	0.0038	0.0056	0.0054

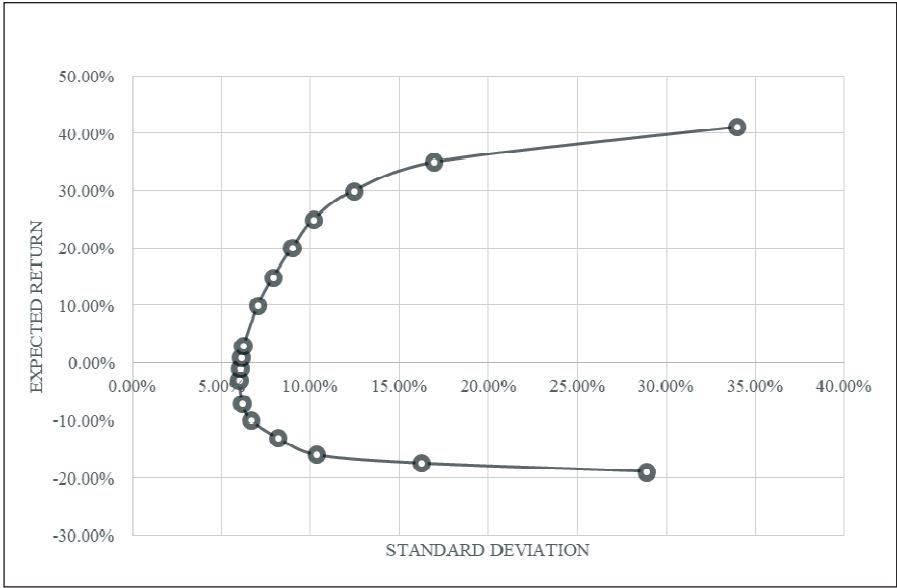
Source: Excel calculation done by the authors

Table 3 shows the variance-covariance matrix of stocks included in the sample to form an optimal portfolio. The shaded cells indicate return variances of individual stocks shown in Table 2 above. After all necessary variables have been calculated, it is possible to create an efficient frontier and select an optimal portfolio.

**4.1. CREATING AN EFFICIENT FRONTIER AND SELECTING AN OPTIMAL PORTFOLIO**

The first step in creating an efficient frontier is to form a set of minimum variances. The set of minimum variances is created on the basis of a series of dominant portfolios that are obtained by using the Excel Solver tool, where the expected monthly returns of individual stocks and the variance-covariance matrix should be reduced to annual values.

**Figure 4.** A set of minimum variances



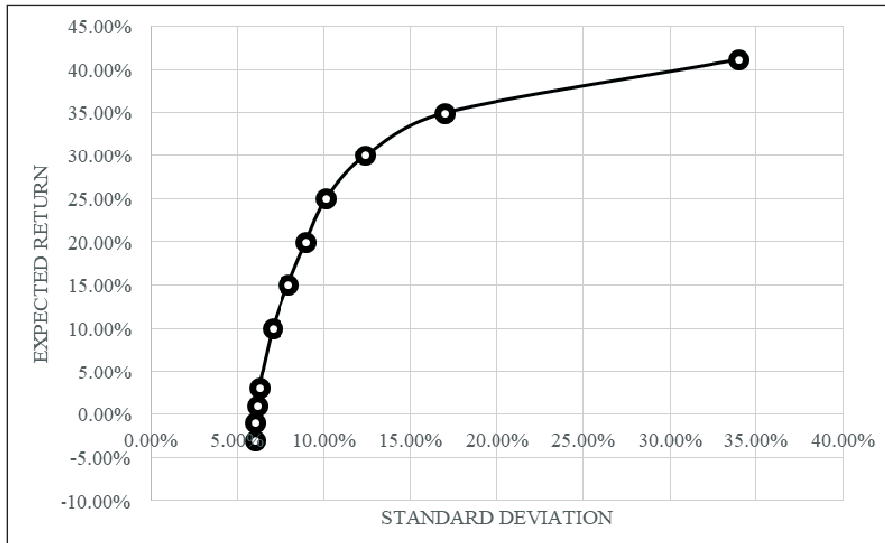
**Source:** Excel calculation done by the authors

The line shown in the figure represents a set of portfolios that have a minimum variance or standard deviation for a certain rate of return. Therefore, it is the dominant portfolio with the lowest possible risk. However, not all of the



dominant portfolios are efficient portfolios. If we look again at Figure 4, we can notice a portfolio marked in red. This portfolio is located closest to the vertical axis and it divides the line into two parts. The upper part of the line is known as the efficient frontier and it is a set of efficient portfolios that, with the same level of risk, promise higher returns than the portfolios located on the lower part of the line.

**Figure 5.** The efficient frontier



**Source:** Excel calculation done by the authors

Although the efficient frontier represents infinitely many combinations of standard deviation and expected return points, the efficient frontier shown in the figure is created based on eleven efficient portfolios, i.e., eleven combinations of the standard deviation and the expected returns shown in Table 4.

**Table 4.** Portfolios that make the efficient frontier

PORTFOLIO	1	2	3	4	5	6	7	8	9	10	11
ST. DEV.	6.00%	6.01%	6.10%	6.23%	7.04%	7.92%	8.96%	10.15%	12.42%	16.96%	33.97%
E(r)	-3.00%	-1.00%	1.00%	3.00%	10.00%	15.00%	20.00%	25.00%	30.00%	35.00%	41.16%
ADPL	3.98%	8.73%	13.47%	17.45%	30.85%	38.25%	44.81%	54.97%	74.89%	32.91%	0.00%
ADRS2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ARNT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ATGR	0.00%	0.00%	0.00%	1.65%	9.34%	11.10%	12.99%	10.07%	0.00%	0.00%	0.00%
ATPL	5.94%	6.36%	6.79%	7.11%	8.51%	10.31%	12.27%	14.94%	22.14%	44.05%	100.00%
DLKV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ERNT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
HT	70.35%	68.08%	65.80%	63.33%	51.18%	32.96%	14.30%	0.00%	0.00%	0.00%	0.00%
INGR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.04%	23.04%	0.00%
KOEI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
KRAS	13.76%	11.39%	9.03%	6.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
MAIS	0.00%	0.00%	0.00%	0.00%	0.00%	1.38%	4.97%	7.00%	1.70%	0.00%	0.00%
PODR	5.97%	5.44%	4.92%	4.12%	0.07%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
RIVP	0.00%	0.00%	0.00%	0.00%	0.06%	6.01%	10.65%	13.02%	0.09%	0.00%	0.00%
ULPL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
VLEN	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.14%	0.00%	0.00%
ZABA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

**Source:** Excel calculation done by the authors

Table 4 shows a share of individual stocks in the portfolios by different combinations of returns and risks. Expected returns and standard deviations move in the same direction, hence portfolios with lower expected returns have less risk, and vice versa – higher expected returns come with more risk. According to the principle of diversification, less risky portfolios consist of a larger number of stocks, and more risky portfolios consist of a smaller number of stocks. For example, the first portfolio with the smallest standard deviation of 6% consists of stocks of five companies (AD Plastik d.d., Atlantska plovidba d.d., Hrvatski Telekom d.d., Kraš d.d. and Podravka d.d.), while the last portfolio with the highest standard deviation of 33.97% consists of stocks of only one company (Atlantska plovidba d.d.).

All portfolios found at an efficient frontier can be called optimal portfolios. Individual investors will select a stock portfolio in accordance with their own views on the risk-return trade-off. Risk-averse investors will choose less risky portfolios from the left-hand segment of the efficient frontier and be ready to

achieve smaller returns. On the other hand, investors prone to risk will invest in a portfolio from the right-hand segment of the efficient frontier, which is characterised by a high level of risk and a higher return. For the purposes of this paper, it is assumed that we deal with a more conservative investor who wants to invest in a moderately risky portfolio with a satisfactory return. Such investors would like to invest their funds in e.g. the portfolio under number 9. The standard deviation of the portfolio is 12.42% and the expected return is 30%. Compared to the maximum standard deviation that can be achieved by combining the observed stocks, the standard deviation of this portfolio is as low as 63.44%, and as such, it is ideal for such type of investor who is not a high-risk taker. On the other hand, the expected return is lower by only 27.11% of the maximum expected return achievable, which makes it more than satisfactory. The stock and sector structure of the investor's optimal portfolio is presented in Table 5.

**Table 5.** The stock and sector structure of an optimal portfolio

STOCK	SHARE	E(r)	ST. DEV.	SECTOR
ADPL	74.89%	26.99%	45.69%	Manufacture of transport equipment
ATPL	22.14%	41.16%	117.69%	Transportation and storage
INGR	1.04%	34.66%	134.32%	Legal, accounting, management, architecture, engineering, technical testing and analysis activities
MAIS	1.70%	15.29%	61.51%	Accommodation and food service activities
VLEN	0.14%	28.32%	153.95%	Manufacture of transport equipment

**Source:** Authors' elaboration

The optimal portfolio includes stocks of the following five companies: Ad Plastik d.d., Atlantska plovodba d.d., Ingra d.d., Maistra d.d. and Brodogradilište Viktor Lenac d.d. The largest stock in the portfolio consists of AD Plastik d.d. and Atlantska plovodba d.d. stocks, which is expected since these are stocks with the fourth and the highest annual expected return compared to other seventeen stocks observed. Although individual shares of stocks of other companies are almost insignificantly small, these stocks are among the top seven in terms of the expected annual returns. All observed stocks are among the ten best ones in terms of the return on equity (ROE). When it comes to the portfolio sector structure, it can be noticed that only two stocks belong to the same sector. Given the presence of four different sectors, it can be concluded that the portfolio is sectorally diversified.

## 5. CONCLUSION

When investing in stocks, each investor is interested in achieving the maximum profit with the minimum risk possible. In order to achieve this, investors should form a stock portfolio that will consist of a larger number of stocks, which will, according to the principle of diversification, significantly reduce the risk of loss. To form a portfolio, investors in developed capital markets have been using the Markowitz portfolio optimisation model for many years to find an optimal risk-return trade-off by selecting certain stock combinations. The aim of this paper was to investigate whether the Markowitz model can also be applied to the Croatian capital market, despite the fact that this market is young and underdeveloped. For the analysis of the application of the Markowitz model, a sample of seventeen stocks was used that had to meet several criteria, i.e., liquidity, which is why only the CROBEX index stocks were taken into consideration, affiliation to different sectors and positive financial results of companies. After calculating all variables needed for model application, an efficient frontier was created successfully, i.e., the curve on which there lie the portfolios with a minimum level of risk for a given level of return. Assuming a conservative investor, an optimal portfolio was selected, which contains five different stocks and which, with an acceptable level of risk, promises a satisfactory return. Nevertheless, underdeveloped capital markets such as the Croatian market have some shortcomings which, to a greater or lesser extent, pose problems for its proper application. Due to a limited number of stocks traded on the market, lack of liquidity and transparency and missing trade history data, it is not possible to accurately calculate the average expected returns. Although because of these reasons the use of the Markowitz model is far more efficient in more developed markets, the use of the expected return as an input parameter is no longer recommended. Today, instead of the original model, much more complex models are used that provide more accurate prediction of return, but this model is still used as a basic model. Despite the aforementioned shortcomings, the first main hypothesis according to which the Markowitz model is applicable to the Croatian capital market is not rejected. The second main hypothesis stating that an increased number of stocks in the portfolio reduces the overall risk is not rejected either. Our research has shown that some joint stock companies, whose stocks are part of the CROBEX index and accordingly make the most liquid stocks listed on Zagreb Stock Exchange, have not achieved positive financial results in 2017; hence the first auxiliary hypothesis is rejected. The optimal

portfolio selected by assuming a conservative investor is sectorally diversified so that the second auxiliary hypothesis is not rejected.

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**Table A1.** S stocks included in the initial sample for the formation of an optimal stock portfolio

No	SYMBOL	ISSUER
1	ADPL	AD Plastik d.d.
2	ADRS2	Adris grupa d.d.
3	ARNT	Arena Hospitality Group d.d.
4	ATGR	Atlantic Grupa d.d.
5	ATPL	Atlantska plovidba d.d.
6	DDJH	ĐURO ĐAKOVIĆ GRUPA d.d.
7	DLKV	Dalekovod d.d.
8	ERNT	ERICSSON NIKOLA TESLA d.d.
9	HT	HT d.d.
10	IGH	Institut IGH d.d.
11	INGR	Ingra d.d.
12	JDPL	Jadroplov d.d.
13	KOEI	Končar - Elektroindustrija d.d.
14	KRAS	Kraš d.d.
15	LKRI	LUKA RIJEKA d.d.
16	MAIS	Maistra d.d.
17	OPTE	OT-OPTIMA TELEKOM d.d.
18	PODR	Podravka d.d.
19	RVP	VALAMAR RIVIERA d.d.
20	ULPL	Uljanik Plovidba d.d.
21	VLEN	Brodogradilište Viktor Lenac d.d.
22	ZABA	Zagrebačka banka d.d.

**Source:** Zagreb Stock Exchange d.d.

Available online at <http://www.zse.hr/default.aspx?id=82041> [Accessed: 25 June 2018]

**Table A2.** Sector affiliation of companies whose stocks are included in the initial sample

SECTOR	SYMBOL	ISSUER
Accommodation and food service activities	ARNT	Arena Hospitality Group d.d.
Accommodation and food service activities	MAIS	Maistra d.d.
Accommodation and food service activities	RIVP	VALAMAR RIVIERA d.d.
Financial and insurance activities	ZABA	Zagrebačka banka d.d.
Construction	DLKV	Dalekovod d.d.
Legal, accounting, management, architecture, engineering, technical testing and analysis activities	ADRS2	Adris grupa d.d.
Legal, accounting, management, architecture, engineering, technical testing and analysis activities	DDJH	ĐURO ĐAKOVIĆ GRUPA d.d.
Legal, accounting, management, architecture, engineering, technical testing and analysis activities	INGR	Ingra d.d.
Transportation and storage	ATPL	Atlantska plovidba d.d.
Transportation and storage	JDPL	Jadroplov d.d.
Transportation and storage	LKRI	LUKA RIJEKA d.d.
Transportation and storage	ULPL	Uljanik Plovidba d.d.
Manufacture of electrical equipment	KOEI	Končar - Elektroindustrija d.d.
Manufacture of food products, beverages and tobacco products	KRAS	Kraš d.d.
Manufacture of food products, beverages, and tobacco products	PODR	Podravka d.d.
Manufacture of food products, beverages, and tobacco products	ERNT	ERICSSON NIKOLA TESLA d.d.
Manufacture of transport equipment	ADPL	AD Plastik d.d.
Manufacture of transport equipment	VLEN	Brodogradilište Viktor Lenac d.d.
Telecommunications	HT	HT d.d.
Telecommunications	OPTE	OT-OPTIMA TELEKOM d.d.
Wholesale and retail trade	ATGR	Atlantic Grupa d.d.
Scientific research and development	IGH	Institut IGH d.d.

**Source:** Authors' elaboration based on data from Zagreb Stock Exchange d.d.  
Available online at <http://www.zse.hr/default.aspx?id=34348> [Accessed: 25 June 2018]

# FINANCIAL AND COMPARATIVE BUSINESS ANALYSIS OF WINERY ILOK

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## **Abstract**

*The Ilok Cellars (Winery Ilok) are in the eastern part of Croatia, due to the quality of the climate and the specific soil, the area where today's vinery and vineyards are located was recognized as very high quality in the antique period. The first written traces of grape growing in these areas originate in Illyrian times. Today's winery recognizability should be thanked Nikola Iločki master of Ilok area, who in 1450 gave a wine cellar for the purpose of producing and storing wine. Very important for viticulture and winemaking in Ilok area is the arrival of the Italian noble family Odescalchi, who became the owner of vineyards and wineries in 1697, the family constantly increases the planting and cellar capacity until 1945 when their possessions were seized and nationalized. Significant advances in Ilok winemaking business occurred in 1970 with the construction of a new basement in the business of the then owner of PPK Vupik Vukovar. During the war, the vineyards and basements were quite neglected, and the renovation was only at the beginning of 2003 when the privatization process was completed when the vineyards and basements were renovated and*



*the mansion of Principovac became a unique tourist destination. The purpose of this paper is to investigate and prove justification of investment and financial investments in the pearl of Eastern Slavonia, Ilok Vineyards, through financial and compartmental analysis of the financial reports over the last several years.*

**Keywords:** *financial analysis, comparative analysis, financial statements*

JEL Classification: G00, G30

## 1. INTRODUCTION

A comparative analysis of the financial statements of a business entity is part of a business analysis aimed at getting acquainted with the company's economic and financial strength, as well as the possible prospects that an enterprise can achieve during its business. Comparative analysis as a research method is very important if we want to get acquainted with the business of the society in the past so that we can get the basis for making decisions in the future. This paper analyzes the operations of a joint stock company that has undergone a transformation from a stock company before 1945, a state-owned enterprise from 1945 until 1990, and back to the joint stock company from 1990 until today.

The work consists of two parts. The first part describes the history of society through various stages and historical events that have created the environment in which society has existed for many years. The second part offers a financial analysis of the company. The aim of this paper is to thoroughly process, investigate and critically evaluate the financial operations of the investigated company, or to determine if the benefits outweigh the disadvantages. The balance sheet and profit and loss account information will be the basis for processing horizontal and vertical analyzes. After the analysis, a conclusion will be drawn that will propose guidelines for sustainable growth and successful business. The methods of analysis and synthesis methods were used in this paper.

## 2. HISTORY AND TOURIST OFFER OF ILOK CELLARS

Ilok Cellars are in the east of the Croatian city of Ilok. Ilok is old traditional town located on the slopes of Fruška Gora and the banks of the Danube River. Wine growing tradition and vineyards take their origins from the Illyrian and

Roman times. The name Ilok was first mentioned in 1267 as Wjlok, Wylhoc, and Iwnalk. The most important relocation of Ilok as the city and the center of that part of Slavonia is the time when the owner of the town and vineyard was Nikola Iločki, the Croatian Deputy of Croatia, Slavonia, and Mačva. The status of a free royal town was given in the 15th century. In the 16th century, the Turks, who continued their vineyard tradition, expanded to the whole of Slavonia. An important event in the history of Vineyards in Ilok is the arrival of the Italian old noble family Odescalchi, which gains herbs and vineyards. The family builds a new wine cellar under the castle of Nikola Iločka in very contemporary conditions for that time, introduces the cold stabilization of wine and for the first time, the wine is packed into bottles that were new in Europe at that time. At that time a wine sort of Traminac was brought from South Tyrol. Traminac found very fertile soil in the area of Ilok and became a trademark of the IloK Cellars. New owners build their Odescalchi castle below which is a beautiful old wine cellar. In the 18th and 19th centuries, Ilok was an important center of the eastern part of Slavonia for trade and wine production.

During the period of socialism and social ownership, Ilok lost its significance and in time lost the status of the town and became a settlement in the Municipality of Vukovar. At that time, cellars and vineyards from private property went to state ownership and the former holdings of Count Eltz became part of the Federal Agricultural Property of Vukovar to which Iločki vineyards were annexed. The processing of vineyards and wine growing has significantly declined during that period. A small shift occurs when PIK Vukovar was founded in 1968, which was a major food producer. Ilok has experienced the revival and flourishing of vineyards and wine production in 1974 when the vineyards expand and reach about 750 hectares, the cellars were then restored, and modern technology was introduced. 1982 PIK Vukovar changes its name and becomes VUPIK Vukovar with the trademark Vučedol dove. After the democratic changes that have taken place in these parts, VUPIK was organized in 1995 as a shareholding company with majority ownership of the Croatian Privatization Fund. In 1999 Vinogradarstvo Ilok stands out from VUPIK d.d. In 2003, with the completion of the privatization process, they gained a new majority owner.

Afterward, the building and the cellar were reconstructed while the mansion used by former Italian owners has been renovated before it was nationalized in 1945. In 2013, Ilok Cellars have about 350 ha of their own vineyards and 700 ha of vineyards in cooperation with the producers of the Ilok area with the ca-

capacity of processing 4-5 million liters of wine in the cellars. Today's offer of Ilok Cellars turns in not just the production of wine but in tourism promotion and offer of the estate. The renovated country estate of Principovac, which was built in 1864 as the summer residence of the Odescalchi family where they stayed during the harvest. Within the estate, there is a restaurant, with a rich gastro-nomic offer based on local cuisine with original local specialties of Ilok area. In its complex, there is a golf course, a volleyball court, a tennis court, while a special attraction is the panorama view with a panoramic lift from the estate and 8 km of asphalted wine trails through the vineyards which are ideal for cycling,

### 3. FINANCIAL ANALYSIS OF ILOK CELLARS

**Table 1.** Analysis of assets of Ilok Cellars

Name of the position	2015	2016	2017	Absolute change 2016-2015	Relative change [%]	Absolute change 2017-2016	Relative change [%]
Non-current Assets	180,230,000	181,320,300	179,250,100	1,090,300	0.60%	-2,070,200	-1.14
I Intangible assets	25,574,300	31,067,400	33,495,600	5,493,100	21.48%	2,428,200	11.03
II Tangible assets	154,626,800	150,224,000	145,725,700	-4,402,800	-2.85%	-4,498,300	-2.99
1, Lot	7,363,000	7,415,700	7,418,300	52,700	0.71%	2,600	0.03
2, Buildings	55,084,600	57,331,300	55,617,400	246,700	4.07%	-1,713,900	0.52
3, Plant and equipment	27,927,300	28,538,400	24,674,100	611,100	2.18%	-3,864,300	-13.54
4, Tools and trans assets	3,609,500	3,557,000	3,335,200	-52,500	-1.45%	-221,800	-6.23
5, Prepaid expenses for tangible assets	26,686,700	27,760,300	25,672,600	1,073,600	4.02%	-2,097,000	-7.52
6, Assets under construction	31,955,700	25,621,300	29,008,100	-2,845,800	-19.82%	3,386,800	13.21
III Long-term financial	28,000	28,000	28,000	0	0	0	100
IV Receivables	0	0	0	0	0	0	0
Current assets	50,522,800	56,478,500	64,726,900	5,925,700	11.79%	8,248,400	14.60
I Stocks	36,038,100	36,172,200	40,955,400	134,100	0.37%	4,783,100	13.22
II Receivable	13,153,300	18,199,000	15,684,400	5,045,700	38.36%	2,514,600	-13.81
III Short-term financial assets	379,100	659,100	7,334,000	280,000	73.86%	6,674,900	1012.72
IV Cash in bank and cash registers	952,400	1,448,300	753,100	495,900	52.06%	-257,200	-48.00
Paid costs of future period	0	0	0	0	0	0	0
TOTAL ASSETS	230,752,800	237,798,800	243,977,000	7,046,000	3.05%	6,178,200	2.60

**Source:** Financial data [available at: <http://poslovna.hr/subjekti.aspx?show=209924&tab=poslovanje>; access March 6, 2019]

Non-current assets were 0.6% higher in 2016 than in 2015, and 1.14% lower in 2017 than in the same period in 2016. Short-term assets were 11.79% higher in 2016 than in 2015, and 14.60% higher in 2017 than in the same period in 2016. Total assets were 3.05% higher in 2016 than in 2015, and 2.60% higher in 2017 than the observed period in 2016.

### 3.1. ANALYSIS OF PASSIVE

**Table 2.** Analysis of passive of Ilok Cellars

Name of the position	2015	2016	2017	Absolute change 2016/2015	Relative change [%]	Absolute change 2017/2016	Relative change [%]
Capital and reserves	119,710,300	127,424,000	133,787,800	7,713,700	6,44	6,363,800	4,99
Long-term obligations	66,973,800	44,240,000	58,560,440	-22,733,800	-99,99	14,320,440	32,4
Short-term obligations	66,973,800	44,240,000	58,560,440	-22,733,800	-99,99		
Deferred payment of costs	36,682,400	55,784,600	42,461,300	19,102,200	52,07	-13,323,400	-23,9
<b>TOTAL PASSIVE</b>	<b>15,480,800</b>	<b>30,843,900</b>	<b>14,391,300</b>	<b>15,363,100</b>	<b>99,23</b>	<b>-16,452,600</b>	<b>-53,34</b>

**Source:** Financial data [available at: <http://poslovna.hr/subjekti.aspx?show=209924&tab=poslovanje>; access March 6, 2019]

Capital and reserves had increased in 2016 by 6.44% in regard to 2015 and increased in 2017 by 4.99% in regard to 2016. Long-term obligations had decreased in 2016 by 99.99% in regard to 2015 and increased in 2017 by 32.4% in regard to 2016. Short-term obligations had also increased in 2016. by 52.07% in regard to 2015 and decreased in 2017 by 23.9% in regard to 2016.

### 3.2. ANALYSIS OF THE PROFIT AND LOSS ACCOUNT

**Table 3.** Profit and loss account

Profit and Loss Account	2015	2016	2017	Absolute change 2016/2015	Relative change [%]	Absolute change 2017/20156	Relative change [%]
Revenues	59,628,900	60,949,000	61,165,300	1,320,100	2,21	216,300	0,35
Sales revenues	59,628,900	60,949,900	61,165,300	1,320,100	2,21	216,300	0,35
Expenses	58,947,300	59,434,900	59,378,900	487,600	0,83	-56,000	-0,09
Changes in inventory value	-4,259,100	-2,486,400	-4,226,900	-1,772,700	-41,62	1,740,500	70
Material costs	33,491,800	30,919,100	30,594,100	-2,572,700	-1,05	-325,000	-1,05

Staff costs	16,356,000	17,245,600	18,593,300	889,600	5.44	1,347,700	7.81
Amortization	7,989,900	8,574,300	8,846,900	584,400	7.31	272,600	3.18
Other expenses	5,368,600	5,182,200	5,571,500	-186,400	-3.79	389,300	7.51
Financial revenues	108,900	590,100	759,400	481,200	441.87	169,300	28.69
Financial expenses	3,042,100	3,034,500	4,028,700	-7,600	-0.25	994,200	32.76
TOTAL REVENUES	63,330,400	64,833,800	66,069,300	1,503,400	2.37	1,235,500	1.90
TOTAL EXPENSES	61,989,400	62,469,400	63,407,600	480,000	0.77	938,200	0.92
Profit before tax	1,341,000	2,364,400	2,661,700	1,023,400	76.31	297,300	12.57
Profit tax	102,500	161,800	691,700	59,300	57.85	529,900	327.50
Net profit	1,238,500	2,202,600	2,069,900	784,100	77.84	-132,700	-6.02

**Source:** Financial data [available at: <http://poslovna.hr/subjekti.aspx?show=209924&tab=poslovanje>; access March 6, 2019]

It is evident that revenues had increased in 2016 by 2.21% in regard to 2015 and had kept on increasing in 2017 by 0.35% in regard to 2016. Expenses had accordingly increased in 2016 by 0.83% in regard to 2015, and in 2017 decreased by 0.09% in regard to 2016.

### 3.3. CALCULATION OF LIQUIDITY INDICATORS

**Table 4.** Calculation of liquidity indicators

	Indicator	2015	2016	2017	standard
1.	Current liquidity coefficient Cash Short-term obligations	1.38	1.01	1.52	>2.00
2.	Accelerated liquidity coefficient Cash and short-term receivables Short-term liabilities	0.39	0.36	0.56	>1.00
3.	Current ratio Current assets Sort-term liabilities	0.03	0.03	0.02	1.00
4	Financial stability coefficient Non-current assets Capital and long-term liabilities	0.41	0.61	0.31	1.00
5	Accounts receivable days	74	104	86	
6	Inventory revolutions days	220	217	244	
7	Settlement period	139	168	175	
8	Total labor cost	26.4	27.6	29.3	
9	Dept ratio	0.44	0.42	0.41	0.7
10	Financial stability	1.03	0.95	1.07	1

Current liquidity coefficient shouldn't be lower than 2.00 point. Based on collected data, it can be seen that the coefficient in all observed years is less than 2.00 which indicates that the company has no ability to settle its obligations presently. Accounts receivable days, the time of the payment of receivables expressed in days based on data from the last day of the year. Inventory Revolutions Days; the time of conversion of inventories into claims expressed in days based on data from the last day of the year. Obligation dates, settlement time obligations to suppliers expressed in days based on data from the last day of the year. Dept ratio represents the ratio of all company liabilities and total assets. The debt rate above 0,7 indicates that the company is over-indebted. Financial stability represents the ratio of long-term sources of financing and long-term assets. The minimum value of this indicator is 1, with long-term assets fully covered by long-term sources.

### 3.4. CASH FLOW QUALITY

Indicator	2015	2016	2017
Net profit	1,238,500	2,202,600	2,069,900
Amortization	7,989,900	8,574,300	8,846,900
Stock	975,200	-134,100	-4,783,200
Short-term receivables	-3,730,300	-5,045,700	2,514,700
Short term fin, Assets	459,700	-280,000	-6,675,000
Short-term liabilities	-7,867,000	3,739,100	3,129,300
Passive delimitations	-977,700	1,963,900	-1,282,700
Operating cash flow	-1,911,600	11,020,100	3,820,000
Long lasting no, property	-3,272,500	-5,493,100	-2,428,200
Long-term assets without am,	-13,173,600	-4,171,600	-4,348,600
Investment Cash Flow	-16,446,000	-9,664,600	-6,776,800
Capital reserve	2,534,700	5,511,100	4,239,900
Long-term liabilities	18,714,300	21,733,700	4,420,400
Short term, obligations	-3,595,500	15,363,100	-16,452,600
Financial cash flow	17,653,500	-859,500	2,261,700
Net cash flow	-704,200	495,900	-695,200
Money at the beginning of the period	1,656,600	952,400	1,448,300
Money at the end of the period	952,400	1,448,300	753,100

The main positions of the cash flow statement are; The cash flow from business activities or operating cash flow (OCF) shows the cash benefits of all transactions that cannot be defined as investment or financial transactions. Cash flow from operating activities excludes the effects of foreign currency exchange rate fluctuations. As a rule, the cash flow from the business activity shows the cash

flow resulting from the activities that generate the company's revenue. Cash flow from investment activities or investment cash flow (ICF) measures the amount of money invested by a business entity in fixed assets, ie measures the amount of money that a business entity disinvested from long-term tangible assets. A negative cash flow statement indicates that a business entity invests in long-term assets (for example, construction of new plants, acquisitions of business units, capital equipment purchases).

A positive investment effect indicates that a business entity liquidates or sells long-term assets. Cash flow from financial activities or financial cash flow (FCF) measures the amount of cash that follows from the capital structure of a business entity. Positive financial cash flow indicates that a business entity is collecting cash from external sources (bank loans, raising equity, issuing bonds, loans). Negative financial cash flow indicates that a business entity returns funds back to external sources of financing. The net cash flow (NCF) is the sum of the operating cash flow (OCF), investment cash flow (ICF) and financial cash flow (FCF). This measures the annual absolute change of money on kuna and foreign currency accounts and cash registers. The negative cash flow indicates an absolute cumulative outflow, a decrease in cash flow while the positive cash flow indicates an absolute cumulative inflow and an increase in cash.

#### 4. PLANS FOR THE FUTURE

According to Croatian national strategy, three operational programs, and rural development programs, contracted projects amounted to HRK 1,6 billion, out of which 700 million HRK are and will be for the rural development programs. The winery in this regard sees the potential for further advancement and expansion of the business. Ilok Cellars produced 4,8 million liters of wine in 2018, which will be placed on the market in the first half of the year 2019. Through national and EU funds, the winery plans to expand capacity in the following years and include new wine varieties in its offer.

Management of Ilok Cellars is actively searching for a business partner abroad. Foreign investors have a significant impact an important role in economic recovery by bringing the much-needed fresh capital, high quality and environmental standards as well as know-how, innovative technologies, job creation, and employee development programs. Wineries in the area of Eastern Croatia should work together on continuing the construction of a stable and

strong market-driven economy, competitive in the world market, to continuously strengthen macroeconomic stability in order to ensure stable and sustainable economic development. In this context, the importance of investment for future development should be recognized as a major contribution to further restructuring and modernization of the economy, strengthening international competitiveness and creating new jobs.

According to the business plan, if the financial and organizational structure is met, Ilok Cellars plan and an investment in the construction of the five-star category hotel on Principovac, with 80 rooms. Such an investment will significantly affect the increase of the tourist offer of the whole region, especially the City of Ilok.

## 5. CONCLUSION

The financial basis for the financial statements prescribed by the Law on Accounting and General Tax Law are business documents, forms, accounts, and other accounting documents. Bookkeeping documentation that enters and exits daily through individual departments and departments of each trading company. Accounting documentation through financial statements provides information on the results of business activities undertaken to persons, organizations, and institutions outside the trading company, and users within the company. The financial statements are publicly available and are published on the Commercial Register pages and on Fine pages as a media publication.

The analysis of financial statements is part of the business analysis that is being conducted to acquaint the economic and financial strength of the company and possible directions in the further development of the company. The aim of the research in this paper is to study the business of a trading company that has undergone a transformation from a private winery that was nationalized in 1945 in order to return to the private winery after 60 years. The way Ilok Cellars took through centuries under the castle's head tells us that wine growing and wine production is older and more durable than all kingdoms and systems in Eastern Slavonia and Ilok.

Compared to larger wineries with a similar portfolio like Belje and Kutjevo, and several wineries with significantly smaller annual production such as Galić and Krauthaker, it is apparent from financial data that Ilok Cellars are lagging



behind in the stability and trend of business even though they have one of the biggest net profit margins among wine producers. This is justified by investing in brand recognition and historical legacy and continually winning prizes at the world and regional competitions, thus maintaining the placement stability of nearly four million liters of wine annually. Number of enterprises in grape wine production compared to 2014./2011 (+9.73%), Portugal (+56.98%), Germany (+24.07%) and decrease in France (-11.76%). In Croatia, the number of companies increased by 5.18%. The value of grape wine production is growing in France (+ 11.38%), Spain (+ 2.48%), Germany (+4.19%) and Portugal (+20.98%) and falling in Italy 0,29%). In Croatia, the value of production fell by 14.04%. Accordingly, we assume that with a foreign partner, using funds and a significant increase in wine production capacity, Ilok Cellars could parry with foreign producers from Spain, Portugal, and Macedonia.

Through a horizontal analysis of financial statements that allows us to compile data over a longer period of time to detect the tendencies and dynamics of changes in absolute and relative amounts of base positions in the balance sheet over the current period compared to the previous year, it is clear that Ilok Cellars are viable and have a perspective. Vertical analysis comparing financial data in a year shows that assets cover liabilities and that liquidity is long-term acceptable and that with constant investments in new equipment and assets the company has a vision.

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# FINANCIAL KNOWLEDGE AND FINANCIAL BEHAVIOR OF STUDENT POPULATION AT KARLOVAC UNIVERSITY OF APPLIED SCIENCES

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## **Abstract**

*In this paper, authors represent results of the research conducted at Karlovac University of Applied Sciences related to financial knowledge and financial behavior of student population enrolled in economic and non-economic studies, as well as employed and unemployed students. The questionnaire was based on the OECD methodology for financial literacy measurement and adjusted to national conditions. The goal of the research is to compare the results to similar researches in Croatia and to find out the need of organizing financial literacy workshops for the student population and the interested public in Karlovac.*

**Keywords:** *financial literacy, financial knowledge, financial behavior, the student population*

JEL Classification: A23, I23

## 1. INTRODUCTION

According to OECD, financial knowledge is “a combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing.” (OECD INFE; 2011, 3). A financially literate person will have some basic knowledge of key financial concepts. (Atkinson & Messy; 2012, 6).

In each country, financial education is becoming more and more important because of introducing and developing new financial products in banks and other financial institutions. It has become an important factor in making long-term financial decisions that affect the lives of every individual. (Matić, Serdarušić & Vretenar Cobović; 2013, 509). That are reasons that governments around the world are interested in finding effective approaches to improve the level of financial literacy amongst their population and that many are in the process of creating or leading a national strategy for financial education to provide learning opportunities throughout a person’s life (Atkinson & Messy; 2012, 13).

In past years, it has been a growing set of literature regarding financial knowledge issues, as well as a lot of researches conducted with the aim to find out the level of financial knowledge of the population. Lusardi and Mitchell (2014, 6) are defining financial literacy as “peoples’ ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions”. They demonstrated that financial literacy is important in economic decisions and showed how costly it is to be financial ignorant (Šreblin-Kirbiš, Vehovec & Galić; 2017, 166). They also compared the level of financial literacy on different social groups and demonstrated the effects of financial literacy on important economic behaviors. Lower levels of financial literacy were related to less frequent saving and retirement planning, more costly mortgages and more often high-cost borrowing. Ali, Rahman, and Bakar (2015) reported that financial planning was an important determinant of financial satisfaction and that financial knowledge and the attitude towards money were significant antecedents of financial planning. Akin, Aysan, Ozcelik and Yildiran (2012) found that people who had more financial knowledge and used it when dealing with financial matters reported fewer financial problems.

Results of the study in Croatia in the year 2015 (Vehovec, Rajh & Škreblin-Kirbiš, 2015) revealed less than satisfying levels of financial literacy among Croatian citizens with the note that lower level of financial literacy was observed

among less educated and unemployed respondents. A similar study in 2017 in Croatia (Šreblin-Kirbiš, Vehovec & Galić; 2017) reveals that women are less financially knowledgeable, invest less and use overdraft more often, making them the more vulnerable gender group in terms of financial literacy. Still, women estimate their own financial management skills better and monitor their expenses more closely than men. The result of the study showed that the most important component of financial literacy was financial behavior. The results of the study in Croatia in 2017 (Bahovec, Barbić & Palić; 2017, 1) indicate that the average financial performance for men is higher than the average value of financial performance for women at the same financial literacy level. Furthermore, a higher level of financial literacy is related to a higher level of financial performance.

According to the financial literacy survey in the Republic of Croatia in 2016, presented by the Croatian National Bank and the Croatian Financial Services Supervisory Agency (HNB, HANFA, 2016), the average score of financial literacy of Croatian citizens was 11.7 points of the total of 21 points. The lowest scoring group was the age group below 19 years of age (9.3) and the highest scoring group was the group with higher and high education (12.8). Poor correlation between financial knowledge and financial behavior shows that Croatian citizens, though relatively aware of the benefits of a financially responsible behavior and how to achieve it, do not always implement such knowledge in everyday life, so it would be desirable to ensure that all education has a positive impact on financial behavior in real life.

Recent research among students in 2016 (Smajla, 2016) showed that although most people in Croatia are involved in banking system (because of the obligation to have bank account to receive wages), involvement in other segments of financial system like non-banking services is lower, especially within student population (78,7% of student population is not involved in financial system other than banking system). The same study pointed out that due to low financial knowledge, a lot of students don't even know which products they are using.

Financial education, therefore, should be implemented in educational institutions, not only for students enrolled in economic but also in non-economic studies. (Smajla; 2016, 629) According to the findings of Šreblin-Kirbiš, Vehovec, and Galić (2017), educational programs should be tailored to accommodate gender differences in financial knowledge. They could incorporate a review and discussion of gender differences in financial literacy and financial

satisfaction. In such a way, the self-awareness of an individual's strengths and weaknesses might be encouraged. Women could learn from men about areas in which they score better on financial literacy such as knowledge, investment and using an overdraft, while men could learn from women about self-management skills and monitoring expenses. Lusardi and Mitchell (2014, 9) state that it is important to raise financial knowledge for everyone early in life (mandating financial education in high school) while providing pre-labor market financial knowledge to the least educated group improves their wellbeing by an amount equivalent to 82 percent of their initial wealth.

Therefore, to increase the financial involvement of the student population, a lot of effort has to be made in educational institutions to make their financial knowledge better. In Croatia, there is a starting point for "further joint learning of all involved about priorities of this type of education as well as for systematic formulation of educational programs for the promotion of financial literacy of the consumers" (Vujčić, B., HNB).

It is expected that students enrolled in economic studies have better financial knowledge and are more involved in the financial system, in comparison to those enrolled in non-economic studies. Unemployed students are expected to have lower financial knowledge in comparison to employed students (and therefore are less involved in the financial system) because they don't have experience in personal finance management while they receive pocket money from their parents.

The objective of this paper is to get information about the level of financial knowledge and characteristics of financial behavior of students at Karlovac University of Applied Sciences enrolled in economic and non-economic studies. The results of the research will be a starting point to organize financial literacy workshops for the student population, as well as for interested public in Karlovac.

## **2. FINANCIAL KNOWLEDGE OF STUDENT POPULATION AT KARLOVAC UNIVERSITY OF APPLIED SCIENCES – RESEARCH RESULTS**

The survey was conducted at student population at Karlovac University of Applied sciences, an institution of higher education, during January 2019, in order to find out the level of financial knowledge and some characteristics of their financial behavior. The research was conducted on a representative sample

of 117 students of bachelor studies, enrolled in economic (bachelor study of Hospitality Management) and non-economic (bachelor study of Food Processing Technology, Mechanical Engineering, and Mechatronics) studies.

The target group included student population, while the survey itself consisted of four parts. The first part of the survey collected some basic information about the sample (gender, age, year of study, name of study, student status and employment information); the second part dealt with the students' information and participation in the financial system; the third part dealt with the attitude and behavior regarding financial issues, and the fourth part dealt with questions related to financial knowledge.

The questionnaire was based on the OECD methodology for financial literacy measurement and adjusted to national conditions and translated to the Croatian language. It covered a mixture of attitudes and knowledge as well as capturing behavior relating to topics such as money management, planning for financial goals and awareness and choice of financial products (OECD INFE; 2011, 4). The questionnaire focuses on those aspects of knowledge and behavior that are associated with the basic concept of financial literacy, related directly to the individual answering the question. The questions have covered some basic financial topics and none of them was complex and none of them required expert knowledge.

Gender, the name of the study and employment status of the student population are shown in Table 1.

**Table 1:** Gender, the name of the study and employment status of the student population in the sample

Gender, type of study & student status		Frequency	Percent	Cumulative Percent
Gender	Male	50	42,7	42,7
	Female	67	57,3	100,0
	Total	<b>117</b>	<b>100,0</b>	
Name of study	Hospitality Management	44	37,6	37,6
	Food Processing Technology	43	36,7	74,4
	Mechanical Engineering	14	12,0	86,3
	Mechatronics	16	13,7	100,0
	Total	<b>117</b>	<b>100,0</b>	
Employment status	Employed	15	12,8	12,8
	Unemployed	102	87,2	100,0
	Total	<b>117</b>	<b>100,0</b>	

Source: author

There were 57,3% of female student examinees and 42,7% male student examinees who were questioned in the total sample of 117 examined students. Most of the student examinees are students enrolled in the Hospitality Management study (37,6%) and Food Processing Technology study (36,7%). There were 12% of students enrolled in Mechanical Engineering and 13,7% in Mecha- tronic study. Regarding the type of the study, 37,6% of students are enrolled in the economic study, and 62,4% of students enrolled in non-economic studies. Only 12,8% of examinees was employed.

The second part of the survey dealt with the students' information and participation in the financial system. There was a list of 15 financial products: pension fund, supplementary retirement scheme (group III), investment fund, mortgage, credit card, debit card, internet banking, housing savings, stock, fixed-term deposit, life insurance, home insurance, microfinance loan, housing credit and leasing. An examinee had to answer has he/she ever heard of each type of product, if he/she currently holds any of these products and if he/she has chosen any of these products in the past two years. The results are given in table 2.

**Table 2:** The information and the use of financial products

Financial product	Heard of		Currently holds		Recently chosen	
	total	%	total	%	total	%
Pension fund	109	93,2	14	12,0	7	6,0
Supplementary retirement scheme (group III)	60	51,3	6	5,1	4	3,4
Investment fund	95	81,2	8	6,8	3	2,6
Mortgage	114	97,4	5	4,3	3	2,6
Credit card	114	97,4	57	48,7	46	39,3
Debit card	105	89,7	42	36,9	34	29,1
Internet banking	114	97,4	73	62,4	63	53,8
Housing savings	112	95,7	18	15,4	14	12,0
Stock	112	95,7	8	6,8	4	3,4
Fixed term deposit	74	63,2	5	4,3	4	3,4
Life insurance	111	94,9	34	29,1	15	12,8
Home insurance	100	85,5	15	12,8	9	7,7
Microfinance loan	46	39,3	2	1,7	2	1,7
Housing credit	110	94,0	5	4,3	2	1,7
Leasing	97	82,9	5	4,3	3	2,6

Source: author

Almost all of the examinees have heard of the mortgage, credit card, internet banking, housing savings, stocks, life insurance and housing credit (from 94,0%



to 97,4% of students). The less informed they are regarding supplementary retirement scheme (only 51,3% of examinees have heard of this product) and microfinance loan (only 39,3% of examinees have heard of it). Students overall are not using a big set of financial products, especially non-employed students. Within the numbered products, they mostly use credit card (48,7% of examinees), internet banking (62,4% of examinees) and debit card (36,9%). The behavior of examinees didn't change significantly during past two years: recently they have chosen mostly credit card (39,3% of examinees), internet banking (53,8% of examinees) and debit card (29,1%). From presented results it can be seen that some students lack financial knowledge regarding basic financial products – they don't understand the difference between credit card and debit card. A great number of examinees stated that they are using internet banking, but not a debit card (which is compulsory to have if using internet banking), even the employed ones (it is compulsory to have a debit card if receiving a salary). They mostly state that they are using a credit card, instead of a debit card.

The third part of the survey dealt with attitude and behavior regarding financial issues. Eight different attitude and behavior statements were written and examinees should write if they agree or disagree with each statement, using a scale of 1 to 5 (1 means that the examinee completely agrees, and 5 describes that he/she totally disagrees). At each statement, an examinee could also answer with "don't know or don't want to answer". All the statements, together with the average score is given in table 3.

**Table 3:** Attitude and behaviour statements

Statement	Average score (1-5)	Average score female (1-5)	Average score male (1-5)
1. Before I buy something I carefully consider whether I can afford it	1,92	2,16	1,58
2. I tend to live for today and let tomorrow take care of itself	3,56	3,70	3,37
3. I find it more satisfying to spend money than to save it for the long term	3,41	3,52	3,25
4. I pay my bills on time	1,35	1,35	1,35
5. I am prepared to risk some of my own money when saving or making an investment	2,69	2,74	2,62
6. I keep a close personal watch on my financial affairs	1,98	2,11	1,79
7. I set long term financial goals and strive to achieve them	2,31	2,31	2,31
8. Money is there to be spent	2,45	2,61	2,23

**Source:** author

Financial attitude and financial behavior are two important elements of financial literacy measure because the way a person behaves and his attitudes towards money and planning for the future will have a significant impact on their financial wellbeing. Within the scale of 1 to 5, the lower average score (the greatest level of agreeing) is about paying bills on time (1,35), thinking before making a purchase (1,92) and close personal watch on financial affairs (1,98). The greatest level of disagreeing is about not thinking about the future (3,56) and satisfaction to spend money rather than saving it (3,41). The relatively high score is given to the statement regarding risk taking (2,69). Those results are aligned with the results of financial literacy research in Croatia, where Croats are generally financially responsible (cautiously manage their financial transactions, costs, financial purchases and timely settlement of bills and debts) and risk-averse. (HNB) When making a comparison about gender, there are some small differences aligned to not thinking before purchasing, not thinking about tomorrow and greater satisfaction to spend money for female students.

The fourth part of the questionnaire was dealing with the level of financial knowledge of the examinees. Students had to answer 12 basic financial questions regarding

**Table 4:** Percentage of correct answers to basic financial questions

Question	Percentage of correct answers						
	Total	Employed	Unemployed	Economic study	Non-economic study	Female	Male
1. Imagine that five brothers are buying together a gift of 1.000 HRK. If the brothers have to share the money equally how much does each one give?	87,18	86,67	87,25	93,18	83,56	93,18	88,64
2. Imagine that a person has to wait for one year to get his share of the 1.000 HRK and inflation stays at 3 percent. In one year's time will they be able to buy: a) more, b) the same amount c) less than he could today	44,44	66,67	41,18	36,36	49,32	31,38	54,55
3. You lend 200 HRK to a friend one evening and he gives you 200 HRK back the next day. How much interest has he paid on this loan?	80,34	93,33	78,43	72,73	84,93	79,55	84,09

4. Suppose you put 1.000 HRK into a savings account with a guaranteed interest rate of 2% per year. You don't make any further payments into this account and you don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made?	37,61	33,33	38,24	27,27	43,84	22,73	52,27
5. And how much would be in the account at the end of five years? Would it be a) more than 1.100 HRK, b) exactly 1.100 HRK or c) less than 1.100 HRK?	28,21	26,67	28,43	29,55	27,40	27,27	29,55
6. An investment with a high return is likely to be high risk (true or false)	82,91	86,67	82,35	84,09	82,19	86,36	84,09
7. High inflation means that the cost of living is increasing rapidly (true or false)	82,91	86,67	82,35	77,27	86,30	72,73	95,45
8. It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares (true or false)	48,72	66,67	46,08	43,18	52,05	52,77	52,27
9. Investing in stock is safer than having money at bank account (true or false)	83,76	86,67	83,33	72,73	90,41	79,55	84,09
10. Overdraft on current account is a type of credit to which a client pays interests (true or false)	59,83	66,67	58,82	56,82	61,64	65,91	63,64
11. When investing in stocks, you ensure a future yield (true or false)	68,38	80,00	66,67	59,09	73,97	63,64	79,55
12. If you get a loan at longer term (5 years), you will pay more interest in comparison to shorter term loan (3 years) (true or false)	65,81	60,00	66,67	75,00	60,27	75,00	63,64
Total	64,17	70,00	63,32	60,61	66,32	60,14	69,96

Source: author

According to the data above, the level of financial knowledge for students is not satisfactory but is more than 50%. In total 64,17% of students answered questions correctly. The less financial knowledge is in the sphere of compound interest, the effect of inflation, risk-taking at the financial market and some basic banking products like overdraft on current account.

As was supposed, better financial knowledge has employed students (70% in comparison to 63,32% for unemployed students) and male students (69,96% in comparison to 60,14% for female students). But, regarding the type of study, the opposite results are given students enrolled in economic studies have lower financial knowledge (60,61% of correct answers) than students enrolled in non-

economic studies (66,32% of correct answers). One reason for those results can be because of the sample – a big number of students of first-year economic study.

However, students still don't have experience in personal finance management while they receive pocket money from their parents and therefore there is a significant room for improvement in term of financial knowledge. Karlovac University of Applied Sciences is welcome to organize financial workshops for student population to which interested public in Karlovac should be invited. Further research in this field should be made each year on a bigger sample of students, including those who attended some financial workshops. At the end of few-years constantly education progression should be seen on results of similar researches.

### 3. CONCLUSION

Authors of the paper represented results of the research related to basic elements of financial literacy of Karlovac University of Applied Sciences students: financial knowledge and financial behavior. The research was conducted in January 2019 at the student population enrolled in economic and non-economic bachelor studies, as well as employed and unemployed students. The questionnaire was based on the OECD methodology for financial literacy measurement and adjusted to national conditions.

Results of the study point that students overall are not using a big set of financial products and they still are not informed of some basic financial products because they don't have experience in personal finance management. Furthermore, the results show that students are generally financially responsible and risk-averse, which is in line with other research results in the Republic of Croatia.

The total level of financial knowledge of students is 64,17%, whereas better financial knowledge is of employed students, students enrolled in non-economic studies and male students.

It is important for Karlovac University of Applied Sciences to organize workshops of financial literacy for students and other interested individuals because of the importance of financial literacy for making long-term financial decisions that affect the lives of every individual. The University should find

the most effective approach to improve the level of student's financial literacy through various learning opportunities.

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## THE IMPACT OF THE SPENDING HABITS OF INTERNATIONAL STUDENTS ON THE ECONOMY OF UNIVERSITY CITIES – CASE STUDY: HUNGARY

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## Abstract

*This paper discusses how the presence of international students is materialized in economic benefits for a university, university city, and destination country. These benefits are directly realized in tuition fees and living costs. Money spent on accommodation, living costs, recreation, and transport has a positive effect on the local economy. Together with tuition fees, they indirectly contribute to the gross domestic product and job creation. Besides evidence found in related international literature, our research team focused on providing local experience. Our empirical research, which was carried out in three major university cities in Hungary, found that international students spend 47,478,301 euros annually, maintain 13,200 jobs (one student “finances” 1.2 jobs) and contribute to 0.47% of the three counties’ gross domestic product. Their presence, therefore, is a significant factor in bolstering economy on an international scale.*

**Keywords:** *international students, mobility, economic impact, Hungarian regional university centers*

JEL Classification: L21, L29

## 1. INTRODUCTION

In the higher education of the twenty-first century, relying on knowledge-based economies and human capital, internationalization is coming to the forefront worldwide. The main catalysts in this process are globalization and the expansion of higher education with its main indicator being international student<sup>1</sup> mobility. Accordingly, OECD numbers reflect the growing trend in student mobility; as a result of the constant growth of the past decades, there are now more than 5 million students studying abroad. Similarly to other Eastern European post-socialist countries, Hungary joined the process of internationalization after the fall of communism. Currently, there are more than 28,000 international students in the Hungarian higher education, two-thirds of whom take part in foreign language programmes – meaning that they do not come to Hungary as part of ethnicity-based student mobility fuelled by Hungarian minorities living in neighboring countries. In the Eastern and Central European post-socialist countries ethnicity-based student mobility is significant, reflecting border changes and break-ups of countries in the twentieth century.

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<sup>1</sup> The present study uses the terms “international student” and “foreign student” as synonyms.



The presence of international students, besides creating cultural diversity and building international relations between universities, shows significant economic benefits for the receiving institution, city, and on a broader scale for the national economy. In many countries, as an impact of neo-liberalization, the public expenditure on higher education was reduced considerably in the last two decades of the twentieth century, and a kind of “regulated market” came into existence which is supervised by the state with the help of different market mechanisms. For the universities (especially the private institutions operating under market conditions) the tuition fees paid by international students mean direct economic benefit. In addition to talent attraction, therefore, today revenue disbursement is also a central issue for the universities related to the recruitment of international students. The presence of international students means advantages for the university, the city hosting its campus and, in a broader sense, the whole country. The advantage is primarily realized in tuition fees and the number of money students spends but there are also indirect advantages like economic co-operation are established between two institutions and two countries (Brooks-Waters 2011). It is particularly true in the case of Hungary where the tuition fees paid by international students constitute considerable income for the universities. Beyond these, the presence of international students has a major impact on the social and economic development of the host cities. In our study, we rely on international research results and provide a case study for three Hungarian provincial cities to illustrate the impacts of international students on the national economy.

## 2. BACKGROUND - INTERNATIONAL CONTEXT

The increasing volume of student mobility materializes significantly both in economic and political terms. Its increasing contribution to tourism flow constitutes a considerable source for the recipient countries (Michalkó 2012). Financial motives are increasingly taken into consideration when recruiting international students (Knight 2004; Teichler 2007). Knowledge-based economies with their increased need for highly-trained individuals have boosted the demand for higher education while there has been a lack of available public resources for financing higher education. Consequently, governments started to pressurize universities to achieve “more on less” (Gürüz 2011). Many universities facing financial dire straits looked upon international education as the

perfect response to a shortage of financial means (Waters 2008). In addition to harnessing the talent pool, nowadays, acquiring incomes is a central factor in recruiting students for universities. However, tuition fees also play an important role in the students' choice of the institution (Beine et al. 2014; Perkins-Neumayer 2014), and thus too high tuition fees can be a disincentive in the present global market. Moreover, as confirmed for the students, those who spent part of their education abroad are more likely to be mobile later in life and to find jobs in foreign countries (Teichler-Jahr 2001; King-Ruiz-Gelices 2003). So, in the case of the most significant recipient countries, the economic advantage does not only translate into students paying tuition fees and spending money during the time of their stay but also into long-term consequences. In these countries, the students usually choose such places for their studies which are academically more advanced than their higher education environment at home or would like to attend specializations which are either not available, or available only to a limited extent, in their own countries (Rivza-Teichler 2007). Besides, the various world university rankings are given more and more emphasis: the more prominent place in these lists has a great influence on the international demand for these institutions (Jöns-Hoyler 2013). The main motivation for these recipient countries is to harness the talent of the most gifted students in the long run ("brain drain"). Recipient countries testify to the trend present from the beginning in international student mobility: to acquire highly-trained workforce later. This, in turn, attracts more students to the country and increases demand for the country's universities, sending those higher up in a real or imaginary global ranking (Findlay et al. 2012).

In the United Kingdom, certain researchers called attention to the regional economic impacts of overseas students already in the previous century (Love-McNicoll 1988). Examining international students in the United Kingdom at a national scale, it can be observed that money spent on tuition fees and living costs come from outside the country whereas it is spent within the UK. Furthermore, there are other positive aspects of the country in their staying there. One of them is the fact that students familiarise themselves with British brands and look for them or purchase them after they return home. Furthermore, they popularise them to their friends and families, too. International students (especially those coming from outside the EU) pay high tuition fees which function as capital injections for the economy. In 2004 the total amount of tuition fees paid by international students was 1.39 billion pounds (Vickers-Bekhradnia

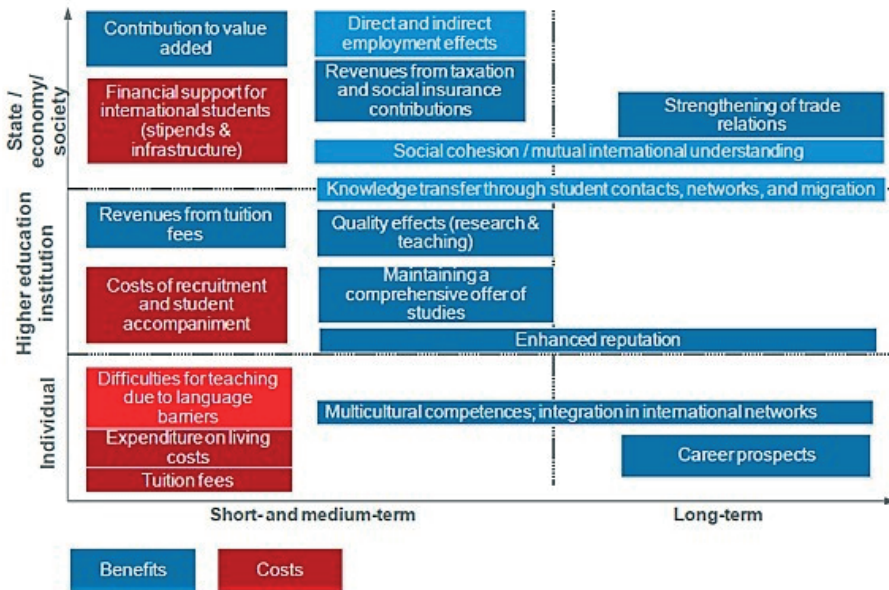
2007). Tuition fees and living costs combined, international students spent 3.74 billion pounds in the academic year 2004-2005 in the UK. In addition to this, thousands of students stay in the country to join the workforce after graduation which can also be detected in economic terms (Vickers-Bekhradnia 2007).

In Italy, international students spent 715.5 million euros in the academic year 2010-2011 (15 421 euros per student) equalling 0.05‰ of the Italian GDP. They spent proportionately the most on accommodation (20%), transport (16%), and food (13%). Tuition fees came only fourth place (10%) (Montanari-Staniscia 2014).

The best example of how international students impact the economy is none other but the biggest recipient country, the USA. According to a 2015 NAFSA (Association of International Educators) Report the previous year international students contributed to the economy with 27 billion dollars, a 12% increase from 2013. The study found that every seven international students in the US maintain three jobs in the country, which means that 340,000 jobs were related to international students in the academic year 2013-2014. (Ortiz et al. 2015)

The DAAD (German Academic Exchange Service) published a study (Münch-Hoch 2013) examining the economic benefits brought about by international students in Germany and five other European countries (the Netherlands, Austria, Switzerland, Poland, and Spain). Based on the literature, *Figure 1* illustrates in a complex way the short-, medium- and long-term impacts of international student mobility on the economy and other factors from the perspective of individuals, higher education institutions and the broader society.

**Figure 1.** An overview of international student mobility in terms of costs and benefits



(Source: Prognos AG (DAAD) 2013)

Costs only appear for every participant in the short-term realm, whereas benefits are realized mostly over the medium- and long-term. There is no direct short-term benefit for the individual, as studying abroad is a certain kind of investment for the future, while for institutions and the national economy direct benefits coming from tuition fees materialize already in the short run (although there are costs too). In the long run, it is not only individuals but also universities and the state that benefit from the process, although in a way that is harder to measure than the direct impact of tuition fees and living costs.

The study shows the economic consequences of inward student mobility in each of the six countries, calculated on the basis of average cost per student and the number of international students. The biggest economic impact can be demonstrated in the case of Germany (based on absolute figures); in 2011 there were 161,000 international students studying in the country, which is the highest number in terms of the six examined countries. Based on living costs per capita, it can be calculated that international students spent more than 1.2 billion euros in Germany (tuition fees not included). The same number is the lowest in the case of Poland, 90 million euros, which is not surprising given that the living

costs per capita and the number of international students are the lowest there (Poland shares this spot with Switzerland, but living costs are much higher in the latter – more than four times that of the Polish numbers). As shown in *Figure 1*, money spent on living costs during studies can be considered as short-term profit, however, writers of the study used a model to calculate long-term direct incomes tied to student mobility if the student stays to work in the given country. This model showed that revenue per capita is the highest in Switzerland (19,500 euros), the lowest in Poland (4,000 euros), whereas in Germany, Austria, Spain, and the Netherlands it ranges between 7,500 and 10,000 euros. Another important aspect is how many jobs international students create in any given country. In the six examined European countries the figures were as follows: Poland came first in terms of the created jobs (0.23 jobs per international student), followed by Switzerland (0.18), Spain (0.16), Austria and the Netherlands (0.15) and finally Germany (0.14). However, these figures were taken into consideration for the time of the students' education. When the focus is expanded also to students who stay after graduation, we get different figures: Switzerland leads with 0.34 and Austria has the lowest value (0.26). (Münch-Hoch 2013)

Based on all the above, we can conclude that the money spent by international students on living costs, recreational activities, travel, and tuition fees has a clear impact on the local economy and thus also on the gross domestic product (GDP) and job creation in the given country. Studies cited above recommend that we take into consideration also taxes derived from students' expenses as well as taxes coming from jobs created by international students. Moreover, if students choose to stay and work in the country after their graduation, there is also the additional benefit of taxes and health insurance/social security paid by them.

The Oxford Economics examined the short-term (while the students are at university) and long-term (post-graduation when they may join the local labor market) impacts of international students at Sheffield-based universities that they had on the local economy, both in terms of costs and benefits, in the academic year 2012-2013. Short-term effects were calculated based on the phenomenon of direct revenue and then the impact on the local GDP was estimated, taking into consideration direct, indirect and induced effects as well. The analysis of long-term impacts was mainly qualitative in lieu of substantial longitudinal data. The findings showed that benefits greatly outnumbered costs, contributing 120.3 million pounds to the local GDP. The overwhelming majority of this contribution was generated directly, whereas an additional 24.8 million pounds was raised via induced and indirect effects. (Oxford Economics 2013)

Brown and Heaney found that the traditional economic base model attains more reliable estimates of local economic impacts (Brown-Heaney 1997). Our research relied on the same model, calling attention to the importance of universities to national economics and its multiplication effect.

Summing up, the related literature and their empirical evidence strengthened our hypothesis that the presence of international students means economic benefits for the given university, the city hosting it and, in a broader sense, for the recipient country. In general, there exists a strong interrelationship between international student mobility and economic development both in terms of costs and benefits. The consulted literature opened new dimensions and encouraged us to explore the specific nature of this economic contribution in the case of Hungary.

### 3. METHODS APPLIED FOR THE PRESENT ANALYSIS

#### 3.1 SAMPLE AREA SELECTION

Our research, empiric in nature, focused on the economic impact of international students in the three most significant university cities in the Hungarian countryside, Debrecen, Szeged, and Pécs. These are the cities that stand out regarding inward student mobility besides Budapest, which is in a different category both in terms of size and in the opportunities it provides. All three universities share the same treat, namely that the number of enrolled international students has risen in the past years. According to statistics, the number of international students is rising steadily; from 8,300 students in 2015 to 10,729 in the spring semester of the academic year 2016/17. This is a considerably high number given the size of the cities: compared on a proportional basis, the total number of international students parallel those studying in Budapest (population: 1.76 million)<sup>2</sup>, although the combined number of inhabitants in those three cities is only approximately half a million. This also implies that the proportion of international students in the three cities is getting higher (currently above 15%) compared to the number of students at each university, but also that their presence is much more significant in relation to the population of

<sup>2</sup> In the lack of updated statistics, we could only rely on figures for 2015/16: accordingly, at the four biggest universities of Budapest receiving the majority of international students 8,000 of them studied. Given the growth in number nationally it is supposed that this figure has reached 10,000 by now.



the whole city. The reason for the high number of students is that these are the only universities in Hungary apart from the Semmelweis University in Budapest which offer medical training, which is the most popular type of education among international students coming to Hungary.

It is worth mentioning, however, that the international catchment area of the three large universities outside Budapest show differences which is due to their specific international relations and recruiting policies. Furthermore, the foreign language training programmes offered by the institutions do not totally overlap either. The most notable sending countries of the foreign language training of each university are summarised in *Table 1*.

**Table 1.** Major source countries regarding students on the foreign language programmes of the three universities at the time of the survey

University of Debrecen (UD)	University of Pécs (UP)	University of Szeged (USZ)
Nigeria (652)	Germany (691)	Germany (412)
Iran (300)	Norway (267)	Iran (156)
Israel (276)	Iran (200)	Israel (107)
Turkey (203)	China (125)	Turkey (89)
United Kingdom (192)	Jordan (105)	Nigeria (82)
China (138)	Spain (90)	Spain (77)
Saudi Arabia (136)	South Korea (87)	Japan (75)
Vietnam (132)	Brazil (60)	China (74)
University of Debrecen (UD)	University of Pécs (UP)	University of Szeged (USZ)
South Korea (112)	Turkey (51)	South Korea (70)
Iceland (107)	Sweden (49)	United Kingdom (67)

**Source:** constructed by the authors based on data provided by the institutions

As can be seen above, while in the case of Pécs and Szeged the most significant source country is Germany, in Debrecen the highest number of international students come from Nigeria. This is not by accident as there is English as well as German language medical training programmes available in Pécs and Szeged whereas in Debrecen these programmes are available only in English.

### 3.2. DATA PROCESSING METHODS USED IN THE ANALYSIS

The available input data allow us to determine the annual expenses of the students, taking into account that an international student spends 9.6 months annually in Hungary on average.

It may be established in the context of the selected confidence level that the results represent data related to students not involved in the survey with a probability of 95%, which makes our deductions appropriate for drafting relevant conclusions for the population.

In addition to the interval, the analysis also uses point estimates which apply equally to the mean value (the arithmetic means of each indicator) and the adjusted (trimmed) mean. The use of adjusted mean was necessary in order to eliminate the distorting effects of the responses falling into the upper and lower 5% categories and typically representing extremely high or low values. In the calculation of the trimmed mean, before defining it, the values belonging to the upper and lower 5% (based on professional standards) of the sample were omitted.

Where data was not given, it was treated as follows: in the case of costs where 0 was a possible answer (i.e. because the given cost is unnecessary), blank rubrics got 0 value, whereas in cases where the number reasonably had to be higher than 0 (food, accommodation etc.) it was filled with the average of a given variable.

The research analyses the weight of the students' expenses compared with the regional and county GDP, the budget of the settlements and the total annual income from entrepreneurial activities. These secondary data are provided by the CSO (Central Statistical Office), TeIR (Land Information System), NAV (National Tax and Customs Administration) databases, and the municipal reports on final accounts.

Our research is based on the in-depth study of the related international literature offering a geographically wide range of case studies. The approaches, methods, and results discussed by the international research groups were partly applicable for the research that allowed us to draw internationally relevant and stimulating conclusions which either fit into the studied structures or provide new aspects. Then we selected the three university towns in Hungary (intentionally neglecting Budapest which is in a special situation as being the capital of the country) where the presence of international students is significant. The empirical work is based on questionnaire surveys that were conducted among the international students at the selected universities, namely at the University of Pécs (UP), University of Szeged (USZ) and the University of Debrecen (UD).



### 3.3. QUESTIONNAIRE SURVEY

In the questionnaire survey used in the research, we focused on the impact international students had on the economy of the three university cities through analyzing the international students' spending habits. Our research used paper-based questionnaires in Pécs and Szeged, and online format in the case of Debrecen. Our sample only featured students who take part in foreign language study programmes. *Figure 2* shows the most relevant detail of the questionnaire from the aspect of the present paper.

**Figure 2.** Details of the questionnaire used during our research

**What is the average monthly amount of money that you spend on the following things?**

- a. housing expenses (dorm fee / rents / overheads): \_\_\_\_\_
- b. basic necessities (food, hygiene items etc.): \_\_\_\_\_
- c. other buyings (clothing, accessories, cigarettes, technical items, novels, computer games etc.): \_\_\_\_\_
- d. transport (maintenance of own vehicle, fuel, taxi fees, public transport fees etc.): \_\_\_\_\_
- e. tuition fee: \_\_\_\_\_
- f. other expenses related to studies (lecture notes, books, exam fees etc.): \_\_\_\_\_
- g. leisure expenses (theater, cinema, recreation, sports, pubs, partying etc.): \_\_\_\_\_

**Source:** own editing

## 4. RELEVANT DATA ANALYSIS

### 4.1. ECONOMIC CHARACTERISTICS OF THE UNIVERSITY CITIES IN THE HUNGARIAN COUNTRYSIDE

All three university cities are regional centers (NUTS 2) as well as county seats (NUTS 3) of their respective counties. Debrecen is the center of the Northern Great Plain region and of Hajdú-Bihar County. In 2016 the city with a total population of 204,156 residents was the second largest in Hungary. Pécs is the center of the Southern Transdanubian region and Baranya County located in the southern-southwestern part of Hungary. In 2016 it had a total population of 150,046 residents and was the fifth largest city in the country. Szeged is the center of the Southern Great Plain region and Csongrád County. In 2016, the total population of Szeged was 164,647, which was almost 8 thousand less

than in the year of the last census in 2011. It is the third most populous city in Hungary (*TeIR 1*).

A common feature of the three cities is that higher education institutions (HEIs) were integrated on 1 January 2000, and the universities which were thus formed are among the five most significant ones in Hungary today. From the aspect of the number of international students, it is a very important shared feature of the three universities is that they offer medical training with strong traditions in foreign languages.

There are also common characteristics in terms of human resources. All three cities had a population peak in 1990. Since then, Debrecen (1990: 212,235 residents) and Szeged (1990: 169,930 residents) have entered into a stagnating or slowly declining phase. In the context of the natural demographic indicators, the decline in the number of population is slower in both cities than the national average and they are destination areas for internal migrants which ensures adequate workforce. In the case of Pécs, the economic transition had a more intensive impact on the demography, there has been a steady decline in the number of the population since its peak in 1990 (170,039 residents) reaching 145,347 at present which is below the lowest figure seen in 1970.

The population in all three cities boasts a highly qualified population as a result of their extensive secondary school networks and integrated universities. This makes them ideal hosts for knowledge-intensive economic areas. The research, development and innovation activities concentrated on the county seats also significantly contribute to the above.

The intellectual potential is considerable in the named university cities which is a basic prerequisite for establishing knowledge-based industries. Competitive economic structures typically demonstrate the presence of a host of (technologically) innovative companies and suppliers. There are also differences between the three cities based on their economic history, location, and different development after the fall of communism.

In **Debrecen**, knowledge industry is based on the highly developed network formed by the universities, research institutes, health institutes, pharmaceutical companies, IT industries, and agricultural commodities manufacturing. The chief economic units of the city are represented by pharmaceutical industry, measurement-control, automatization, mechanical engineering, food industry, printing industry, and service industry. In Debrecen, the fastest growing eco-

conomic sector of the past few years has been the so-called SSC (*shared services center*) sector with an estimated 2,000 employees at present. This sector has the specific feature of exercising activities which can be conducted from great distances using computer networks and relying on the work of local experts (e.g. IT services, customer service, accounting).

In Pécs, provided by the university, training related to innovative industries supports the development of the blue economy, energy design, environmental industries, smart technologies, creative industries, health industries, and health tourism. The city underwent an economic structural change after the transition, during which the mines were closed, deindustrialization started, and as a consequence of these Pécs suffered from the economic structural change more than most of the other middle and large towns in the country. Recovery is further hindered by the fact that Pécs was left out of the considerable wave of green-field investments in the second half of the 1990s due to the lack of factors of industrial location, in particular, the lack of utility infrastructure. Therefore, the major investments are missing from the city.

In Szeged, the economic transition following the change of regime gave a new impetus to post-industrial development. The size, capitalization and weak productive links of the successive businesses built on the ruins of the socialist industry, however, could not generate considerable development for a long time. Szeged is an outstanding intellectual center, the university, and the research institutes ensure development for knowledge-intensive sectors (information technology, biotechnology). The ratio of intellectuals living in the city is high which is reflected in the high share of quaternary sectors in the economy (information, communication, professional, scientific, technical activities).

Debrecen (dairy industry, milling industry) and Szeged (meat industry, milling industry) have considerable (based on the particularly favorable conditions of the regions for agricultural production and their production traditions) food processing capacities.

All three cities are important tourism centers. The attractive urban landscape, the internationally acknowledged cultural programmes, conferences, fairs, and the opportunities related to thermal and wellness tourism result in major income for the cities. The significance of the universities is illustrated with statistical data in *Table 2*.

**Table 2.** The weight of universities in the Hungarian university cities in the countryside (2016)

	Debrecen	Pécs	Szeged
Number of population *	204,156	150,046	164,647
Total income of the city budget [million euro] **	186.9	156.4	124.9
Number of university students ***	27,375	19,882	22,702
Number of international university students ****	4,321	3,200	3,208
Income of university budget [million euro] *****	218.0	181.4	277.1
Number of employees at the university ***	1,981	1,705	2,038

**Source:** \*TeIR 1, \*\* TeIR 2., \*\*\*TeIR 3., \*\*\*\*Berács, 2017, \*\*\*\*\*UD, UP, USZ management data

In Debrecen the total number of students at the university was 27,375 in 2016, constituting 13.4% of the total population of the city. The number of international university students in the city in the same period was 4321, representing 15.78% of the student population of the university and 2.11% of the population of the city.

In Pécs, the university can counterbalance the declining student numbers, a benefit for both the university and the city. The role of international students, who are present in growing numbers, is becoming more and more central to the economy of the city as the number of students at the University of Pécs (UP) and also the population of the city is decreasing (currently the proportion of university students is 13.25% of the total population of the city). In 2016 international students constituted 16.09% of all university students and 2.13% of the total population of the city.

In Szeged, university students account for 13.78% of the population of the city, and this ratio is 1.94% for international students. International students make up 14.13% of the total student population.

The University of Debrecen is the biggest employer of Debrecen. The total number of employees at the university nears the aggregated number of employees of the first five employees in the real sector. The total income of the budget of Debrecen in 2016 was 186.9 million euros, which is considerably lower than the income of the budget of the university. Similarly, the weight of the University of Pécs (UP) in the economy of the city is also obvious as its incomes exceeded that of the city: in 2016 the UP had a total budget of 181.4 million euros, while the budget of the city of Pécs amounted only to 156.4 million euros. The

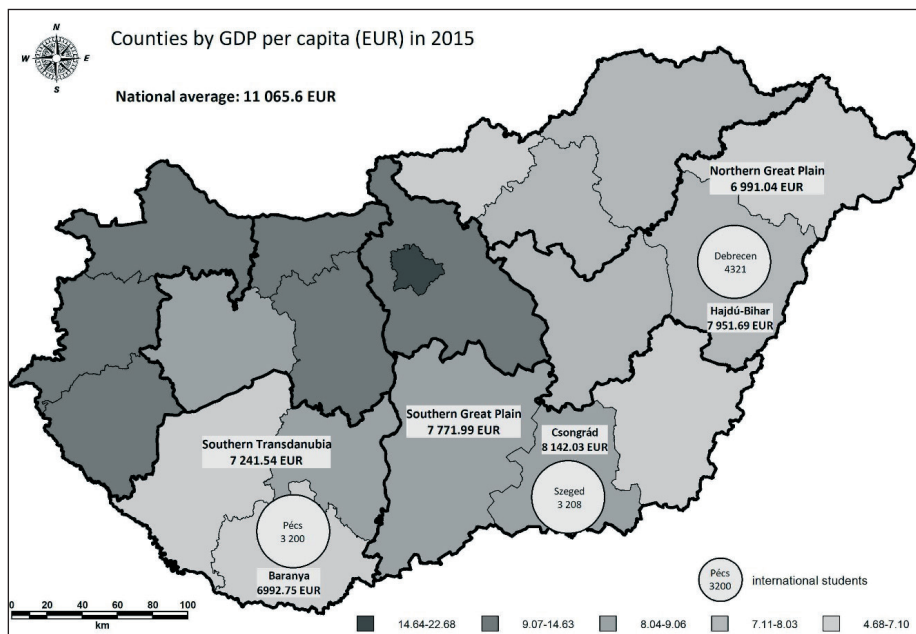
total income of the University of Szeged (USZ) exceeded 277.1 million euros in 2016, which was more than double of the total incomes of the budget of the city of Szeged (124.9 million euros). In all three cities, the biggest employer is the university, each employing 6,500-7,000 people.

The studied university cities are the centers of regions and counties which are lagging behind the national average with regard to their socio-economic development. In this context, higher education institutions have an especially important role.

#### 4.2 THE SITUATION OF THE THREE COUNTIES REGARDING THEIR GDP'S

Considering the GDP of each county as the regional GDP is regarded as a standard procedure even by the professionals. The Hungarian GDP per capita in 2015 was 11,065 euros with well-documented regional differences (*Figure 3*).

**Figure 3.** GDP per capita on the county and regional levels (2015)



Source: CSO

In terms of GDP per capita, the university cities examined in our research are centers of regions and counties below the national average. The highest fig-

ure (Budapest) is two or three times higher (22,660 euros) than in those regions. The GDP in Csongrád county (Southern Great Plain region), the most developed among underdeveloped counties/regions, is still lagging behind the national average. Among the regions, the Northern Great Plain has the lowest figure, whereas in terms of counties it is Baranya County.

**Table 3.** GDP in 2015

Territorial unit	Amount (million euros)
Budapest	39 849
Baranya	2 586
- Southern Transdanubia	6 557
Csongrád	3 302
- Southern Great Plain	9 852
Hajdú-Bihar	4 265
- Northern Great Plain	10 330
Hungary	108 971

**Source:** [https://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_qpt012b.html](https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qpt012b.html)

If we look at the absolute numbers, we get the same picture. The region with the worst conditions is the one with Pécs as a center. Due to differences in population, Hajdú-Bihar County (Northern Great Plain region) and Csongrád County (Southern Great Plain region) swapped places on the list. All three regions are underdeveloped, consequently, higher education plays a key role in their development and economic growth (*Table 3*).

## 5. ECONOMIC IMPACTS OF THE PRESENCE OF INTERNATIONAL STUDENTS IN HUNGARY – RESEARCH RESULTS

### 5.1. GENERAL FINDINGS OF THE SURVEY

Our survey was conducted in Pécs in the spring of 2015, in Debrecen in the autumn of 2015 and in the spring of 2016, and in Szeged in the autumn of 2016<sup>3</sup>. Only international students who take part in non-Hungarian language programmes were surveyed (quantitative research) (*Table 4*).

<sup>3</sup> In Debrecen the students received online questionnaires which made the survey period longer.

**Table 4.** Basic data acquired in the survey

	University of Debrecen	University of Pécs	University of Szeged
Period the sample was taken	2015	2015	2016
Number of sampled pool	500	546	441
The proportion of respondents within those taking part in foreign language programmes	14.92%	23.21%	22.45%
Median age	22.92 years	22.06 years	22.9 years
Distribution of sexes	44% M; 44,2% F; 11,8% n.a.	45.97% M; 48.35 F; 5.68% n.a.	53% M; 47% F

**Source:** Authors' own calculations

The highest number of international students was questioned at the University of Pécs, whereas the highest proportion of international students was representative of the University of Szeged, but all the samples can be regarded as representative. As for the most important data retrieved, which is the distribution among faculties and by sending countries, it is important that those answering the survey represent the markers of the whole examined group (i.e. international students at the universities). The present study focuses only on summarising our findings concerning the spending habits of international students.

## 5.2. SPENDING HABITS OF INTERNATIONAL STUDENTS

In our survey, we examined specifically the spending habits of international students. The data were analyzed in terms of costs regarding accommodation (dormitory, rented flats, utility costs), basic needs (food, personal hygiene) transport, entertainment (theatre, movies, recreation, sports, going out), and other (clothing, accessories, tobacco, books, video games, etc.). The data were also studied as to how costs on education were spent in addition to tuition fees (textbooks, books, exam fees, etc.). Based on the grouping of the costs, observations could be made about the students' spending portfolio and the differences between groups of students.

The research revealed that in 2016 in all three cities the 8,130 international students contributed to the local economies with an amount ranging from 4.8 to 5.09 million euros (tuition fees not included). This can be translated into an annual amount of 46.17 to 48.89 million euros (*Table 5*). Differences in spend-



ing can be attributed to several factors. One of the differences is in students' monthly expenditures (also linked to different price levels in different cities), the other is the uneven distribution of student numbers. The lowest spending per capita can be found in Pécs, ranging from 503 to 556 euros, from 607 to 670 euros in Szeged and from 641 to 704 euros in Debrecen. In Debrecen, the 3,290 international students mean 2.11–2.31 million euros monthly for the shops and entrepreneurs of the city. In the case of Pécs and Szeged, the number of international students is 2,935 and 1,905 respectively. Monthly students' expenses are ranging from 1.48 to 1.63 million euros at the University of Pécs, and from 1.16 to 1.28 million euros at the University of Szeged. On a yearly projection, calculating with the 9.6 months international students spend in Hungary on average, this means 14.17–15.67 million euros in Pécs, 11.09–12.25 million euros in Szeged and 20.24–22.22 million euros in Debrecen.

**Table 5.** Students' yearly expenses in 2016, an estimate based on separate costs, 2935 (University of Pécs, UP), 1905 (University of Szeged, USZ), 3290 (University of Debrecen, UD), as well as 8130 (total) and per capita (euros, 2016)

City	Confidence interval (with a level of 95% accuracy)			5% trimmed average
	lowest margin	average	highest margin	
Monthly				
UP	1 475 762	1 554 088	1 632 414	1 451 216
USZ	1 155 723	1 216 034	1 276 346	1 161 426
UD	2 108 289	2 211 537	2 314 785	2 100 267
Total	4 809 801	4 951 578	5 093 356	4 665 416
Yearly				
UP	14 167 311	14 919 242	15 671 173	13 931 673
USZ	11 094 945	11 673 931	12 252 917	11 149 691
UD	20 239 578	21 230 757	22 221 936	20 162 562
Total	46 174 091	47 535 152	48 896 214	44 787 993

**Source:** Authors' calculation

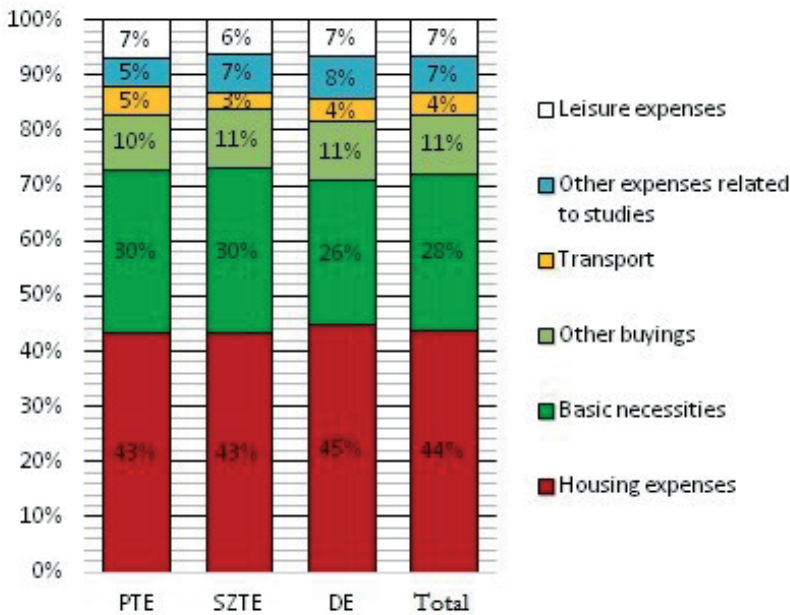
There are differences in the students' spending patterns, but no marked trends can be identified. For example, in Pécs non-European students spend considerably less than Europeans, but this is not true in Szeged and Debrecen. The sums can be compared with the total income of businesses in Pécs, Szeged and Debrecen in 2014, which is 0.73–0.81, 0.27–0.29 and 0.36–0.39% respec-



tively<sup>4</sup>. The biggest proportion can be observed in the case of Pécs. If the number of international students is taken into consideration, this reflects a considerable consumer potential, a sum of 592-626 euros per student can be realized from it.

The structure of spending was found to be uneven; the largest proportion of it is spent on accommodation (44%), followed by basic expenses (28%). In the third place came the other expenses (11%), followed by groups of costs related to studies and leisure activities (7-7%). Transport costs came last (4%) (Figure 4).

**Figure 4.** Structure of expenditures (%) in the group of international students (UP, USZ, UD, and total sample)



Source: Authors' own work

The second biggest group of expenses were basic needs (26-30%). Expenses in the “other” category represent 10-11%, with little variation. Money spent on education and leisure activities came in fourth and fifth (5-8%). The least amount of money spent on transport can be observed in Szeged (3%) but in the other two cities, it also does not account for more than 5% of expenses. If the

<sup>4</sup> Our own calculations, based on data of TeIR (2014).

total amount of money spent is compared to the GDP, it can be established that total income derived from students at the three universities reach 0.04% of the national, 0.17-0.18% of the regional and 0.45-0.48% of the county level GDP (Table 6).

**Table 6.** The total amount of international students' spending in relation to national, regional and county GDP (2015, %)

Geographical unit	Confidence interval (with an accuracy of 95%)			5% trimmed average
	Low	Average	High	
South Transdanubia	0.22%	0.23%	0.24%	<b>0.21%</b>
Baranya	0.55%	0.58%	0.61%	<b>0.54%</b>
Southern Great Plain	0.11%	0.12%	0.12%	<b>0.11%</b>
Csongrád	0.34%	0.35%	0.37%	<b>0.34%</b>
Northern Great Plain	0.20%	0.21%	0.22%	<b>0.20%</b>
Hajdú-Bihar	0.47%	0.50%	0.52%	<b>0.47%</b>
Hungary	0.04%	0.04%	0.04%	<b>0.04%</b>
Southern Transdanubia, Southern Great Plain and Northern Great Plain in total	0.17%	0.18%	0.18%	<b>0.17%</b>
Baranya, Csongrád and Hajdú-Bihar county in total	0.46%	0.47%	0.48%	<b>0.44%</b>

**Source:** Authors' calculation, based on the current survey and [https://www.ksh.hu/docs/hun/xstadat/xstadat\\_eves/i\\_qpr012b.html](https://www.ksh.hu/docs/hun/xstadat/xstadat_eves/i_qpr012b.html)

There are significant differences between the different regions: students at the University of Pécs bear the most considerable weight in their spending (0.22–0.24% of the regional GDP and 0.55–0.61% of county GDP). Students at the University of Szeged are at the other end of the spectrum, their spending was proportionately lower, 0.34–0.37% of the GDP on a county level and 0.11–0.12% on a regional level. The median is represented by the students of the University of Debrecen, their spending amounting to 0.47–0.52% of the county and 0.20–0.22% of the regional GDP. Based on trimmed averages, estimates are more conservative (0.34–0.54% and 0.11–0.21% respectively). This, as referred to above, is realized mostly in relation to accommodation and basic needs. At the same time, leisure activities mostly pertaining to the realm of tourism have a 7% share of the spending portfolio.

## 6. CONCLUSIONS

The three cities, locations for our research, share many similar characteristics, besides some differences in their economic development. One of the similarities is that these cities are centers of regions and counties which are underdeveloped. Consequently, higher education has certain economic benefits and these, in turn, materialize as development potentials for the economy. A positive sign is that the number of international students is growing in all three cities (currently and on average it stands at 2% of the local population). The biggest asset of universities is medical training as it is the most popular among international students. International students at the universities account for 13-16% of the students but the demand for the three universities engaged in the international sphere in accordance with the trends drafted by Findlay, et al. (2012). The international catchment area of the universities in Debrecen, Szeged, and Pécs show differences which are due to their specific international relations, recruiting policies and the available training programmes. In Pécs and Szeged, it is Germany, while in Debrecen it is Turkey that constitutes the biggest European source country. As for the international students from outside Europe, Iran is outstanding in all three universities, and Nigeria Debrecen.

Spending habits occupied a central role in our questionnaire survey aimed at examining international students who take part in foreign-language study programmes. We formulated feasible estimates built on students' responses. Our findings show that students as consumers contribute to the cities' economies with 46.2 million euros. There are some differences in the structure of spending in Pécs, Szeged, and Debrecen, which can be derived both from differences in monthly expenditures per capita (also related to differences in prices at a given place) and from the uneven distribution of student numbers. The structure of spending shows great extremes, although differences between cities are small in scale. The most significant part of expenses was spent on accommodation and basic needs, followed by "other" costs, education, leisure activities and finally, transportation. If tuition fees, worth 67.3 million euros, are added to this, a yearly income of 113.5 million euros can be demonstrated in the three cities. In the three university cities, five international students finance, on average, six workplaces which – regarding the settlement as the basis for comparison – is much higher than the value calculated for certain destination countries in former researches (Münch-Hoch 2013; Ortiz et al. 2015). Naturally, the presence

of international students leaves its mark on the three cities in ways other than generating income.

The universities are major actors in their cities' economies, not in the least because they are significant employers. The incomes of the universities surpass those of the cities significantly. Tuition fees paid by students who are enrolled in international foreign-language programmes mean a direct economic profit for universities, so recruiting international students becomes more and more essential for HEIs. The above universities offer training that is good value for money, and their seats offer highly favorable costs of living in international comparative terms (Montanari-Staniscia 2014). On the whole, in accordance with previous studies, it can be concluded that international students' money spent on accommodation, living costs, recreation, transport, and tuition fee plays a significant role in the development of local economies. This, in turn, is realized in further benefits, such as attracting talented students, more tuition fees, resources for local economies, a growing service sector, job creation and more taxes for local and national governments.

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# ZUR UNABHÄNGIGKEIT EINES AUFSICHTSRATSMITGLIEDS – EINE ERSTE SITUATIONSANALYSE SAMT BILDUNG VON FALLGRUPPEN

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## **Abstract**

*Bilanzskandale und die Banken- und Finanzkrise haben eine Professionalisierung des Topmanagements und dessen Kontrolle zur Folge. Der Auswahl der einzelnen Mitglieder im Aufsichtsrat und deren effizienten Aufgabenerfüllung wird mehr Aufmerksamkeit geschenkt. Im Mittelpunkt des Beitrags steht die Frage, welche Rolle Interessenkonflikte von einzelnen Aufsichtsratsmitgliedern spielen und wie diese zu regeln sind. Dabei werden wichtige Fallgruppen dargestellt.*

**Schlagwörter:** Corporate Governance, Aufsichtsrat, Treuepflicht, Unabhängigkeit, Interessenkonflikt, Unternehmensinteresse, Beratungsleistung, Business Judgement Rule.

JEL Classification: G30, G34

## **1. PROBLEMSTELLUNG**

Deutsche Kapitalgesellschaften – gerade Aktiengesellschaften – haben eine duale Führungsstruktur. Der Vorstand leitet das Unternehmen in eigener Verantwortung, der Aufsichtsrat überwacht und berät dabei den Vorstand. Damit der Aufsichtsrat seinen Aufgaben nachkommen kann, gibt es für das Gremium insgesamt und für jedes einzelne Mitglied Anforderungen, die größtenteils nicht ausdrücklich im Gesetz stehen. Eine Anforderung ist die Unabhängigkeit der Aufsichtsratsmitglieder. Aufsichtsräte sollen in Erfüllung ihrer Aufgabe unabhängig agieren und allein dem Unternehmensinteresse dienen. Welche Fallgruppen und Anforderungen die Unabhängigkeit mit sich bringen, wird in diesem Beitrag dargestellt.



## 2. FUNKTION UND AUFGABE DES AUFSICHTSRATES

Das Gesetz sieht Aufsichtsräte nur bei managementgeführten Unternehmen vor. Für eigentümergeführte Unternehmen, in der klassischen Rechtsform Einzelunternehmen oder Personengesellschaft mit privater Haftung des Gesellschafter-Geschäftsführers (OHG, KG), ist dieses Kontrollorgan nicht vorgesehen. Grund hierfür ist die private Haftung des Unternehmers und der daraus abgeleitete Grundsatz, dass, wer privat haftet, auch alle zentralen Funktionen selbst ausführen und alle Entscheidungen allein treffen darf. Eine unternehmerische Kontrolle findet in dieser Konstellation nicht statt. Freilich gibt es bei Personengesellschaften eine Gesellschafterversammlung, bei der sich die Gesellschafter gegenseitig informieren, abstimmen und insoweit kontrollieren. Die Satzung kann vorsehen, dass sich die Gesellschafter durch einen Beirat oder Verwaltungsrat beraten lassen und Zustimmungsvorbehalte definieren (Schewe, 2.3).

Bei management- bzw. fremdgeführten Unternehmen werden die zentralen Entscheidungen – also die Vertretung und Geschäftsführung – an Manager (Vorstände) übertragen, die das Unternehmen in eigener Verantwortung führen und leiten. Die Gesellschafter wirken über den Aufsichtsrat und/oder über die Gesellschafterversammlung bei den Entscheidungen und bei der Kontrolle mit. Ab 500 Mitarbeitern haben die Arbeitnehmer bei Kapitalgesellschaften und Genossenschaften ein unternehmerisches Mitwirkungsrecht im Aufsichtsrat. Nach dem Drittelbeteiligungsgesetz erhalten sie ein Drittel der Aufsichtsratsmandate; hat das Unternehmen mehr als 2.000 Mitarbeiter, so steht ihnen jeder zweite Sitz zu (§ 4 DrittelbG und § 7 MitbestG.).

Aufgabe des Aufsichtsrates ist es, den Vorstand bei der Leitung des Unternehmens regelmäßig zu beraten und zu überwachen. Das „Königsrecht“ des Aufsichtsrates ist die Entlohnung sowie Bestellung und Abberufung des Vorstandes. Der Aufsichtsrat wirkt auch bei der Rechnungslegung mit. Zusammen mit dem Abschlussprüfer prüft er den Jahresabschluss und den Lagebericht und stellt den Jahresabschluss fest (§ 48 GenG, § 42a GmbHG).

Der Aufsichtsrat muss das Handeln des Vorstandes im Hinblick auf dessen Rechtmäßigkeit (Recht und Gesetz), Ordnungsmäßigkeit (angemessene Planung und Organisation) sowie Zweckmäßigkeit und Wirtschaftlichkeit **überwachen** (Kremer, Rz 913 ff.). Bei Entscheidungen von grundlegender Be-



deutung ist der Aufsichtsrat einzubinden. Die Rollen sind dabei klar verteilt: Die Strategieentwicklung und Umsetzung obliegt dem Vorstand, der sie mit dem Aufsichtsrat abstimmt. Der aktive Part bei strategischen Maßnahmen liegt beim Vorstand, der Aufsichtsrat ist in die Diskussion einzubinden. Seine Rolle kommt im Nachgang – er stimmt zu! Da der Vorstand das Unternehmen in eigener Verantwortung leitet (§§ 76 AktG, 27 GenG), darf der Gesellschafter und der Aufsichtsrat keine Geschäftsführungsmaßnahme übernehmen und sich nicht in die Erledigung des laufenden Tagesgeschäfts einmischen. Bei einer GmbH ist das rechtlich anders: Hier können die Gesellschafter und, wenn es die Satzung vorsieht, auch der Aufsichtsrat Weisungen hinsichtlich der strategischen Ausrichtung und für das Tagesgeschäft erteilen (§ 37 GmbHG).

### 3. ANFORDERUNGEN AN AUFSICHTSRÄTE

Anforderungen an den Aufsichtsrat und an seine Mitglieder ergeben sich aus Gesetz, aus Rechtsprechung und je nach Branche auch nach aufsichtsrechtlichen Regeln. Nach dem BGH hat jedes Aufsichtsratsmitglied Mindestkenntnisse allgemeiner, wirtschaftlicher, organisatorischer und rechtlicher Art zu besitzen, die erforderlich sind, um alle – normalerweise anfallenden – Geschäftsvorgänge ohne fremde Hilfe zu verstehen und sachgerecht beurteilen zu können (BGHZ 85, 293, 295). Im Nachgang der Bank- und Finanzkrise standen auch die Aufsichtsräte generell und deren Kontrollpflicht in öffentlicher Kritik. Die Anforderungen an die Aufsichtsräte steigen, die Erwartungen an deren Arbeit werden höher.

Generell können die Anforderungen an Aufsichtsräte (differenziert) wie folgt dargestellt werden (BGH Urteil vom 15.11.1982 („Hertie“); ACI, S. 38; Potthoff, Kap. 1 III 3; Semler, § 2 Rz 75 ff.):

- Sachkunde: Erfahrung im Geschäftsmodell, Branchenwissen, betriebswirtschaftliche bzw. rechtliche Ausbildung, Managementwissen, unternehmerische Erfahrung je nach Tätigkeit des Unternehmens auch international.
- Pflichtgemäßes Verhalten: Ein Aufsichtsrat muss gewissenhaft und verschwiegen sein und die Arbeit des Vorstandes konstruktiv kritisch begleiten.
- Zuverlässigkeit und Vorbildfunktion: Ein Aufsichtsrat muss glaubhaft und gewissenhaft agieren. Man muss ihm Vertrauen schenken können.

- Unabhängigkeit: Es dürfen keine Mandatsverbote und keine gravierenden Interessenkonflikte bestehen.
- Ein Aufsichtsrat muss dem Amt ausreichend Zeit widmen können.
- Im Team des Aufsichtsrates ist auf „Diversity“ zu achten.

Bei der Sachkunde sind neben Erfahrungen im jeweiligen Geschäftsmodell wichtige Geschäftsfelder wie „Strategie, Planung und Organisation“, „Recht und Compliance“, „Finanzwirtschaft und Rechnungslegung“, „IT (EDV, Prozesse, Digitalisierung)“, „Vertrieb, Marketing und Kommunikation“ vom Aufsichtsrat abzudecken. Dabei muss nicht jedes einzelne Aufsichtsratsmitglied alle Kompetenzen mitbringen. In der Summe ist jedoch dafür Sorge zu tragen, dass der Aufsichtsrat in seiner Gesamtheit die erforderlichen Kenntnisse, Fähigkeiten und Erfahrungen zur Erfüllung seiner Überwachungsaufgabe besitzt (ACI, S. 35.). Dabei sind die relevanten Geschäftsfelder abzudecken, Kernbereiche – wie die Rechnungslegung – sind mehrfach zu besetzen.

Übernimmt ein Aufsichtsratsmitglied besondere Aufgaben im Aufsichtsrat – z. B. Vorsitz des Aufsichtsrates, Vorsitz eines Ausschusses, Mitglied im Prüfungsausschuss – so muss es über die hierfür erforderliche Expertise verfügen (§ 107 AktG, vgl. auch ACI, S. 38; Kremer, Rz 986, Semler § 8 V. Zur Rechnungslegung, insbesondere zum formellen Bilanzrecht vgl. Bacher, Kap. 2.). Andernfalls riskiert es ein Überforderungs- bzw. Übernahmeverschulden. Mitglieder, die vorschnell ein nicht qualifiziertes Aufsichtsratsmitglied mit besonderen Aufgaben betrauen, können ebenfalls in eine Ersatzpflicht geraten (Auswahlverschulden).

## 4. DIE UNABHÄNGIGKEIT EINES AUFSICHTSRATES

### 4.1, VORRANG DER UNTERNEHMENSINTERESSEN

Der Aufsichtsrat agiert eigenverantwortlich, er handelt frei von Aufträgen und Weisungen und muss der Gesellschaft seinen Rat und Dienste umfassend zur Verfügung stellen. In Ausübung des Amtes ist jedes Mitglied des Aufsichtsrates dem Unternehmensinteresse verpflichtet und schuldet dem Unternehmen seine unabdingbar verbundene Treue und strikte Loyalität (DCGK Ziffer 5.5; Potthoff, Kap. 1 III 3 b, Kremer, Rz 1112 ff.). Die vorrangige Verpflichtung auf

das Unternehmensinteresse beschränkt sich auf die Tätigkeit im Aufsichtsrat. Außerhalb des Aufsichtsrats kann jedes Mitglied seinen eigenen Beruf und Interessen nachgehen.

#### 4.2. ZURÜCKHALTUNG BEI INTERESSENKONFLIKTEN

Gesellschaften haben Gesellschafter und die können Interessen haben, die nicht in voller Übereinstimmung mit den Unternehmensinteressen sind. Gesellschafter sind üblicherweise prominent im Aufsichtsrat vertreten. Insofern gibt es durchaus Abhängigkeiten. Um eine unabhängige Beratung und Überwachung zu ermöglichen, sollen dem Aufsichtsrat unabhängige Mitglieder in ausreichender Anzahl angehören (DCGK Ziffer 5.4.2). Ein Mitglied ist dann unabhängig, wenn es in keiner geschäftlicher oder persönlicher Beziehung zur Gesellschaft oder deren Vorstand steht, die einen Interessenkonflikt begründet (DCGK Ziffer 5.4.1 Satz 2. Vgl. hierzu noch deutlicher Malik, S.188 ff.).

Da das Mandat eines Aufsichtsrats ein Nebenamt ist, existieren oft mehrere Interessen (Ulmer, NJW 1980, 1603 ff.). Ein Mitglied kann Doppelämter ausüben und damit einer Doppelverantwortung unterliegen. Nach h. M. ist eine Verteidigung mit dem Argument „eine Person unterliege einfach kollidierenden Pflichtenkreisen“ abzulehnen. Es gilt indes: In Ausübung des Mandats muss das Unternehmensinteresse stets Vorrang vor eigenen Interessen haben (BGHZ 64, 238; BGHZ 69, 207, BGH NJW 1978, 425; DCGK Ziffer 5.5; Potthoff, Kap. 1 III 3 b, Kremer, Rz 1112 ff; Ulmer, NJW 1980, 1603.). Das Unternehmensinteresse unterliegt einem Wandel und ergibt sich auch aus der strategischen Ausrichtung und der daraus abgeleiteten Geschäftspolitik. Es inhaltlich ganz konkret zu fassen, ist meist ein schwieriges Unterfangen.

Wenn es Interessenkonflikte gibt, sind diese offenzulegen und angemessen zu behandeln. Hierzu haben sich in der Rechtsprechung und Praxis Fallgruppen entwickelt.

#### 4.3. AUSGEWÄHLTE FALLGRUPPEN

##### 4.3.1. Fallgruppe „Gesetzliches Verbot“

Das Gesetz kennt wenige Verbote für das Mandat eines Aufsichtsrates (ACI S. 39, Semler, § 12 RZ 90.). So können Mitglieder in Aufsichtsräten nur

natürliche Personen sein. Ein Mitglied der Regierung darf grundsätzlich keinem Aufsichtsrat angehören (Art. 66 GG). Auch darf ein Mitglied des Exekutivorgans (Vorstand/Geschäftsführer) nicht zugleich Aufsichtsrat sein (§ 105 AktG). Eine Person, die in den letzten zwei Jahren Vorstandsmitglied war, soll nicht Mitglied des Aufsichtsrates werden; insgesamt sollen ihm nicht mehr als zwei ehemalige Vorstände angehören (DCGK Ziffer 5.4.2 und ACI, S. 37.). Überkreuzverflechtungen sind verboten, d. h. Exekutivorgane mehrerer Unternehmen dürfen nicht jeweils im anderen Unternehmen im Aufsichtsrat sitzen. Auch die Ämterhäufung ist beschränkt. So darf eine Person nicht mehr als zehn Aufsichtsratsmandate haben, der Vorsitz eines Aufsichtsrates zählt dabei doppelt. Für Banken und Versicherungen und börsennotierte Gesellschaften gelten strengere Regeln, vgl. § 25d KWG und die Merkblätter der BaFin für Aufsichtsratsmitglieder für Banken bzw. Versicherungen.

#### **4.3.2. Fallgruppe „Kredite und Überschuldung“**

Kredite an Mitglieder des Aufsichtsrates der Gesellschaft dürfen nur nach vorheriger Zustimmung des Aufsichtsrates vergeben werden (§ 115 AktG) (DCGK Ziffer 3.9 und Semler, § 8 Rz 98 ff.; Spindler/Stilz § 115; Schmidt/Lutter §§ 115, 89 Rz 5 ff.). Ein überschuldetes Aufsichtsratsmitglied, deren Gläubiger die Gesellschaft ist, ist nicht mehr unabhängig und muss sein Amt niederlegen.

#### **4.3.3. Fallgruppe „Mandat bei einem Wettbewerber“**

Kontrovers wird die Frage diskutiert, ob Aufsichtsratsmandate in konkurrierenden Unternehmen zulässig sind. Ein Interessenkonflikt drängt sich dann auf, wenn ein Aufsichtsrat wesentliche Funktionen bei einem Konkurrenten ausübt, z. B. als Vorstand, leitender Mitarbeiter, Aufsichtsrat, Bankier oder Berater. Der Konflikt besteht darin, dass der Aufsichtsrat in konkurrierenden Unternehmen besonderes Wissen erlangt, das er gegenseitig verwerthen kann. Diese Fallgruppe ist gesetzlich nicht geregelt, es gibt kein gesetzliches Mandatsverbot! Die h. M. ist der Ansicht, dass ein Mandat in dieser kritischen Konstellation zwar unerwünscht, aber zulässig sein kann (BGHZ 39, 116, 123; Semler, § 12 Rz 139 ff.; Kremer, Rz 1029, 1051. Ausführlich Matinek, WRP 2008, 51-67.). Je nach Einzelfall kann die Doppelfunktion indes einen schwerwiegen-

den und dauerhaften Interessenkonflikt begründen und dann einen Sanktions- oder Inkompatibilitätsgrund darstellen.

Nach dem Governancekodex (DCGK Ziffer 5.4.2 Satz 4) „soll“ ein Aufsichtsrat keine Organfunktion oder Beratungsaufgaben bei wesentlichen Wettbewerbern ausüben. Wesentlich ist ein Wettbewerber mit Gewicht, der dem Unternehmen auf seinen Märkten Wettbewerb macht und in der Kernleistung identische Tätigkeitsfelder hat. *Semler* entwickelte hier die Formel vom „sensiblen Wissen im Kerngeschäftsfeld“ (*Semler/Stengel*, NGZ 2003, 5.). In Anlehnung an *Lutter* ist es zu recht unerträglich, wenn man beispielsweise im Aufsichtsrat von Daimler die neue Modellpolitik erörtert und ein Mann von Audi dabei sitzt (*Lutter*, Rechte und Pflichten des Aufsichtsrates, § 1 Rz 9.). Ähnlich gravierend können interne Diskussionen um ein gravierendes Straf- oder Kartellverfahren, um den Einsatz neuer Technologien, um die internationale Kooperationsstrategie oder ähnliche grundlegende Themenbereiche sein.

#### 4.3.4. Fallgruppe „Interessenkonflikte im Konzern“

Bei Unternehmen im Konzernverbund finden sich vielfältige personelle Verflechtungen. Das Gesetz verbietet in § 100 II Nr. 2 AktG den Fall, dass der gesetzliche Vertreter einer Tochtergesellschaft gleichzeitig im Aufsichtsrat der Muttergesellschaft sitzt. Praxisrelevant und zulässig ist der umgekehrte Fall: Ein Vorstand der Muttergesellschaft sitzt im Aufsichtsrat der Tochtergesellschaft. Rechtlich zulässig ist auch der Fall, dass jemand Aufsichtsrat bei Mutter- und Tochtergesellschaft ist. Als Grundregel gilt im Konzern, dass ein Aufsichtsrat das Konzerninteresse zu wahren hat, die Interessen des herrschenden Unternehmens – also der Muttergesellschaft – haben grundsätzlich Vorrang (§§ 308, 323 AktG; *Semler*, § 12 Rz 130 ff.).

#### 4.3.5. Fallgruppe „Vertreter eines Großaktionärs oder eines Familienstammes“

Ist ein Aufsichtsrat ein Vertreter eines Großaktionärs oder eines Familienstammes kann es zu einem Konflikt zwischen den „Interessen des Großaktionärs bzw. der Familie“ und des Unternehmens kommen. Aufsichtsräte sind an Aufträge und Weisungen nicht gebunden, sie haben kein imperatives Mandat. So wörtlich „Sie sind an Aufträge und Weisungen nicht gebunden“ in § 4 III 2

MontanMitbG. Dieser Grundsatz gilt für alle Aufsichtsräte unabhängig von Größe und Rechtsform des Unternehmens. Dabei müssen die Interessen des Großaktionärs bzw. die Interessen der Familie zurückstehen, soweit sie den Interessen der Gesellschaft widersprechen.

#### 4.3.6. Fallgruppe „familiäre bzw. persönliche Verquickung“

Enge familiäre oder persönliche Beziehungen innerhalb eines Organs oder zwischen den Organen (Ehepartner, Geschwister, Verwandtschaft in gerader Linie, Liebesbeziehungen etc.) können zu einer besonderen Vertrautheit führen, die jede sachliche Entscheidung überlagert oder sogar ausblenden kann. Innerhalb der Familie oder bei gescheiterten Liebesbeziehungen kann es dauerhaft zu Streit und unsachlichen Auseinandersetzungen kommen. Beides – zu enge Vertrautheit oder Fehde in der Familie – sind dem Unternehmensinteresse nicht dienlich. Je nach Art der Vertrautheit und der Schwere des Interessenkonflikts sind angemessene Maßnahmen erforderlich, die das betroffene Mitglied und die Organe prüfen, bewerten und schlussendlich entscheiden müssen. In Frage kommen je nach Einzelfall ein generelles Mandatsverbot (z. B. Ehemann ist Vorstandsvorsitzender, die Ehefrau soll ihn als Aufsichtsratsvorsitzender kontrollieren; Eltern sind alleinige Vorstände, deren Kinder sollen als alleinige Aufsichtsräte bestimmt werden) oder einschränkende Maßnahmen je nach Sachlage (z. B. Bestellung weiterer unabhängiger Mitglieder; Enthaltung bei Fragen der Anstellung, Vergütung oder Entlastung des Familienmitgliedes). Besonders heikel sind Liebesbeziehungen, die nicht offenkundig sind. Wenn z. B. der oder die Aufsichtsratsvorsitzende ein Verhältnis mit einem Vorstandsmitglied beginnt und über mehrere Quartale aufrecht unterhält, ist eine Amtsniederlegung – entweder die des Aufsichtsratsvorsitzenden oder des Mitglieds im Vorstand – unabdingbar.

#### 4.3.7. Fallgruppe „Arbeitnehmervertreter im Aufsichtsrat“

Arbeitnehmervertreter im Aufsichtsrat können verschiedene Rollen im Unternehmen haben, die zu Interessenkonflikten führen können (Semler, § 12 Rz 125 ff.). In ihrem Hauptamt unterliegen die Arbeitnehmer dem Direktionsrecht des Vorstandes, im Nebenamt sind sie Mitglied im Kontrollorgan und überwachen insoweit als Aufsichtsratsmitglied den Vorstand. Insofern gibt es eine vom Gesetzgeber vorgesehene Überkreuzüberwachung, die nicht un-

problematisch ist. Auch hier gilt: Als Arbeitnehmervertreter im Aufsichtsrat sind die Mitarbeiter ausschließlich dem Unternehmensinteresse verpflichtet. Im Konfliktfall (z. B. Fusion, Wegfall des Arbeitsplatzes, Schließung einer Betriebsstätte) haben eigene Interessen und die Interessen der Belegschaft, des Betriebsrates oder die Interessen der Gewerkschaft zurückzustehen.

Schwierig ist die Rechtslage im Arbeitskampf, z. B. aktive Mitwirkung eines Aufsichtsratsmitglieds beim Streik gegen das Unternehmen. Nach h. M. ist hier eine gewisse Zurückhaltung des jeweiligen Mitglieds geboten (Semler § 12 Rz 128m. w. N.).

Wenn die Arbeitnehmervertreter überlegt argumentieren, kommt es bei Arbeitnehmerinteressen kaum zu Interessenkonflikten. Grund hierfür ist, dass die Interessen der Arbeitnehmer stets einen wichtigen Teil des Unternehmensinteresses darstellen (vgl. § 2 BetrVG). Sie müssen insofern nicht strikt einem „Vorstandsinteresse“ oder „Mehrheitsinteresse im Aufsichtsrat“ untergeordnet werden, sondern stehen als gewichtiger Teil des Unternehmensinteresses daneben. Arbeitnehmerinteressen können also im Rahmen der laufenden Aufsichtsrats-tätigkeit stets mitverfolgt werden. Mehr noch: Die unternehmerische Mitbestimmung erwartet gerade dieses Engagement von den Arbeitnehmervertretern.

#### 4.3.8. Fallgruppe „Verträge mit Aufsichtsratsmitgliedern“

Bei Verträgen mit Aufsichtsratsmitgliedern und deren Angehörigen ist Zurückhaltung geboten. Besonders kritisch sind Beraterverträge zwischen der Gesellschaft und den Mitgliedern des Aufsichtsrates zu sehen, zumal die Beratung des Vorstandes durch die Aufsichtsratsmitglieder ureigene Aufgabe des Aufsichtsrates ist und mit dem Amt und dessen Vergütung abgegolten ist. Die Einzelheiten regeln §§ 113, 114 AktG. Danach muss bei einem Dienst- oder Werkvertrag höherer Art zwischen der Gesellschaft und einem Mitglied des Aufsichtsrates der Aufsichtsrat zustimmen (Semler, § 12 Rz 109 ff.).

Zu Anschauung werden vier Fallbeispiele vorangestellt:

Fall A: Der Aufsichtsratsvorsitzende ist Rechtsanwalt und bittet seinen Kanzleisozius kurz vor der Hauptversammlung um Mithilfe bei der Erstellung eines Verhandlungsleitfadens. Er erteilt ihm insofern einen kostenpflichtigen Auftrag!



Fall B: Ein Aufsichtsrat ist Steuerberater und wird vom Vorstand zur Abwehr eines Steuerstrafverfahrens inklusive Verteidigung beauftragt.

Fall C: Ein Aufsichtsrat ist bisher Organisations- und Finanzberater und wird als Aufsichtsrat neu bestellt. Er will seinen Beratervertrag fortführen. Dort heißt es u. a.: „Der Berater erhält monatlich 4.000 € für die Beratung in wesentlichen Fragen der Geschäftsführung, insbesondere in Fragen der Organisation, der Datenangelegenheiten, von Finanzierungen und Versicherungen und beim Erwerb von Beteiligungen im In- und Ausland.“

Fall D: Ein Aufsichtsrat ist Schreibwarenhändler. Bei ihm kauft die Gesellschaft Büroartikel.

Erfasst von § 114 AktG sind nur Dienst- und Werkverträge höherer Art, also Verträge mit geistigem Anspruch. Im Kern sind damit Beratermandate gemeint. Fall D behandelt einen Kaufvertrag. Diese Fallgruppe ist unproblematisch und braucht im Aufsichtsrat nicht behandelt werden, wenn und soweit die Kaufbedingungen angemessen sind. Die Gesellschaft darf also schlichte Umsatz- und Tagesgeschäfte mit einzelnen Aufsichtsratsmitgliedern jederzeit tätigen (z. B. Kauf von Backwaren bei einem Aufsichtsrat, der im Hauptberuf Bäcker ist; Autoreparatur bei einem Aufsichtsrat, der ein Autohaus führt; Auftrag einer Elektroinstallation bei einem Aufsichtsrat, der selbstständige Elektromeister ist).

Zu den ureigenen Aufgaben des Aufsichtsrates gehört die Beratung des Vorstandes, zu den ureigenen Aufgaben des Aufsichtsratsvorsitzenden gehört die Versammlungsleitung. Diese organschaftlichen Pflichten schuldet das Organmitglied der Gesellschaft aus seinem Amt heraus. Typischerweise erhält ein Aufsichtsratsvorsitzender hierzu Unterstützungsleistungen vom Vorstandsbüro der Gesellschaft. Eine Auftragserteilung im Kernbereich der organschaftlichen Pflichten an sich selbst oder an seine Kanzlei – wie im Fall A – ist nicht zulässig. Ein derartiger Vertrag ist auch nicht genehmigungsfähig. Er ist unwirksam. Im Fall A darf der Vorsitzende weder selbst eine Zusatzrechnung für die Erstellung eines Verhandlungsleitfadens schreiben noch seinen Kanzleikollegen dazu kostenpflichtig beauftragen.

Grundsätzlich hat jedes Mitglied seine gesamten Fähigkeiten in den Dienst der Aufsichtsratsaufgabe zu stellen, inklusive seiner professionellen Spezialkenntnisse. Ein hoher Arbeitsaufwand allein ist noch kein Grund für eine



zulässige Mandatierung. Ein Aufsichtsrat hat in erster Linie den Vorstand zu beraten und zu überwachen. Die Beratung und Kontrolle bezieht sich nicht nur auf abgeschlossene Sachverhalte, sondern erstreckt sich auf grundsätzliche Fragen der Geschäftspolitik und auf aktuelle Sachverhalte. Im Fall C betrifft das Beratungsverhältnis durchweg allgemeine Bereiche der Unternehmensführung. Diese Beratungsaufgabe zählt zu den ureigenen Aufgaben eines Aufsichtsrates und kann schuldrechtlich nicht extra beauftragt und vergütet werden (vgl. BGHZ 114, 131 f.). Ein Beratungsverhältnis ist insoweit unwirksam (§ 114 AktG).

Bei Spezialfragen oder bei Unterstützung des Vorstandes im Tagesgeschäft kann etwas anderes gelten. In diesem Fall darf die Gesellschaft ein Beratungsverhältnis „höherer Art“ (Werk- oder Dienstvertrag) mit vorheriger Zustimmung des Aufsichtsrates eingehen. Die Beauftragung muss also vom Aufsichtsrat sorgfältig geprüft und entschieden werden. Im Fall C gibt es für eine Beauftragung keine Möglichkeit, zumal es um eine allgemeine Dauerberatung des Vorstandes geht.

In der Praxis besteht die schwierige Abgrenzungsfrage darin, wie weit die Beratungspflichten eines Aufsichtsrates reichen. Nach h. M. (BGH Urteile vom 25.03.1991 und 04.07.1994 (BGHZ 114, 131 f.; 126, 344 f.)) gilt für dieses Problem folgendes (Semler, § 12 Rz 739; Spindler/Stilz § 114 Rz 5 ff; Schmidt/Lutter § 114 Rz 5 ff.):

- Ein Vertragsverhältnis mit einem Aufsichtsrat über eine allgemeine (laufende) Beratung der Gesellschaft bzw. des Vorstandes ist unzulässig. Sie ist Teil der Aufsichtsratsfunktion und mit deren Vergütung abgegolten (§ 113 AktG).
- Eine Spezialberatung in einem konkreten Einzelfall oder im Tagesgeschäft ist nach sorgfältiger Prüfung genehmigungsfähig, weil dieser Aufgabenbereich weder eine Frage der Strategie noch zur laufenden Überwachungsaufgabe des Aufsichtsrates gehört. Fall B ist damit zulässig, wenn vor der Mandatierung der Gesamtaufichtsrat angehört und den Vertragsbedingungen mittels Beschlusses zugestimmt hat. Mittels Aufsichtsratsbeschluss – das betroffene Mitglied hat dabei ein Stimmverbot – sind also nur Dienstleistungsverträge mit einem „spezifischen Leistungsprogramm“ genehmigungsfähig, also Verträge, die spezifische und nicht allgemeine Fragen der Geschäftsführung betreffen und nicht im

normalen Feld der Aufsichtsratsstätigkeit liegen. Je spezieller die Fragen sind, desto eher können sie Gegenstand einer Beauftragung sein. Ebenso sind Fragen zu behandeln, mit denen sich der Aufsichtsrat gewöhnlich nicht befasst, wie z. B. anwaltliche Vertretung im Einzelfall, die Erstellung von Steuererklärungen, einer Werbekonzeption oder eines Personalkonzepts oder die Erbringung von Routinedienstleistungen.

- ✦ Dem Wortlaut nach betrifft § 114 AktG nur die Gesellschaft und das jeweilige Aufsichtsratsmitglied. Der Anwendungsbereich von § 114 AktG ist jedoch weiter zu fassen: Vom Verbot bzw. Zustimmungsvorbehalt werden auch Tochtergesellschaften der Gesellschaft und nahestehende Personen bzw. Personengesellschaften des Mitglieds (Partner einer Sozietät, Ehepartner oder nahe Angehörige des Mitglieds) umfasst.
- ✦ Dritte sind unbefangen bzw. unabhängig und können jederzeit vom Vorstand sowohl mit strategischen Fragen als auch mit Einzelfragen oder einem Dauermandat beauftragt werden.
- ✦ Genehmigungsfähige, aber „nicht richtig“ oder „nicht“ genehmigte Beratungsverträge sind unwirksam. Eine gezahlte Vergütung ist zurückzugewähren (§ 114 II AktG). Der Aufsichtsratsbeschluss ist nur wirksam, wenn der Inhalt der Beratungsleistung spezifiziert ist (genaue Bestimmung des Arbeitsprogramms bzw. der Aufgabenstellung) und die Höhe der Vergütung offengelegt ist (Transparenzgebot!). Zweck dieser Regelung ist, dass keine Sondervergütung für einen Aufsichtsrat ausgekehrt wird, zumal hierfür gemäß § 113 II AktG ausschließlich die Hauptversammlung zuständig ist.

#### 4.4 VERHALTENSGRUNDSÄTZE BEI INTERESSENKONFLIKTEN

Da das Mandat im Aufsichtsrat ein Nebenamt ist und das Mandat höchstpersönlich auszuüben ist, nimmt der Gesetzgeber Interessenkonflikte hin. Der Aufsichtsrat muss jedoch alles tun, um die Interessenkonflikte gering zu halten und zu beschränken, idealerweise sind sie zu vermeiden. Schon bei der Auswahl und Nominierung der Aufsichtsratsmitglieder müssen die Organe einschätzen, ob und gegebenenfalls mit welcher Intensität mit dem Auftreten von Interessenkonflikten zu rechnen ist. Sind Interessenkonflikte wahrscheinlich, sollte ein Kandidat erst gar nicht zur Wahl vorgeschlagen werden.

Auf Interessenkonflikte und deren Vermeidung hat der Aufsichtsratsvorsitzende, jedes Mitglied im Aufsichtsrat und auch der Vorstand zu achten. Die Sorgfaltspflicht trifft besonders das betroffene Mitglied selbst. Jedes Mitglied im Aufsichtsrat muss Interessenkonflikte, insbesondere solche, die aufgrund einer Beratung oder Organfunktion bei Kunden, Lieferanten, Kreditgebern oder sonstigen Beziehungen entstehen können, dem Aufsichtsrat gegenüber klar und deutlich offenlegen. Je nach Interessenkonflikt unterliegt das betroffene Aufsichtsratsmitglied einem Stimmverbot. Hierüber entscheidet der Aufsichtsratsvorsitzende. Ist der Interessenkonflikt besonders intensiv, so kann das betroffene Mitglied auch von der Beratung bei diesem Tagesordnungspunkt ausgeschlossen werden (Ulmer, NJW 1980, 1604; ACI, S. 144.). Denkbar ist das zum Beispiel in einer Übernahmesituation, wenn ein Aufsichtsrat auch der Bietergesellschaft angehört. Bei dauerhaften und gravierenden Interessenkonflikten ist das Aufsichtsratsmitglied verpflichtet, sein Mandat niederzulegen (Beispiel: Liebesbeziehung zwischen den Vorsitzenden des Leitungs- und des Kontrollorgans). Kommt das befangene Mitglied seiner Pflicht nicht nach, so muss der Aufsichtsrat einen Antrag auf Abberufung stellen.

Bei der Ausübung seines Amtes muss der Aufsichtsrat stets den Vorteil des Unternehmens wahren und Schaden von ihm abwenden. Ansonsten besteht eine Treupflichtverletzung, die zu weiteren Rechtsfolgen (Abberufung, Zwang das Amt niederzulegen, Schadenersatzpflicht) führen kann.

Eine Pflichtwidrigkeit besteht nicht, wenn der Aufsichtsrat bei unternehmerischen Entscheidungen vernünftigerweise auf der Grundlage angemessener Informationen und Abwägungen annehmen durfte, zum Wohle der Gesellschaft zu handeln (sog. Business Judgment Rule nach §§ 116, 93 I 2 AktG). Insofern kann die Business Judgment Rule ein „sicherer Hafen“ für den Aufsichtsrat sein. Dieses Prinzip findet jedoch keine Anwendung, wenn das Aufsichtsratsmitglied nicht ausschließlich im Unternehmensinteresse handelt oder wenn konkrete Gesetzespflichten verletzt werden. Unter Juristen ist streitig, „ob“ und „wie“ dabei der gesamte Aufsichtsrat von Interessenkonflikten „infiziert“ ist (ACI, S. 145.). Eine höchstrichterliche Entscheidung liegt hierzu bisher nicht vor.

## 5. ZUSAMMENFASSUNG

Kapitalgesellschaften werden von Organen geleitet und jedes Organ – Vorstand wie Aufsichtsrat – darf sich nur vom Interesse des Unternehmens leiten lassen. Da das Amt des Aufsichtsrats ein Nebenamt ist und höchstpersönlich auszuüben ist, können zum Unternehmensinteresse weitere unternehmerische, finanzielle oder persönliche Interessen treten. Der Gesetzgeber nimmt solche Interessenkonflikte in Kauf. Der Aufsichtsrat muss jedoch alles tun, die Interessenkonflikte zu beschränken oder zu vermeiden. In erster Linie **zählt es zur Pflicht des betroffenen Mitglieds** seinen eigenen Interessenkonflikt offenzulegen. In gravierenden Fällen hat sich das betroffene Mitglied der Beratung zu enthalten und darf nicht mitstimmen. Besteht der Interessenkonflikt dauerhaft und wiegt er schwer, ist eine Amtsniederlegung zu prüfen.

Praxisrelevant ist die Fallkonstellation, dass ein Aufsichtsrat bzw. sein Unternehmen oder Kanzlei neben seinem Mandat einmalig oder laufend Beratungsleistungen erbringt. Grundsätzlich sind Beratungsleistungen mit dem Aufsichtsratsmandat abgegolten. Will das Mitglied für sich, seine Angehörigen oder sein Unternehmen einen Werk- oder Dienstvertrag schließen, so bedarf dieser Vertrag einer sorgfältigen Prüfung und Beratung im Aufsichtsrat und einer ausdrücklichen Zustimmung.

Zusammenfassend zeigt sich, dass die Diskussion um eine „Good-Governance“ Konturen zur Problemlösung herauskristallisiert, die eine klare Tendenz erkennen lassen: Die Toleranz hinsichtlich Interessenkonflikte von Aufsichtsräten nimmt ab. Verfahren werden eingefordert („Interessenpolicy“) mit den Bausteinen „Offenlegung/Transparenz“, „Diskussion und Bewertung im Aufsichtsrat“ samt angemessener „Sanktion“ am besten anhand von Fallgruppen.

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# CENTRAL PAYROLL SYSTEM AS AN INSTRUMENT FOR EFFICIENT BUDGET MANAGEMENT

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## **Abstract**

*The need for efficient management for spending State Budget in the Republic of Croatia, which is a crucial problem, has led to the implementation of a single salary information system for employees whose salaries are funded from the State. That information system is the Central Payroll System for monitoring expenditures and staff data of public sector employees.*

*Purpose of the paper is to give a review of research results made by Ministry of Administration of Republic of Croatia and Financial Agency about the usage of income calculations outside the Central Payroll System focused on Brod - Posavina County. The research took its part during January and February 2017 which covered Public Sector in the Republic of Croatia. The aim of the paper is to prove that making all calculations, salaries, material rights, other incomes, etc., by using Central Payroll System will be easier to manage and control the spending of State Budget and to reduce the additional costs of using additional programs in that purpose. There is a strong correlation between the*

*inefficient expenditure of budget resources and the use of various payroll and income calculations programs that generate additional costs.*

**Keywords:** Central Payroll System (CPS), management, expenditure, reduction, State Budget

JEL Classification: H61, M10

## 1. INTRODUCTION

Management is a complex category and has five important functions which are planning, organizing, staffing, leading and control (Barković, 2009,13). Through political decision-making process, these five mentioned management functions were used to bring rationalization, stabilization, and optimization of public sector system to reduce expenditures for employees because these expenditures are the highest. The analysis method of problems through a list of activities (“procedures”) provides us to perceive important dimensions of one process and to get ideas about its improvement (Srića, 2003,87). According to that, the successful and efficient public sector is an indicator of the success of a modern state.

On the June 12<sup>th</sup>2015, according to 81<sup>st</sup> article of Croatian Constitution, Croatian Parliament brought Development Strategy of Public Administration for period 2015 – 2020 which is the frame for development of all bodies in the property of the State. The emphasis of Strategy was informatization in the purpose of easier data managing, control and better connection between services, which means less paperwork. It also contains results of previous strategies and the most important mechanism for Public Sectors was a project of Central Payroll System implementation and human resource management. At the moment, Information system RegZap/COP (Register of Public Sector Employees/ Central Payroll System), is one of the largest services of Republic of Croatia which will be described in the second part of the paper. Better human resource managing in Public Sector, better managing, and control of State Budget expenditures for salaries and material rights, was enabled by launching above mentioned project. The result is also, expenses reduction to local programmers for every institution individually before using Central Payroll System, along with monthly and yearly reporting about paid wages on an institutional level, group

of institution and on the level of the system in general, because of further planning, savings, and allocation of State Budget resources.

In the second part of the paper briefly will be described Register of employees in Public Sector as well as Central Payroll System, apropos implementation and managing with these two information systems and their advantages and disadvantages. Following that, will be described management of expenditures for employees. In the fourth part of the paper will be processed researched data and methodology of research and in the end conclusion.

Purpose and aim of the paper are the establishment of quality and efficient Central Payroll System and Human Resource Management to improve Public Sector in general. Collected data and statistical processing were made on basis of the poll made by Ministry of Administration of Republic of Croatia and Financial Agency, in period January – February 2017, about using systems for income calculations outside the Central Payroll System, in the meaning of upgrading new functionalities. The research covered all Public Sector institution in the Republic of Croatia. Paper research is focused on institutions in Brod – Posavina County.

## 2. PUBLIC SECTOR EMPLOYEE REGISTER

Nowadays, quality computers and information systems are instruments without its existence is unimaginable the business of a company, private or public. They facilitate the business of the company, contribute acceleration of business processes and using them managers bring decisions faster and easier. With global Economy Crisis, Government of Croatian also took some activities to fight against it, and one of the results was activities of establishment Register of Employees in Public Sector, further RegZap, and after it was developed Central Payroll System. The largest critics pointed to Governments in present and in the past are huge amounts of employees in Public Sector and high expenditures of State Budget. Unification of data, quality Human Resource Management and managing with salaries in the Public Sector was the result of the implementation of RegZap and Central Payroll System. Establishment and managing of RegZap were given to Financial Agency by Government of Republic of Croatia Decree from June 10<sup>th</sup>2010 (Narodne novine 83/2010). RegZap covers data from every employee in state firms and public companies and it ensures moni-



toring and changing of existing data. RegZap users are all institutions beneficiaries of State Budget.

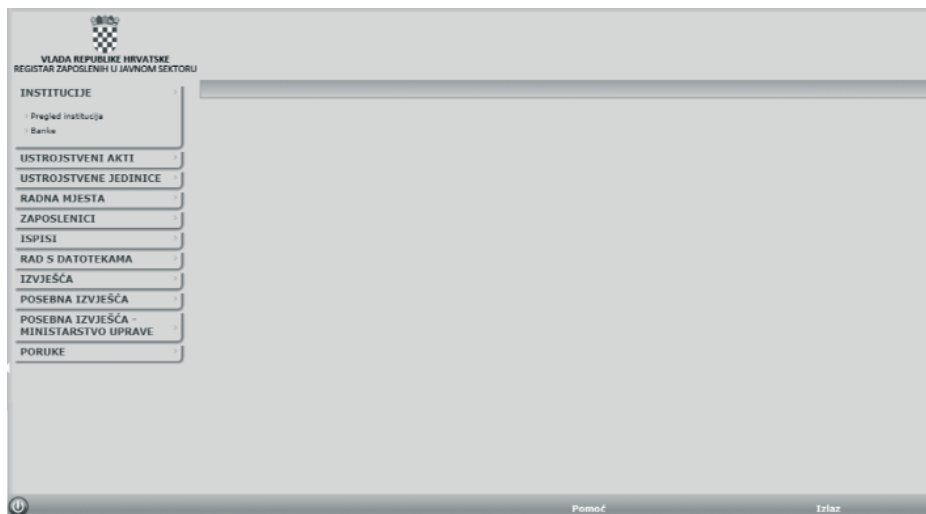
At the beginning of May 2012, informatics infrastructure for central data collecting was implemented and was covering 250 000 employees. The web application was developed and to use contemporary and safe security mechanisms all beneficiaries were ensured with Public Key Infrastructure (PKI). At that moment 4000 users registered and all of them had an opportunity to participate in workshops in regional centers through a system of users support. RegZap creates conditions to develop a system for effective and successful Human Resource Management in public and State companies as well as the Central Payroll System for beneficiaries who use State Budget resources for salaries. Basic preconditions to use the application are:

- + Internet
- + installed support for smart card or USB
- + smart card reader or USB token.

The URL address is <https://zaposleni.javnisektor.hr>, after choosing received certificate it is needed to enter PIN code received with a smart card or USB.

At the end of logging into application, approval had to be verified. After entering application new window with modules classification was opened.

**Figure 1.** Register of employees in the public sector – main menu



**Source:** Financial Agency (April 2019)

All modules have sub-modules with their logical unities. For example, module ZAPOSLENICI (employees) has few sub-modules connected to different data. There are two field categories for module entries: 1. Structure and method of data entry (free entry field, drop down menu and search window); 2. Possibilities of data entry (mandatory fields – marked with blue color, optional field – marked white, protected fields with no data entry -grey color). Data entered for employees, for example, are a first and second name, personal ID, IBAN account, residence address, employment date, working experience/years before employment, education data, level of education, foreign language competences, different suspensions, etc. Within Register of Employees in Public Sector data about every employee are covered and through the System, all data are managed, followed, and corrected. Quality management of mentioned data is correlated to one of the five main management function and that is human resource management and leading, motivating and controlling of employees which will be mention and discussed in a subsequent part of the paper.

### 3. EMPLOYEES COST MANAGEMENT AND ITS POTENTIAL

#### 3.1. COST MANAGEMENT

Expenditure emerges every time when we invest one resource into the process of realization, e.g. materially in the shape of current or fixed assets, financial assets and physical or mental work of the human, or for making outcome (service/good). Expenditures are values of resources which needs to be immolated for maintaining life and accomplishment certain goals every physical and legal person. Two main financial performance components are revenue and expense. Their relation is measured by profit. Nowadays, when global competition is high, profit is crucial for the existence of every company. Many economists explore to find proper and perfect models for cost management (Belak, 2017). For every company is important to figure out how costs emerge, methods for cost calculations. It can be concluded that costs are an investment which will result in future benefit. Theoretically, goal to engaging costs/expenditures is to score a profit. Reduction of costs is not easy work (Belak, 2017). Main activities of cost management are:

1. foresight, planning, budgeting, following and controlling of costs
2. cost behavior analysis caused by changes in environment
3. analyzing causes of cost deviation (Belak, 2017).

Cost calculations process includes identification and budget of planned costs, apropos measuring appeared costs and placement on their holders. A most common method of costs reduction is saving, which can produce large damage to an organization. Organizations usually combine different models of cost management. And the goal is to accomplish a kind of organization which has developed cost management and the result will be the optimization of costs. Cost, as an economic category, has two components amount of used production elements and their purchase price (Belak, 2017). Therefore, mathematically cost (value –  $V$ ) is the product of quantity ( $q$ ) and price ( $p$ ),  $V = q \times p$ . At the end of every business period objective (real) costs are determined, and for the next period are planned (evaluated). The most common guideline in the praxis of cost management is low costs, the phrase: “reduction of costs cause profit”, added value and revenue. Selection of the main directive of cost management will depend on the manager (Belak, 2017). Totally low cost means to put all cost on minimum which has negative results (low standard) repercussion of it more theoretical than real and leads the company to loss. Phrase “reduction of costs cause profit” on the other words, if lower costs bring lower revenue, profit will be reduced, and it is damaging for a company and it is not a good guideline for cost management. Added value as a guideline for cost management has focused on reduction of activities that result does not bring added value, and it contains salaries and reimbursements to employees, interest rates, tax on income, net profit. The connection between added value and profitability are non-transparent and the appliance of these models are relayed on intuition, not on empirical proves. Added value is not a good guideline for cost management in a time of crisis (Belak, 2017). When revenues are low profit does not appear and it is the most distinct guideline for cost management. The most important is to develop awareness between managers to adopt uncritical cuts of all kinds of costs. In the period of crisis and problems, companies can lose their sensitivity for social problems and they focused only on their own survival and the result of it is the dismissal of employees. Is it good for the economic state of the company and are the results positive? To authors opinion, when dismissals are caused by managers incompetence to ensure satisfying volume products and services. It is easier to reduce workforce than making revenues.

Employees are most valuable goods to every company and large dismissal have disadvantages like a high level of fear, low morals, the appearance of animosity, negative behavior, negative selection, loss of competitive employees, work effectiveness collapse, etc. In that case, companies should avoid dismissals as far as possible (Belak, 2017). How that situation would not happen, a key role has management. In case when employees are not the most valuable good of the company and when values of it are not connected to their competences, with large dismissal companies are not in the big losses. Thereby they reduce working force costs. Cost management, in the time of crisis, needs to base itself on empirical foundations that are easy operating in praxis (Belak, 2017).

Different researches show how the strategical costs and investments planning per employee is a precondition to company competitiveness, the accomplishment of efficiency of management and further development and existence on the market. There is a significant role of cost reports in the process of management in subjects of the private and public sector. Expenditures, the broader term of costs present reduction of economic benefits within a specific period in the form of flowing of assets and creation of debts that results in principal sum decrease. Regular and exceptional expenses are followed by expenditure structure and MSFI and HSFI that are important to determinate financial result and efficient financial management in the private and public sector. Budget fund for salaries of public sector employees was a good tool for that because they are a significant part in the structure of total costs. The principal of good financial management means that budget funds need to be economically, efficient and effective used.

Because of nonrational state budget management for salaries in public sector, illogicality was seeking in the system, to make efficient financial management and payroll system, as well as efficient control of purpose spending of State Budget, on the level of the entire system and costs of salaries in public sector were put under control. The outcome was the implementation of the Register of Public Sector Employees and Central Payroll System (RegZap/COP) that is one of the biggest state systems.

### **3.2. CENTRAL PAYROLL SYSTEM**

One of the main reforms and fiscal consolidation measures for the period from 2014 – 2016, was the Central Payroll System. By the Croatian Republic

Government decree about the establishment of an informatic system for calculating salaries for all state companies and public sector, institutions enabled quality human resource management in the public sector. Likewise, it provided state resources for salaries in public sector management, reporting about salaries individually and in total. Implementation of the System started in 2012 for bodies of state administration and production in 2013. In 2013 it spread to public sector institutions. System was established in 2100 institutions for 250 000 employees and in 2015 salaries were calculated and paid through it for employees financed from State Budget.

Central information system provided a division of duties – human resources services for RegZap and financial services for COP. Set goals were legality, fiscal responsibility, and paperless system. On Figure 2, below can be seen Register of employees in the public sector in numbers.

**Figure 2.** Register of employees in the public sector in numbers



**Source:** Ministry of Administration (2019)

According to Law about Register of Employees in the public sector (NN 34/11) to fool implementation were make special evidence about the number and structure of employees. There were also a well-structured 10 reports in the Registry application and 20 new improvements to the Registry were pre-

pared. Several dozen working sessions between the Financial Agency and State bodies were held with the aim of further enhancing/developing the Register of employees in the public sector (HRM system and COP system). With the aim of preparing strategic documents, legal and our laws, for the needs of EU monitoring and the preparation of responses to media and citizens, data from state bodies were compiled and reports from the RegZap and interpreted data were produced for over 350 reports. Government of the Republic of Croatia authorized Financial Agency, with the contract signed on October 25<sup>th</sup>2013, to manage implementation and support of the System (Official Gazzette, 2011).

The informatic system provides efficient managing of budget resources allocated for salaries in the public sector. Scope and aim of the project were to provide access to data about human resources, need for education, employee placements, pension planning, need for employment, etc. in the purpose of upgrading the efficiency of the public sector. It also ensures supervision on salaries calculations, paid salaries overview in different sectors, the effect of salaries elements (coefficients and additions), etc. A system is a tool for efficient centralized human resource management. In every moment Government can follow expenditures for employees in the public sector, it can receive different reports and simulations of calculation which is the basis for clear and transparent management (Official Gazzette, 2011). It also has access to public sector human resources register.

With its dimensions and data quantity the System RegZap / COP is one of the biggest state services in this moment (from everyday evidence of every 250 000 employees in 2100 institutions whose salaries are financed from the State Budget in total amount of about 31 billion HRK per year) – monthly cost of the System (development, processing and data protection) is 5,5 HRK per employed person (16,5 million HRK yearly cost).

**Table 1.** Monthly costs of COP system (development, processing and data protection)

Employees in the Public Sector	Monthly cost per person in HRK	Total monthly cost in HRK	Number of months in a year	The total yearly cost of system RegZap/COP in HRK
250.000	5,5kn	1.375.000,00	12	16.500.000,00

**Source:** Authors elaboration of data received from the Ministry of Administration, December 2017

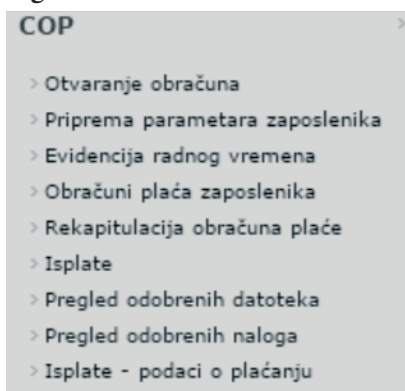
Further digitalization will bring possibilities of employees and expenditures reduction for software in the part of human resources and salaries payment. It has enormous potentials to connect with other systems and registers (Health insurance- HZZO, Retirement insurance- HZMO, State Treasury) and further optimization and digitalization, as well as paper-free administration. Linking the System with e-Citizens (e-Građani) there are opened new possibilities in the part of employee data using and entering of new data (e.g. education, work reports, etc.), like “self-service” portal in the future. For example, from 2009 Estonia has a similar system with personal userbox for employees in Register where they can enter and check and change their own data.

Visible results of the System are as followed:

- improvement of fiscal responsibility in every level
- duties dive – HRM and financial
- standardized and controllable system
- HRM- fast mobility
- correction of deviations (coefficients, bonuses, etc.)
- higher effectiveness and less paperwork
- faster decision making on the level of State (Ministry of Administration).

Module Central Payroll System (COP) contains 9 sub-modules for the salaries calculations in public sector shown on Figure 3, below.

**Figure 3.** Content of module Central Payroll System



**Source:** Financial Agency, April 24<sup>th</sup>2019



Sur-modules on Figure 3 are by the order calculation opening, preparation of parameters of employees, working hours notes, salaries calculation, recapitulation, payments, files review, orders reviews, payment data. By choosing sur-module Otvaranje obračuna (calculation opening) it can be access to calculations basic data and conditions of calculations research and there need to fill in fields with data about institution name, ID or RKP number, a period of calculation, name of the calculation, expected day of payment, etc. Steps of calculation process choosing of proper calculation, preparing of parameters, then working hours record, salary calculation, and verification, after that JOPPD form needs to be sent and checked in e-Porezna on-line application, and at the end of process sum up the order must be formed. When calculation status is completed, i.e. completed order generation means (all orders are made, including Message Pain001) changes are impossible. Central Payroll System is simple to use but there are few disadvantages, it is slow under the system load and there are some unnecessary steps.

## 4. RESEARCH METHODOLOGY AND RESULTS

### 4.1. RESEARCH METHODOLOGY

For the purpose of the research, authors used data collected from poll made by the Ministry of Administration of the Republic of Croatia and Financial Agency. All Public Sector users of Central Payroll System were conducted to survey about the use of income calculations outside the System. Survey took its part during January and February 2017. The main objective of the survey was collecting data for the further development of the Central Payroll System in the sense of additional functions. Authors focused their research results on Brod – Posavina County and institutions which are covered by it. There was a total of 60 Central Payroll System users in Brod – Posavina County and analysis showed how 58 of questioned institutions were using additional programs for income calculations outside the CPS Information System. Results of the survey were processed with statistical methods.

The survey was formed as a questionnaire and it contained 24 questions. Questionnaires were filled by persons who were responsible for financial management or salary calculation of the institution. All questions and data asked were mandatory to fill in.

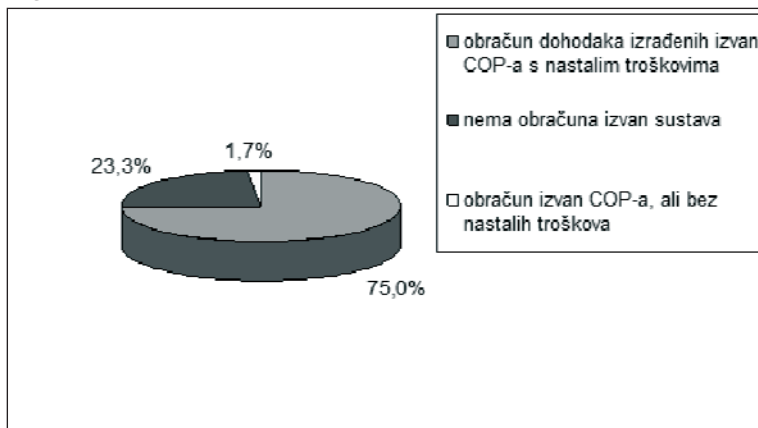


#### 4.2. RESULTS OF RESEARCH

The results of the research showed that the costs of all systems of income calculations which were used before implementation of the Central Payroll System for all 60 respondents in Brod – Posavina County totaled 817.695,82 HRK per month. One-fifth of the respondents answered that before implementation hasn't had any extra costs for income calculation and average monthly expenditures of other 48 respondents were 17.035,33 HRK. Total system costs per month (November 2016 invoice) at the moment of the survey were 831.906,87 HRK or 13.861,11 HRK on average. Furthermore, 25% of institution did not have any expenditures, they were 0,00 HRK.

Yearly (2016) expenditures of 75% (45) institutions were 9.723.296,36 HRK which is on average 216.073,25 HRK.

**Figure 4.** Income calculation made outside of CPS



**Source:** Authors elaborations of data based on a survey of Ministry of Administration, January to February 2017

According to the pie chart above (Figure 4), most of the institutions, 75%, made income calculations in some additional program systems outside the CPS, no calculations outside of system 23,3% and 1,7% calculations outside the CPS, but without any expenditures. It can be assumed that the percentage of calculations made outside of the CPS will be reduced during the future years.

Most of the respondents, 96% answered positively when asked whether they use another system for income calculations and a number of monthly calcula-

tions is made for 536 persons and reason for that are connections with other systems and use of their own program for calculation. 15% of institutions which make income calculations outside of the System, but financial resources are secured from State Budget bring that reasons are unemployment benefits for disabled people, reimbursements for mentors, reimbursement for services contract of persons who are not employed in the institution.

All respondents, 100% of them answered that there were no reimbursements to employees assigned abroad which means there are no expenditures. According to the question about salaries on other base or coefficients for calculation (workplace regulations, determinations and similar) 36,37% of public sector institutions in Brod - Posavina County had that kind of calculations in the amount of 270.000,00 HRK.

For the purpose of payment other income calculation, 65% of respondent answered positively. There were 84 calculations for 366 persons with total spending of 121.423,82 HRK per institution (total 4.735.528,82 HRK). Other 35% of institutions had zero expenditure for that purpose.

There were no expenditures for non-residents.

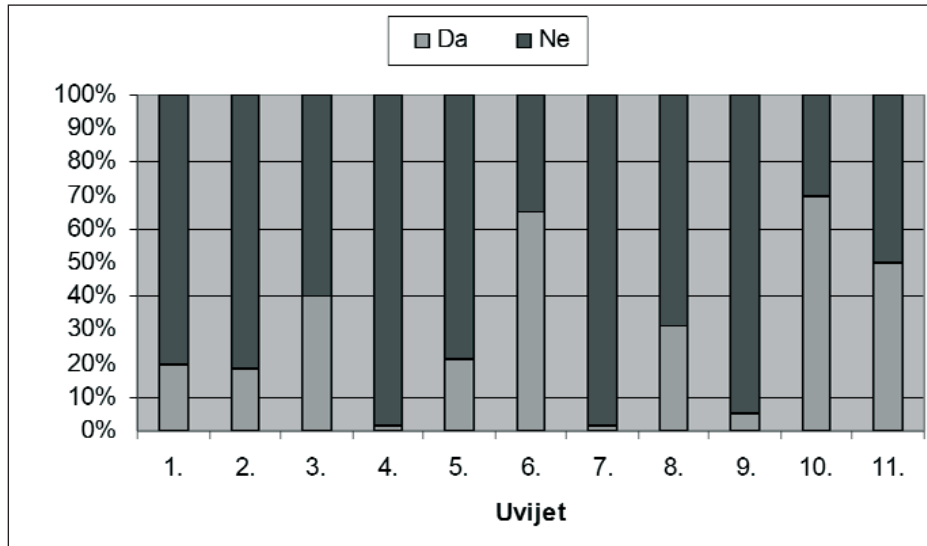
Transport costs paid for October 2016 in 35 institutions for 2608 persons were in total 643.816,17 HRK. Expenditures for contribution for persons included in the program of professional training without employment were 86.177,51 HRK in 32 (53%) institutions.

The needs of the institution, covered by the survey, for other types of calculations were travel order, project help, an extended stay of pupils in the school, reimbursements for working on projects, mentoring, part-time studies teaching, etc.

Key points apropos activities that need to be carried out to completely abandon other calculation programs and to only use Central Payroll System, according to research, are as followed: salaries (1), salaries based on regular base or coefficients for calculation (provided from State Budget)(2), salaries based on other base or coefficients for calculation (other resources)(3), salaries for employees assigned abroad (4), salaries based on other base or coefficients for calculation (5), other income (6), reimbursements for non-residents (7), transport costs (8), salaries for coordinators community service (9), contribution for persons included in program of professional training without employment (10)

and other payments (11). Results in percentage will be presented in Figure 5. Numbers marked on Figure 5 are linked to numbers of specified conditions in this paragraph. Figure marks: abscissa - requirements, ordinate - percentages of institution's needs, light gray parts mean yes and dark gray no.

**Figure 5.** Requirements for abandoning other programs for income calculations



**Source:** Authors elaborations of data collected from Ministry of Administration, RegZap-CPS for Brod – Posavina County

Presented results in Figure 5 shows that the lowest percentage (1,67%) of institutions which could abandon other programs because of requirements 4 and 7 that result is expected because none of the correspondents had that kind of payments. The strongest two requirements for abandoning other programs are 6 (65%) and 10 (70%). The conclusion is, in general, that institutions in Brod – Posavina County are not ready to completely abandon other additional programs for calculations.

According to the answer on the question about ease of using COP 65% institutions rate it with 5 (the system fully meets their needs), and 35 % rate it with 4 (the system is very good and needs small updates). Central Payroll System, in Brod – Posavina County has been highly rated well.

User support was also rated well, 95% (55) of institutions covered by survey rated COP with 5 – fully accomplished their needs.

It can be assumed that the research carried out on the territory of Brod – Posavina County is sufficient. Register of Employees in the Public Sector is data set about employees in the public sector and its purpose is to compare the quality and efficiency of Central Payroll System and human resource management.

The most productive part of the research is one that refers to requirements and implementation needed conditions for abandoning other program solutions.

## 5. CONCLUSION

Human resource management is one of the most important fields for reforms of public administration. In accordance to noticed Register of Employees in Public Sector (RegZap) has been established and the Government has an instrument for monitoring all data about civil servants and employees, and civil servants and employees in public services at one place in one moment. The RegZap / COP system is one of the largest state-owned services at the moment (from the daily records of each of about 250000 employees in approximately 2100 institutions receiving salaries from the State Budget in total budget of around 31 billion HRK per year) - monthly amount of costs (development, processing and data protection in the System) is 5,5 HRK per employee (16,5 million HRK annual cost of the System). The purpose and aim of establishing a Register of Public Sector Employees were to ensure monitoring and data exchange, thus creating the preconditions for effective and efficient human resources management in state and public services, also to provide basic prerequisites and elements for centralized payroll - COP. Centralized payroll allows financial management and payroll structure, both at the level of the whole system and at the level of individual groups and at the employee, to be more effective control of State Budget spending. The system has its advantages and disadvantages as challenges to be faced and to deal with in the way of further system development to ensure the needs of the public sector as a whole. Further development and investment are present and justified through the conducted Questionnaire about use of the payroll system outsourced of Central Payroll System (COP) in terms of additional functionalities under the comprehensive system of income calculation by the Ministry of Administration and Finance Agency during January and February 2017. The most productive part of the questionnaire in the survey is one that concerns the determination of data for

the implementation of the necessary conditions to abandon other software solutions, so that the COP is a system that can fully respond to the requirements and specifics of the activity and further automation of the process in the respective ministries at the level of the bodies themselves involved in the income calculation system, or without the use of other software solutions that require additional costs.

Other software solutions, that are used out of COP in the amount of 75% during 2016, require additional costs, as the survey results show, the annual costs for 2016 (including December 2016 and other work on the income calculations) amount to a significant 9.723.296,36 HRK. Through the conducted research authors come to the conclusion of justification of the goal set in the paper that the Register of employees in the Public Sector is a set of data about public sector employees that are led to establishing a quality and efficient system of centralized payroll (COP) and Human Resources Management (HRM).

The system ultimately provides a centralized payroll that includes high-quality and accurate billing control, different forms of reporting on key policy planning and monitoring elements, and simulation of payroll and Centralized Human Resource Management. The Government of the Republic of Croatia as the client obtains a complete and unique system in which it can monitor expenditures for public sector employees, which are secured from the state budget. In addition to managing expenditures, the Government has insight into the complete staff record of public sector employees. RegZap and COP will be further upgraded in the direction of adding a quality application solution for reporting and managing human resources, as well as upgrading for calculation, reporting, and managing the salary system.

Because of research made by Ministry of Administration of the Republic of Croatia and Financial Agency about use of income calculations outside the Central Payroll System is the first one and only, and the System is relatively new and has some imperfection there is potential for further researches about its development and cost management control.

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# MARKETING MANAGEMENT





# HEXACO PERSONALITY TRAITS AS PREDICTORS OF IMPULSIVE BUYING IN MEN AND WOMEN

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## **Abstract**

*Impulsive buying is a complex purchasing behavior which includes quick decision-making and tendency for immediate acquisition of the product. This study aimed to investigate relations between impulsive buying and HEXACO personality traits.*

*These traits show different relationship patterns with other constructs, and these relations may differ in men and women. Data were collected from the sample on 260 undergraduate students (54% women) from various colleges and faculties located in Zagreb using the Buying Impulsiveness Scale (Rock & Fisher, 1995) and the HEXACO Personality Inventory (HEXACO-60; Ashton & Lee, 2009; Babarović & Šverko, 2013). This research showed that personality plays an important role in explaining impulsive buying. The results of regression analyses indicated that low Conscientiousness is the best predictor of impulsive buying in both men and women. The negative relationship between impulsive buying and Honesty-Humility was found only in women. Only in men, Agreeableness predicted low impulsive buying.*

*In addition, gender has a moderating role in the relationship between traits of Honesty-Humility and Agreeableness and impulsive buying, indicating that these personality traits protect men from impulsive buying more than women.*

**Keywords:** *Impulsive buying, HEXACO, personality, sex differences.*

JEL Classification: D18, D91

## 1. INTRODUCTION

### 1.1. IMPULSIVITY AND IMPULSIVE BUYING

Impulsivity (also called impulsiveness) is a relatively stable personality trait which comprises different cognitive, behavioral and emotional features including low inhibitory control, sensation seeking, risk-taking, novelty, irresponsibility, impatience, unreliability, and a lack of planning (e.g., Depue & Collins, 1999; Moeller et al., 2001; Stanford et al., 2009). Impulsivity is a multidimensional construct. According to Eysenck and Eysenck (1977), impulsivity consists of four dimensions: narrow impulsivity, risk-taking, non-planning, and liveness. Some of the most dominant models of impulsivity are the BIS model (Patton, Stanford, & Barratt, 1995) and the UPPS-P model (Cyders et al., 2007; Whiteside & Lynam, 2001). According to the BIS model, three second-order factors reflecting the different dimensions of impulsivity: attentional, motor, and nonplanning impulsivity (Patton et al., 1995). Attentional impulsivity refers to an inability to focus attention, motor impulsivity involves acting without thinking, and non-planning impulsivity reflects a lack of future orientation or forethought. The UPPS-P model includes five dimensions of impulsivity: negative urgency (tendency to act rashly under extreme negative emotions), lack of premeditation (tendency to act without thinking), lack of perseverance (inability to remain focused on a task), sensation seeking (tendency to seek out novel and thrilling experiences) and positive urgency (tendency to act rashly under extreme positive emotions).

The term impulsive buying has a long history, and it was connected to immaturity, primitivism, stupidity, “defects of the will,” lower intelligence, and social deviance lifestyle (e.g., Bohm-Bawerk, 1959; Freud, 1911; Mill, 1848/1909). Rook (1987, p. 191) was defined impulse buying as “Impulse buying occurs when a consumer experiences a sudden, often powerful and persistent urge to buy something immediately”. A definition of this kind of consumer behavior

includes lack of premeditation, non-planning, irresistible urge to buy and immediate gratification. Rook (1987) quoted that impulse buying especially has been linked to postpurchase financial problems, product disappointment, guilt feelings, and social disapproval. Results of DDB Needham Annual Lifestyle (1974-1993) showed that 38 percent of the adults think of themselves as “impulse buyers.” Research on mall shoppers (Nicholls, Li, Roslow, Kranendonk, & Mandakovic, 2001) showed that nearly half of US shoppers made unplanned purchases and that 80% sales in luxury goods are associated with impulsive purchase (Ruvio & Belk, 2013). In this time of e-commerce impulsive buying represents a significant amount of total purchases (Chen & Lee, 2015).

Previous studies have shown that impulsive buying is associated with high maladaptive narcissism (Cai, Shi, Fang, & Luo, 2015), high hedonism (Kacen & Lee, 2002), and high materialism and individualism (Zhang & Shrum, 2009). Moreover, the results of the recent study (Saad & Metawie, 2015) indicated that two personality factors (impulsivity and excitement), two shop environment factors (music and layout), as well as shop enjoyment, were related to impulse buying tendencies.

Two twin studies have demonstrated that the tendency for impulsive buying is heritable. Findings in a twin sample from China (Cai et al., 2015) have shown that genetic factors accounting for 34% of the variations for impulsive buying measured by the Impulsive Buying Scale (Rook and Fisher, 1995). Additionally, this study found that the associations between impulsive buying and overall and maladaptive narcissism (which is related to high neuroticism, anxiety, depression, Machiavellianism, impulsive antisociality, and low empathy and conscientiousness) were heritable. The results of the twin study conducted by Bratko and colleagues (2013) showed that both impulsive buying and its associations with impulsivity, neuroticism, and extraversion are heritable.

## **1.2. PERSONALITY AND IMPULSIVE BUYING**

Impulsive buying is related to fundamental individual differences, including gender, age, values, attitudes, self-control, and personality. Previous studies have shown that impulsive buying has a strong basis in personality. However, the findings on the relationship between impulse buying and the Big Five model of personality are inconsistent. For example, Bratko et al. (2013) find significant positive associations between impulsive buying and extraversion and neuroti-

cism, while a study conducted by Verplanken and Herabadi (2001) has shown a positive relationship between impulsive buying and Extraversion, and negative between impulsive buying and Conscientiousness. The study (Thompson, & Prendergast, 2015) indicates that impulse buying is negatively associated with Conscientiousness, but positively with Neuroticism and Extraversion.

However, to our best knowledge, there is no study investigating impulsive buying within the framework of the HEXACO model of personality (Lee & Ashton, 2004). The HEXACO model posits six personality dimensions: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. There are some similarities and differences between the Big Five and HEXACO models of personality. Agreeableness and Emotionality in the HEXACO model represent rotated variants of Big Five Agreeableness and Emotional Stability, while Extraversion, Conscientiousness, and Openness to Experience are the similarity in both models (De Vries, Lee, & Ashton, 2008; De Vries & Van Kampen, 2010 ).

One of the essential characteristics of the HEXACO model is Honesty-Humility dimension which represents a key novelty compared to the Big Five model. Namely, Honesty-Humility represents individual differences in tendencies to be sincere, honest, fair and modest versus greedy, manipulative, pretentious and unassuming (Lee & Ashton 2008). It is especially valuable to investigate impulsive buying in relation to the HEXACO model of personality because Honesty-Humility is negatively related to hedonism (Anglim, Knowles, Dunlop, & Marty, 2017) and narcissism (Lee & Ashton, 2005; Wertag & Bratko, 2019), given that high hedonism and narcissism are the key features of impulsive buying (e.g., Cai et al., 2015; Kacen & Lee, 2002; Khuong & Tran, 2015).

### 1.3. AIMS AND HYPOTHESES

This study aimed to investigate relations between the HEXACO model of personality and impulsive buying, as well as gender differences within these relationships.

**Hypothesis 1:** Based on the theoretical description that Honesty-Humility entails modesty and greed-avoidance, and based on previous findings showing hedonism and narcissism to be positively related to impulsive buying (e.g., Cai et al., 2015; Kacen & Lee, 2002; Khuong & Tran, 2015) and negatively re-

lated to Honesty-Humility (Anglim, Knowles, Dunlop, & Marty, 2017; Lee & Ashton, 2005), we predict that impulsive buying would be negatively related to Honesty-Humility.

**Hypothesis 2.** Consistent with the notion that Emotionality entails anxiety (Lee & Ashton, 2004) and based on empirical evidence showing that anxiety or the emotional distress leads people to make an impulse purchase (Shahjehan, Jaweria, Qureshi, Zeb, & Saifullah, 2012; Silvera, Lavack, & Kropp, 2008) we predicted that impulsive buying would be associated with high Emotionality.

**Hypothesis 3.** Consistent with the notion that Extraversion includes excitable and dramatic interpersonal style, social boldness, tendency to enjoy conversation, social interaction, and parties (Lee & Ashton, 2004), such as a tendency to enjoy to explore new things in life (Judge, Simon, & Hurst, 2014; Leong, Jaafar, & Sulaiman, 2017) and in line with previous empirical work showing that impulsive buying is positively associated with Extraversion (e.g. Farid & Ali, 2018; Thompson & Prendergast, 2015; Verplanken & Herabadi 2001), we expect that impulsive buying would be positively related to Extraversion.

**Hypothesis 4.** Based on the theoretical description that impulsive buying includes persistent urge to buy something immediately and an automatic action activated by psychological impulses (Lins, 2012) and based on previous findings showing that Agreeableness is associated with self-control (De Vries & Van Gelder, 2013), we expected that impulsive buying would be related to low Agreeableness.

**Hypothesis 5:** Based on evidence that low self-control is key feature of impulsive buying (Baumeister, 2002) and consistent with the notion that self-control and cautiousness appear to be essential characteristics of Conscientiousness (De Vries & Van Gelder, 2013), as well as on the basis prior empirical findings (e.g. Bratko et al., 2013; Thompson, & Prendergast, 2015), we expect that impulsive buying would be related to low Conscientiousness.

**Hypothesis 6.** Based on previous findings showing that Big Five Openness is not related to impulsive buying (e.g. Bratko et al., 2013; Thompson, & Prendergast, 2015) we expect similar results in this study.

**Hypothesis 7.** Finally, although there is not a sufficient basis in the literature to state an a priori hypothesis, we expect that gender moderates the relationship between impulsive buying and HEXACO personality traits because of the dif-

ferences in the manifestation of impulsive buying and HEXACO personality traits across genders (e.g., Ashton & Lee, 2009; De Vries, De Vries, De Hoogh, & Feij, 2009; Dittmar, Beattie, & Friese 1996; Dittmar, Beattie, & Friese, 1995; Lee & Ashton, 2004).

## 2. METHOD

### 2.1. PARTICIPANTS AND PROCEDURE

The sample consisted of 260 Croatian college students (54% woman),  $M_{age} = 22.31$ ,  $SD = 5.98$ . The study protocol was approved by the ethics committee of the Faculty of Arts and Humanities at the University of Zagreb. All students provided informed consent after the nature of the study had been explained to them. The students participated on a voluntary basis during regularly-scheduled classes. The questionnaires were administered before a class started with the permission of the course lecturers. The research was anonymous and voluntary, and students received no reward.

### 2.2. MEASURES

#### 2.2.1. HEXACO-60 (Ashton & Lee, 2009, for Croatia version, see Babarović & Šverko, 2013)

Personality was measured with a short version of HEXACO-PI-R (Lee & Ashton, 2004). The HEXACO-60 contains six broad factor-level scales: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. Each item uses a five-point response scale (1 = *strongly disagree* to 5 = *strongly agree*).

#### 2.2.2. Impulsive Buying Scale (Rook & Fisher, 1995)

Impulsive buying was measured with the Impulsive Buying Scale. The scale includes nine items, such as the statements, “I often buy things without thinking”,

“Sometimes I am a bit reckless about what I buy”. Items are presented in 7-point Likert-type format (from 1 = *completely disagree* to 7 = *completely agree*).

The scale was translated into Croatian and back-translated.

### 3. RESULTS

#### 3.1. DESCRIPTIVE STATISTICS AND CORRELATION ANALYSES

We first examined gender differences for personality traits and impulsive buying variables. These results are reported in Table 1. Women had significantly higher scores on Honesty-Humility, Emotionality and impulsive buying, with effect size estimates ranging from small to large. There were no gender differences on Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. As shown in Table 1, all scales demonstrate adequate reliability.

**Table 1.** Descriptive statistics (means and standard deviations) and internal consistency values. Men (n = 120), Women (n = 160).

	Men	Woman	t	d	$\alpha$
Honesty-Humility	30.90(7.23)	33.84(5.94)	-2.96*	0.44	.78
Emotionality	27.46(5.28)	34.12(4.95)	-8.63**	1.30	.74
Extraversion	35.12(4.91)	34.22(5.96)	1.09	0.16	.74
Agreeableness	30.84(5.80)	29.71(5.37)	1.35	0.20	.70
Conscientiousness	34.73(5.56)	35.31(5.59)	-.69	0.10	.73
Openness to Experience	32.89(6.48)	33.92(6.54)	-1.05	0.16	.78
Impulsive buying	22.87(7.84)	27.41 (8.02)	-3.75**	0.57	.92

*Note:* d = Cohen's d index. According to Cohen's (1988) interpretation of effect size, effect sizes around 0.2 are considered small, 0.5 medium, and 0.8 large.  $\alpha$  = Cronbach's  $\alpha$ .  
\*\*p < .01. \*p < .05.

Bivariate correlations among measured variables for men and women are presented in Table 2. Both men and women's Honesty-Humility scores were significantly positively related to Agreeableness and Conscientiousness, while both men and women's Extraversion scores were positively related to Conscientiousness.

Emotionality scores were significantly negatively related to Agreeableness for men but not women, while Extraversion scores were positively related to Agreeableness and Openness to Experience only in women.

For impulsive buying, both men and women's scores were significantly negatively related to Conscientiousness, as expected. The positive relationship between Honesty-Humility and impulsive buying was found only in women but not in men. Openness to Experience showed an unexpected negative association with impulsive buying in men. Contrary to the hypothesis, in both men



and women, Emotionality, Extraversion, and Agreeableness were not found to be significantly associated with impulsive buying.

**Table 2.** Zero-order correlations among study variables in Men (n = 120) and Women (n = 160).

	1	2	3	4	5	6	7
1. Honesty-Humility	-	-.05	-.09	.27*	.23*	.21	-.10
2. Emotionality	.03	-	-.07	-.24*	.06	-.05	.00
3. Extraversion	.08	.13	-	.08	<b>.38</b>	-.04	-.06
4. Agreeableness	<b>.41</b>	.00	.22*	-	-.04	.09	-.18
5. Conscientiousness	.21*	-.05	<b>.31</b>	-.03	-	.16	-.50
6. Openness to Experience	.11	-.07	.24*	<b>.31</b>	.08	-	-.25*
7. Impulsive buying	<b>-.30</b>	.02	-.10	.00	<b>-.44</b>	.03	-

*Note:* Data for men are presented above the diagonal and below the diagonal for women. Bolded values of  $r$  are significant at  $p < .01$ . \* $p < .05$ .

### 3.2. PREDICTION OF IMPULSIVE BUYING FROM THE HEXACO PERSONALITY DOMAINS

In order to determine the unique contributions of the six HEXACO personality domains to impulsive buying, as well as to explore possible gender differences, we used hierarchical regression analyses. A significant increase in  $R^2$  on the third step would indicate gender differences in the relation between the impulsive buying as the criterion and HEXACO scores as predictors.

The HEXACO domains significantly predicted impulsive buying (Adjusted [Adj.]  $R^2 = .26$ ,  $p < .01$ ), and gender was a significant predictor ( $\beta = .30$ ,  $p < .01$ ).

The results have shown that there was a significant increase in  $R^2$  in the third step of analysis for impulsive buying ( $\Delta R^2 = .05$ ,  $p < .01$ ) with a significant interaction between gender and Honesty-Humility ( $\beta = -.66$ ,  $p < .01$ ) as well as gender and Agreeableness ( $\beta = .51$ ,  $p < .05$ ), suggesting that the association between these personality traits and impulsive buying differed across gender.

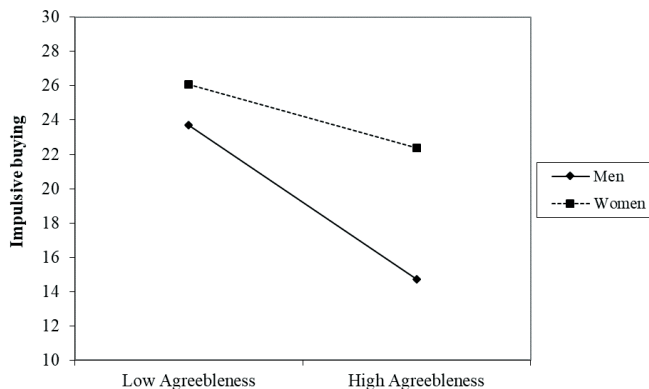
Graphical representation the interaction between gender and Honesty-Humility (Figure 1) show that men low in Honesty-Humility traits have the lowest levels of impulsive buying tendencies, compared to men high in Honesty-Humility and women both high and low in these traits.

**Figure 1** The interaction between Honesty-Humility and gender in the prediction impulsive buying



The interaction between gender and Agreeableness (Figure 2) shows that men high in Agreeableness traits have the lowest levels of impulsive buying tendencies, compared to men low in Agreeableness and women both high and low in these traits. Moreover, high Agreeableness reduces the tendency to impulsive buying, especially in males. These results are in line with Hypothesis 7. Therefore, subsequent regression analyses were performed for men and women separately.

**Figure 2** The interaction between Agreeableness and gender in the prediction impulsive buying



Gender effects in the HEXACO prediction of impulsive buying were then followed up by conducting multiple linear regression on impulsive buying

scores for men and women separately, with scores on the age and six HEXACO domains as predictors (see Table 3 and Table 4). Only in women, Honesty-Humility uniquely predicted impulsive buying ( $\beta = -.27, p < .05$ ), thus partially confirming Hypothesis 1. Contrary to Hypothesis 2 and Hypothesis 3, in both men and women, Emotionality and Extraversion were not found to be significantly associated with impulsive buying. Agreeableness negatively predicted impulsive buying only in men ( $\beta = -.24, p < .05$ ) but not in women ( $\beta = .10, p = .41$ ), thus partially confirming Hypothesis 4. In line with Hypothesis 5, Conscientiousness uniquely predicted impulsive buying in men ( $\beta = -.61, p < .01$ ) and women ( $\beta = -.34, p < .01$ ) which is consistent with the bivariate correlations reported in Table 2. The negative relationship between impulsive buying and Openness to Experience in men (see Table 2) dropped to nonsignificance after controlling for other HEXACO dimensions ( $\beta = -.15, p = .14$ ). This result is in line with Hypothesis 6.

**Table 3.** Multiple regressions predicting impulsive buying from the HEXACO dimensions in Men (n = 120).

Criterion	Predictors	$\beta$	$t$	$R^2$	$Adj. R^2$	$F$
Impulsive buying						
	Age	-.03	-.26	.37	.30	<b>5.64</b>
	Honesty-Humility	.15	1.37			
	Emotionality	.00	.00			
	Extraversion	.20	1.79			
	Agreeableness	-.24	-2.28*			
	Conscientiousness	-.61	<b>-5.41</b>			
Openness to Experience	-.15	-1.5				

Note: Bolded values are significant at  $p < .01$ . \* $p < .05$ .

**Table 4.** Multiple regressions predicting impulsive buying from the HEXACO dimensions in Women (n = 160).

Criterion	Predictors	$\beta$	$t$	$R^2$	$Adj. R^2$	$F$
Impulsive buying				.24	.18	<b>3.76</b>
	Age	-.05	-.44			
	Honesty-Humility	-.27	-2.46*			
	Emotionality	.02	.24			
	Extraversion	-.03	-.31			
	Agreeableness	.10	.83			
	Conscientiousness	-.34	<b>-3.00</b>			
Openness to Experience	.24	.23				

Note: Bolded values are significant at  $p < .01$ . \* $p < .05$ .

## 4. DISCUSSION

In the current study, we examined relations between HEXACO personality traits and impulsive buying, as well as gender differences within these relationships.

Our study has shown the importance of personality in explaining impulsive buying; the HEXACO domains, after controlling for demographical variables, explained 20% of impulsive buying variance. For comparison, the Big Five model, after controlling gender, age and state effect, explained about 8% of impulsive buying variance (Thompson & Prendergast, 2015).

The results showed that women had significantly higher scores on impulsive buying and Honesty-Humility and Emotionality traits, but there were no gender differences on Conscientiousness, which is in line with previous findings (e.g., Dinić & Wertag, 2018; Dittmar, et al., 1995; Lee & Ashton, 2004).

The results of regressions analysis indicated that Honesty-Humility negatively predicted impulsive buying in women but not in men, which partially confirmed our first hypothesis. Additionally, gender moderate relationships between Honesty-Humility and impulsive buying; men low in Honesty-Humility trait had the lowest values on impulsive buying. A possible explanation of these results is that impulsive buying manifests differently in men and women under influence situational and dispositional factors such as socialization, affects, value orientations (Amos, Holmes, & Keneson, 2014). For example, men exhibit higher hedonistic and lower self-realization values than women (Ljubin Golub & Sokić, 2016), and impulsive buying is positively related to hedonism (Kacen & Lee, 2002).

Unexpectedly, Emotionality did not show a relation with impulsive buying. This HEXACO domain includes facets of fearfulness, anxiety, dependence, and sentimentality, and unlike Big Five Neuroticism, does not contain impulsivity and irritability. It seems that facet of Anxiety contained in the HEXACO Emotionality domain does not lead to impulsive buying. However, it should be kept in mind that Impulsive Buying Scale (Rook & Fisher, 1995) consist of items referring to cognitive aspects of impulsive buying. Therefore, future research should be examined the relationship between HEXACO Emotionality domain and impulsive buying using measures which can detect affective aspects of impulsive buying tendencies, such as The Verplanken and Herabadi (2001) scale.

Contrary to our hypothesis and previous studies (Farid & Ali, 2018; Thompson & Prendergast, 2015; Verplanken & Herabadi 2001) results of this study showed that Extraversion is not related to impulsive buying. A possible explanation of these results is that HEXACO Extraversion, unlike Big Five Extraversion, does not include excitement-seeking. Namely, impulsive buying is positively related to thrill-seeking (Sharma, Sivakumaran, & Marshall, 2010) and it may be that this aspect of Extraversion is most strongly associated with impulsive buying.

Agreeableness domain showed a negative relationship with impulsive buying in men but not in women. This result is in line with previous findings showing that Agreeableness is positively associated with self-control (De Vries, & Van Gelder, 2013) which is one of the fundamental features of impulsive buying.

In addition, it has been shown that gender moderate relationships between Agreeableness and impulsive buying; men high in Agreeableness had the lowest values on impulsive buying. This results showed a protective effect of Agreeableness in regards to impulsive buying. Moreover, our results are consistent with a recent study (Međedović, Wertag, & Sokić, 2018) showing that Lifestyle traits of psychopathy which includes impulsivity and stimulation seeking, are more adaptive in men, compared to women,

As expected, Conscientiousness showed a strong negative association with impulsive buying in both men and women. This result is consistent with the results from previous studies (Bratko et al., 2013; Thompson & Prendergast, 2015) and evidence that low self-control is a key feature of impulsive buying (Baumeister, 2002). Self-control and cautiousness are essential characteristics of Conscientiousness (De Vries & Van Gelder, 2013). Namely, Conscientiousness encompasses facet of prudence that shows a propensity to be cautious and self-controlled (Lee & Ashton, 2004).

Finally, according to hypothesis and previous studies (e.g. Bratko et al., 2013; Thompson & Prendergast, 2015) results of this study shown that Openness to Experience is not related to impulsive buying.

## 5. LIMITATIONS AND CONCLUDING REMARKS

Findings of this study must be considered in light of some limitations. First, we used a fairly homogeneous college sample which limits external validity.

Therefore, future studies should also use general population samples. Second, the use of self-report measures is also a limitation given the impact of shared method variance. Using behavior measures of impulsive buying would be an advance over the current design. Namely, a tendency to buy on impulse, may not necessarily result in real behavior (Rook & Fisher, 1995). Besides, future research should be investigated mechanisms that link personality and impulsive buying and examined the role of meditation and moderator variables such as income, age, the standard of living, level of education, cultural effects and intrinsic and extrinsic factors to cause impulse buying.

Despite the limitations, the findings of the present study expand our understanding of the role of personality in impulsive buying. This is the first study on the relationship between impulsive buying and the HEXACO model of personality. Our findings are shown that the HEXACO Honesty-Humility and Agreeableness predict impulse buying, as well as that gender moderates relationship between these personality domains and impulsive buying. It seems that these personality traits are more protective in men as compared to women.

Finally, our results showed that the HEXACO model of personality outperformed Five-Factor model in explanation variance of impulsive buying, and therefore this model should be used in future research of relationships between personality traits and impulsive buying.

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# SOCIAL MEDIA IN ORGANIZING VACATION: TESTING THE CONCEPT OF PERCEIVED BENEFITS AND PERCEIVED COSTS

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## **Abstract**

*The concept of perceived benefits and perceived costs of using social media in organizing vacation was proposed as the theoretical model in order to explain the factors determining the intentions to use social media when organizing and taking vacation trips. This model was then tested on a sample of residents who use the Internet and had traveled on vacation in the previous 12 months. By applying the concept of tourists visiting a destination, the purpose of this paper is to examine its suitability in relation to tourist destination visitors. Data were collected through a self-administered questionnaire on a sample of tourists staying in hotels in nine tourist towns in Istria County, Croatia. This study was conducted from July through September 2015. A total of 1554 responders were taken into analysis. For measuring the perceived benefits and costs a five-point Likert scale was used. Responders were asked to state the level of agreement for items measuring the perceived benefits and perceived costs of using social media in organizing vacation. Exploratory and confirmatory fac-*

tor analyses were used to examine the reliability and validity of the constructs. The dataset was split randomly into the half, so that the first half of the sample was used for conducting exploratory factor analysis, while the second half was used for confirmatory purposes. Through exploratory factor analysis, two dimensions of perceived benefits were determined, while perceived costs formed one dimension. Through confirmatory factor analysis, a certain modification regarding items was made but the previous structure was retained. The main changes were made in factor measuring perceived costs. The original structure of perceived benefits and perceived costs was not confirmed. The results suggest that the proposed concept cannot be fully applied to tourist destination visitors.

**Keywords:** social media, perceived benefits, perceived costs, tourist destination visitors

JEL Classification: L83, Z33

## 1. INTRODUCTION

The Internet has revolutionized all aspects of our lives (namely social, commercial, business and political life, educational and health sector, travel sector) and has changed the way people search for information (Alalwan et al., 2017; Amaro et al., 2016). It provides different benefits like permanent availability of information under reasonable conditions, the global character of the data and it helps in assessments of various products and offers (Popesku, 2014).

Purchase of tourist products can be risky so potential consumers, i.e. tourists, require more information processing before making a decision (Amaro et al., 2016). There are several difficulties that tourists face when they organize vacation (Amaro et al., 2016; Kim et al., 2009; Werthner & Klein, 1999): only descriptions are available, consumers cannot try travel products/services before purchasing, making it difficult to evaluate the value for money before the actual experience. Due to these reasons, social media can be a great media to minimize these difficulties. It provides a way to search, organize, share and annotate their travel stories and experiences resulting in facilitation of word of mouth that the hospitality and tourism industry heavily relies upon (Huang et al., 2010; Leung et al., 2017). Consequently, in the last decade, user-generated content has grown parallel to the rise of information and communication technologies (ICT) and social media (Marine-Roig, 2017).

Thus, social media provides different benefits for tourists searching for information relevant to the organization of their vacation. However, there may also be certain obstacles to the usage of social media for travel purposes. This paper focuses on the perception of benefits and costs of using social media in the process of organizing vacation. By applying the concept of perceived benefits and perceived costs proposed by Parra-López et al. (2011), on tourists visiting a destination, this paper examines its suitability in the context of using social media in organizing a vacation in relation to tourist destination visitors.

## 2. THEORETICAL BACKGROUND

Social media in tourism and hospitality fields has been researched from different aspects. Leung et al. (2013) and Zeng & Gerritsen (2014) summarized the research, while Ukpabi & Karjaluoto (2017) identified research related to customers' using social media in the travel purpose context. Thus, according to Ukpabi & Karjaluoto (2017), research related to customers' using social media in travel purpose context focused on four areas: 1. factors influencing consumers' travel purchases online (Al-havari & Mouakket, 2012; Escobar-Rodriguez et al., 2014; Kim et al., 2013; Lee & Cranage, 2011; Nunko & Ramkisson, 2013; Sahli & Legohérel, 2015), 2. website and booking intentions (Ku & Chen, 2015; Wu et al., 2011), 3. the role of social media in booking travel online (Ayeh et al., 2013; Book et al., 2015; Parra-López et al., 2011) and 4. the role of mobile technology on travel planning and use (Chang et al., 2016; Kim et al., 2015; Lai, 2015; Okazaki & Hirose, 2009).

Although social media is currently very interesting research field, especially since 2008 (Kim et al., 2017), there is no universally adopted definition of social media (Sotiriadis, 2017). Ihsanuddin & Anuar (2016) point out that all definitions are more or less similar highlighting social media as a form of communication where users can create, edit and share content with other online communities. The definition of social media changes as social media continues to evolve and its uses change and expand (Zeng & Gerritsen, 2014). So, a number of different terms like social software, social media, user-generated content (UGC), consumer-generated media (CGM), online social networks (OSN), social networking sites (SNS), Web 2.0 and Travel 2.0 (Alizadeh & Mat Isa, 2015; Lange-Faria & Elliot, 2012; Popesku, 2014) are used interchangeably in

literature. Although the terms are very connected, there are certain differences among them. Thus, in this paper, we use the term social media.

Travelers use social media to search, organize, share and annotate their travel stories and experiences (Leung et al., 2013), so social media is used before, during and after travel. Before travel, it is used for decision-making purposes, e.g. which destination, airline company or hotel to choose (Cox et al., 2009; Marine-Roig, 2017; Öz, 2015; Pabel & Prideaux, 2016; Xiang et al. 2015). During travel, it is used to get more information related to tourist destination and to share experiences, while after travel it is solely used to share experiences (Fotis et al., 2012; Zavodna & Zavodny Pospisil, 2018).

There are many different contents that are available to tourist like blogs and microblogs (e.g. Blogger and Twitter), online communities (e.g. Facebook, RenRen and TripAdvisor), media sharing sites (e.g. Flickr and YouTube), social bookmarking sites (e.g. Delicious), and social knowledge sharing sites (e.g. Wikitravel) (Leung et al., 2013). These Internet sites, commonly referred to as social media offer different tourists' experiences (good or bad) that are spread through countless sites. Thus, research on perceived benefits and perceived costs of using social media for travel purposes is becoming highly researched research area (Agag & El-Masry, 2016; Amaro & Duarte, 2015; Amaro et al., 2016; Andelić & Grmuša, 2017; Ayeh et al., 2013; Bilgihan et al., 2016; Cox et al., 2009; Davies & Cairncross, 2013; Di Pietro & Pantano, 2013; Di Pietro et al., 2012; Dina & Sabou, 2012; Fabricius & Eriksson, 2017; Fotis et al., 2012; Ghandour & Bakalova, 2014; Hua et al., 2017; Matikiti et al., 2017; Munar & Steen Jacobsen, 2013; Nemeč Rudež & Vodeb, 2015; Pabel & Prideaux, 2016; Parra-López et al., 2011; Tom Dieck et al., 2017; Varkaris & Neuhofer, 2017).

Research on perceived benefits and perceived costs of using social media for travel purposes intensified since the beginning of 2010 following the interest of researching the social media field. However, they are mostly focused on social media users who travel and who use this media for getting travel-related information (Agag & El-Masry, 2016; Amaro & Duarte, 2015; Ayeh et al., 2013; Bilgihan et al., 2016; Cox et al., 2009; Di Pietro et al., 2012; Dina & Sabou, 2012; Fotis et al., 2012; Hua et al., 2017; Parra-López et al., 2011; Varkaris & Neuhofer, 2017). Additionally, although the concept of perceived benefits and perceived costs is gaining importance in research terms, the definition of perceived benefits and perceived costs is not unanimous (Fabricius & Eriksson, 2017; Matikiti et

al., 2017; Parra-López et al., 2011). Fabricius & Eriksson (2017) use the terms enablers (e.g. finding good hints and tips, enjoyment, convenience) and barriers (e.g. privacy, trust etc.). Matikiti et al. (2017) examine perceived usefulness as the benefits derived from using social media for trip organization, thus they consider this concept through perceived functional benefits, perceived social benefits and perceived risk, namely time risk (e.g. the time wasted through searching and learning how to use social networks), social risk (e.g. the potential loss in one's set of friends as a result of using social media) and privacy risk (e.g. the potential loss of control of personal information). Parra-López et al. (2011) consider perceived benefits as functional, social, psychological and hedonic, while perceived costs relate to effort, the difficulty of use and loss of privacy. Hence, the perceived benefits of using social media include different user's perception of the benefits that social media provides, while the perceived costs benefits of using social media in organizing vacation encompass various user's perception of the sacrifices. Other research related to this concept examine different risks, e.g., giving data to third parties, spreading of fake news and trust issues (Pabel & Prideaux, 2016), possibility of abuse and reliability of information (Davies & Cairncross, 2013) and various benefits, e.g., up to date information (Amaro et al., 2016; Cox et al., 2009; Nemeč Rudež & Vodeb, 2015), enjoyment, pleasure, (Ayeh et al., 2013; Di Pietro et al., 2012), ease of use (Ayeh et al., 2013; Davies & Cairncross, 2013; Di Pietro & Pantano, 2013; Ghandour & Bakalova, 2014; Hua et al., 2017; Nemeč Rudež & Vodeb, 2015) similarity of interest (Agag & El-Masry, 2016; Ayeh et al., 2013), time saving (Agag & El-Masry, 2016).

### 3. METHODOLOGY

The main research study was conducted from July through September in 2015. The target population included tourists who were staying in hotels located in Istria County. For the purpose of sampling, a list of accommodation facilities in Istria County (Tourist board, 2015) was obtained. Hotels were mostly categorized as either three or four-star hotels (54 hotels in each category) so, hotel category was used in designing the sample. The hotels where the research was conducted were situated in Umag, Novigrad, Poreč, Vrsar, Rovinj, Pula, Medulin and Rabac. A minimum sample size of 60 responders per hotel was set. The survey was carried out in 20 hotels. Hotel guests were approached by the researchers and asked to participate in the survey. The researchers explained

the purpose of the survey, stated that the survey was anonymous, and handed out a questionnaire in the appropriate language. In the process of onsite data collection, the researchers were stationary while the responders were mobile (Veal, 2006). Data were collected through a self-administered questionnaire. The questionnaire consisted of 16 questions that were divided into six sections: 1) general usage of Internet, tourist web sites and social networking web sites, 2) usage of Internet and social networking web sites for the purpose of organizing vacation, 3) benefits and obstacle in using social networking web sites for tourism purposes, 4) usage of Internet and social networking web sites during vacation, 5) usual usage of Internet and social networking web sites after returning home and 6) respondents' socio-demographic characteristics (country of origin, age, gender, income level, occupation, size of settlement, traveling party) and trip characteristics (number of visits, length of stay and sources of information). It was originally designed in Croatian and then back-translated into English, German, Italian, and Slovene.

Data were processed using statistical methods consisting of descriptive statistics, exploratory factor analysis, and confirmatory factor analysis. Descriptive statistics were used to provide a general description of the sample, exploratory and confirmatory factor analyses were used to examine reliability and validity of the perceived benefits and perceived costs, as proposed by Parra-López et al. (2011), in order to determine its suitability in tourism settings. The individual items were examined through checks for accuracy of data entry, missing data, and distribution. The cases with the missing values were replaced using the MCMC method for item imputation. The dataset was split randomly into the half so that the first half of the sample was used for conducting exploratory factor analysis while the second half was used for performing confirmatory factor analysis. Exploratory factor analysis was done using maximum likelihood factor analysis and promax rotation with an eigenvalue of 1.00 or more being used to identify potential factors. Internal reliability was determined by computing Cronbach's alpha.

The concept of the perceived benefits and perceived costs of using social media in organizing vacation defines the perceived benefits functional (exchange information and experiences, easy access to a greater amount of relevant information, keep up to date with knowledge about tourist sites and activities of interest), social (communication, the construction of relationships, the exchange of ideas and opinions, involvement in the exchange of information), and psychological and hedonic (belonging to communities, pleasing and fun using of social



media), while perceived costs includes effort costs: time and monetary), difficulty of use (registration, many websites and pages) and loss of privacy (public exposure) (Parra-López et al., 2011). For measuring the perceived benefits and perceived costs of using social media in organizing vacation, a five-point Likert scale (1 = “strongly disagree” to 5 = “strongly agree”) was used. A total of 16 items were used for measuring perceived benefits and perceived costs (Parra-López et al., 2011). A total of 2000 questionnaires were prepared and distributed, while 1554 questionnaires were taken into the analysis (77.7% return rate).

#### 4. RESULTS AND DISCUSSION

On average, 60 questionnaires were collected per hotel. Most of the responders stayed in four-star hotels (60%). The proportion of female responders (54%) was slightly higher than that of males (46%). The majority of responders were between 35 and 54 years of age (53%). Most of them had obtained a higher education (58%). Generally, the responders were full-time employees (45%), 13% were self-employed, and approximately 12% were managers. Most of them were from Austria (23%), almost 19% were from Italy, and about 17% originated from Germany. The most frequent monthly net income was between €1.000 and €2.000 (30%). Most of the responders (80%) visited the hotel for the first time, but most of them (52%) have already visited the region.

**Table 1.** Descriptive statistics for items measuring perceived benefits and perceived costs

Items	M	SD
<i>Perceived benefits</i>		
Keep up to date with knowledge about the tourist sites and activities of interest	3.58	1.243
Save costs and get the most from the resources invested in the trip	3.36	1.198
Possibility to provide and to receive information about tourist sites and activities of interest	3.81	1.164
Stay in contact with others who share the same interests regarding tourist trips	2.55	1.283
Provide a strong feeling of belonging to a group	2.01	1.145
Usage is pleasing and fun	2.76	1.247
Proud of sharing opinions and tourist experiences	2.44	1.257
The increase of personal relationships with people with similar motivations	2.18	1.191
<i>Perceived costs</i>		
Excessive and not worthwhile effort and time to find trip-related information	2.66	1.159
Too high monetary costs of the equipment and services required to collaborate on the Internet	2.43	1.112
Difficult to find the time needed to monitor the Internet sites that might be interesting	2.47	1.187



Very high risk of losing privacy	3.03	1.274
Not wanting for others to see posts	2.97	1.353
Not wanting transparency and public exposure related to Internet	2.82	1.277
Complicated or bothersome processes required by travel websites for contributors	2.77	1.298
Too many travel websites	2.70	1.248

**Source:** Data processed by authors

The scale measuring perceived benefits and perceived costs proposed by Parra-López et al. (2011) focused on people using the Internet in order to get information about tourist destinations but in this study, it has been used on tourists staying in hotels in a tourist destination. The perceived benefits item means (Table 1) varied from 2.01 (‘Provide a strong feeling of belonging to a group’) to 3.81 (‘Possibility to provide and to receive information about tourist sites and activities of interest’), while the perceived costs item means varied from 2.43 (‘Too high monetary costs of the equipment and services required to collaborate on the Internet’) to 3.03 (‘Very high risk of losing privacy’). In general, the costs were not perceived as obstacles in using social media in organizing vacation. On the other hand, tourists perceived benefits as unimportant.

**Table 2.** Results of exploratory factor analysis

Variable	1	2	3
The increase of personal relationships with people with similar motivations	.812		
Provide a strong feeling of belonging to a group	.786		
Proud of sharing opinions and tourist experiences	.770		
Stay in contact with others who share the same interests regarding tourist trips	.703		
Usage is pleasing and fun	.621		
Keep up to date with knowledge about the tourist sites and activities of interest		.858	
Possibility to provide and to receive information about tourist sites and activities of interest		.797	
Save costs and get the most from the resources invested in the trip		.703	
Not wanting for others to see posts			.727
Complicated or bothersome processes required by travel websites for contributors			.720
Not wanting transparency and public exposure related to Internet			.672
Too many travel websites			.610
Cronbach's alpha	.846	.827	.744
% accumulated variance	26.439	40.842	55.459

**Source:** Data processed by authors

Exploratory factor analysis (EFA) was performed on 16 items measuring perceived benefits and perceived costs of using social media in organizing

vacation. Items with loading below .04 and cross-loadings were deleted, resulting in retention of 12 items. Using eigenvalues greater than 1.0, as criteria, three factors representing perceived benefits and perceived costs formed clear factor structures (Table 2). Jointly, they accounted for 55.46% of the accumulated variance, and all of the factor loadings was greater than .60. They were labeled functional benefits, social and psychological benefits, and costs. Cronbach's alpha coefficients were between .744 and .846.

The same items were subjected to CFA using the second half of the data in order to examine the relationship between the items and their corresponding latent construct (Table 3). The model fit indices for the measurement model were acceptable and all indicators significantly loaded onto their respective latent construct and were higher than 0.50 (Hu & Bentler, 1999). Each construct (Table 4) had estimated composite reliability that exceeded the value of 0.60 and an extracted variance higher than the recommended threshold of 0.50 (Hair et al., 2014). The results for the correlations showed that functional benefits and social and psychological benefits were interrelated. The correlation was positive and not very excessive.

**Table 3.** Results of confirmatory factor analysis

Factor	Item	Standard load
Social and psychological benefits	The increase of personal relationships with people with similar motivations	.89
	Provide a strong feeling of belonging to a group	.74
	Proud of sharing opinions and tourist experiences	.72
Functional benefits	Keep up to date with knowledge about the tourist sites and activities of interest	.82
	Possibility to provide and to receive information about tourist sites and activities of interest	.84
	Save costs and get the most from the resources invested in the trip	.70
Costs of losing privacy	Not wanting for others to see posts	.83
	Not wanting transparency and public exposure related to Internet	.66

Note:  $\chi^2 = 69,784$ ,  $df = 17$ ,  $p\text{-value} = 0,000$ ;  $CFI = 0,975$ ;  $SRMR = 0,049$ ;  $RMSEA = 0,063$ ;  $PClose = 0,073$

**Source:** Data processed by authors

**Table 4.** Scales reliability and discriminant validity

	CR	AVE	Functional benefits	Social and psychological benefits	Costs of losing privacy
Functional benefits	0.830	0.621	<b>0.788</b>		
Social and psychological benefits	0.830	0.622	0.217***	<b>0.789</b>	
Costs of losing privacy	0.717	0.562	-0.088*	-0.091	<b>0.750</b>

Note: \* significant at 0.05, \*\* significant at 0.01 \*\*\* significant at 0.001; Bold figures in diagonal are the square root of the AVE

**Source:** Data processed by authors

Benefits of using social media for organizing a vacation were perceived as important but also as rather unimportant. Those benefits perceived as important depict functional benefits, while the benefits that were not perceived as important include psychological and social benefits. Costs of using social media for organizing a vacation were generally not perceived as important suggesting that tourists do not think of them as obstacles. However, the risk of losing privacy was perceived as somewhat important suggesting that privacy may present a certain obstacle in the future. Through exploratory factor analysis, two dimensions of perceived benefits, namely functional, social and psychological, were determined, while perceived costs formed one dimension, i.e. they included items measuring effort, privacy and difficulty of use. Still, confirmatory factor analysis refined this structure but the number of dimensions was detained. The structure of perceived costs was the most affected, thus the new structure focused on costs related to losing privacy. Items measuring the dimension of the perceived benefits were also purified, but only those measuring social and psychological benefits. They were mostly centered on the social component.

Although the concept of perceived benefits and perceived costs was adopted from Parra-López et al. (2011) the results are not comparable because was not confirmed entirely in this research. This research confirmed the existence of functional benefits, while social and psychological benefits were perceived and as one dimension. Also, this research highlighted the issue of privacy as the perceived cost, thus, partially supporting the findings of Parra-López et al. (2011). Perceived costs of losing privacy identified in this research are partially supported by the findings of Davies & Cairncross (2013), Fabricius & Eriksson (2017), Matikiti et al. (2017) and Pabel & Prideaux (2016) while perceived benefits are

partially supported by Agag & El-Masry (2016), Amaro et al. (2016), Ayeh et al. (2013), Cox et al. (2009) and Nemec Rudež & Vodeb (2015).

The finding in this study provide insights to tourism and hospitality managers related to tourist's behavioral intentions in the usage of social media for planning vacation. These results help them to better understand and provide a tool to identify obstacles and prospects of social media usage for the purposes of destination selection and travel planning related activities. Managers need to ensure the trustworthiness of the information placed on different social media sites and reduce to a minimum the perceived costs, namely costs related to privacy risk.

Although the study helps to fill a gap in knowledge in the literature on this issue, there are some limitations. These results are based on a sample of tourists who stayed in selected hotels in Istria County. Therefore, the results could not be generalized to the overall Istria County's tourism market or to the user of social media in general. Future studies could include different populations (e.g., tourists in different accommodation facilities, one day visitors, visitors of certain cultural and natural sites), different parts of Croatia, tourists staying in Croatia in low and pre/post season. This research did not focus on particular social media sites, thus, future research could be centered on a particular social media like Facebook, Twitter, Instagram, TripAdvisor, because each of them offers different opportunities (e.g. posts, photos, videos etc.). Social media and Internet usage is a fast evolving area due to the development tools that provide the user experience. Considering that, findings will need to be periodically revised.

## 5. CONCLUSION

Social media can be a great way to minimize various difficulties related to vacation planning because it provides a way to search, organize, share and annotate travel stories and experiences in different tourist destinations. Thus, how tourists perceive obstacles and prospects of social media usage for the purposes of destination selection and travel planning related activities is becoming a highly interesting research area.

This study aids in understanding consumer behavior in relation to the use of social media in travel-related context, through the concept of perceived benefits and perceived costs. This concept primarily included three dimensions of perceived benefits and three dimensions of perceived costs. It was applied to general users of social media who traveled as tourists. However, when it was ap-

plied to the different population, namely hotels guests of various nationalities, the structure was only partially confirmed. This suggests that redefinition of the perceived benefits and perceived costs concept is needed for tourism settings.

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# OPINION LEADERSHIP, WEB SHOP EFFECTIVENESS – AN INTEGRATED MODEL TO PREDICT RECOMMENDATION AND REPURCHASE

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## **Abstract**

*Online purchases grow rapidly and competition among online providers is getting fiercer. Customer loyalty has become a key metric for e-tailers and it is frequently assessed “through the lenses” of repurchase and recommendation intention. Following the customer value-oriented approach; we suggest an in-*

egrated SEM model, which combines important aspects of a webshop (quality perception, trust, usefulness, satisfaction) with the construct of online opinion leadership. Based on a large sample (1000 respondents) of online purchases we have tested the model with partial least square (PLS) path modeling. Results suggest that six of the suggested effects are strong (trust on usefulness, the quality of trust and satisfaction, satisfaction on recommendation and repurchase intention). However, the offline opinion leadership construct has a low effect (Cohen's  $f^2$  value) on recommendation intention. The effect size of online opinion leadership on the same variable is higher but still low ( $f^2=0.07$ ). The results are useful to predict online and offline word-of-mouth intentions and future purchases. However, there are many limitations to this research, which result mainly due to the applied research method (online questionnaire) and among further research directions, we would name the test of the proposed model on company data as a top priority.

**Keywords:** repurchase intention, recommendations, integrated SEM model

JEL Classification: M31, M37

## 1. THE EMERGING ROLE OF MEASURING AND PREDICTING FUTURE CUSTOMER BEHAVIOR

In today's world, digitalization is present in every aspect of our life. According to Statista (2019) in 2017, retail e-commerce sales worldwide amounted to 2.3 trillion US dollars and e-retail revenues are projected to grow to 4.88 trillion US dollars in 2021. The top 3 online stores' revenue amounted to almost 100 billion US dollars in 2017. Not just key players but smaller web shops are also focusing on understanding customers' omnichannel purchase behavior, its different consequences, and opportunities. They strive to identify everyone who has an interest in their offers, monitor the customer journey, and gather enough data to build valuable relationships, evoke customer loyalty and not just get into price wars with competitors. Automatization, predictive algorithms, and machine learning do not only enable to personalize offers but to select those, who really matter to the company: the most valuable customers. Many authors have already pointed out (Kumar et al., 2010) that besides traditional monetary focused customer valuation models the role of non-monetary elements cannot be underestimated. Among these components, word-of-mouth, personal recommendations, customers' opinion leadership behavior are outstanding factors.

It can be stated that the retailing industry is going through a major shift (Kahn 2018). The Internet is now a central element in business' sales processes from the stage of information search to the actual purchase and follow-up of the order, or even the delivery of the products or services (e.g. software, e-banking). As websites should live up to dynamically rising consumer expectations, it is crucial to be aware of the criteria by which they evaluate website quality and the influence of these criteria on their level of satisfaction and repurchasing as well as recommendation intentions, which ultimately add up to loyalty. In order to stay competitive, this knowledge is critical for businesses. The continuously improving and growing body of research on competitiveness has a major contribution to economic development (Tukker & Tischner 2017) which warrants more detailed scrutiny of online solutions as significant opportunities of the present and the future.

In our research, we aim at developing an integrated model in an online environment that combines a personal trait – opinion leadership – with the perceived effectiveness of a webshop in order to predict loyalty, measured by planned behavior dimensions such as recommendation (online and offline word-of-mouth intention) and repurchase intention. In this manner, the model can serve as a basis for calculating a non-monetary customer value as well.

## 2. STRUCTURAL MODEL – UNDERLYING ASSUMPTIONS, INTEGRATED CONSTRUCTS AND RELATIONSHIPS

Consumers tend to buy products on the internet even if they encounter risk due to lower trust in online shops. They get many impulses by advertisers, but they rely more frequently on their personal network or on other customer's choice. According to Hennig-Thurau et al. (2004, p. 39) electronic word-of-mouth is "any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet". Consequently, the role of word-of-mouth and listening to recommendations by other customers is increasing. the eWOM source is likely to be perceived as more useful by consumers with high susceptibility to informational influence than neutral/third party and manufacturer/retailer sources (Chen et al., 2016). Among studies that have investigated interpersonal influence in online contexts, two groups can be identified. Those

looking at the structure of online platforms as an enabler of interpersonal influence (e.g. Chu & Kim, 2011), and those investigating the actual process of interpersonal influence as it happens online (e.g. Kozinets et al., 2010). We focus our attention on the latter and use informational influence as an exogenous latent variable.

As Schäfer & Taddicken (2015) state media environments have changed significantly in recent decades, however, opinion leadership still exists and many roles that have been identified previously in this research field still hold up. Word-of-mouth (WOM) communication as a personal influence has always played an important role in the purchase process of products and services. Extensive research results pointed out that the behavior of customers is heavily influenced by interpersonal communication (Herr et al., 1991). With the advent of the internet, many different channels of communication can be used in order to convince others and share experiences. In cyberspace, a dynamic and interactive communication is enabled, where a single person can take on multiple roles. Initially, based on the direction and underlying motives, three major behavior dimensions can be differentiated (Flynn et al. 1996, Sun et al. 2006): opinion seeking, opinion giving and opinion passing.

Consumers with a high level of opinion seeking behavior tend to search for information and advice from others when making purchase decisions (Flynn et al. 1996). Conversely, individuals with a high level of opinion giving behavior, known as opinion leaders, may exert great influence on others' attitudes and actions (Price and Feick 1987). Many opinion leaders may also be opinion seekers because they desire more knowledge or expertise, partly due to their interest in a specific topic or product. Even though, information seekers are not necessarily opinion leaders. Sun et al. (2006) suggest that opinion forwarding/passing is an important and yet overlooked (Norman – Russel 2006) behavior consequence of eWOM and it accelerates the flow of information. Opinion passing behavior is more likely to occur in an online social context, as the unique characteristics of the Internet can facilitate multidirectional communication, and with a few clicks of the mouse, consumers can 'spread the word' on a global scale (Chu and Kim 2011).

In the early stage of the Internet's expansion retailers believed that low prices and web presence can guarantee success (Minocha et al., 2003). However, with the accumulation of consumer and corporate experience in online shopping,

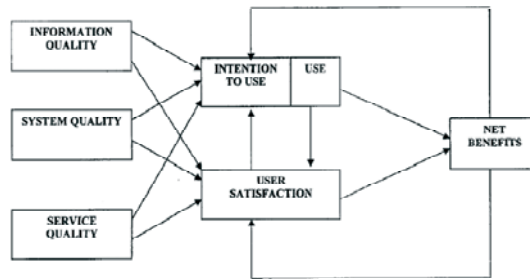
and as the competition got stronger as well as online purchases became a routine, companies had to realize that they had been mistaken. If consumers do not find the required information on the website, if e-mails are not answered in time or if the product is not delivered at the requested time, consumers do not hesitate to give a much lower rating in the quality assessment and switching to another e-tailer has never been easier. Recognition of this fact gave rise to changes in strategic thinking and quality became a crucial factor in the online channel as well. However, electronic-service quality is a complex concept that includes aspects of the buying process that precede and follow the actual purchase. It covers not only the information-seeking processes and the use of a website, but also purchase, fulfillment, goods delivery, and occasional return and compensation. In the same way as in the offline world, but much faster. A broadly accepted definition of perceived e-service quality is “the extent to which a Web site facilitates efficient and effective shopping, purchasing, and delivery.” (Parasuraman et al., 2005 p. 5). The relationship between perceived quality and satisfaction as well as the role of emotions in consumer satisfaction decisions are well-researched topics (Oliver, 1993). E-satisfaction that occurs in online environments can be interpreted on the model of previous satisfaction definitions because consumers’ evaluation of the given webshop has regard also to the prior online purchase experience (Anderson – Srinivasan, 2003). In the case of e-commerce, we can distinguish between transaction-specific satisfaction pertaining to a particular encounter with a webshop (e.g. booking a room), and cumulative satisfaction, which stems from repeat purchases. In the literature on information systems, which are an integral part of e-commerce, satisfaction is the sum of opinions about a specific system’s attributes, with special attention to efficiency in which design and implementation play a leading part.

Many researchers agree that the evaluation of quality for online stores is not limited to the transaction itself, but includes the entire range of provided electronic services (Montoya et al., 2000; Wolfinbarger & Gilly, 2002; Bauer et al., 2006). These include all interactive services, which are conveyed via information-communication technologies (Sousa & Voss 2006). Accordingly, quality assessment should take into account, besides in transaction events, the pre- and post-service aspects, such as information gathering process, transaction accomplishment, customer service, or even refunds and problem management. To measure e-SQ several concepts exist in the literature, unfortunately, there is no consensus about its dimensions. In our opinion, when evaluating the existing

e-SQ scales, the primary considerations should be their compliance with the definition of electronic service quality and the extent to which they account for the heterogeneity of e-commerce by types of products/services. Thus our choice was made for the RECIPE scale (Francis, 2009).

As Delone and McLean (2016) state their information systems success model (see Figure 1) can be adapted to the measurement challenges of the new e-commerce world.

**Figure 1.** The updated Delone and McLean information system success model



**Source:** Delone and McLean (2003, 24)

The six dimensions of the updated model are a parsimonious framework for organizing the e-commerce success metrics identified in the literature. Out of the service quality construct, we have highlighted and included in our model the importance of trust and it served as an antecedent to the most important aspect of perceived value: usefulness.

Customer satisfaction is of strategic importance for businesses as it contributes to effectiveness through loyalty (Kenesei & Kolos, 2007). The relationship between perceived quality and satisfaction (de Ruyter et al., 1997) as well as the role of emotions in consumer satisfaction decisions are well-researched topics (Oliver, 1993). Veres (1999) suggests that consumer judgments about service quality should form the basis of the measurement of satisfaction. Others assert that complete satisfaction is the direct product of perceived service quality (Parasuraman et al., 1988; Cronin, 1994; Ribbink et al., 2004). Wolfenbarger and Gilly (2003) carried out a study on this topic in an online context, which revealed that e-service quality dimensions show a positive correlation with satisfaction. Their hypothesis was confirmed as well by Bressolles et al. (2007).

The disconfirmation paradigm has a central role among customer satisfaction measurement techniques, where satisfaction or dissatisfaction is a result of the relationship between expectations and performance (Hofmeister-Tóth et al. 2002). The degree and level of satisfaction have far-reaching consequences. In an online context, where the medium allows easy access to competing for offers and switching between providers involves lower costs, revisiting and repurchasing intentions, which may on the long-term lead to loyalty, gain in importance. Although loyalty is a continuing relationship established between a consumer and a brand; it is an emotional connection that binds a consumer to a business/brand when making purchases (Ltifi – Gharbi, 2012), a number of researchers believe that behavioral intentions are the key to success (Venkatesh et al., 2003).

Based on the previous considerations we could draw up an integrated model (see Figure 2), aiming at predicting planned purchase and WOM behavior. The model consists of two major parts. One of them is focused on the relationships between informational influence and online and offline opinion leadership. Beside first-order constructs and their relationships, we have included two-second order constructs (Allard et al. 2017) in order to combine offline and online opinion leadership factors. The other major part is based on the information system success model and follows the well-known quality-satisfaction-repurchase “chain”. As final dependent variables online and offline word-of-mouth, as well as repurchase intention, are included.

### 3. RESEARCH METHOD AND MAIN RESULTS

In order to verify the model, we have chosen validated scales (Table 1) from the literature and composed an online questionnaire. Data collection took place in 2017; the sample consists of 2000 respondents, who have purchased something on the internet in the previous 3 months and are between 18-65 years old. It is a representative sample of the Hungarian population regarding age, gender, and region. Questions were directed towards their latest online purchase experiences and their general traits. The analysis of data took place with the use of IBM SPSS and ADANCO. However the huge sample size would have guided us towards the CB-SEM method, we have chosen to use PLS for path analysis because it minimizes residual variance by each step of estimation either in the external or in the internal model and is more appropriate for prediction.



**Table 1. Factor loadings of latent variables**

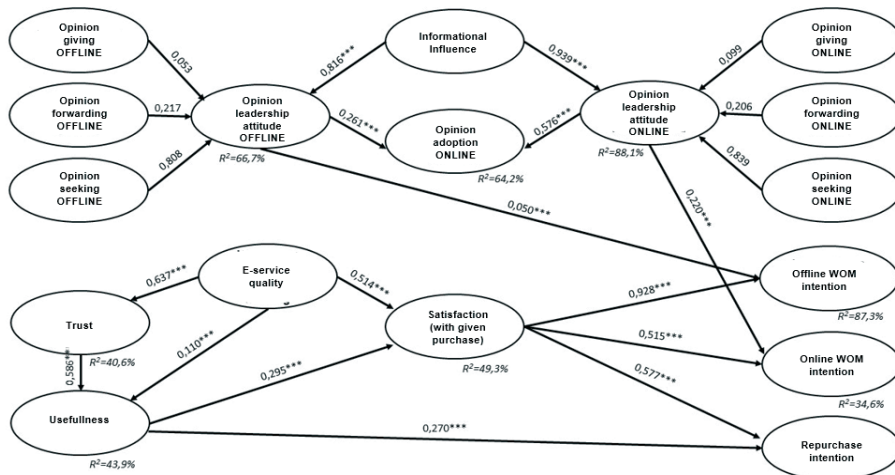
<b>Usefulness (Teo et al., 2003)</b>		<b>Informational influence (Bearden et al., 1989)</b>	
Usefulness _1	0,8190	Informational influence _1	0,8140
Usefulness _2	0,7662	Informational influence _2	0,8067
Usefulness _3	0,8800	Informational influence _3	0,7530
Usefulness _4	0,8427	Informational influence _4	0,7201
Usefulness _5	0,8514	<b>Online opinion leadership</b> (Sun et al., 2006; Chu and Kim, 2011))	
Usefulness _6	0,8564	<b>Opinion giving - ONLINE</b>	
<b>Trust (Suh and Han 2002)</b>		Opinion giving _online_1	0,8861
Trust _1	0,8901	Opinion giving _online_2	0,9283
Trust _2	0,8887	Opinion giving _online_3	0,8832
Trust _3	0,8892	<b>Opinion forwarding - ONLINE</b>	
Trust _4	0,9222	Opinion forwarding _online_1	0,9491
Trust _5	0,9270	Opinion forwarding _online_2	0,8641
<b>Opinion adoption (Cheung et al., 2009)</b>		Opinion forwarding _online_3	0,8991
Opinion adoption _1	0,8607	<b>Opinion seeking – ONLINE</b>	
Opinion adoption _2	0,8649	Opinion seeking _1	0,8474
Opinion adoption _3	0,8887	Opinion seeking _2	0,8429
Opinion adoption _4	0,8879	Opinion seeking _3	0,8965
Opinion adoption _5	0,8827	Opinion seeking _4	0,9029
<b>Offline opinion leadership</b> (Sun et al., 2006; Chu and Kim, 2011))		<b>Quality</b> (RECIPE scale by Francis, 2009)	
<b>Opinion giving - OFFLINE</b>		Efficiency and system availability	0,9048
Opinion giving offline_1	0,9270	Fulfillment	0,8352
Opinion giving offline_2	0,9314	Security	0,6773
Opinion giving offline_3	0,9134	Compensation and contact	0,2630
<b>Opinion forwarding – OFFLINE</b>		<b>Satisfaction (Chang et al. 2009)</b>	
Opinion forwarding _offline_1	0,9425	sat_1	0,9294
Opinion forwarding _offline_2	0,9045	sat_2	0,9033
Opinion forwarding _offline_3	0,9016	sat_3	0,9643
<b>Opinion seeking - OFFLINE</b>		<b>Offline recommendation intention</b> (Yang and Peterson, 2004)	
Opinion seeking _offline_1	0,8871	offline word-of-mouth intention_1	0,9810
Opinion seeking _offline_2	0,8978	offline word-of-mouth intention_2	0,9217
Opinion seeking _offline_3	0,9200	offline word-of-mouth intention_3	0,8810
Opinion seeking _offline_4	0,8846	<b>Online recommendation intention</b>	
		Electronic word-of-mouth intention	1,0000
		Repurchase intention	
		Repurchase intention	1,0000

Source: own compilation and results



Results (see Figure 2) indicate that all of the proposed effects are significant at 0,95 reliability. Out of the addressed relationships, six have a strong effect according to their Cohen  $f^2$  value: trust on usefulness ( $f^2=0,36$ ); quality on trust ( $f^2=0,68$ ) and satisfaction ( $f^2=0,40$ ); satisfaction on offline ( $f^2=6,7$ ) and online recommendation ( $f^2=0,40$ ), as well as repurchase intention ( $f^2=0,55$ ). Although offline opinion leadership has a significant direct effect on offline recommendation intention, it does not seem so relevant ( $f^2=0,02$ ). Regarding online opinion leadership, direct influence on the online recommendation intention is still low, but more notable ( $f^2=0,07$ ). The effect of quality on usefulness is also lower compared to the other relationships. Two endogenous variables have good explanatory value – offline recommendation intention ( $R^2=87,3\%$ ) and repurchase intention ( $R^2=57,4\%$ ) – but the value of online recommendation intention ( $R^2=34,6\%$ ) suggests to look further into underlying motives.

**Figure 2.** Integrated structural model and results



**Source:** own compilation and results

Using the values of the latent variables in the integrated model, we can draw up prediction functions with multivariate linear regression.

(1) function:

$$\text{Offline WOM intention} = -0,065 + 0,085 * \text{usefulness} + 0,206 * \text{trust} + 0,044 * \text{quality} + 0,722 * \text{satisfaction}$$

(2) function:

$$\text{Online WOM intention} = 0,349 + 0,249 * \text{usefulness} + 0,313 * \text{trust} + 0,117 * \text{quality} + 0,346 * \text{satisfaction} + 0,085 * \text{informational influence} + 0,273 * \text{online opinion leadership} - 0,102 * \text{opinion adaption}$$

(3) function:

$$\text{Repurchase intention} = -0,231 + 0,280 * \text{usefulness} + 0,108 * \text{trust} + 0,652 * \text{satisfaction}$$

Results of this multivariate linear regression (Table 2) show that four effects are not significant, however, all the others are at the regular 0.05 significance level. Satisfaction has the strongest effect in every case, but trust is also notable when calculating online recommendation intention. The models can be accepted based on R<sup>2</sup> values.

**Table 2:** Effects in the suggested predictive functions

INDEPENDENT VARIABLES	DEPENDENT VARIABLES		
	Offline recommendation intention	Online recommendation intention	Repurchase intention
usefulness	0,085	0,249	0,280
trust	0,206	0,313	0,108
quality	0,044	0,117	not significant
satisfaction	0,722	0,346	0,652
informational influence	not significant	0,085	Based on the integrated model it has no direct or indirect effect
online opinion leadership	Based on the integrated model it has no direct or indirect effect	0,273	
offline opinion leadership	not significant	Based on the integrated model it has no direct or indirect effect	
opinion adoption	not significant	-0,102	
R <sup>2</sup> value	90,5%	63,2%	75,0%

Source: own compilation and results

## 4. CONCLUSIONS, MANAGERIAL IMPLICATIONS

There is an emerging need to assess the effectiveness of a webshop and to predict customers' future behavior. In our research, we have drawn up an integrated model as one potential solution that is focused on webshop specific factors and

a special customer related factor (opinion leadership). According to our model, several aspects of a webshop can be influenced by the marketer in order to reach higher satisfaction, which is the most important variable in predicting recommendation and repurchase intention. Out of the addressed personal traits, online opinion leadership has a significant effect on online recommendation intention but this relationship needs further investigation and research. When companies try to measure customers' value, they apply monetary approaches; however, we would like to advise to focus on the non-monetary elements of the proposed integrated model as well. Especially to consider customers online and offline word-of-mouth as well as repurchase intention.

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# MODERN BRANDING: HOW BRANDS ADAPTED TO DIGITAL ADVERTISING AND SOCIAL MEDIA

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## **Abstract**

*Managing a brand today implies that consumers participate actively in marketing activities and communication. In the past, it was more of one-way communication from brands to consumers through traditional marketing channels such as television, radio, etc. Digital environment and social media enabled constant dialogue between brands and their users. Dialogue through brand communities inside the social network environment as well as fan pages on social media offers a possibility to brands to reach a large target group in a short amount of time. The purpose of this article is to explore how brands adapted to this new, dynamic way of communicating by using previous research as a methodology and available literature. Also, through the paper the goal is to determine, is branding, with all these new possibilities and communication platforms easier or more complicated for brand owners? Is it a relationship where everybody benefits, companies and consumers?*

**Keywords:** brands, social media, communication

JEL Classification: M31, M37

## 1. INTRODUCTION

The relationship between brands and consumers is a long evolving one. Brand management as it is used today, started around 1950s and has evolved since. Social media definitely speeded up that process and changed the game. Brands and consumers have never been in closer communication and interaction than in the present time, but also their relationship has never been more challenging and fragile.

The main objective of this paper is to determine how brands adapted to social media, and what are the main challenges of brand owners today. Is the success of a brand in total control of brand managers and brand owners or has the power shifted to the consumer? Are we in an era of the empowered consumer?

To understand how the relationship between brands and consumers functions in today's digital and virtual environment, it is important to understand how that relationship evolved during history. The paper will also try to explain the evolution of branding and the history of branding, how social media affected the communication between brands and consumers and empowered consumers, as well as brand communities inside social media and what impact they have on brands today.

## 2. EVOLUTION OF BRANDING

According to different marketing researchers such as Khan and Mufti (2007), we can trace brands as far back as ancient Egypt where it was used as a symbol of the quality of cattle that were being sold or bought, as well as a way to discourage theft. A farmer that had a reputation for quality cattle was high in demand, unlike those who offered the opposite. Khan and Mufti (2007) also say that in that way brands as a symbol of quality and a choice were established and that is what they symbolize in the present time.

As can be expected, a lot has changed from the period where cattle were branded so people would know which herd belongs to each owner. Hampf and Lindberg (2011) say that in today's time almost everything we use is branded. From clothes, cars, food to water. During the course of history consumers and brand owners have developed a very complicated and delicate relationship. Some of those relationships last a very long time, some for a short period of time. Some of these relationships are very loyal, and others are a one-time thing.



Market researchers devoted a great deal of time trying to determine what is key to a successful brand, loyal consumer, repeated purchase. Moore and Reid (2008) say that those are the topics of most marketing research focuses as well as brand choice, brand loyalty, brand switching, and brand extensions. What also changed is the way that brands and consumers communicate today from traditional communication channels such as TV, magazines and daily papers to social platforms. This shift accrued with the ever-growing importance and presence of social media. And this shift in communication also brought a change in how brands create value, because today, more than ever, a consumer is a co-creator of brand value as well as the brand owner. A good consumer – brand relationship in today's era of endless choices and fast communication on social media is more important and more fragile than ever.

## **2.1. WHAT IS BRANDING?**

There is a lot of available information on this subject, and often readers and students, are not sure what is the difference between product, brand, and branding. While researching for this article, we came across a lot of different definitions, perhaps the one that is the more clearest is the one from the Branding Journal where it is explained what is a product, a brand, and what is branding. A product can be considered everything from a toothbrush, food, clothes, a language course, etc. ([www.thebrandingjournal.com](http://www.thebrandingjournal.com)). Kotler and Keller (2015) also point out that anything that can be offered to a market, more specifically a consumer, in order to satisfy a want or a need can be considered a product. This includes ideas, events, services, properties, places, etc. A product is crucial in creating a brand.

According to American Marketing Association, a brand is a key feature that identifies a seller good or service from those of another. This can be a name, symbol, designed ([www.ama.org](http://www.ama.org)). Let's take the example of coffee. One of the most beloved beverages on the planet. How to choose in the sea of available products. This is where brands come in. Coffee is a generic product, but Lavazza is a brand, or Starbucks, Nescafe, etc. Brand, their name, logo, perception of quality, design, that is what influences our choices and preferences. Moore and Reid (2008) explored in great details the history of brands, from ancient time until today in their article "The birth of Brand: 4000 years of branding history" and what market researchers in the 20<sup>th</sup> century define as brand and how their



biggest influence is in the part that enables a consumer to express themselves. Moore and Reid (2008) also state that the personality traits of people who are associated with the brand are often transferred to the brand itself. After defining what is a brand, it is also important to define what is branding.

Kotler and Keller (2015) define it as giving the power of a brand to a product or a service. Branding is a strategy, a process that gives meaning to a product or a company by shaping a brand in a consumer mind.

Branding is a promise that a brand gives, by always delivering the same level of service and quality for their products and services ([www.thebrandingjournal.com](http://www.thebrandingjournal.com)). Perhaps one of the most known brands in the world today is Apple who revolutionized the way technology looks and is used today, and the way we communicate and perceive brands. Steve Jobs who was the founder of the company had a vision of what he wants his company and its products to be. Quality, functional products with trendy design. Mobile phones in the past did not have cameras or could make videos. Today you can make a short movie on your iPhone, and edit it on your Apple computer, as well as record and edit music. Apple is constantly working on its branding. The most recent example is their marketing campaign called Today at Apple which completely transformed the way their retail store's function. Because of the popularity of online shopping Apple retail stores experienced a sale drop. New CEO Angela Ahrendts changed all that. Apple stores were transformed into community points, where besides being able to buy an Apple product you can participate in many events using Apple products. For example, iPhone photography courses where you can learn basics on how to take professional photos. Programming classes for children, families, and teachers, which Apple described is a way of giving back to the community ([www.forbes.com](http://www.forbes.com)). The branding part of this campaign was done impeccably, and Apple showed once more that it kept its promise to consumers, present and future.

## 2.2. THE HISTORY OF BRANDING

Brands like Apple, Coca-cola, Burberry, BMW, etc. are landmarks of the branding of the 20<sup>th</sup> century, but what led up to the way we perceive brands today? What influenced and shaped relationships consumers and brands have in the present time?

Hampf and Lindberg (2011) say that the brands most similar to the ones we have today were shaped in the 16<sup>th</sup> century. Brands like Wedgwood that was founded in England by ceramist Josiah Wedgwood and Bertin founded in France by fashion designer Rose Bertin. Khan and Mufti (2007) mention that the first ever recorded brand on the Western hemisphere were one of Hernan Cortez and its Three Latin Crosses in 1519.

In 1936 Robinson – Patman act was passed in America, which was a federal law that wanted to outlaw price discrimination. The act required a business to sell its products at the same prices regardless who the buyer is ([www.investopedia.com](http://www.investopedia.com)). In more simpler words this act created a legislative obstacle for companies to price similar products differently (Hampf and Lindberg, 2011). Since the pricing was determined by law, sellers needed another way to distinguish one product from another, and this could be achieved by different brands of the same product.

But with brands came a question of how much a company should emphasize its brand or how much do consumers care about brands, so several market types of research wanted to determine just that.

Hampf and Lindbergh (2011) through their research explained the influence of several marketers and their contribution to the evolution of branding by introducing crucial marketing terms and calling them 12 millstones of branding. These terms can be considered as today's backbone of branding (Figure 1).

**Figure 1.** 12 Branding milestones



**Source:** Authors, adapted from Hampf, A. & Lindberg-Repo, K. (2011). Branding: The Past, Present, and Future: A Study of the Evolution and Future of Branding. Hanken School of Economics Working Papers. Available at: [https://helda.helsinki.fi/bitstream/handle/10138/26578/556\\_978-952-232-134-3.pdf](https://helda.helsinki.fi/bitstream/handle/10138/26578/556_978-952-232-134-3.pdf)

As it can be seen through Figure 1., today’s branding, and its key elements took more than fifty years to develop, and we can conclude that the process is not over. Why? Because new terms evolve every day due to social media. Terms such as influencers, consumer-generated content, company generated content, digital advertising, brand communities, etc. All these terms are now used in marketing. So once again we are witnessing how social media speeded everything up, not just marketing, but marketing research in general, and how challenging it is for the academic community to keep up. They are not the only one under pressure to keep up, marketers and brand managers have to adapt to changing values of all stakeholders: consumers, employees, business partners, institutions and society in general (Khan and Mufti, 2007)

### 3. HOW COMMUNICATION BETWEEN BRANDS AND CONSUMERS CHANGED DUE TO SOCIAL MEDIA

Until social media became popular as a channel of communication, traditional channels such as tv, newspapers, radio were the only way brands communicated with consumers. Communicating through those channels was more a one-way street, without consumer input, which can also be considered as their biggest disadvantage. Traditional channels of communication did not give power to the consumer but gave it to the brand. Social media made it a two-way communication, where there is constant interaction between brands and their users. Social media on the other hand also offers more content, more information and more possibilities of communication, and consumers now have as much influence on the brand's success as the brand owners. That consumer influence is one of the most important elements of how social media changed communication between brands and consumer. Consumers started to form groups and communities online, exchanging information between them and by that changing the balance of power from brands to consumers (Bernoff and Li, 2008). It made brands to try harder, be more alert, to fight more for its consumers. Social media transformed the Internet into a platform where people themselves become the media by sharing information and their user experience (Leung et al, 2013) Until social media, it was a one way street in terms of communication between brand and its consumers. Brands would advertise through different channels to its target groups and the only response they would get from consumers, and if their product is good, was in sales numbers and if the numbers were rising or dropping. There was no immediate response, especially not in a sense of expressing their opinion about the brand or any kind of user experience. Brand managers realized that the one-sided communication model was not suitable for the dynamic computer motivated environment (Christodoulides, 2009). Simmons (2008) determined that the internet is a great medium for brands because it enables them to communicate directly to its consumers. Social media had an enormous impact on marketing communication. What was considered "rules" in marketing communication and marketing in general, changed in a very short amount of time, but brands adapted, brand managers adapted, consumers, adapted. It is a whole new world that came with social media, and its impact on social interaction and communication between people, and not just brands is yet to be determined in the future.

### 3.1. CONSUMER EMPOWERMENT THROUGH SOCIAL MEDIA

Social media today represents the global community of every nationality in the world that is estimated to be the size of China in terms of population. Facebook as the biggest crossed 1 billion users in January of 2015, WhatsApp users were 600 million, and Twitter 284 million users ([www.brandba.se](http://www.brandba.se)). Social media also brought consumer empowerment. As earlier mentioned, the consumer is now a co-creator of brand success as much as brand owners. Consumers today not only have the power to influence the success of a brand but also to destroy it, leaving brands more vulnerable than ever. Kaplan and Haenlein (2010) detected the signs of a change, and that the shift in power is going to the consumers. Before companies would manage the information about their company or its products with PR or press releases, but in the age of social media more than often companies are observers in the information that are provided about their companies with practically no way to control the situation. Consumers today have an influence on other consumers by sharing their experience and by generating content which eventually has an impact on decision making for buying, brand image and word of mouth ([www.brandba.se](http://www.brandba.se)). Social media sites allow the consumer to express a positive or negative opinion about any brand (Christodoulides, 2009).

A good example of an empowered consumer is the case of the United airline company in America that removed a passenger from the plane due to airlines overbooking error ([www.theforbes.com](http://www.theforbes.com)). The incident went viral because the passenger sustained injuries during the flight due to the fact that he didn't want to leave the plane. First the airline company denied its responsibility but the pressure on social media was immense and to avoid more negative publicity they apologized to the passenger and in the end, suspended the security guard who injured a 69-year-old passenger. The whole incident raised questions about the fact that airlines in America often overbook their flights, and rarely apologize to passengers because of it, but this time a passenger sustained injuries while other passengers were shocked.

This was a negative example of a company who was "forced" by social media to put the customer first. There are also positive examples of companies who decided by themselves to put their customer first and to fully adapt to social media ([www.forbes.com](http://www.forbes.com)). A brand like Burberry set out to be the first digital luxury brand and it grabbed every chance it could to get closer online to their customer and their wants and needs. Burberry enabled its customers to buy clothes

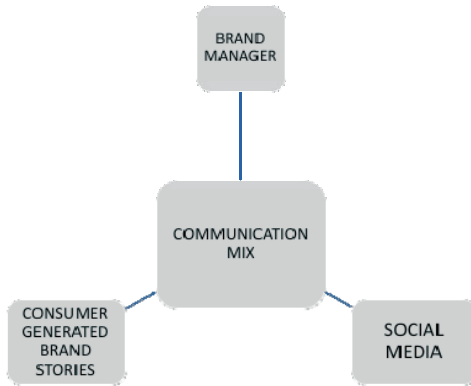
from the catwalk from their mobile phones and not wait for six months for the new looks to appear in stores. Their customers wanted this change, Burberry enabled it and the company thrived ([www.theforbes.com](http://www.theforbes.com)). Social media gave consumer enormous power, a fact that will not change in the near future. It is very clear that the more brand adapts their communication to the consumer on social media, the more successful the brand will be. Yes, this communication has its risks, it often leaves the brand vulnerable and exposed, but perhaps the example of Burberry is a beacon for other brands to follow. Perhaps social media can bring empowerment to brands, and not only consumers.

### 3.2. CONSUMER-GENERATED BRAND STORIES

Consumers are becoming pivotal authors of brand stories due to new dynamic networks and brands formed through social media and the easy sharing of brand experiences in such networks. Firms need to pay attention to such consumer-generated brand stories to ensure a brands success in the marketplace (Gensler et al, 2013, p. 243).

Singh and Sonnenberg (2012) say that brand stories provide meaning to the brand. In the past, only companies created brand stories through traditional advertising, but through social media, consumers are now becoming the ones who create stories about brands. Consumer voice can no longer be ignored by companies and brand managers, nor it is wise to do so, and they also have to accept that mistakes will be made do to loss of control (Gensler et al, 2013). Henning - Thera et al. (2010) also state that brands stories told through social media will have a greater impact on consumers than the ones told through traditional marketing channels, because they occur in real time and are dynamic. Puzakova et al. (2013) emphasize that humanization of brands generates more positive consumer attitudes and, in that way, improves brand performance. Consumer influence on brands is making a brand manager work very challenging. Brand managers have to balance between consumer-generated stories that they have no control over and how they are presented on social media. Trying to include consumer generated brand stories in the communication mix can also be achieved by sharing their stories on official brand pages on social media. Maintaining control over fast social media communication is less difficult if consumer stories can be integrated into the communication mix by brand managers (Figure 2.)

**Figure 2.** Brand managers communication mix in social media



**Source:** Authors

It is obvious that in the era of social media, brands and brand managers need to find the best way to communicate with consumers and try to make them an ally in their brand's success, especially when brand stories are concerned. Most companies today crave for organic content, the one that is created and shared by consumers about their products or services. This is not easy to achieve. Content that is written correctly and by consumer or user with knowledge in different areas speaks the most to the reader's interest ([www.kmguru.com](http://www.kmguru.com))

Excellent way of including users in their communication mix is the way NASA communicates with the public on social media. They share behind the scenes of workdays in NASA, and their stories are shared further by their followers ([www.adweek.com](http://www.adweek.com)). Another great story that was created by NASA but shared further by users is their literacy programme. Astronauts that are on a mission in space, read every week a different children's book. It was the idea of Patricia Tribe, the former director of education at Space Centre Houston who came up with the idea to merge STEM and literacy that would be interesting to children. Their videos are shared through social media with a very large number of positive comments from users who were thrilled with the idea ([www.huffingtonpost.co.uk](http://www.huffingtonpost.co.uk)). Not only were followers thrilled with the idea, but media from all over the world wrote about Story Time from Space.

We will conclude this part with a consumer-generated brand story. It is about an American with Croatian roots that moved from America to the small town of Šestanovac near Makarska in Croatia and open a burger bar. He uses

all local ingredients and very soon became a social media sensation. Users wrote about their good experience to that extent that one newspaper decided to write a story about Mikes burgers. All this would not perhaps be so interesting if the burger bar isn't in rural Dalmatian area, and from Split, you have about half hour drive, maybe even more. The same from Makarska and people come from all over Split county to try the burgers. When Mike was interviewed he not only told his life story but also emphasized how he loves living in Croatia, in spite of the hierarchy and political situation. A positive and refreshing consumer-created a brand story that not only makes you think but also makes you want to go and try Mikes burgers, which only confirms the influence of today's consumers and the influence social media as their communication channel. ([www.slobodnadalmacija.hr](http://www.slobodnadalmacija.hr)).

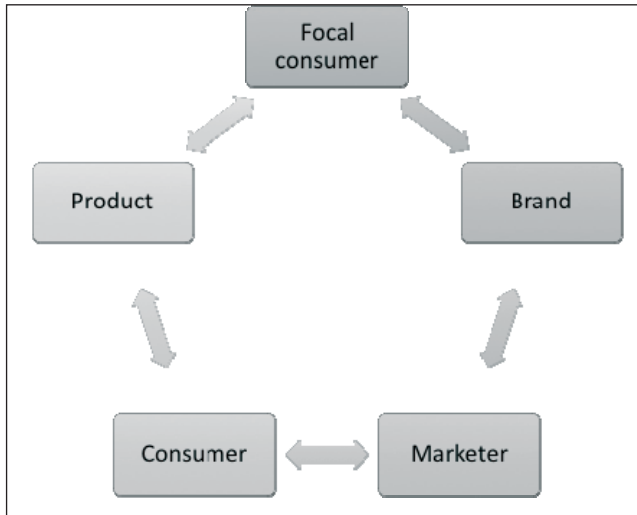
#### 4. BRAND COMMUNITIES INSIDE SOCIAL NETWORKS

The main characteristic of a brand community is an interaction between its members ([www.brandbe.se](http://www.brandbe.se)). A brand community is a community that has no geographical restrictions, and it is based on social relations between brand admirers. Brand communities exhibit a sense of moral responsibility, rituals and traditions, and shared consciousness. (Muniz, O, Guinn, 2001). Storytelling is an important part of communities, and stories based on brand experience give meaning to the brand and to its community members (Muniz, O, Guinn, 2001.) A brand community from a consumer's point of view includes the relationship between the consumer and product that is used, between the consumer and the brands, and between consumer themselves (McAlexander et al., 2002).

McAlexander et al (2002), also debated that brand communities should be observed as customer-centric and that the focus should be on users experience of the brand and not the brand of which that experience revolves. The consumer is the focal point as is showed in Figure 3.



**Figure 3.** Customer-Centric Model of Brand Community



**Source:** McAlexander, J.H, Schouten, J., Koenig, H.F. (2002). Building Brand Community, *Journal of Marketing* 66(1), p. 38-56

McAlexander et al (2002) wanted to emphasize that this broader model of brand community is necessary to observe in full so the perspective of interaction inside the community is more accurately described and understood. Zaglia (2013) considers brand communities to represent customer relationship tool innovation management and valuable marketing tool.

Virtual environments such as social media enable brand communities to organize in sub-groups around a specific brand, and most of the market research so far researched social media and brand communities separately. (Zaglia, 2013).

The online social network provides a platform where people with similar interests gather and communicate, exchange information, form relations and discuss ideas (Raacke, Bonds-Raacke, 2008). How powerful channel of communication social media is best shows the most recent example in Croatia is a facebook group #spasime (save me), that became a movement within a few days. The group was formed after one post from a Croatian actress after a horrific case of child abuse he became the subject of public debate. More than 30.000 people joined the group in less the five days and the purpose of the group is to organize peaceful protest demanding the laws in Croatia concerning abuse are changed ([www.telegram.hr](http://www.telegram.hr))

When researching brand communities and social media Zaglia (2013) noticed that within social networks additional sub-groups develop embedded communities. It is possible to find on a social network such as Facebook communities or groups that discuss topics like celebrities, education, pets, children, education, political topics, have from several hundred to several thousand members.). There are also examples of other groups on different social media.

LinkedIn users join groups that focus on business events, etc. Facebook offers a different kind of user activities such as fan page or groups. A fan page is formed by either a company or brand or by users themselves. To receive data from the fan page, the user has to click like button and after that, every time there is a change in the content of the fan page, fans received in their newsfeed. On the other hand, groups on Facebook can be open, closed or private and usually have fewer members than fan page. Private groups are not visible to all Facebook users, and one can become a member only if a group administrator includes you as a member. A closed group is visible through a Facebook search engine but to become a member one must be approved by the group administrator. Open groups are visible to everyone and everyone can become a member.

Brand communities can be an important marketing tool and understanding who joins the and why can have powerful managerial implications (Ouwensloot, Odekerken-Schoerder, 2008).

The positive aspect of brand communities on social media for companies is that they have the opportunity to collect first – hand consumer insights. If companies listen and participate in the discussion by members, they could have a better insight into their consumer's needs ([www.brandba.se](http://www.brandba.se)). The negative aspect is that when a company or a brand has a fan page that is available for comments 24 hours a day, 365 days a year it is impossible to avoid negative comments from the community.

We can conclude that brand communities present on social media allow users to freely express their satisfaction or dissatisfaction with a brand or its products. Users definitely have an upper hand because of their undeniable influence. The internet enables the consumer to have influential power and companies need to adapt. Listening to consumers, taking their requests seriously, and staying to consumers as close as possible is imperative for companies on social media. A long lasting bad reputation is sometimes only one post away, and that is the reality of social media communication for companies ([www.brand.ba](http://www.brand.ba)).

## 5. CONCLUSION

This paper main objective was to explore how well brands adapted to social media. It soon became very clear that brands adapted. Perhaps they are struggling at times, but they are trying to keep up because they understand that social media is where the consumers are, and where all brands need to be if they want to succeed. What also can be concluded researching for this article is that social media empowered the consumer and made him an equal participant of the brand success as much as brand managers and brand owners are. This is also what will be a future obstacle for all brands who do not put the customer as the focal point of their marketing strategy. We can also conclude that the today's consumer is very aware of its power and influence which leaves brand managers in a position where they have to understand that trying to have complete control of the brand and its communication on social media is impossible. Social media interaction is happening 24/7 and 365 days a week, and there will always be more consumers than there are brand managers. The only way for brands to be successful in the social media era is to be closer to consumers and their wants and needs. This can be in great deal achieved through brand communities, fan pages, blogs as well as collaboration with influencers. Influencers and their impact on brand success are also what should be further researched and determined if it is a trend or a more permanent marketing tool. No matter what media is popular at the moment, humans will always be social beings, and telling stories and experiences, sharing our opinions and worries will always be a necessity. Social media made that need global, erasing all physical borders for people to interact. Today it is perfectly normal that if you are a part of a brand fan group that you can read about experiences of brand users from all parts of the world, also reviews on products and services present on social media. Consumers will always believe another consumer brand story rather than the ones created by companies because they can relate to other people experiences. They see them as equals as opposed to brands. This is the biggest threat to brands and companies, because the difference between success or failure, despite all the work on the behalf of brands and brand managers, in the end, can be in one post. This is also the biggest strain on the relationship between consumers and brands. Social media made companies try more, work more to keep their customers, making them more creative, and keep them in a constant state of alert (not to say fear). On the other hand, consumers are more vocal, not afraid to criticize or demand what they consider is their right, and due to social media, they definitely have more power than ever and are very aware of it.

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# THE INFLUENCE OF ADVENT FAIR VISITORS' EXPERIENCE ON THEIR EXPENDITURE INTENT

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## **Abstract**

*Experience can be regarded as a personal occurrence with highly emotional significance obtained by the consumption of products and services. To develop a distinct value-added service, practitioners attempt to provide memorable experiences for customers. The positive experience of the event meets the visitors' needs but is also a prerequisite of a revisit intention as well as of the level of consumption. The subject of this paper is the analysis of the Karlovac Advent Fair visitor experience and the relatedness between experience and expenditure intent. The aim of this paper is to demonstrate the relatedness between visitor experience (independent variable) and their expenditure intent (dependent variable) at the Advent Fair.*

*The main hypothesis is as follows:*

*MH - There is a relatedness between the experience and expenditure intent of the Karlovac Advent Fair visitors.*

The study also tested the following hypotheses:

H1 - There is a correlation between the overall atmosphere of the Karlovac Advent Fair and visitor expenditure intent.

H2 - There is a correlation between the novelty of the Karlovac Advent Fair experiences and visitor expenditure intent.

H3 - There is a correlation between the experience based on the spirit of Christmas in terms of warmth and aesthetics of the Karlovac Advent Fair and visitor expenditure intent.

H4 - There is a correlation between experiences based on the local culture and visitor expenditure intent.

Exploratory research of visitor attitudes of the Karlovac Advent Fair was conducted on a convenience sample, which is a form of non-probability sampling, in the period from December 14<sup>th</sup> to December 30<sup>th</sup>, 2018. The hypotheses were tested using the correlation and linear regression method. The observed variables were described using descriptive statistics. This exploratory research was carried out with the purpose of highlighting the significance and the role of the visitors' event experiences on expenditure intent.

**Keywords:** experience, memorable experience, Advent, visitors, visitor expenditure intent

JEL Classification: Z32, Z33

## 1. INTRODUCTION

The subject of this paper is the analysis of Karlovac Advent Fair visitors' experiences and the analysis of their expenditure intent during the visit. The aim of this paper is to demonstrate the correlation between the visitor's experience (independent variable) and their expenditure intent (dependent variable) at the Advent Fair.

The research questions were:

1. What was the experience of Karlovac Advent Fair visitors?
2. Were Karlovac Advent Fair visitors in the year 2018 ready to spend more money in order to reach a memorable experience?

Exploratory research of visitors' attitudes on Karlovac Advent Fair was conducted on a convenience sample, which is a form of non-probability sampling, in the period from December 14 to December 30, 2018. The hypotheses were



tested using the correlation and the linear regression method. There were conducted interviews on 350 Karlovac Advent Fair visitors, 202 domestic visitors (57.7%), 113 trippers (32.3%) and 35 tourists (10%). The size of the main sample is estimated at the level of the daily visit of Karlovac Advent Fair in the year 2018 based on the data from the organizer's web site (Association Izvan Fokusa, 2018). The daily data size of the Karlovac Advent Fair visitors according to the relevant source is 3.000 visitors per day, the significance of the sample of Karlovac Advent Fair visitors is estimated on a daily basis and is 11.66%. The questionnaire contains 23 closed questions and 1 open question. Attitudes of the respondents were measured by the Likert scale ranging from 1 to 5 (1-lowest score, 5-highest score). The observed variables were described using descriptive statistics. This exploratory research is being carried out with the purpose of highlighting the significance and the role of the visitors' event experiences on visitor's expenditure intent. The results of this exploratory research are of benefit to those subjects who manage the organization of various manifestations in order to improve the quality of the service. The data was processed in Microsoft Office Excel. The questionnaires were anonymous.

## 2.THEORETICAL BACKGROUND

### 2.1. TOURIST EXPENDITURE

Nowadays, tourism becomes one of the main drivers of the development of cities and regions. The success of the tourism sector most often affects the success of many other sectors such as agriculture, manufacturing, transport, retailing and many other production and service sectors. Literature review shows that most of the authors (Nicolau and Mas, 2005; Fredman, 2008; Brida and Scuderi, 2013; Craggs and Schofield, 2009) analyzed tourism demand at macro level in which the unit of analysis is aggregated data (total arrivals, nights spent at tourist accommodation establishments and total tourist receipts). Yet, research of the level, structure, and determinants of micro-level tourist expenditure is an essential issue in determining the economic impact of tourism for a destination (Soldić Frleta, 2017).

The analysis of individual tourist expenditure and of visitor spending behavior (consumer behavior) can play a crucial role in achieving a better understanding of the tourism economic benefits for a destination (Disegna and



Osti, 2016). The consumer's behavior is the study of how, where, when and why people purchase or do not purchase a service or a product. It combines elements from psychology, sociology, social anthropology and economics (Fotiadis, Vassiliadis and Piper, 2013; Kamenidou, Mamalis and Priporas, 2009; Kamenidou and Priporas, 2010). According to Narayan and Prasad (2008) and Blackwell, Miniard and Engel (2010) the consumer behavior is a multidisciplinary science which not only studies the decision-making process and the actual purchase of the product, but also the further activities of the consumer after the purchase of the product, such as use, evaluation and disposal of the product or service. The main goal of consumer behavior theory is to understand the decision-making process of individuals or group of people. It studies the characteristics of individual consumers, such as the demographic and behavioral variables and the influence of the consumer experiences (Fotiadis, Vassiliadis and Adronikidis, 2014).

## 2.2. THE CONCEPT OF EXPERIENCE

The experience is the direct result of the consumption of products and services. The search for experience is something that is inherent to all indicators between tourists and tourists service providers (Lončarić, Dlačić, & Kavran; 2018, 104). Experience co-creation can create added value for visitors and hosts and also helps to enhance the authenticity and distinctiveness of a destination. Customers have the opportunity to choose from a wide selection of products and services, but they may still be dissatisfied if there is a lack of products or services that could enrich them with valuable experience (Lončarić, Dlačić & Kavran. 2018, 105).

Experience marketing is based on the experience economy theory of Pine and Gilmore (1998), who claimed that experience is a distinct economic offering, alongside commodities, goods, and services (Lončarić, Dlačić, Kavran; 2018, 105). Pine and Gilmore (1998) focused on the emotional, physical, spiritual and intellectual impressions that are felt by individuals during an event (Tung & Ritchie, 2011, 1368) more research must be done to uncover the essence of what exactly makes certain experiences special, spectacular, and fittingly, memorable. This study sought to explore the essence of MEs based on research from the field of psychology, with a view to understanding the cognitive processes that impede individuals from paying attention to their experi-

ences, as well as the conceptual processes of memory formation and retention. In-depth interviews revealed four key dimensions of MEs: affect, expectations, consequentiality and recollection. Finally, we propose several avenues for future research on MEs. © 2011 Elsevier Ltd.

author:{"dropping-particle":"","family":"Tung","given":"Vincent Wing Sun","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Ritchie","given":"J. R. Brent","non-dropping-particle":"","parse-names":false,"suffix":""},container-title:"Annals of Tourism Research",id:"ITEM-1",issue:"4",issued:{"date-parts":[["2011"]]},page:"1367-1386",title:"Exploring the essence of memorable tourism experiences",type:"article-journal",volume:"38"},uris:["http://www.mendeley.com/documents/?uuid=1968a9f7-8680-4bb6-b9a1-7bc8e7ce50a"}],mendeley:{"formattedCitation":'(Tung and Ritchie, 2011. From the customer perspective, there are four realms of consumption experience (the 4Es): entertainment, educational, escapist and aesthetic (Pine II & Gilmore, 1998, 102) a gram-negative enteric bacterium, is capable of secreting a number of proteins extracellularly. The types of activity found in the growth media include proteases, chitinases, a nuclease, and a lipase. Genetic studies have been undertaken to investigate the mechanisms used for the extracellular secretion of these exoproteins by *S. marcescens*. Many independent mutations affecting the extracellular enzymes were isolated after chemical and transposon mutagenesis. Using indicator media, we have identified loci involved in the production or excretion of extracellular protease, nuclease, or chitinase by *S. marcescens*. None of the mutations represented general extracellular-excretion mutants; in no case was the production or excretion of multiple exoproteins affected. A variety of loci were identified, including regulatory mutations affecting nuclease and chitinase expression. A number of phenotypically different protease mutants arose. Some of them may represent different gene products required for the production and excretion of the major metalloprotease, a process more complex than that for the other *S. marcescens* exoproteins characterized to date.

author:{"dropping-particle":"","family":"Pine II","given":"B. Joseph","non-dropping-particle":"","parse-names":false,"suffix":""},{"dropping-particle":"","family":"Gilmore","given":"James","non-dropping-particle":"","parse-names":false,"suffix":""},container-title:"Harvard Business Review",id:"ITEM-1",issued:{"date-parts":[["1998"]]},number-of-pages:"1-105",title:"Experience Economy",type:"book"},uris:["http://www.mendeley.com/documents/?uuid=40e32909-c59b-4cbf-a2d7-9d370179f341"}],mendeley:{"formattedCitation":'(Pine II and Gilmore, 1998 which was tested by Oh et. al. 2007 in tourism, who also de-

veloped a scale based on the model focusing on the bed-and-breakfast industry (Oh et. al.; 2007, 126). Hosany and Witham (2010) further tested the scale on cruisers' experience (Hosany & Witham, 2010, 358), Lee and Jan (2015) tested the scale on recreation experience and environmental attitude on the environmentally responsible behavior on community-based tourists in Taiwan (Lee & Jan, 2015, 11) and on recreation experience on environmentally responsible behavior of Liuqiu Island in Taiwan (Lee, Jan, & Huang, 2015, 10). Experience level is significantly correlated with happiness and perceived quality of life (Schmitt; 2010, 98). Verbauskienė and Griesienė (2014) in their analysis of experience types suggest that the experience of each person is individual, subjective and constantly changes the parts of human life (Lončarić, Dlačić, Kavran, 2018, 105). It depends on the time factor, the phase of buying and the level of experience a customer is at (pre-experience, experience, post-experience). Clawson and Knetsch (1966) incorporated the influences and personal outcomes that begin before the trip and after the tourist returns from the destination (Tung & Ritchie, 2011, 1368).

Tourist experience is an individual's subjective evaluation and undergoing (i.e. affective, cognitive and behavioral) of events related to his/her tourist activities which begin before (i.e. planning and preparation), during (i.e., at the destination) and after the trip (i.e. recollection) (Tung & Ritchie, 2011, 1369). Many authors researched the tourist experience by exploring connections between concept, authenticity, and motivation (MacCannell; 1973 Feifer, 1985; Ryan; 2002). Two research paths have diverged from the original research source exploring tourism experiences. The first is social science approach (Cohen, 1979; Lee & Crompton, 1992, Urry, 1990, Zatori & Beardsley, 2017, 19). The second approach is marketing and management centered. This customer-oriented approach integrates supporting customer experience that is driven from the experience.

Experience marketing efforts are seen as one of the ways of motivating tourists to visit a specific destination, as tourists are ready to spend more on products and events that will provide them with a different memorable experience (Schmitt; 2010, 63). Collaboration in creating experience should be approached from the perspective of the individual tourist who is engaged with an event on an emotional, physical, spiritual or intellectual level (Pine & Gilmore, 1998; Lončarić, Dlačić, Kavran, 2018, 106). Tourist travel can enrich someone's everyday life as it involves new experience (Neal et. al., 2007) in visiting specific

destination and experiencing destination offers like culture, gastronomy, or natural landscapes (Lončarić, Dlačić, Kavran, 2018, 106).

### **2.3. EVENT EXPERIENCE**

There have been a number of conceptual studies of the tourist experience and memorable experience but the literature on event experience is understudied and under-conceptualized with focus on motivations, satisfaction and economic impacts (Gursoy, Kim & Uysal, 2004; Berridge, 2007, Morgan, 2008; De Geus et. al., 2015; Marković et al., 2018, 232). Planned event experience and the meanings attached to them are the core phenomenon of event studies (Getz; 2014) and it is recognized that special event experience should be unique, fluid, engaging and memorable, creating an ever-changing perceptual novelty (Schmitt, 1999; Marković et. al. 2018, 232). Beard (2014) highlights the important role of creative event programming in facilitating engaging and memorable attendee experience (Marković; et. al., 2018, 232). Events have been defined as a one-time or infrequently occurring event of limited duration that provides the consumer with leisure and social opportunity beyond everyday experience (Jogo & Shaw, 1998; Marković et. al., 2018, 232). Many definitions of “special events” exist, with a general academic consensus that they are unique, infrequent transient occasions, characterized by celebration, festivity, tradition, community spirit and the opportunity for special, social, cultural and leisure experiences (Getz, 1997; Goldblatt, 1997; Yeoman et. al., 2004, Shone and Parry, 2013; Marković; et. al. 2018, 233). Special events provide opportunities for a memorable experience.

### **2.4. MEMORABLE EXPERIENCE**

Memory is an important dimension of the tourist experience (Pine & Gilmore. 1999; Larsen, 2007; Zatori & Beardsley, 2017, 22). Memories can be defined as filtering mechanisms which link experience to other attitudinal outcomes of the tourist event (Oh et al., 2007, 123). In other research, perceived overall quality and customer satisfaction have been used as global evaluations immediately following a consumption experience or a destination visit (Oh et al., 2007, 123). The importance of a memorable tourist experience is underpinned by the theory of experience economy (Pine & Gilmore, 1999) which argues that memorable experience is what created value for a business and defines

its competitive advantage (Zatori & Beardsley, 2017, 18). Memorable tourism experience refers to the memory of visitors, their feelings and emotions experienced during a tourism activity (Lee, 2015; Coelho, 2018, 15).

Ali (2016) found that a creative-tourist experience may significantly impact an individual's memories, satisfaction and their intentions to revisit and recommend (Ali, Ryu & Hussain, 2016, 85) few empirical studies have focused on the constituents of creative tourists' experience and its consequences. This study aims to bridge this research gap by examining the effect of creative tourists' experience on their memories, satisfaction, and behavioral intentions. Data were collected from 296 creative tourists, selected through purposive sampling, at selected resort hotels in the Malaysian states of Terengganu and Kedah. The results show that creative-tourist experience is a second-order factor with five dimensions, namely escape and recognition, peace of mind, unique involvement, interactivity, and learning. The results of structural equation modeling show that creative tourists' experience is a good predictor of their memories, satisfaction, and behavioral intentions. The proposed model and findings can greatly help researchers and practitioners understand the concept of creative-tourist experience and its complex relationships with their memories, satisfaction, and behavioral intentions.

© 2015 Taylor & Francis.,"author": [{"dropping-particle": "", "family": "Ali", "given": "Faizan", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], {"dropping-particle": "", "family": "Ryu", "given": "Kisang", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], {"dropping-particle": "", "family": "Hussain", "given": "Kashif", "non-dropping-particle": "", "parse-names": false, "suffix": ""}], "container-title": "Journal of Travel & Tourism Marketing", "id": "ITEM-1", "issue": "1", "issued": {"date-parts": [{"2016}], "page": "85-100", "title": "Influence of Experiences on Memories, Satisfaction and Behavioral Intentions: A Study of Creative Tourism", "type": "article-journal", "volume": "33"}, "uris": [{"http://www.mendeley.com/documents/?uuid=bb92a0c7-7097-4045-beae-f1ba17aa5e77"}], "mendeley": {"formattedCitation": "(Ali, Ryu and Hussain, 2016 which is in line with other studies like visitor experience of heritage tourism (Chen & Chen, 2010, 29) perceived value, satisfaction, and behavioral intentions. A total of 447 respondents completed a survey conducted at four main heritage sites in Tainan, Taiwan. Using structural equation modeling (SEM, creative experience of visitors in pottery-making activities (Hung, Lee, & Huang, 2014, 38) and the influence of core-consumption experience on the nostalgia intensity, word-of-mouth activity and revisit intentions in Greek summer campers (Triantafylli-

dou and Siomkos, 2013, 197). Creating a memorable experience is the essence and *raison d'être* of the hospitality industry (Pizam, 2010, 343). More research must be done to uncover the specific elements of what makes certain experience special, spectacular, and memorable. The central role of tourism planners is to facilitate the development of an environment that enhances the likelihood that tourists can create their own memorable tourism experience (Tung & Ritchie, 2011, 1369). Destination managers cannot directly deliver a memorable experience to tourists since individuals recall experience subjectively and uniquely even though tourism planners may have, provided objectively equivalent services, events, and activities. It is crucial to understand the underlying essence of memorable experience so that tourism planners can enhance the probability of delivering the tourists those experience that is special, cherished and truly memorable (Tung & Ritchie, 2011, 1369).

Many researches investigate memorable experiences (Kozak, 2001; Lehto et al. 2003; O'Leary & Morrison, 2004), memorable tourist experience (Tung & Ritchie, 2011; Kim et al., 2012; Kim et al. 2012; Kim & Ritchie, 2013; Aroeira, Dantas & Gosling, 2016; Knobloch, Robertson & Aitken, 2016; Kim & Jang, 2016; Tsai, 2016) memorable experience with experience outcomes such as loyalty, word-of-mouth, or returning visitors, or subjective well-being (Oh, Fiore, & Jeoung, 2007) potentially, tourism research across various destinations. Focusing on the bed-and-breakfast industry, the authors conducted preliminary qualitative studies and a subsequent field survey to collect data from bed-and-breakfast owners and guests to develop and test a proposed model of experience economy concepts. The proposed measurement model includes four realms of experience and four theoretically justifiable nomological consequences. The data supported the dimensional structure of the four realms of experience, providing empirical evidence for both face and nomological validities of these realms and a starting point for measuring emerging experience economy concepts and practices within lodging and tourism settings. The authors discuss ways the measurement scale can be further refined for adoption by destination marketers and directions for future research.



parts": [{"2007"}], "page": "119-132", "title": "Measuring experience economy concepts: Tourism applications", "type": "article-journal", "volume": "46", "uris": [{"http://www.mendeley.com/documents/?uuid=4d0e25b3-7ce8-4c68-abce-6de668ecf24a"}], "mendeley": {"formattedCitation": "(Oh, Fiore and Jeoung, 2007; Kim et al., 2010; J.-H. Kim, 2010) hedonic activity, and local culture positively affected the autobiographical memory of recollection and vividness of past experiences. Specifically, the experiential factors of involvement and refreshing experiences are found to increase an individual's ability to recollect past travel experiences and retrieve the experiences vividly. Alternatively, the experience of local culture enhances the recollection of past travel experiences, albeit not as vividly. The findings of the present study suggest that marketing efforts used at the anticipation stage of travel experiences are necessary to provide memorable travel experiences. The theoretical and managerial implications of the results obtained are discussed in detail.", "author": [{"dropping-particle": "", "family": "Kim", "given": "Jong-Hyeong", "non-dropping-particle": ""}, {"parse-names": false, "suffix": ""}], "container-title": "Journal of Travel & Tourism Marketing", "id": "ITEM-1", "issue": "8", "issued": [{"date-parts": [{"2010"}], "page": "780-796", "title": "Determining the Factors Affecting the Memorable Nature of Travel Experiences", "type": "article-journal", "volume": "27"}, {"uris": [{"http://www.mendeley.com/documents/?uuid=216da175-fb6a-4a58-a324-a6c5c369cdc7"}], "mendeley": {"formattedCitation": "(J.-H. Kim, 2010; Uysal, Perdue & Sirgy, 2012; Kim, 2014; Kim & Ritchie, 2014; Manthiou et al. 2016; Mathis et al. 2016; Zatori & Beardsley, 2017, 18). Other factors such as eWOM, mindfulness level, and hedonic happiness were investigated on tourist experience in on-site conditions (Zeng & Gerritsen, 2014; Zatori & Beardsley, 2017, 18). A positive memorable tourism experience has been defined as a tourism experience positively remembered as recalled after the event has occurred. Many authors researched feelings such as sociability, pleasure, happiness, irritation, guilt, sadness and worry (Wirtz et. al. 2003; Larsen & Jenssen, 2004; Kim et al., 2010, 13). The personal memory of purchase experience is a valuable information source for future decision –making (Hoch & Deighton, 1989; Kim, 2014, 36).

Kim et. al. 2012 and Kim et. al. 2012 developed the memorable tourism experiences scale after cross-referencing the literature of memory with that of tourism experience (Kim & Ritchie, 2014, 330) The study of Kim Jong-Hyeong (2014) suggested that memorable tourist experiences are composed of the

following seven dimensions: hedonism, refreshment, social interaction, and local culture, meaningfulness, knowledge, involvement and novelty (Kim, 2014, 36). When consuming tourism products (experiences), unlike other activities and products, people primarily seek enjoyment (**hedonism**/pleasure) (Kim, 2014, 36). In empirical tourism studies, researchers found that hedonic experiences allow tourists to construct memorable experience (Dunman & Mattila, 2005; Tung & Ritchie, 2011; Kim, 2014, 36). **Refreshment** and recuperation were among the major motivations of tourists who attend special events and festival (Leblanc, 2003), feeling of being refreshed positively influences people's memories of travel (Morgan and Xu, 2009, 216). **Novelty-seeking** has been consistently reported as another important component of the subjective tourism experience and a popular motivation for an individual to travel (Dunman & Mattila, 2005; Farber & Hall, 2007; Kim, 2014, 36). Chandralal & Valenzuela (2013) confirmed that the perceived novelty, experiencing something new (e.g. culture, food, accommodation) and encountering different types of tours is a component of memorable holiday experience (Kim, 2014, 36). **Involvement** in a customer experience reinforces an individual's effective feelings when evaluating experience and stimulates cognitive analysis at the deep level (Block & Richins, 1983; Blodgett & Granbois, 1992; Craik & Lockhart, 1972; Swinyard, 1993; Kim, 2014, 37). Pine & Gilmore (1999) indicate that when individuals find themselves immersed in an activity, the individuals are more likely to have a memorable experience (Kim, 2014, 37). Numerous respondents indicated that the tourism experience from which the visitors gained new knowledge concerning the destinations visited were among the most memorable (Kim, 2014, 37). Customers search for **meaningful** experiences within their travel and tourism activities (Kim, 2014, 37). Meaningful tourism experiences were found to last longer in human memory (Tung & Ritchie, 2011, 37). Tourist can unexpectedly realize negative emotions or feelings during their tourism experiences if these emotions are sufficiently intense, the emotions can result in **adverse feelings** (e.g. anger and frustration) which leads to negative memorable experience (Kim, 2014, 37).

### 3. RESEARCH RESULTS

The objective of this study is to identify the constituents and factors which contribute to the memorability of visitors' experience on Karlovac Advent Fair.



The research instrument was divided into six parts, comprising five main research constructs (overall atmosphere, novelty, the spirit of Christmas experience, local culture and visitors' expenditure intent) and respondents' demographic characteristic. All measures were derived from previous literature and modified according to the context of the present research. Measures for overall atmosphere, novelty, spirit of Christmas experience and local culture were taken from the literature on memorable tourism experience (MTE) scale (Kim, Ritchie & McCormick, 2012, 18) and measure for expenditure (tourist's level of expenditure dedicated to the lived experience) were taken from the literature on tourists level of expenditure dedicated to the experience (Buonincontri et al., 2017, 269) a survey was designed, and data was collected from 385 tourists visiting Naples, Italy. A path analysis revealed that the interactions among tourists and tourism service providers and the active participation of tourists are antecedents of experience co-creation in the tourism industry. Experience co-creation positively affects the satisfaction of tourists, their level of expenditures, and their happiness. Study results also revealed that the attitude of tourists of sharing their experiences with others does not influence experience co-creation. As one of the first studies in this area in the field of tourism, this study contributes to the body of knowledge by proposing and empirically testing a model that shows three antecedents and three consequences of experience co-creation in tourism.

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The sample consisted of 350 respondents classified into three target groups, mostly domestic visitors (57.71%), trippers (32.3%) and tourists (10%). There were more females (60.29%) than males (39.71%), approximately mature ages.

Tourists stayed mostly in hostels (37.14%), lodgings (39.71%) and hotels (11.43%).

**Table 1.** General characteristics of Karlovac Advent Fair visitors in the year 2018

GENERAL CHARACTERISTIC		PERCENTAGE
GENDER	FEMALE	60.29
	MALE	39.71
AGE	16 - 25	20.86
	26 - 35	13.71
	36 - 45	18.89
	46 - 55	20.29
	56 - 65	22.86
	66 and more	2.86
VISITORS	DOMESTICS	57.71
	TRIPPERS	32.29
	TOURISTS	10.00
<b>TOURIST</b>		
TOURISTS ACCOMMODATION	Hotel	11.43
	Hostel	37.14
	Lodging	31.43
	Other (friends and family)	20.00

**Source:** Authors' on the basis of research results, N=350

The coefficient of simple linear correlation, in particular, the Pearson coefficient, was used while testing the hypothesis of this paper. Pearson's correlation coefficient assumes a range of minus one to plus one. The authors (Dawson & Trapp, 2004) find that the values of correlation coefficients from 0 to 0.25 or 0 to -0.25 indicate that there is no correlation, while the values from 0.25 to 0.50 or from -0.25 to -0.50 indicate a weak correlation among variables. Correlation coefficient values from 0.50 to 0.75 or from -0.50 to -0.75 indicate a medium correlation and values from 0.75 to 1 or from -0.75 to -1 point to very good to the excellent correlation between variables.

The tables below show the values of the Pearson coefficient of correlation between the independent variable of this research, which states, "visitor experience" and the dependent variable "visitor expenditure intent".

**Table 2:** Correlation of aggregate elements of visitor's expenditure intent and aggregate elements of visitors' experience

ALL VISITORS		EX Visitor Experience	VEI Visitor Expenditure Intent
<b>EX</b> Visitor experience	Pearson correlation Sig. (1-side) N	1	<b>,508(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,508(**)</b> ,000	1

\*\* Correlation is significant at the level 0,01 (1-side)

Source: Authors' on the basis of research results (N=350)

The Pearson correlation coefficient value is 0.508 and indicates a positive medium correlation between variables "visitor experience intent" and "visitor expenditure".

**Table 3:** Correlation of aggregate elements of visitors expenditure intent and overall atmosphere experience

ALL VISITORS		OA Overall Atmosphere experience	VEI Visitor Expenditure Intent
<b>OA</b> Overall Atmosphere experience	Pearson correlation Sig. (1-side) N	1	<b>,439(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,439(**)</b> ,000	1
DOMESTIC		OA Overall Atmosphere experience	VEI Visitor Expenditure Intent
<b>OA</b> Overall Atmosphere experience	Pearson correlation Sig. (1-side) N	1	<b>,489(**)</b> ,000

<b>VE</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,489(**)</b> ,000	1
TRIPPER		<b>OA</b> Overall Atmosphere experience	<b>VEI</b> Visitor Expenditure Intent
<b>OA</b> Overall Atmosphere experience	Pearson correlation Sig. (1-side) N	1	<b>,348(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,348(**)</b> ,000	1
TOURISTS		<b>OA</b> Overall Atmosphere experience	<b>VEI</b> Visitor Expenditure Intent
<b>OA</b> Overall Atmosphere experience	Pearson correlation Sig. (1-side) N	1	<b>,515(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,515(**)</b> ,000	1

\*\* Correlation is significant at the level 0,01 (1-side)

Source: Authors' on the basis of research results (N=350)

Table 3 shows the result of the correlation of the aggregate elements of the dependent variable “visitor expenditure intent” an independent variable “overall atmosphere”. The Pearson correlation coefficient value, in this case, is 0.439 and indicates a positive weak correlation between “overall atmosphere” and “visitor expenditure intent”. The following stands out: the Pearson correlation coefficient value is the highest in the case of tourists (0.515) and indicates a positive medium correlation between the variables.

**Table 4:** Correlation of aggregate elements of visitors expenditure intent and novelty

ALL VISITORS		<b>N</b> novelty	<b>VEI</b> Visitor Expenditure Intent
<b>N</b> novelty	Pearson correlation Sig. (1-side) N	1	<b>,384(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,384(**)</b> ,000	1
DOMESTIC		<b>N</b> novelty	<b>VEI</b> Visitor Expenditure Intent
<b>N</b> novelty	Pearson correlation Sig. (1-side) N	1	<b>,430(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,430(**)</b> ,000	1
TRIPPER		<b>N</b> novelty	<b>VEI</b> Visitor Expenditure Intent
<b>N</b> novelty	Pearson correlation Sig. (1-side) N	1	<b>,224(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,224(**)</b> ,000	1
TOURISTS		<b>N</b> novelty	<b>VEI</b> Visitor Expenditure Intent
<b>N</b> novelty	Pearson correlation Sig. (1-side) N	1	<b>,656(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,656(**)</b> ,000	1

\*\* Correlation is significant at the level 0,01 (1-side)

**Source:** Authors' on the basis of research results (N=350)

Table 4 shows the result of the correlation of the aggregate elements of the dependent variable “visitor expenditure intent” and the independent variable “novelty”. The Pearson correlation coefficient value, in this case, is 0.384 and indicates a positive weak correlation between “novelty” and “visitor expenditure intent”. The following stands out: the Pearson correlation coefficient value is the highest in the case of tourists (0.656) and indicates a positive medium correlation between the variables.

**Table 5:** Correlation of aggregate elements of visitors expenditure intent and the spirit of Christmas experience

ALL VISITORS		<b>SOC</b> The spirit of Christmas experience	<b>VEI</b> Visitor Expenditure Intent
<b>SOC</b> The spirit of Christmas experience	Pearson correlation Sig. (1-side) N	1	<b>,449(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,449(**)</b> ,000	1
DOMESTIC		<b>SOC</b> The spirit of Christmas experience	<b>VEI</b> Visitor Expenditure Intent
<b>SOC</b> The spirit of Christmas experience	Pearson correlation Sig. (1-side) N	1	<b>,490(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,490(**)</b> ,000	1
TRIPPER		<b>SOC</b> The spirit of Christmas experience	<b>VEI</b> Visitor Expenditure Intent
<b>SOC</b> The spirit of Christmas experience	Pearson correlation Sig. (1-side) N	1	<b>,464(**)</b> ,000

<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,464(**)</b> ,000	1
<b>TOURISTS</b>		<b>SOC</b> The spirit of Christmas experience	<b>VEI</b> Visitor Expenditure Intent
<b>SOC</b> The spirit of Christmas experience	Pearson correlation Sig. (1-side) N	1	<b>,176(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,176(**)</b> ,000	1

\*\* Correlation is significant at the level 0,01 (1-side)

**Source:** Authors' on the basis of research results (N=350)

Table 5 shows the result of the correlation of the aggregate elements of the dependent variable “visitor expenditure intent” and the independent variable “the spirit of Christmas experience”. The Pearson correlation coefficient value, in this case, is 0.449 and indicates a positive weak correlation between “the spirit of Christmas experience” and “visitor expenditure intent”.

The Pearson correlation coefficient value, in the case of domestic visitors, is the highest (0.490) and indicates a positive weak correlation between variables.

**Table 6:** Correlation of aggregate elements of visitors' expenditure intent and local culture

<b>ALL VISITORS</b>		<b>LC</b> Local Culture	<b>VEI</b> Visitor Expenditure Intent
<b>LC</b> Local Culture	Pearson correlation Sig. (1-side) N	1	<b>,364(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,364(**)</b> ,000	1

DOMESTIC		<b>LC</b> Local Culture	<b>VEI</b> Visitor Expenditure Intent
<b>LC</b> Local Culture	Pearson correlation Sig. (1-side) N	1	<b>,321(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,321(**)</b> ,000	1
TRIPPER		<b>LC</b> Local Culture	<b>VEI</b> Visitor Expenditure Intent
<b>LC</b> Local Culture	Pearson correlation Sig. (1-side) N	1	<b>,463(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,463(**)</b> ,000	1
TOURISTS		<b>LC</b> Local Culture	<b>VEI</b> Visitor Expenditure Intent
<b>LC</b> Local Culture	Pearson correlation Sig. (1-side) N	1	<b>,434(**)</b> ,000
<b>VEI</b> Visitor Expenditure Intent	Pearson correlation Sig. (1-side) N	<b>,434(**)</b> ,000	1

\*\* Correlation is significant at the level 0,01 (1-side)

Source: Authors' on the basis of research results (N=350)

The table 6 shows the result of the correlation of the aggregate elements of the dependent variable “visitor expenditure intent” and the independent variable “local culture”. The Pearson correlation coefficient value, in this case, is 0.364 and indicates a positive weak correlation between “local culture” and “visitor expenditure intent”.



The following stands out: the Pearson correlation coefficient value is the highest in the case of trippers (0.463) and indicates a positive weak correlation between the variables.

**Table 7:** Linear regression analysis of visitor's expenditure intent and elements of visitors' experience

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0,876164	0,262675126	3,335544	0,000943	0,359534	1,392795	0,359534	1,392795
Experience	0,700931	0,063768054	10,99188	2,52E-24	0,575511	0,82635	0,575511	0,82635

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1,330853	0,26597367	5,003704	8,94463E-07	0,807735	1,853972	0,807735	1,853972
overall atmosphere experience	0,561835	0,061571938	9,124855	5,92369E-18	0,440735	0,682935	0,440735	0,682935

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	2,321548	0,187112684	12,40722	1,60785E-29	1,953534	2,689562	1,953534	2,689562
novelty	0,376224	0,048558011	7,747939	1,03357E-13	0,28072	0,471729	0,28072	0,471729

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1,846188	0,20552385	8,982842	1,69781E-17	1,441963	2,250414	1,441963	2,250414
The spirit of Christmas experience	0,465645	0,049671851	9,374421	9,09441E-19	0,36795	0,56334	0,36795	0,56334

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1,857111	0,260015152	7,142318	5,40135E-12	1,345712	2,36851	1,345712	2,36851
local culture	0,437045	0,059963467	7,288514	2,12155E-12	0,319108	0,554981	0,319108	0,554981

**Source:** Authors' on the basis of research results (N=350)

The linear regression analysis of the independent variable "visitor experience" and dependent variable "visitor expenditure intent" was created. All variables have a small "p" value and are statistically significant. The coefficient of the independent variable is positive, and it has a positive impact on "visitor expenditure intent". The highest coefficient is for "overall atmosphere experience" (0,561835) and the lowest for "novelty" (0,376224).

**Table 8:** Elements of visitors' experience (mean, mode)

ITEM	VISITORS		
	Domestic visitors	Trippers	Tourists
<b>OVERALL ATMOSPHERE</b>			
MEAN	4,37	4,04	4,11
MODE	5,00	4,00	4,00
<b>NOVELTY</b>			
MEAN	3,84	3,48	3,57
MODE	5,00	4,00	4,00
<b>THE SPIRIT OF CHRISTMAS</b>			
MEAN	4,09	3,89	3,89
MODE	5,00	4,00	3,00
<b>LOCAL CULTURE</b>			
MEAN	4,31	4,13	4,20
MODE	5,00	5,00	4,00

**Source:** Authors' on the basis of research results (N=350)

Table 8 shows the result of the most frequent response of visitors (local visitors, trippers, tourists) regarding the overall atmosphere, novelty, the spirit of Christmas, the local culture. The results of the survey for the question related to the overall atmosphere show an average rating of 4.37 by domestic visitors, 4.04 by trippers, 4.11 by tourists which implies an agreement with the statement of the survey questionnaire: "I am delighted with the overall atmosphere of the Karlovac Advent Fair because of the unique experience that delivers". Also, the results of the survey for the question related to the novelty show an average rating of 3.84 by local visitors, 3.48 by trippers, 3.57 by tourists which implies agreement with the statement of the survey questionnaire: "I experienced something new and more different than usual". The results of the survey for the question related to the spirit of Christmas show an average rating of 4.09 by domestic visitors, 3.89 by trippers, 3.89 by tourists which implies agreement with the statement of the survey questionnaire: "I experienced the spirit of Christmas in the true sense of warmth and beauty". The results of the survey for the question related to the local culture show an average rating of 4.31 by domestic visitors, 4.13 by trippers, 4.20 by tourists which implies agreement with the statement of the survey questionnaire: "The local residents are friendly, autochthonous and contribute to a greater intensity of experience".

Since the initial hypotheses of conducted research were: MH - There is a relatedness between the experience and expenditure intent of the Karlovac Advent Fair visitors, H1 – There is a correlation between the overall atmosphere of the Karlovac Advent Fair and visitor expenditure intent, H2 – There is a correlation between novelty of the Karlovac Advent Fair experience and visitor expenditure intent, H3 – There is a correlation between the experience based on the spirit of Christmas in terms of warmth and aesthetics of the Karlovac Advent Fair and visitor expenditure intent, H4 – There is a correlation between experience based on the local culture and visitor expenditure intent, it can be concluded that all aforementioned hypotheses have been confirmed.

#### 4. CONCLUSION

Tourists are the target group that is more willing to spend more money in order to get a memorable experience that completely fulfills them. The correlation of aggregate elements of visitor expenditure intent and overall atmosphere experience is the strongest for tourists. The Pearson correlation coefficient value is the highest in the case of novelty and visitor expenditure. It may be concluded that the motivation of tourists for visiting Karlovac Advent Fair is specific and more oriented to the memorable experience that is the case with other target groups. The linear regression analysis has confirmed that the independent variable “the overall atmosphere” of the Karlovac Advent Fair is the most important for the dependent variable “visitor expenditure intent”. Considering the independent variable i.e. one that the most frequently describe the influence on the dependent variable, in this case, it is the independent variable „overall atmosphere“ of the Advent in Karlovac.

It is suggested a continuous adaptation of the research instrument (survey questionnaire) to the future focus of the researcher's interest and the needs of the target groups (domestic visitors, trippers, tourists). It is recommended to use the results of research conducted to all actors in the formation of the same or similar manifestations in order to improve the quality of services. Improving the quality of services tailored to target groups will have a positive impact on target groups expenditure. Future research could investigate the role of the demographic characteristic on visitors' motives to visit Karlovac Advent Fair and event experience. Also, future research could include comparative analysis with other cities in Croatia.

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# MARKETING ORIENTATION OF THE STRATEGIC BUSINESS UNIT: THE MINISTRY OF SCIENCE AND EDUCATION, SECTOR FOR EU PROGRAMS AND PROJECTS

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## **Abstract**

*Sector for EU programs and projects (SEPP) is a strategic business unit within the Ministry of Science and Education in the Republic of Croatia. It is also a part of the system for management and control of EU funds for Research, Development, and Innovations. Marketing orientation of the SEPP as a non-profit organization is analysed through processes of planning, implementation, monitoring, and evaluation. Grant schemes and relevant Calls for proposals are products that are offered to scientific organizations, universities, research institutes, and companies at the market. This paper analyses the systemic marketing orientation of the SEPP and activities that are necessary for a better understanding of market needs for the development of new products and for achieving policy goals. The results show that it is important for the SEPP as a non-profit organization to undertake marketing activities in a strategic and*

*systemic way: to analyze the market and the market needs, and to develop marketing information system, in order to improve the system for management and control of EU funds in the SEPP, its products and services and generally to accomplish better long-term policy results.*

**Keywords:** *marketing orientation, non-profit marketing, science, research, innovations*

JEL Classification: M31, M38

## 1. INTRODUCTION AND LITERATURE REVIEW

Marketing recognizes and fulfills customers' needs through the process of exchange and transaction. The exchange refers to the process of obtaining the desired product from someone by offering them something in return. Transaction means the exchange of values between two or more subjects (Kotler and Keller, 2008, p. 6-7). The fundamental goal of marketing could be defined as an effective and profitable satisfying of customers' needs.

Marketing has become a framework for understanding the overall human activity and has gone through several phases, from the production phase, the sells phase and the demand phase to the phase of justifying what has been doing (Meler, 2003, p.48). In that context, Meler (2003, p.48) stresses that marketing will be more and more focused on the quality of life and other social goals and less focused on sales. In other words, it has deepened its function in relation to wider social relations and focused more on the qualitative dimension of satisfying the needs of the targeted groups. Marketing can be profit (conventional) and non-profit. However, both are primarily focused on societies (their targeted groups within society) where operate (Meler, 2003, p.49). It is important to note that the division of marketing into profit and non-profit is essentially declarative because non-profit marketing uses techniques, tools, and instruments of generic marketing (Meler, 2003, p.49).

Furthermore, non-profit marketing can be divided into two categories: marketing of non-profit organizations and social marketing. While the marketing of non-profit organizations is focused on the activities of these organizations, social marketing is a tool for a change of social behavior, primarily for the benefit of the target group(s) or society as a whole (Meler, 2003, p.53). Non-profit marketing is applied in various institutions, such as state bodies, local and re-



gional self-government bodies, and civil society organizations, while social marketing is limited to social change initiatives (Meler, 2003, p.53). "Marketing of non-profit organizations is a set of activities designed and directed to planning, implementing, distributing and communicating the activities of organizations that have a certain public interest, but their basic purpose of existence is not profit-making" (Pavičić 2003, p.31). That is the basic difference between conventional and non-profit marketing. Both strive to meet the needs within the exchange process, but while one seeks to achieve the profit, the other's focus is on social benefit or change (Meler 2003, p.62). Moreover, the exchange process for non-profit marketing takes place at the so-called "quasi-market" where the relationship of supply and demand occurs, not always and exclusively of material goods, but very often of intangible ones or their specific combinations (Meler, 2006: 90).

While Meler (2006,p.64) states that the basic forms of non-profit organizations in the Republic of Croatia are associations and foundations, Pavičić (2003,p.24) defers humanitarian, religious organizations, scientific research organizations, educational and nurturing organizations, health and social protection, culture and art, sports and recreation, political organizations and trade unions, associations and ideas movements and other related organizations such as: *state and state institutions*. However, the key to understanding the non-profit organizations is in understanding their purpose, which is not in gaining the profit. If a non-profit organization generates income, it has to be re-invested in activities of the non-profit purpose/mission.

There are many scientific and expert discussions that point out the benefits resulting from the systematic marketing orientation of organizations. Thus, the implementation of the marketing concept in an organization is known as market(ing) orientation (Modi and Mishra, 2010, p.2). Theoretical contributions (Kholi and Jaworski, 1990; Slater and Narver, 1990) and empirical studies point out a positive relationship between market orientation and business performance (Jaworski and Kohli, 1993; Pelha and Wilson, 1996; Slater and Narver, 1990). Modi and Mishra (2010, p.4-5) also show that in various empirical studies on marketing orientation including a large variety of non-profit organizations in different sectors (universities, public services organizations, cultural organizations, and hospitals) there is a positive link between marketing orientation of non-profit organizations and their performance.

Therefore, the marketing orientation of non-profit organizations is an organizational culture that most efficiently shapes the behavior that is needed to create superior value for customers. Benefits of using marketing tools in non-profit organizations depend on the organization and its specifics. In general these organizations have better possibilities (methods) of research the needs of the target group and ways of satisfying them, better options (methods) of securing financial, human and other resources for action, better opportunities (methods) in planning, organizing, conducting and controlling the overall activities of the organization, better understandings among employees/volunteers/departments inside the organization, and the overall innovation activities of the organization (Pavičić, 2001, p.103). In short, non-profit organizations that are using marketing systematically (have marketing orientation) are achieving better results than those that are using marketing activities only rarely/sporadically or do not use them at all (Pavičić, 2001, p.103).

## 2. CONCEPTUALIZATION

Most of the empirical studies used versions of MARKOR scale developed by Kohli, Jaworski, and Kumar to measure non-profit market orientation, while on the other hand most profit market orientation studies used Narver and Slater measure (Modi and Mishra 2010, p.7). For part of the analysis in this paper, we use three components of the concept developed by Modi and Mishra (2010, p. 9-12). These are beneficiary and donor/stakeholder orientation, peer orientation (competition orientation) and inter-functional coordination (marketing organization). For the purpose of this paper in concept, we use stakeholders' orientation rather than donor because of the nature of the non-profit organization (part of the governmental system).

The marketing orientation will be put in correlation with the activities and the achieved results of the SPPEU. Activities will be analyzed through the current *Manual of proceeding* of the employees within the SPPEU and its importance as an official document defining procedures of business processes. Achieving results in the case of the SPPEU and other organizations within the system of management and control of EU funds is measurable with the rates of absorption of funds and indicators stated in Operational programs. Thus, the main focus of this paper is the connection of marketing orientation with results of usage of EU funds.

In that context official data on absorption developed by the European Commission as well as internal analysis of the Croatian management system for the EU, funds will be used. Therefore, this paper puts in correlation the level of marketing orientation of the non-profit organization (SBU – SPPEU) and its performance results. As the marketing theory shows, at the open market there is a very strong link between the usage of marketing tools and achievement of results, primarily in terms of profit, hereby of the usage of available funds. The lack of marketing orientation has a negative influence on achieving results. We will analyze the current SPPEU results, defined in the percentage of contracting and payment, and the activities that employees of the SPPEU undertake, aiming for the most efficient usage of the EU funds available and for the achievement of the set results.

### 3. THE SPPEU AS A NON-PROFIT ORGANISATION

Sector for EU programs and projects (SPPEU) is a strategic business unit (SBU) within the Ministry of Science and Education (MSE) in the Republic of Croatia. It is also a part of the System for management and control of EU funds.

SPPEU has been chosen as the subject of this paper's analysis for several reasons: the MSE is a large body that operates in a variety of fields: education, science, technology development, and innovation. This includes various beneficiaries and customers: from kindergartens and pre-school organizations/institutions, primary and secondary education institutions, to higher education institutions, public and private scientific institutes, scientific technology parks, centers of research excellence and private companies that have research and development (R&D) potential/capacity. Furthermore, the SPPEU is a strategic unit in charge of the relevant activities under the Management and Control System of EU Funds, the Specific Objective 1 of the Competitiveness and Cohesion Operational Program 2014 - 2020 (OPCC). Although the scope of the analysis is narrowed to one particular organization, it still remains rather complex. The analysis becomes more interesting and complex given the diversity of goals, organizational tasks, and constellations of relationships between different stakeholders.

The current form of the SPPEU was set in 2017 (by the Regulation of the Government of the Republic of Croatia at its session held on 24 August 2017). Originally, it was established in 2012 as the Sector for International Cooperation and EU Programs and Projects. Before that, the activities (to a lesser extent)

were carried out by the EU Programs and Projects Department (established in 2009). The organization rapidly grew within a decade, adding new functions and responsibilities, while taking charge of substantially higher amounts of EU funds available to the Republic of Croatia from the operational programs for every new financial period.

The scope of work of the SPPEU includes planning, development, and coordination of the relevant strategic documents: the Partnership Agreement, Operational Programs, National Strategies, Smart Specialization Strategies, calls for proposals, evaluation, and selection process of project applications, management of financial allocation, monitoring of the implementation of measures and instruments and their evaluation, risk management, information and visibility measures, the information and publicity activities. In the current financial period (2014 - 2020), the SPPEU is in charge of more than EUR 385 million (85% of which is the EU contribution and 15% is national contribution).

The SPPEU as an organizational unit (sector) is divided into two services, and each service is divided into two departments. Programming and Monitoring Services has two departments: the Programming Department and the Monitoring Department. The Contracting and Financing Services has another two: Contracting Department and Financing Department. There are currently 38 job posts in the sector.

*The Manual of Proceedings* (Manual) defines all business processes of the SPPEU. In respect to marketing activities, it includes visibility activities that are part of the promotion and therefore part of the marketing mix. Other processes that could be related to marketing activities are defined by the Manual (Chapter J.a.- Preparation of granting procedure) in three segments:

- stakeholders can be invited to work in a working group for the development of selection criteria (6.2.1)
- stakeholders can be invited to contribute to the development of Call documentation (point 6.5.1.)
- public consultation - all public including target groups are able to contribute to the development of Call documentation (6.5.4.).

In this respect, stakeholders and target groups are to some extent included in the definition and improvement of products.

However, when talking about visibility activities, they are defined by Regulation (EU) No. 1303/2013, Article 115, as obligations for the EU Member

States (MSs) relating to the activities of developing communication strategies, providing a single Internet site with all relevant information on EU funds, providing timely information, informing and advertising on results and calls/tenders. These activities have been elaborated in more detail in the Communication Strategy of the European Structural and Investment Funds, which was issued by the MRDEUF in July 2015 and was updated in June 2017. The Communication Strategy of the Operational Program Competitiveness and Cohesion 2014 – 2020 has defined an organizational framework, a communication plan and an annual communication plan with detailed activities and tasks.

The subject activities are defined as “information and visibility” and are transposed into parts of the rules and procedures for managing bodies within the EU funds system. They are coordinated by the Managing Body (the MRDEUF), which has the organizational unit that deals exclusively with these tasks. Likewise, the beneficiaries of the EU funds (products/services) are obliged to implement information and visibility measures when implementing their projects.

In this context, according to the Manual (Chapter M. - Information and Visibility), the SPPEU contributes to the development of Communication strategy (of the whole System), Communication plans, and has appointed a visibility officer for these activities. The Manual also defines the organization of info days, press conferences, publicity and visibility materials, reporting procedures, management of news related to Operational program, informing and graphical and other standards within visibility materials. Activities related to the annual communication plan are also defined by the Manual.

SPPEU participates in all these activities and contributes to the strategy and stated plans. Visibility materials have been developed and disbursed on several occasions. Also, visibility officer regularly communicates with beneficiaries regarding visibility standards and graphics.

The complexity of the SPPEU activities and therefore marketing activities lies in its dual role of both national and EU cohesion policy requirements. While the national policy in the field of science and technology is more focused on the science system itself, financing of research projects, the EU (cohesion) policy requirements are quite different, namely economic growth and increase of employment. In other words, on one hand we focus on pure (primary) science (with the exception of written words in some strategies and rare initiatives of officials with the desire to support innovations), while on the other hand it

is about orientation towards innovations and the aspiration to fund applied science that is oriented more towards the needs of economy. Furthermore, with regard to the target groups (which will be analyzed furthermore), while “national policy” is addressed to all scientists, the EU is mainly addressed to scientists and institutions working in areas defined by the Smart Specialization Strategy.

## 4. MARKETING PROGRAMME

The marketing program of non-profit organizations consists of the elements of the marketing mix, which is similar to profit organizations while respecting the particular features and particularities of individual elements as well as their mutual structure. (Meler, 2003, p.212).

### 4.1. PRODUCT/SERVICE

Kotler and his associates define the product as all that can be offered in the market with the purpose of attracting attention, encouraging purchase, usage, consumption and meeting the wishes or needs (Kotler et al, 2006, p. 537). Services are products that consist of activities, benefits or satisfaction that are offered for sale. However, from a consumer perspective in the context of non-profit marketing, the product is a set of material and non-material elements that, in their joint operation, meet the needs of the customer (Meler, 2003, p.215).

The aforementioned concept that takes into account the material and immaterial elements of a product is called the *total product* (Meler, 2003, p.215). Thus, the product does not have to be tangible, but it can be a service or a combination. For the purpose of this paper, the term product will be understood as the total product. A product should in principle meet the needs of a particular customer or group. Products that meet the same need form the product line, while the product program (or mix) represents the totality of product lines or individual products within them. The number of products within the line makes the depth of the product line and the number of lines within the program makes the product width. Optimization of the product program (mix) is a continuous process of providing the best choice for customers in order to meet their needs (Meler, 2003, p.217 - 218).

A product's life cycle includes life stages similar to stages of human life. There are stages of creating ideas, product development, market introduction, product growth, product maturity, aging and dehumidification (Meler, 2003, p.215).

It is important to note that any serious non-profit organization must continuously improve its products as part of its policy if they aim to be more successful than their competitors, to make/keep users loyal and to eventually win the competition.

The SPPEU products (or product program) are non-refundable funds that are provided through calls for project proposals. These funds are, according to a predefined plan, organized in 15 calls (products) that could be grouped in several product lines as follows:

Line 1: Calls / Products related to investments in scientific infrastructure and so-called large projects. The objective of this line is it to meet the needs for building, upgrading, modernizing scientific infrastructure and equipment.

P1.1. Investment in organizational reform and infrastructure in the sector of research, development, and innovation

- ♦ Designed for large infrastructure investments into public scientific organizations (colleges and scientific institutes).
- ♦ Most of the allocated funds: approximately 760 million kunas.
- ♦ Permanent character, there is a likelihood that the product will be offered in the future (continuation of the investments).

P1.2. Preparation of Industrial Research and Innovation (IRI) Infrastructure Projects

- ♦ Designed for the preparation of infrastructure investment documentation for public scientific organizations
- ♦ A smaller amount of funds: approximately 45.6 million kunas
- ♦ Permanent character, the third call of this character during several years; is likely that the product will be offered in the future (continuation of the investments).

P1.3. Large project: “Children’s Centre for Translational Medicine “Children’s Hospital Srebrnjak

- ♦ About 430 million kunas

P1.4. Large project: Open scientific infrastructural platforms for innovative applications in the economy and society – O-ZIP

- ♦ About 461 million kunas for Institute Ruđer Bošković

P1.5. Project CALT

- ♦ About 121.5 million kunas for Institute of Physics



These three products/calls have no permanent character and relate to large individual investments

Line 2: Calls/products for conducting RDI activities

P2.1. Support to Centers of Research Excellence

- For research activities and investment in scientific equipment
- 380 million kunas
- The product may be placed in the future (medium durable character).

P2.2. Science and Innovation Fund (SIIF)

- Designed for RDI activities of two or more scientific organizations; focus on research results that need to respond to market needs.
- About 158 million kunas
- This is already the 3<sup>rd</sup> call (the third placement of funds), a possible continuation of investments (durable character).

P2.3. Strengthening Capacities for Research, Development, and Innovation (STRIP)

- Designed for collaborative research activities between scientific organizations and companies
- Around 181 million kunas
- Permanent character.

Line 3. Calls/products aimed at creating synergies with HORIZON 2020 investments

P3.1. The building of scientific excellence through synergy with the European Research Council (ERC) - 22.8 million kunas

P3.2. Development and strengthening of synergy with horizontal activities of the OBZOR 2020 program: Twinning and ERA chairs -9 million kunas

P3.3. Development and strengthening of synergy with horizontal activities of the OBZOR 2020 program: Teaming - 152 million kunas

Line 4. Calls and products aimed at strengthening the ecosystem

P4.1. Project "Scientific and Technological Foresight" – 15.5 million kunas

P4.2. Project 'HR\_ZOO- Croatian scientific and educational cloud' - 196.8 million kunas



## 4.2. PRICE

The price has a great significance in relation to the customer in non-profit marketing. With regard to the prices of products in non-profit marketing, we generally have the following situations: (a) the product has the price and is entirely paid by the customer, (b) the product has a price but the price is paid only partly by the customer and (c) the product has a price but the customer pays for it indirectly (through contributions and taxes). What matters is the fact that the product has a certain value (its usefulness). Depending on the level of marketability, its price can be a full price, partial, differentiated or product free for users (Meler, 2003, p.240). It should be noticed that consuming/using a particular product could have a certain cost for customer/beneficiaries (Meler 2003, p.247 - 249).

The SPPEU products (services) are free for users (paid indirectly by EU citizens through taxes). However, some counter-claim is requested. In other words, they do not pay the price of the product but are expected to do certain activities and achieve pre-defined indicators. The SPPEU products are most similar to those of financial institutions (banks, investment companies, etc.) such as loans, equity, and venture capital investments. Unlike the latter, where a customer has to pay for a product a certain price (interest, ownership, etc.) in the case in question, the customer does not pay interest but has to achieve pre-defined required indicators (as a policy requirement) and in some cases to co-finance the usage of the product. This means that the usage of certain products is conditioned by own contribution, thus there are products where the customer/beneficiary is obliged to contribute from 15% to 50% of the total project (product) value. In addition, there is also cost of preparing project documentation and administration costs during implementation that in some cases is arranged within the call (is free to the customer) and sometimes the customer has to secure the costs from its own resources.

In regard to the costs related to the policy requirements the customer, in return for the money received, has to achieve certain goals and indicators. Often these indicators are in line with what a customer plans and needs, but often they are settled in such a way that customers are required to perform the certain extra engagement. For example, in case of a product/call for modernization of infrastructure and equipment, users are required to achieve results related to scientific productivity or economic responsibility: more and better scientific publication, better co-operation with the economic sector.

When defining the price, competition should be considered. In the case of the SPPEU products, the market is not saturated yet and strategic marketing is only partly used. Thus, it could be stated that the price mechanisms are not been systematically used.

#### **4.3. DISTRIBUTION**

Distribution is an element of a marketing mix that relates to the way how a product comes from the producer to the consumer. The task of distribution is to deliver the product at the right time to the right place. In non-profit marketing, the distribution may be direct or indirect, meaning with or without an intermediary, and in its nature, it may be extensive, selective and exclusive, but in any case, it should be directed towards the customer (Meler, 2003, p.251-252). Extensive distribution brings the product as close as possible to the customer. In selective distribution, products are distributed through a small number of sales points on a number of intra-local markets, so the customer has to make a certain effort that generates certain costs. In the context of exclusive distribution, the products are distributed over a small number of sales spots/outlets to one or several local markets. However, today the electronic distribution (internet) has become extremely important and it became a dominant channel of distribution.

In terms of product distribution, the SPPEU uses electronic/internet distribution. Distribution is made via electronic service eFunds for all processes and communications. That way product became available to everyone under the same conditions. Thus, we have the combination of wide availability and exclusivity of the site (one portal, one e-place). On one hand, the product is moved closer to a customer and is easily reachable on the internet, but on the other hand, all customers are required to come to the same spot (move to the product), to a particular internet portal.

#### **4.4. PROMOTION**

Promotion is an element of the marketing mix that relates to the form of communication with the purpose of informing, persuading or reminding people of products, services, images, etc. (Meler, 2003, p.257). In this context, the effect of the promotion is directed to helping potential customers find the product that will meet their needs. The overall marketing communications set consists of advertising, personal sales, sales promotion, public relations and direct marketing (Kotler, et al, 2006, p. 719).

The SPPEU in its promotional activities uses the platform of the system for management and control of EU funds. All relevant information is published on the web pages of the Structural Funds [www.struktturnifondovi.hr](http://www.struktturnifondovi.hr) as a focal point of information about the possibilities and activities of all actors and stakeholders in EU funds system in Croatia. The same communication is done also via the *eFunds* platform. Visibility activities are defined within the Manual of Proceedings and represent the most advanced part of business procedures in regard to marketing activities.

These activities aim to bring products closer to customers/beneficiaries and to promote the idea of cohesion policy and the EU itself as a supranational instance that takes care of the well-being of its citizens.

## 5. BENEFICIARIES AND STAKEHOLDERS

“Beneficiary orientation is the organizational focus on understanding the explicit and latent needs of beneficiaries, designing services to meet those needs and regularly monitoring beneficiary” (Modi and Mishra 2010, p.11). Beneficiaries and customers of non-profit organizations are often very heterogeneous groups with different characteristics. Therefore, in order to qualitatively plan how to meet their needs, it is necessary to segment them into groups. Segmentation is a process when the heterogeneous market is divided into smaller parts with certain homogeneity characteristics (Meler, 2003, p. 197). Segmentation is required because organizations often have scarce resources and they have to focus their efforts in order to fulfill the market needs. Until an organization decides on its targeted market segment, it cannot undertake any strategic marketing decisions (Renko, 2005, p. 210). Each established market segment for a non-profit organization means a specific target/beneficiary group which needs a particular program (product) to meet their needs. Market segmentation criteria may be different due to market diversity. The most common criteria are demographic, socio-economic, geographical, cultural, behavioral and psychological criteria (Meler, 2003, p. 198). Well-established segments should have internal homogeneity, heterogeneity to each other and have to be large enough to be cost-effective and operable (Meler, 2003, p. 198).

The SPPEU target groups/beneficiaries are defined within the OPCC: students, scientists, researchers and enterprises (business sector). However, the beneficiaries of the SPPEU products/services in the form of grants are higher

education institutions, public and private research institutes. The measures/products are directed towards the STEM (science, technology, engineering, and mathematics) area as defined within the Smart specialization strategy. Besides this, more detailed segmentation of the market has not been carried out.

The stakeholder concept was firstly introduced by the Stanford Research Institute in 1963. It includes all parts interested in a non-profit organization's successor without whose support a non-profit organization would cease to exist (Meler, 2003, p.96). Stakeholders could be divided into four groups: those affecting a non-profit organization, those that have the same mission and share the same values as the organization, those interacting with the organization and those who are influenced or affected by it (Meler, p.97). The SPPEU stakeholders are product customers/beneficiaries, higher education institutions, public and private research and development institutes (RDI), researchers, students, managers (directors, rectors, deans, etc.), project organizational units at the aforementioned bodies, technology parks managers, centers, etc. State/regional and local authorities and management (officials) and employees are also stakeholders. Furthermore, public bodies within the System of Management and Control of the EU Funds are the Ministry of Regional Development and EU Funds (MRDEUF) as the Managing and Coordination Body, the Central Finance and Contracting Agency (CFCA) as the Implementing Body, the Ministry of Economy, Entrepreneurship and Crafts (MEEC), the Ministry of Labour and Pension System, small businesses, Innovation and Investment Agency (Implementing Body). The Agency for the Audit of the European Union Funds, the National Science Foundation, the Agency for Mobility and EU Programs (as an implementing agency), counties, cities, and municipalities. Also, there are Central Strategic Bodies: National Council for Science, Higher Education and Technological Development, National Innovation Council. And finally, there are covering EU institutions: European Commission, Directorate General for Regional and Urban Policy, Directorate General for Research and Innovation, Directorate General Joint Research Centre (JRC).

The distribution of the above-mentioned stakeholders by importance is as follows:

- The ones that influence the non-profit organization are the bodies in the management and control system of EU funds (MRDEUF as the most important), EC (Directorate-General for Regional and Urban Policy) as well as central strategic bodies.

- ♦ The stakeholders serving the mission and its values: MRDEUF, implementing agencies (CFCA and other relevant agencies and implementing bodies), beneficiaries.
- ♦ Stakeholders in the largest interaction with a non-profit organization: bodies in the management and control (MRDEUF, CFCA), beneficiaries/customers.
- ♦ Stakeholders affected or influenced by a non-profit organization: first and foremost, customers (beneficiaries) of products/programs but also bodies in the Management and Control System of the EU Funds.

## 6. PEER/COMPETITION ANALYSIS

Competition between non-profit organizations is reduced to the following areas: quality of the program and technical superiority; product and service quality; price. (Meler, 2003, p. 104). Often this competition is more collaborative, therefore Modi and Mishra (2010 p.11) have introduced term *Peer* rather than competition. However, non-profit organizations, as well as organizations in the profit sector, must be able to identify competitive advantages in relation to peers/competitors (services/products). For our selected subject the competition includes other ministries that carry out similar programs (primarily the MEEC which also manages the OPCC R&D funds). Another important competitor is the EC with its European Research Program - HORIZON 2020. There are also other bodies that allocate funds to the targeted market. Funding resources that include national co-financing are allocated in accordance with national legislation, the National Foundation for Science, private investors, Venture Capital Funds.

Modi and Mishra (2010 p.12-13) have conceptualized inter-functional coordination as the coordinated way of functioning and the utilization of resources by organizational units – the way how marketing activities are organized.

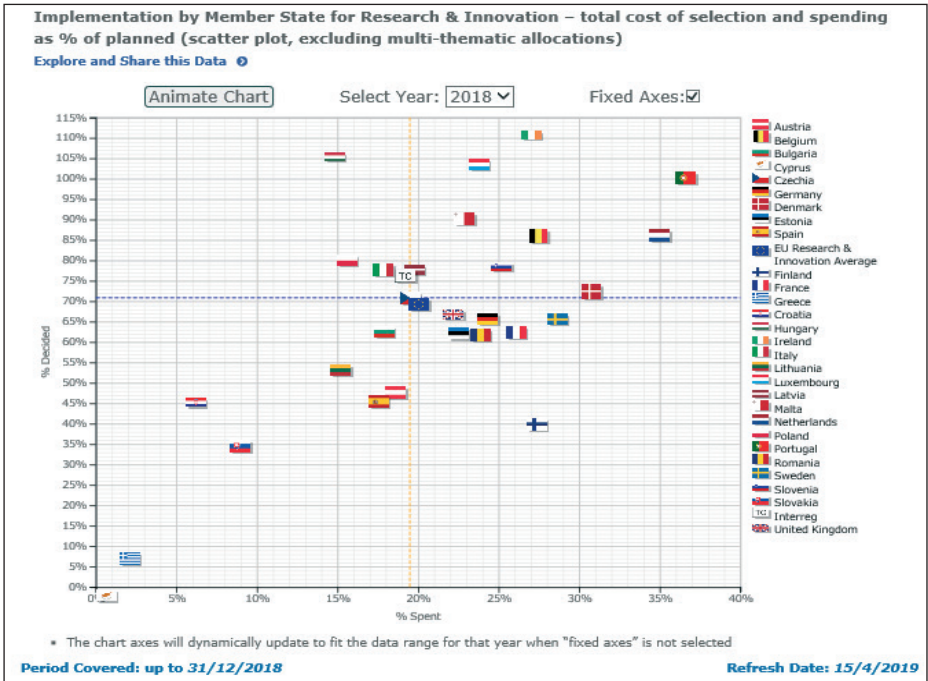
The organization of marketing activities should have at least strategic and operational level but often non-profit organizations have no specific organizational units and do not perform marketing activities systematically (Meler, 2003, p. 273). Accordingly, the SPPEU does not perform its marketing activities in a strategic and systemic way. Most of these activities are fragmented and managed through several organizational units and processes separately, often lacking the coordination and strategic approach. Market research and moni-

toring performance is implemented through the programming and monitoring departments, while the promotion activities are currently carried out by two persons (in line with the defined EU funds management requirements). The promotional activities represent the only systemic part of the marketing activities that are being performed by the SPPEU.

## 7. DATA PRESENTATION

The European Commission monitors results of six funds (Cohesion fund, Agricultural Fund for Rural Development, European Maritime and Fisheries Fund, European Regional Development Fund (ERDF), European Social Fund, Youth Employment Initiative). In this paper, we are analyzing the management performance of one part of the ERDF that is intended for the R&D in Croatia. The following data, collected and monitored by the European Commission, include resources for research and innovations.

**Picture 1.** Research and Innovation implementation by MSs



The Croatian absorption and spending of the Cohesion funds for Research and Innovations is low in comparison with other 27 MSs. Croatia is underper-



forming both in the sense of allocating and contracting projects and in spending. By the end of 2018, out of the planned amount of EUR 811,618,244 for research and innovations, Croatia has contracted only 48% and 6% was spent by particular projects. These results show that current activities are not effective enough to achieve the set program goals in the RDI field.

After presenting the financial performance in this chapter we will give an overview of non-financial indicators that are planned in the Operational program as the criteria for measurement of successful implementation and spending of allocated funds. For better insight, we have presented indicator achievements for the Investment priority 1a, namely resources for research and development managed by the MSE (SPPEU).

**Table 1.** Non-financial indicators defined by the OPCC

Indicator MSE - SPPEU IP1a	Measurement unit	Target value (2023)	Total achieved (2018)	%
Number of researchers in improved RDI infrastructure facilities	Fulltime equivalents	1.215,00	0	0
Number of enterprises cooperating with research institutions	Enterprises	30,00	0	0
Number of R&D&I infrastructural projects	Number	6,00	1	16,6
Number of Centres of Research Excellence supported projects	Number	6,00	0	0
Number of R&D projects conducted by research organizations	Number	75,00	0	0
Scientific publications published in journals indexed in the platform Web of Science (core collection)	Number	36.430,00	54.966,00	160.2

These indicators are to be achieved by the end of the year 2023 for the financing period 2014 – 2020, as three extra years are planned for the achievement of results. Nevertheless, the indicators that monitor the achievements of the portfolio under the jurisdiction of the SPPEU show very low performance at the end of 2018, at half of the financial perspective.

## 8. DISCUSSION

From the data presented in the previous chapter, it is obvious that Croatia (here primarily the SPPEU as focused and analyzed part of the system) is un-

derperforming in the context of absorption of EU funds and reaching the targeted indicators. This underperformance is especially seen in the research and innovation sector in which the SPPEU operates. This could relate to the lack of marketing orientation, adequate knowledge of market needs, understanding of the beneficiaries and stakeholders, competition and better organization of the marketing activities.

In the broader sense, it could be said that currently no systemic initiative towards marketing orientation (and related activities) in the context of improvement of overall business performance is seen within the SPPEU.

Beneficiary orientation is low performed. Limited market research efforts during the process of developing strategies and operational programs cannot be considered as strategic and systemic marketing activities but may represent a certain experience for the future (marketing) activities. This is a certain disadvantage since the measures/programs/products have to be better market fitted to better respond to the needs of the market. In that context, a more detailed segmentation should be carried out. The market should be divided into different scientific fields/areas, given that research activities and results differ from one field/area to another. For example, in the information and communication technology (ICT), the results can be seen very quickly, while in biomedicine this path is much longer and rather different. In other words, not all researchers and entrepreneurs have the same needs to meet. The segmentation should focus on several target groups. One of them is young researchers (without experience or with little experience) and their retention within public and private research and development sector. Also, special attention should be given to postdoctoral researchers who should become the leaders of the research activities. Additional focus should be on companies with research and development capacity. However, without serious beneficiary orientation, specialized products do not adequately satisfy the needs and do not achieve wanted results. As previously mentioned, the products or grants that the SPPEU provides are placed/invested in one or more of the thematic and sub-thematic areas of the Smart Specialization Strategy. This covers mainly research institutions and companies in the so-called STEM areas, which largely excludes socio-humanist and arts areas of science. This is the only segmentation that exists in the programs (product program/mix) and they (programs/calls) are designed rather genuinely in order to cover as many potential beneficiaries/customers.



In relation to stakeholder orientation, improvement and coordination with stakeholders are also important. They are very important for SPPEU's business processes, especially in terms of impact and sustainability. Although the system of public policy organization is determined and structured, it is important to maintain good business relations.

The peer/competition orientation: decision-makers within the SPPEU should bear in mind that the Croatian market is relatively small. In Croatia, there is a relatively small number of researchers and companies who are beneficiaries/customers of relevant products/services. In addition, there are several other sources through which the market can meet its needs: other domestic and international sources (the MEEC, the Croatian Science Foundation, and the EU Program: HORIZON 2020). Failure to perform its function or poor performance can cause loss or reduction of the resources for future activities. In accordance with the aforementioned, the SPPEU officials should be aware of it and act like active market participants if they want to keep the competitive advantage. It is very important in this context to have well-developed products and services presented to potential customers/beneficiaries, thus directly involving market actors in the process of addressing and stating their needs. This can be achieved by simplifying procedures, improving the calls for proposals' documentation, digitization, which can result in higher quality, faster processes and mutual satisfaction. It is crucial to have good quality and continuous communication with the market. In respect to inter-functional coordination or marketing organization, a lack of decision about introducing strategic marketing activities into business processes represents the real systemic problem. There is no serious, systematic market research. Following the market research, it is necessary to develop a marketing information system that should contain all relevant market data: beneficiaries/customers, stakeholders, products, monitoring performance, efficiency. The Monitoring department can perform the tasks of collecting and analyzing marketing data. These activities should also be linked to the monitoring system of the Ministry which is in the development phase. This system should be functionally linked to a system developed by the MEEC which similarly establishes organized monitoring of the part of the private RDI system.

## 9. CONCLUSION

This paper presents and analyses the marketing orientation of an independent business unit - the SPPEU within the MSE, from the perspective of non-profit marketing, where the SPPEU in the exchange process seeks to meet the needs of its customers/beneficiaries and to achieve certain objectives of public policy. There are many scientific and expert discussions that point out the benefits resulting from the systematic marketing orientation of organizations. The marketing orientation is put in correlation to achieved results of SPPEU. Achieving results in the case of SPPEU and other organization within the system of management and control of EU funds is the absorption of funds and achieving indicators planned within Operational programs. The data show the connection between the lack of marketing orientation and the current low performance in achieving results.

Although there are certain marketing activities that are well organized and performed (visibility and promotion), there is a space for business improvement which starts with strategic decisions on the introduction of marketing activities and improvement of all business processes especially in regards to beneficiary/customers and stakeholder relations, better understanding competition and improving organizational concepts. The marketing orientation of non-profit organization means more efficient business processes which reflect in satisfaction of the market needs and in the achievement of targeted results.

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# CULTURAL CONSUMPTION PATTERNS AMONG LIFESTYLE GROUPS IN HUNGARY

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**Abstract**

*Despite the increasing importance of cultural consumption, the majority of existing research focuses on certain cultural areas, e.g. museums, festivals. There are only a few approaches to examine cultural consumption in general. There are still fewer studies which compare the cultural profiles of lifestyle groups. To fill this hiatus our paper explores the cultural consumption differences among Hungarian consumer lifestyle groups.*

*Our examination is based on the quantitative research of Töröcsik et al. (2018), which highlights the characteristics of lifestyle groups of 15-74-year-old Hungarian consumers. Our primary research examines the differences in cultural consumption patterns among these lifestyle groups. The research was conducted in 2018 face to face with 2001 respondents.*

*The latest overall cultural research took place in Hungary in 2008. Therefore it is particularly valuable in our study to give an overview of the cultural habits of the Hungarian population in 2018. In addition to quantifying cultural consumption, cultural analysis works increasingly focus on the cultural background, mentality, and value orientation. The basis of our analysis is provided by the results of lifestyle research, in which the lifestyle groups were separated along the fast and slow pace of life, as well as modern and traditional values. Therefore, the results of our work can trigger the interest of the profession also through the lifestyle groups presented.*

**Keywords:** *cultural consumption, lifestyle, Hungary, consumer behavior*

JEL Classification: D19, G40

**1. INTRODUCTION**

As marketing professionals and academics, we experience significant changes in consumer behavior: always experiencing new patterns of behavior, new content, and expression forms. The beauty of this work is that we can always find new phenomena in this exciting exploratory journey, the knowledge of which is constantly expanded by the results of social sciences (Töröcsik, 2016). Marketing primarily focuses on shoppers, consumers, their behavior, the reasons for their choices, and their drives. However, new features of behavior have been emerging, such as non-consumption and non-purchase. We can see that these

phenomena also deserve great attention in connection with cultural consumption (Töröcsik et al., 2018b).

Today, we are seeing a new direction of non-buying, labeled pseudo-buying, which is unique in that it is neither shopping nor consumption. Pseudo-buying is a demonstrable habit of the young generation to carry out the purchasing decisions process, but it does not end with actual purchases. They enjoy being informed, seeking, sharing, making a wish list, asking their peers for their opinion. They deal with products/brands before buying and consuming very much and the process seems to satisfy them (Prónay - Hetesi, 2014). The reason for this, on one hand, is the thickness of the wallet; on the other hand, this activity seems to be excellent for leisure. We can see that, like other markets, decision-makers face these new challenges in the field of culture.

Another important consequence of these phenomena is that there is increasing pressure on cultural institutions. For example, because of the low attendance of public (state) cultural institutions financed by public funds, there is a need to prove their social utility (Kay et al., 2009).

Participation in cultural consumption is significantly determined by the socio-economic characteristics of individuals. Cultural consumption is differentiated by demographic variables (e.g. age, gender, parental status) (Chan, 2013). It is also stratified by education level, income and social status (Bennet et al., 2009; Chan 2010). People who are highly educated, have higher incomes, and work in prestigious occupations shows higher participation in cultural consumption than people in less advantaged social positions (Chan 2013) Jaeger and Katz-Gerro's (2010) longitudinal research has also shown, that the predictive power of these stratification variables has not decreased over 40 years in Denmark. The results of Reeves and de Vires (2019) show that consuming certain cultural activities increases the likelihood of upward social mobility, of becoming a supervisor, and of being promoted, so cultural consumption predicts future earnings. Cultural consumption has a higher impact on future earnings like family background, education, cognitive ability, and personality, and it is one of the mechanisms through which inequality is reproduced.

Previous research based on demographical and social status approach gives us detailed information about the different groups with certain cultural consumption patterns and social status. So-called omnivores with higher cultural consumption level tend to be female, well-educated, of higher social status, liv-

ing in urbanized areas, and without young children at home (see Chan 2010). But we have only a little information about their social and political values and personality traits (Chan 2013). Dimaggio (1996) examined the social, cultural and political values of American art-museum visitors, and found that they are somewhat more secular, trusting, politically liberal, racially tolerant, open to other cultures and lifestyles, and much more interested in high culture than non-visitors.

Lifestyle research provides a good starting point for consumer differences, characterization of the segments.

Recognizing the changing market signals, our focus is on examining the cultural consumption of Hungarian consumers. The aim of our study is to explore the cultural consumption differences among Hungarian consumer lifestyle groups. Our examination is based on the research conducted with questionnaires and it highlights the characteristics and lifestyle groups of 15-74-year-old Hungarian consumers with 2001 respondents in 2018.

## 2. CULTURAL CONSUMPTION PATTERN TENDENCIES, ESPECIALLY IN HUNGARY

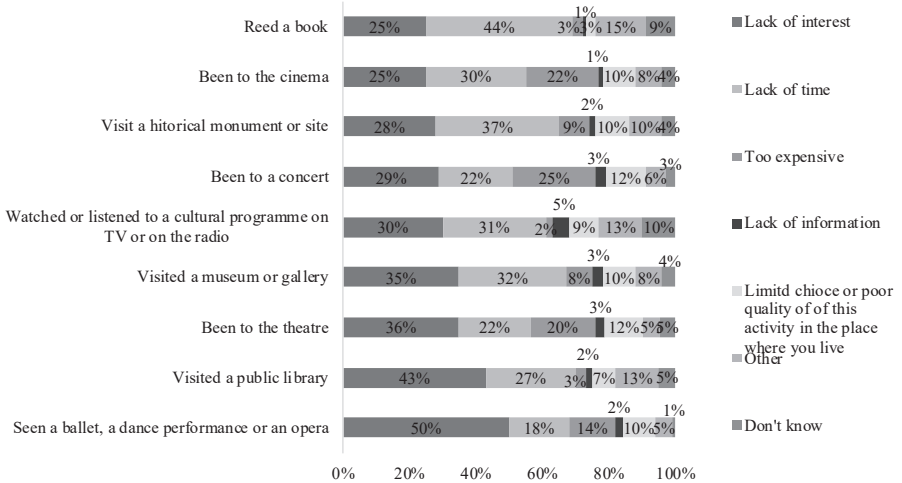
The latest European Culture Commission survey was published in 2013 (Special Eurobarometer, 2013). The survey shows a remarkable result that, compared to the previous survey in 2007, we can record a decrease in most cultural activities by 2013. These activities are as follows: watching or listening to a cultural programme on TV or on the radio, reading a book, visiting a historical monument or site, a museum, a gallery, a concert, a public library, a theatre. Only the activity of visiting a cinema shows an increase in participation (with a one-percentage-point rise). The comparison of surveys also shows a decrease in participation rates and frequencies. As the study highlighted, many of these activities involve spending money (to take part in and/or to travel to the venue). The decline in participation may, therefore, reflect on the difficult economic circumstances since the financial and economic crisis began in 2008.

To help identify levels of engagement in cultural activities among citizens from the 27 EU Member States, a simple index of cultural practice has been created based on the frequency of participation and access to the different cultural activities included in this survey. The index distinguishes 4 levels of cul-

tural engagement: very high, high, medium, and low. The average of the EU27 recognizes a decline in participation in cultural activities among citizens. The very high and high levels of cultural engagement changed from 21% to 18%, medium scores fell just one percentage point, from 49% to 48%, and the portion of low engagement increased from 30% to 34%. There are huge differences among the Member States. The Northern European countries' citizens practice the highest level of cultural engagement in general (the proportion of very high and high categories in Sweden is 43%, in Denmark 36%, in Finland 29%, the European average is 18%). The greatest rises in "low" cultural index scores have occurred in Poland (from 31% to 50%) and in Hungary (from 28% to 54%).

An analysis of the reasons may explain the decline in participation rates, and the European survey also provides information. Respondents answered a general question about the main barriers they need to overcome to access culture: "lack of time" was the first answer given (42%), followed by "too expensive" (29%) and "lack of interest" (27%). Lack of interest and lack of time are the main obstacles to participating also in a particular activity (Figure 1).

**Figure 1.** Barriers to accessing the cultural activities: "And for each of the following activities, please tell me why you haven't done it more often in the last 12 months?"



Source: Special Eurobarometer (2013)



Lack of interest is the main reason for not going to more concerts (29%), visiting a museum or gallery (35%), a theatre (36%), a public library (43%) or attending a ballet, dance performance or opera (50%). Lack of time is the main reason for not going to the cinema (30%), watching or listening to a cultural program on the TV or radio (31%), visiting a historical monument or site (37%), or reading a book (44%). In addition, cost (“too expensive”) is also an important factor and mentioned as a reason for not going, or going less often, to the theatre (20%), the cinema (22%), or a concert (25%). However, the expense is not the main obstacle mentioned by respondents for any one of these cultural activities. The demographical analysis shows that working hours, education and income situation are important factors in participating in cultural activities. The age groups that are most likely to be in work (24-39 and 40-54 years old) and respondents with higher educational level are also more likely to cite lack of time as a reason for not participating in a given cultural activity. Those who left education at an early stage are more likely to say that they have no interest in the given activity. Expenses are a significant factor for those who frequently have difficulties paying bills, as might be expected. In terms of the index of cultural practice, those with a “low” index score are more likely to give lack of interest as a reason for lack of participation than other reasons. Lack of time is more likely to be mentioned by those with a “very high” or “high” score, who given the choice would participate more.

Research in Hungary highlights that there is a huge decline in cultural interest after the 2000s. This decline was not the result of a rearrangement towards popular cultural genres, as we could record a decline in all genres (Hunyadi, 2005; Antalóczy, 2009). These results are therefore in line with EU trends, although we have experienced it before the economically difficult period. The changes can be traced back to several reasons (Kuti 2009).

The group of people interested in high culture has become older over time, and younger generations are no longer involved in the consumption of these areas. We also see that young people have a strong interest in popular music and cinema, but because of the (cheaper) entertainment opportunities provided by the internet, these areas are also somewhat downshifted. Educational qualifications continue to be a decisive differentiating factor: this is also the most influential factor in the quantity and quality of cultural consumption. Although there are significant differences in economic activity. Students with the most leisure time and intensive use of info-communication tools have dropped their

cultural interest significantly. Interesting and most active groups are left out of consumption due to lack of time.

More important findings are highlighted on the basis of major cultural retention studies conducted from the mid-1980s to the present (Pavluska, 2014) (Table 1).

**Table 1.** Types of cultural consumers in Hungary from the mid-1980s to the present day

In the middle of the '80s	In the middle of the '90s	Millennium	2003	2008	2013
Autonomous culture oriented (15%)	Autonomous culture oriented (15%)	High culture oriented (8%)	Consolidated, traditional consumer culture (9%)	Cultural elite (10,1%)	Various traditional culture lovers (13,7%)
Open-minded – hoarder (24%)	Youthful, entertainment oriented (24%)	Culturally "omnivores" (18%)	Youthful "omnivores" (7%)	All use consumer (8,6%)	Traditional culture picker (10,7%)
Clinging – recreator (26%)	Stay at home – reader (15%)	Recreation/ amusement oriented - (23%)	Monotone revelling, movie watcher - partying (14%)	Easy enjoyment lovers (13,8%)	Culturally diverse (11,9%)
Passive (35%)	Passive – others (17%)	Passives (28%)	Monotone reveling, community center attender (10%)	Culturally curious (20,5%)	Easy enjoyment searchers (16,8%)
	Passive – stay at home, never reader (26%)	Lack of culture consumption/ isolated (23%)	Stay at home – reader (17%)	Culturally passive (47,1%)	Mass event attender, linear revelling (15,2%)
			Passive, outside the culture, bleak (43%)		Culturally passives (31,6%)

Legend: High culture oriented, culturally „omnivores”, enjoyment searchers, passives  
**Source:** Pavluska, 2019

Pavluska (2014) identified the following major trend phenomena of Hungarian culture consumption in the light of consumer typology:

- ♦ The basic structure of cultural stratification is discernible from the beginning of the Hungarian culture research. There has not been any significant rearrangement of cultural consumer types during this period.
- ♦ There is no pronounced rearrangement among the different types, only a shift can be observed towards mass culture and passive behavior.
- ♦ The biggest group consist of people who don't use the cultural institutional network et all:
  - Culturally completely passives, whose cultural consumption is limited to television. The members of the group include the elderly and the low-skilled from disadvantaged areas.
  - Stay at home, classic culture consumers, who are older but qualified people from larger cities.
  - Stay at home, Internet users, which is a major leisure activity among young adults.
- ♦ The portion of classic elite culture consumers is decreasing but they show a homogeneous segment.
  - Members are typically adults (natural decline), who are highly educated intellectuals with good income, high status.
  - Young adults are also consuming popular culture (omnivores).
- ♦ The ratio of leisure time of the middle class is increasing, they are located between intense and passive consumers.
  - Omnivores are new types of consumer culture, in addition to high cultural consumption, they are also widely selected from the more popular genres.
  - A new class, preferring simple and basic entertainment can be differentiated based on the genres. For them, cultural consumption is basically a community experience that serves to relax.

European and Hungarian research findings on cultural consumption patterns show a similar picture of today's cultural market. On the one hand, we recorded a decrease in the intensity and quality of consumption, on the other hand, we also see that these processes cannot be fully explained by the economic downturn and the scarce spendable income: the direction and intensification of interest and taste have changed as well. With the aging of high-culture groups, new generations show different patterns of consumption, shifting towards more popular, easier-to-eat, shared experiences.

### 3. METHODOLOGY

Our empirical research is based on a personal interview in April-May 2018. During the period of the survey, we interviewed a total of 2001 respondents aged 15-74. The sample represents the adult Hungarian population aged 15-74 by gender, age group (10-year intervals) and the region of residence. In the course of the survey, the behavior and opinion of the Hungarian population will be examined in relation to several topics. These are aging, health innovations, tourism, eating habits, cultural participation, lifestyle. For this reason, research has provided an opportunity to conduct cross-analyzes on larger issues, and to examine the existence of relationships between different topics. Table 2 shows the demographic characteristics of the sample.

**Table 2.** Sample characteristics (N=2001)

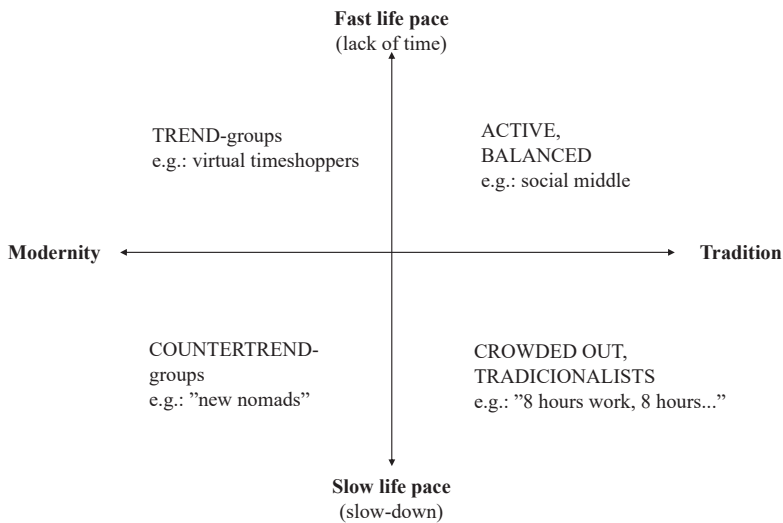
Demography	Percent	Demography	Percent
Gender (total)	100.0%	Settlement (total)	100.0%
Male	48.6%	Budapest	18.6%
Female	51.4%	Chief town of a county	21.2%
Generations (total)	100.0%	Town	32.7%
Young (15-29 years)	23.1%	Village	27.6%
Middle-aged (30-59 years)	54.1%	Household monthly net income (Total)	100.0%
Older (60-74 years)	22.8%	NA	3.6%
Social status (Total)	100.0%	They live very well and they can save.	7.5%
Single	21.9%	They can save only a little.	39.5%
Married	43.3%	It is enough to make a living out of it, but they can't put aside anymore.	43.4%
Lives apart	10.3%	Sometimes it is not enough to make a living (s) of it.	4.8%
Widow	8.1%	There are regular daily living problems.	1.1%
Lives in partnership	16.4%	Legal status (Total)	100.0%
Educational qualification (Total)	100.0%	NA	1.2%
NA	0.5%	Active intellectual worker	42.0%
Primary school	47.6%	Active physical employee	18.7%
Vocational training	32.2%	Student	6.2%
University/college	19.7%	Retired	23.6%
		Unemployed	2.1%
		Another inactive earner	5.3%
		Dependant	0.9%

**Source:** own construction

## 4. NEW CONSUMER LIFESTYLE GROUPS IN HUNGARY

The starting point for this study is the results of the research of Törőcsik et al. (2019), which carried out on the basis of our survey presented above. The authors defined lifestyle groups using a multivariate analysis of the above-described sample. The basis of lifestyle groups was the model of Törőcsik LifeStyle Inspiration model (Törőcsik 2011). It based on two dimensions, determines the differences between lifestyle groups according to the life pace (fast and slow poles) and values (modern and traditional poles). Figure 2 illustrates the dimensions of the LifeStyle Inspiration model.

**Figure 2.** Dimensions of LifeStyle Inspiration model



**Source:** Törőcsik, 2011, p. 344.

Researchers identified 9 lifestyle groups as a result of multivariate analyses. Figure 3 shows the location of these lifestyle groups in the model, Figure 4. compare the socio-demographic characteristics of these lifestyle groups.

Among the groups, career builders and well-off young adults follow trends most: live fast, young, free from responsibility for others, highly educated, live in a good income, and live in the capital. Based on responses to attitudes scales,

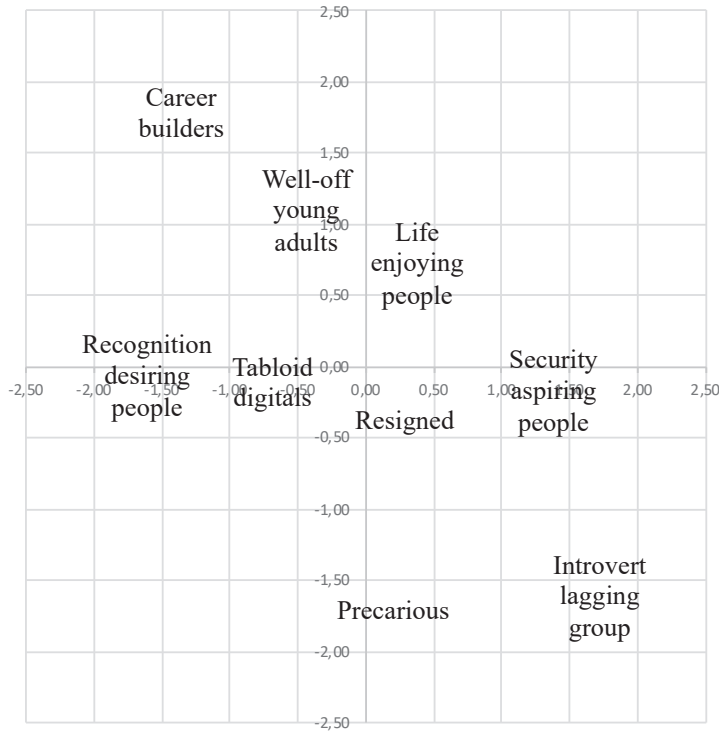
career builders are interested in technological novelties, innovations, new products. Shopping is a lovely activity for them, and they can also spend more than before. Regarding their leisure activities, they are happy to undertake outdoor activities that require stronger physical endurance activity (hiking, hiking, skiing, etc.). They are in good health conditions, but they deal with their health a lot. They are looking for gastronomic experiences. They spend their cultural activity outside of the home, and also it is increasingly connected to the internet. The group of well-off young adults still consists of young or young adults who typically do not live alone. They are interested in technological novelties, innovations, new products. They deal a lot with their health. They are good financial opportunities, spend more than they used to. They are increasingly interested in cultural programs, especially outside the home. At the same time, it is also characteristic of them that their cultural activity is increasingly linked to the Internet.

Life enjoying people are a middle-aged feminine group with a slower lifestyle and more traditional values. They are active intellectual and also physical workers. They love to buy, although their financial resources have more limitations than the previous ones. They are eager to participate in natural activities and eating plays an important role in them. Cultural interest is less present in their leisure activity. Recognition desiring people are also a middle-aged group, they are primarily educated from smaller settlements. They are also interested in technological novelties and innovations. Their cultural activity is outside the home, they also traveled last year somewhere on vacation. They feel disadvantaged because of their appearance. Digital tabloids are a young - middle-aged group, those who are disadvantaged in many ways: because of their financial opportunities, physical conditions and also gender. They are interested in new products, however, because of their financial resources, they are more like followers. Resigned is a female group with middle-aged and elderly generations. Because of their financial resources, they have significant limitations. Although they traveled last year somewhere on vacation, they have to take medication permanently for their illness and are therefore limited in their lifestyle. The security aspiring people are from elderly generations. They are typically female with a higher educational degree. They live in rural cities with average income. They make purchases as fast as possible. They are more and more eager to experience nature. Because of their illness and their limited health conditions, they travel for medical tourism.

The precarious and introvert lagging groups perceive the processes that determine the trends and the dynamics of the markets the least because of the slow pace of their life which is coupled with traditional values. These groups are older, low-skilled, are in necessity, and in bad health conditions. Precarious group lives in Budapest, or in major cities, introvert lagging groups in major cities. It is characteristic of both groups that they feel multiply disadvantaged: because they age, physical conditions, appearance, and because they live alone. Because of their health barriers, they spend time for culture mainly at home.

It is noticeable that we do not find any groups in the area of the active-balanced and the countertrend groups.

**Figure 3.** New Hungarian lifestyle groups in 2018



**Source:** Töröcsik et al. 2019

**Table 3.** Socio-demographical dimensions of Hungarian lifestyle groups Source: Törőcsik et al. 2019.

Career builders	Well-off young adults	Life enjoying people	Recognition desiring people	Tabloid digitals	Resigned	Security aspiring people	Precarious	Introvert lagging group
male	male	female and male	male	male	female	female	female and male	female
young	young	middle-aged	middle-aged	middle-aged, young	middle-aged and elderly	elderly	elderly	elderly
single or in relationship	single and in relationship	married, single, in relationship	divorced, in relationship	single	married or widow	married, divorced, widow	married, divorced, widow	married or widow
high school graduation	high school graduation or university degree	secondary school graduation, bachelor's degree	at most 8 class primary school or vocational training, specialized vocational training	vocational training, specialized vocational training	vocational training, specialized vocational training, technical school in higher education	high school graduation, university degree	at most 8 class primary school or vocational training, specialized vocational training	8 class primary school, vocational training, specialized vocational training
he/she is very well off of it and is able to save up	he/she is able to live with his/her money, moreover he or she is very well off of it	he/she is able to live with his/her money, and is able to save up a small amount	just enough	just enough or daily livelihood problems	he/she makes a living out of it, the earning is enough for it	average	just enough or daily livelihood problems	just enough but sometimes not for everything
active intellectual workers, students	active intellectual and physical workers, on child care, students	active intellectual and physical workers	active physical workers	active physical, inactive worker, or women who are on child care and dependent	pensioner, inactive	pensioner	pensioner, unemployed	pensioner
Budapest	Budapest	chief town of a county and large village	village	city, village	city, large village	chief town of a county	Budapest	chief town of a county



## 5. RESULTS - CULTURAL CONSUMPTION PATTERNS OF HUNGARIAN LIFESTYLE GROUPS

In order to compare the participation of lifestyle groups in cultural consumption, we conducted a multivariate analysis. During the interview, we asked the respondents how often they participated in the given cultural leisure time during the past year (once, 1-2 times, 3-5 times, more than 5 times). We examined the following cultural activities: visiting a ballet or other dance performance, a circus performance, a jazz concert, a festival, a classical music concert, a popular music concert, a cinema, a museum or gallery, monuments, historical monuments, sites, being in a community center, visiting a folk music or world music concert, a public library, an opera performance, an operetta or Hungarian song performance, a theatre, being in places like e.g. disco, music club, club, cafe).

As the first step in our research, we conducted a factor analysis using these 16 different cultural activities. We have identified cultural factors that can be used to describe the cultural interest and consumption of Hungarian lifestyle groups.

Factors are terminated by the principal component method with varimax rotation. During the analysis, we had to switch from multiple variables because of their bad behavior. As a result, we could involve 13 different cultures in the study: visiting a ballet or other dance performance, a jazz concert, a festival, a classical music concert, a popular music concert, a cinema, a museum or gallery, monuments, historical monuments, sites, being in a community center, visiting a public library, an opera performance, a theatre, being in places like e.g. disco, music club, club, cafe. Using these variables, we identified 3 factors to describe cultural consumption patterns and direction of cultural interest. Table 3 presents the rotated component matrix resulted from factor analysis. The statistical parameters of these results are acceptable: KMO and Bartlett's Test: 0.881, Chi-Square: 7301.283, and significance level is 0.000. Factor's eigenvalues are > 1 and they explain the 56.108% of the total information.

**Table 4.** Rotated component matrix with cultural consumption variables

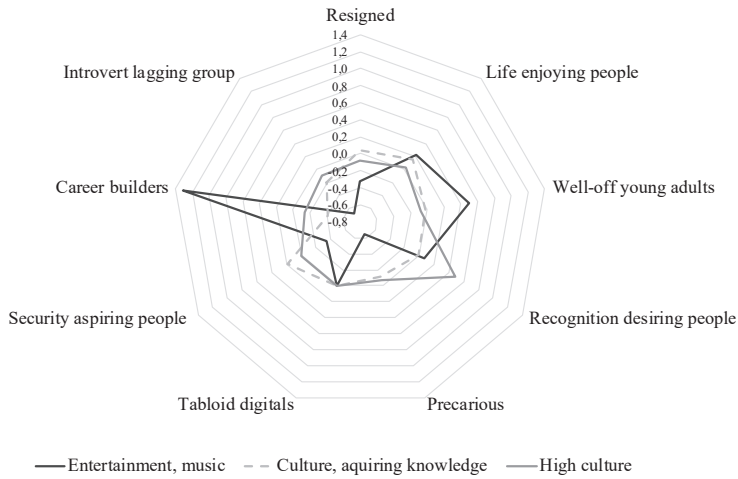
Factors	Variables	Components		
		1	2	3
1	being in places like e.g. disco, music club, club, cafe	0.794		
	visiting a cinema	0.768		
	visiting a popular music concert	0.752		
	visiting a festival	0.704		
2	visiting monuments, historical monuments, sites		0.786	
	visiting a museum		0.720	
	visiting a community center		0.689	
	visiting a public library		0.661	
	visiting a theatre	0.359	0.554	
3	visiting a classical music concert			0.727
	visiting an opera performance			0.673
	visiting a ballet or other dance performance			0.670
	visiting a jazz concert	0.360		0.538

**Source:** own construction

The first factor includes popular cultural products as visiting places like disco, music club, club, cafe, a cinema, a popular music concert, a festival, so we called it “entertainment and music”. The second factor called “culture and acquire knowledge”, it consists of visiting monuments, historical monuments, sites, a museum, a community center, a public library, and a theatre. The third factor gives the element of “high culture”: visiting a classical music concert, a ballet or other dance performance, an opera performance, a jazz concert.

Using the factors obtained, we examined the differences between lifestyle groups, see Figure 3.

**Figure 4.** Cultural characteristics of Hungarian lifestyle groups



**Source:** own construction

As the result shows entertainment and music is the main characteristic of a career builders lifestyle group and most of the other groups. This cultural consumption area is dominated also the patterns of the well-off young adults. The introvert lagging group' displaced position from the mainstream, that their participation is the lowest in the area of entertainment and music.

In high culture, the recognition desired people are in primarily concerned, whose life a moderate life pace with modern values. Only looking at the other groups is a striking difference, or rather a homogeneous characteristic, that the groups show the smallest differences in consumption in the dimension of high culture.

For groups that are primarily members of the older generation, the culture and knowledge acquisition and the high culture can move together, from which the entertainment and the music dimension fall apart. Therefore, we can assume those cultural products that are readily available to popular and broad groups, as emerging market supply elements, could not gain more space in the consumption patterns of older generation culture.

We do not see a segment that is primarily elderly, highly educated and of high social status, who are usually identified as consumers of high culture. The reason for this is that in the dimensions of the lifestyle inspiration model, the social status appears only indirectly, we cannot identify this segment due to their varied characteristics based on values and pace of life.

## 6. CONCLUSION

Recognizing the deficiency in the academic literature that only a few researches that comprehensively examines cultural consumption patterns. From time to time, studies are being conducted to investigate the differences in consumption and preferences from the socio-demographic and social status side, but the use of lifestyle research is negligible in this market area. One of the reasons for this is that the level of education is still heavily determined by the level of education and the quality of participation in cultural consumption. However, we suggest that lifestyle-based approaches that are well-suited to different markets can bring useful results in terms of the culture that can help understand the behavior of target groups or the lack of consumption.

Earlier research on cultural consumption has shown that cultural consumption is significantly reduced for many years due to the unfavorable economic environment. The situation in Hungary is further undermined by the fact that researchers have registered a decline before the economic recession. Although the structure of consumption in Hungary has not changed significantly, however, we are seeing a shift in the consumption of massive segments of mass culture and passive consumption.

To give an overview of the cultural consumption patterns of the Hungarian population, we conducted a representative survey in 2018. The identification of the lifestyle groups was done by Töröcsik et al. (2019). Based on these results our study examined the cultural consumption differences of the identified 9 lifestyle groups.

In our analysis, we have identified three dimensions of cultural consumption: entertainment and music; culture and acquiring knowledge; and high culture. The differences between the lifestyle groups show that in the dimension of mass culture, as entertainment and music there are huge differences. On the contrary, in the dimension of high culture, most of lifestyle groups show similar low consumption level or the lack of consumption.

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# THE MARKETING ASPECTS OF EMPLOYER BRANDING

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## **Abstract**

*Today's saturated and competitive market is a great challenge for a company – it is necessary to create competitive advantages in order to be successful.*

*It is often said that people are the key to success, so when a company has top professionals and experts satisfied with their career and how a company is treating them, that makes a strong base for creating value for customers, too. Care for the employees, from the moment that they joined the company until they leave the company becomes a standard, of furthermore - an imperative - if a company wants to keep its high-quality professionals and attract new talents that can enhance its existence.*

*Customers today do respect and value good employers and give them support through their loyalty, so employer branding is a long-term and sustainable strategy that empowers corporate brand in total.*

*The purpose of this paper was to research the marketing aspects of employer branding. The research was conducted through an online survey among students regarding students' perspective on employer branding, for students are future professionals that companies should want to recruit and keep.*

*The results of the research can serve as a good base for selecting the characteristics that will be communicated inside and outside the company to exist and attract new professionals or talents and also to raise awareness of the importance of employer branding - that will become as important as a corporate brand or a product brand. Satisfied employee means satisfied consumer – and that makes a win-win situation for society as a whole.*

**Keywords:** marketing, employer branding, company's differentiation, employer of choice

JEL Classification: M31, M37

## 1. INTRODUCTION

Today's saturated and competitive market is a great challenge for a company – it is necessary to create competitive advantages in order to be successful.

It is often said that people are the key to success, so when a company has top professionals and experts satisfied with their career and how a company is treating them, that makes a strong base for creating value for customers, too. Care for the employees, from the moment that they joined the company until they leave the company becomes a standard, of furthermore - an imperative - if a company wants to keep its high-quality professionals and attract new talents that can enhance its existence.

Branding is an important strategy every company can benefit from, for it is a way to differentiate one company from another. Ways to brand a company are numerous, but today we see so many successful companies brand themselves as good employers, the ones that care for their staff... it implies that they care for people in general, so that includes the customers, too. Customers today do respect and value good employers and give them support through their loyalty, so employer branding is a long-term and sustainable strategy that empowers corporate brand in total.

The purpose of this paper was to research the marketing aspects of employer branding. The research was conducted through an online survey among students regarding students' perspective on employer branding, for students are future professionals that companies should want to recruit and keep and we also did an overview of the subject matter.

The importance of communication in human life is unquestionable. Communication is the interaction of at least two sides that results in a certain way. We communicate for different purposes and in so many forms and ways, but always to fulfill the need for social interaction. For people to be able to create new values, both privately and professionally, communication as an art of interaction is the one that enables it.

Communication management is one of the business strategies of our modern era. When we look at communication through the aspects of marketing, we can say that communication as an exchange represents a source of valuable information about the market and about consumers especially. Successful communication is a precondition for a good understanding and satisfying of consumers and their needs and desires. Long-term relationships with consumers lead to creating loyal consumers – consumer loyalty is of multiple values for the company.

## 2. BRANDING

A brand, in general, represents the name, the value and the association with a company and what it stands for.

According to American Marketing Association, “a brand is a name, term, design, symbol, or any other feature that identifies one seller’s good or service as distinct from those of other sellers” (Schneider, 2003). “Brands can be distinguished from the more generic constructs of products and services, which can be defined as anything offered for sale to a market to satisfy a need or a want. Unbranded products and services are commodities (flour, soap, beer, banking). Brands allow for the differentiation of generic products and services by associating them with particular producers, meanings, and qualities. A brand is the total constellation of meanings, feelings, perceptions, beliefs, and goodwill attributed to any market offering displaying a particular sign. Branding refers to the advertising, marketing, and managerial practices designed to develop, build, and sustain the characteristics, properties, relationships, and signifiers of a particular brand.” (Wiley Online Library, 2015)

Branding is “the process involved in creating a unique name and image for a product in the consumers’ mind, mainly through advertising campaigns with a consistent theme. Branding aims to establish a significant and differentiated



presence in the market that attracts and retains loyal customers.” (Business Dictionary, 2019) It is also a way a customer see us as a company. Keller and Kotler say “Branding is endowing products and services with the power of a brand.” (The Branding Journal, 2018)

When we think of a brand, we think about our customer experience in total, not just the sign, a logo, or a motto... but a quality brand doesn't just happen... it is a result of a planning process and a strategy. Branding helps companies to: gain recognition through consistent communication so customers recognize them more easily; it helps to differentiate a company from another; speaks about a company, what it stands for, describes its core; acts as a motivator and a direction for the staff, too (how to achieve the organization's goals); helps customers to identify with the brand (people do love to be a part of a group, a community, to belong somewhere...); communicates a level of service quality (what a customer can expect when they experience the brand); represents a claim but also a promise to customers (what value will be delivered); helps maintain a focus on a company's original mission and vision as an organization; helps to connect emotionally with customers (having a strong brand helps people feel good at an emotional level when they engage with the company. (Strategy New Media, 2018)

Branding is a strategic way to make the desired impact on many aspects of a company's business. Branding affects:

1. Consumers: As discussed above, a brand provides consumers with a decision-making-shortcut when feeling indecisive about the same product from different companies.
2. Employees/shareholders/third-parties: Besides helping consumers to distinguish similar products, successful branding strategies are also adding to a company's reputation. This asset can affect a range of people, from consumers to employees, investors, shareholders, providers, and distributors. As an example, if you don't like or don't feel connected to a brand, you would probably not want to work for it. However, if you feel like the brand understands you and offers products that inspire you, you would probably desire to work for it and be part of its world. (The Branding Journal, 2018)

**Figure 1** Branding and what does it involve?



**Source:** Your Listing Expert blog, <https://yourlistingexpert.com/why-branding-is-important-for-businesses/> (20-12-2018)

### 3. EMPLOYER BRANDING

The term employer brand represents how a company is perceived as an employer. Employer brand is vitally important in today's market and there is a big competition for attracting talents to the company. (Attracting Top Talent with a Strong Employer Brand, 2019)

“There are a lot of ways that companies define success: employee satisfaction, customer service rating, profits, sales, number of investors, and the list goes on and on. No matter what your definition is, or if it's a combination of several pieces, there are several things that go into making that success a reality. One of the most important things in the foundation of business success is having the right employees in place. Success grows from having passionate, capable individuals in each of the positions in your company. Start-ups live or die on the dedication and flexibility of their hires, while other businesses might need talent that is extremely tech-savvy, highly educated, and has many certificates and credentials. No matter what kind of employees your business needs, employees are crucial to the success of your business. To attract and retain the best talent, you need to make sure you've positioned yourself well with employer branding.” (Why Employer Branding Is Critical to Company Success, 2019)

Figure 2 Employer branding



Source: Why Employer Branding Is Critical to Company Success, [https://www.techfunnel.com/hr-tech/why-employer-branding-is-critical-to-company-success/\(02-02-2019\)](https://www.techfunnel.com/hr-tech/why-employer-branding-is-critical-to-company-success/(02-02-2019))

Employers today are in a position where they have to clearly define their so-called value proposition. It stands for a value set that a company can provide to its employees. A strong employer brand enhances the organization's ability to attract, retain and continuously motivate its employees. It also contributes positively to the ability of the company to satisfy more efficiently customer's need and desires. The quality of the employer's image will lead to higher employee engagement and dedication, which will again produce higher profits and overall higher return on investment. One should not ignore the fact that employer branding is not only a strategy of communicating the desired perception of the company out. It must be based on real experience and the existing values that the organization advocates and implements. As an employer, a company should follow and implement the golden rule to promise only what it can and will deliver, that is – to be what it really is and what it truly stands for. (Kajinić, 2017, 5)

Ambler and Barrow (1996) were some of the first academics to acknowledge the concept of employer branding, acknowledging its ability to attract potential employees and retain current talent. They defined the topic initially as a package of benefits provided by an employer during employment (Ambler & Barrow, 1996). Further research into the concept by Backhaus and Tikoo (2004) stated that employer branding is the process in which an identifiable and unique identity as an employer is built. More recently, Sivertzen, Nilsen, and Olafsen (2013) proposed that employer branding is the development of an organiza-

tion's image and reputation as a prospective employer and would affect its ability to retain employees. (Gilani, H., Cunningham, L., 2017)

Employer branding is a relatively new approach toward recruiting and retaining the best possible human talent within an employment environment that is becoming increasingly competitive. We can also call it a strategy for a company to be separated from its competition. Employer branding has the potential to be a valuable concept for both managers and scholars. Integrating recruitment, staffing, training and development, and career management activities under one umbrella will have a substantially different effect than each of the processes would have alone. The employer branding concept can be especially valuable in the search for an organizing framework for strategic human resource management. (Backhaus, K., Tikoo, S., 2004, 513)

Employer branding combines three concepts:

- ✦ Corporate culture and identity,
- ✦ Internal marketing and
- ✦ Corporate Reputation.

Corporate culture and identity define the values that the organization defines as its mission, the values that it implements through its strategy and what it is trying to build its identity. A positive effect, ultimately, is the cohesion of employees, the identification of consumers and employees with a vision of the company and, undoubtedly, a good reputation of the company. Internal marketing, by Kotler, is: "Successful employment, training, and motivation of capable employees to serve consumers." They accumulate what we call later a corporate reputation (made of competencies, being consist and creating integrity built on honesty and consequent trust in the business entity and it's brand by all interested public). (Kajinić, 2017, 13)

In order to develop a successful employer brand strategy, by Minchington, key elements we should take into consideration are: to clearly define a strategy (it is always a key to success), with very clear objectives; to develop distinctive assets of a company (those many creative elements such as color, logos, slogans... that make an association with the brand to the employees, so they can connect to a company); to engage leadership to implement an employer brand strategy across the organization (identify a team); empower staff (create a positive corporate culture that motivates, unleashes creative potential and gives staff a chance to make its contribution); to be unique; to train and develop leaders in

creating and managing the employer branding strategic function and lead from the front (so that leaders responsible for the employer brand strategy are visible to a company's staff. (Employer Branding College, 2016)

There is no point attracting the best talent if you cannot inspire, motivate and retain them. To develop and implement an employer brand strategy that builds a competitive advantage is complex and involves multiple stakeholders, often with competing interests. The successful organizations beyond 2020 will be those that:

1. Adopt a strategic approach to employer branding,
2. Build employer brand leadership capability across the leadership functions to manage the employee experience through the full employment lifecycle,
3. Understand how value is created through integrated stakeholder experiences (human resources, freelancers, candidates, employees, customers, and investors), and
4. Deploy a business model and organizational structure that is agile enough to respond to changes in the political, economic, social (e.g., how people connect and communicate today) and technology (e.g., AI, neuroscience, robotics) environments faster than their competitors. A corporate culture that nourishes continuous learning, empowerment, transparency, and trust will give the best results. (Minchington, B., 2017)

Impressive information of 72% of recruiting leaders around the world agree that employer brand has a significant impact on hiring, hence that makes a significant impact on your business's success. Salary is important to candidates, but it's not the most important factor - CareerBuilder reports that 67% of candidates would essentially accept lower pay if the company they were interested in had very positive reviews online. Stats show that 78% of people will look into a company's reputation as an employer before applying for a job and 88% of millennials believe that being part of the right company culture is very important. It is also very important that employer branding is communicated on social media platforms like Facebook, Twitter, Instagram, and LinkedIn, for 79% of job seekers are likely to use social media in their hunt for their next job. A strong employer brand leads to 50% more qualified applicants. Employer branding becomes even more important in highly competitive sectors where niche skill sets are in demand. (Ansari, K., 2018)

To conclude the marketing aspects of employer branding, we will agree that “Every employee should be treated as a customer and every customer should be treated as a part of a company.” (Gronroos, C., 1990, 10)

## 4. RESEARCH

### 4.1. RESEARCH METHODOLOGY

The purpose of this paper was to research the marketing aspects of employer branding. The research was conducted through an overview of relevant literature and an online survey in 2017 among students (108 respondents) regarding students’ perspective on employer branding, for students are future professionals that companies should want to recruit and keep. The research analysis was descriptive.

Hypothesis was:

H1 - More than 50% of respondents are familiar with the term employer branding.

H2 - Dynamic organization is more important to respondents as a characteristic that marks them an ideal company from the financial strength.

H3 - Respondents value more a possibility of personal advancement (promotion) within a company than high pays.

H4 - Respondents consider building an employer brand as important as building a brand name for a product. (Spajić, 2017, 8-9)

### 4.2. FINDINGS

Gender structure of the respondents showed us that 69% were women and 31% men. The age of the respondents - students varied from 22 to 29 years, so all of the respondents are young people, all students of graduate studies.

H1 - More than 50% of respondents are familiar with the term employer branding. *Supported.* Exactly 63,9% respondents said they are familiar with the term of employer branding. These results are positive; hence it is very important for young educated people to be aware of the importance of their personal role at a company – their employer in the future.

H2 - Dynamic organization is more important to respondents as a characteristic that marks them an ideal company from the financial strength. *Not supported.* Students perceive the “ideal” company through some characteristics: primarily by “gender equality”, “interesting products and services” and “good/inspirational management”. Also important are “financial strength”, “strong organizational culture”, “constant innovation” and “acceptance of employees with disabilities”, while a “conservative working environment” seems irrelevant.

H3 - Respondents value more a possibility of personal advancement (promotion) within a company than high pays. *Not supported.* Students perceive high pay as a more valuable element of an “ideal” company than the possibility to progress at a current work position. We must say that respondents perceive the two elements similarly important. Among the other features highlighted by the respondents are “extremely flexible working hours”, “paid overtime”, “safe work” and “hygienic work conditions”.

H4 - Respondents consider building an employer brand as important as building a brand name for a product. *Supported.* This result implies that employer branding is perceived among students (respondents) as a key asset for a company to achieve long-term business success for it is known that people are a company’s biggest strength, so a struggle for talents is strong. (Spajić, 2017, 52)

Important information to this and similar issues companies should consider and use in creating a marketing strategy to become an employer brand. When talents are attracted to a company, they give more value, motivate others and a company creates more value in general.

## 5. CONCLUSION

A brand, in general, represents the name, the value and the association with a company and what it stands for. Employers today are in a position where they have to clearly define their so-called value proposition. It stands for a value set that a company can provide to its employees. A strong employer brand enhances the organization’s ability to attract, retain and continuously motivate its employees. It also contributes positively to the ability of the company to satisfy more efficiently customer’s need and desires. “Every employee should be treated as a customer and every customer should be treated as a part of a company.” Customers today do respect and value good employers and give them support



through their loyalty, so employer branding is a long-term and sustainable strategy that empowers corporate brand in total.

The results of the survey show that young educated people are aware of the importance of employees' role at a company – their employer in the future. Students perceive the “ideal” company through some characteristics: most important are “gender equality”, “interesting products and services” and “good/inspirational management”. Also important are “financial strength”, “strong organizational culture”, “constant innovation” and “acceptance of employees with disabilities”. Students perceive high pay as a more valuable element of an “ideal” company than the possibility to progress at a current work position. Respondents consider building an employer brand as important as building a brand name for a product. The result implies that employer branding is perceived among students (respondents) as a key asset for a company to achieve long-term business success for it is known that people are a company's biggest strength.

The results of the research can serve as a good base for selecting the characteristics that will be communicated inside and outside the company to exist and attract new professionals or talents and also to raise awareness of the importance of employer branding - that will become as important as a corporate brand or a product brand. Satisfied employee means satisfied consumer – and that makes a win-win situation for society as a whole.

Reasons and benefits for building an employer's brand are many. The brand can help in creating competitive advantage, reducing recruitment costs, attracting professionals, and improve employee productivity. In order to create a successful employer brand, it is necessary to perceive the employer branding as a strategic way of being a company that is aware of the importance of human resources and attracting and retaining the best talent on the market.

The role of employees in building an employer's brand and transferring value is important, as employees, directly and indirectly, influence the brand image creation in the minds of the internal and external public.

For that reason, the employment process needs to be approached very seriously and strategically. The basis for building an employer's brand is to define the employer's bid value that is communicated to current and potential employees and which provides a positive relationship between the promised and the provided. The results of the research give an insight into the characteristics of the employer and the value of the employer's value.



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# LIFECYCLE AND BRAND REPRESENTATION OF SMARTPHONES

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## **Abstract**

*Today's market is significantly different when compared to the markets ten, twenty, or fifty years ago, which is especially true for the technological products market. The presence of many similar, related, and competing products has forced the manufacturers to think about the situation in a new way. The products no longer are, or can be, the result of exclusive production; they are instead the result calculated on the basis of market demand, i.e. consumer needs. Smartphones are a very good example of this, considering that we cannot imagine a world without them. All the products available at the market have a lifecycle. Considering a large number of products at the market today and the strong market competition, it is not rare to see products that used to have a long lifecycle and represented powerful brands disappear from the market. The aims of this paper are to analyze the condition of the smartphone market, determine the position that smartphones have on the lifecycle curve, and investigate the representation of individual smartphone brands, the reasons for replacing, purchasing, and using smartphones. The research was conducted us-*

*ing a survey questionnaire on a sample of 233 study participants. The results have shown that the lifecycle of an individual smartphone model, regardless of the manufacturer, is regularly two to three years, which was recognized by telecommunication service providers, who defined their marketing strategy according to this information. The participants are replacing their mobile phones with increasing frequency; they are keeping up with trends and spending an increasing amount of time on their smartphones. Implications of our findings are discussed in the paper.*

**Keywords:** *lifecycle, smartphones, marketing strategy, brand*

JEL Classification: M20, M31

## 1. INTRODUCTION

All business entities, whether they are selling products or services, should be implementing the marketing concept and all of its features. It is necessary to start with the market, more accurately from the consumers and their needs, wants, expectations, and similar. Based on the information they receive, they make decisions on the products that should be made, along with all of their aspects.

All the products on the market have a lifecycle. It can be only several hours or up to several decades. Today, considering a large number of products on the market and the high level of competition, it is not unusual to see products that used to have a rather long lifecycle and a powerful brand disappear from the market. One could say that it is very similar to human life, products are born, live a life, and ultimately die. When we observe a product, we can see that it goes through several stages during its lifecycle. Naturally, a product cannot stay on the market forever and keep up the large revenues that generate profit for the company, i.e., once a product reaches its peak success, it is logical that it would slowly begin to decline. That fact is the reason for constant product innovations and improvements through marketing strategies, to enable them to survive on the market as long as possible.

The research goals in this study were to analyze the condition of the smartphone market and to determine the position of smartphones on the lifecycle curve. The purpose of the implemented primary research was to attempt to determine the presence of smartphones in Osijek and the surrounding area, us-

ing a sample of 233 study participants. The marketing strategies were proposed based on primary and secondary data.

## 2. PRODUCT LIFECYCLE

The product lifecycle theory has been applied in research in the last fifty years. Previšić (2011, 856, 857) stated that the lifecycle of a product is a concept used when trying to describe the sales, profit, consumers, competition, and the marketing efforts related to a product, from the moment it appears until it is removed from the market. The duration of specific stages of the product lifecycle on the market is not uniform and it depends on all the elements related to the product or the service and the relevant environmental aspects. Its most common graphical representation is in the shape of a semi-circular, bell-shaped curve, but there are also some alternative shapes of course (Kotler, 2001, 347). There are various stage distributions, but the following stages are most commonly mentioned (Meler, 2005, 195):

1. Creating the idea about the product
2. Product development stage
3. Market introduction stage
4. Product growth stage
5. Product maturity stage
6. Product aging and decline

“As the economic business conditions change, the market, and consequently the product, goes through new stages of interest and the consumer’s set new requirements, new competition appears, so the business entities change the product lifecycle strategy. Namely, every business entity wants to extend the product lifecycle. The method for achieving that result depends on the established business goals, the current market position, consumer habits and needs, and the willingness to invest financial assets into the improvements for the existing product or creating a new product” (Lulić, 2009, 58). Furthermore, Lulić (2009, 58) states that it is necessary to emphasize the following:

- Every product has a lifecycle;
- Its sales go through specific stages, each of which represents challenges, possibilities, but also problems for the business entity;

- ♦ Profits rise and fall differently in the various stages of the product lifecycle;
- ♦ Every product demands certain strategic management in the areas of marketing, finances, raw material acquisition, and human resources, in each stage of the product lifecycle.
- ♦ There are many factors that affect the product lifecycle curve, we will list the following (Kotler et al, 2006, 606):
- ♦ Consumer needs and wants, as well as their attitudes and behavior – these, determine the amount of time required for a new product to be accepted, some are accepted faster and some slower;
- ♦ Technological changes;
- ♦ Competitor activities – these can be anticipated up to a point and their effect can be increased or reduced using economic policy; e.g. a product can be protected by a patent or a license, or copyrighted;
- ♦ Marketing activities by a business entity – every business entity want to keep the product in the transition period between the growth stage and the maturity stage for as long as possible because the most favorable business results are created in that period.

The product lifecycle concept is very important for making product-related decisions. It shows both the sales curve and the profit curve. It enables marketing experts to anticipate the changes in consumer tastes, competition, and similar. Considering it is a theoretical model for monitoring and anticipating sales and profits for the product, it cannot be applied always and for every product. This is also the main criticism of this concept. Furthermore, there is certain criticism related to the practical application of the concept, as well as the fact that there is an alternative product evolution cycle concept, which is based on the constant growth and development of a product, as opposed to the product lifecycle concept, which is based on the birth and ends with the death of a product. One of the criticisms is that the concept does not have an accurately determined sequence of stages or their duration and that in some rare situations it is very difficult to precisely determine the stage in which the product is at the observed moment. Determining the lifecycle of a product can be exceptionally difficult, even if some sort of a time analysis can be performed. This is related to the complex issue of measuring the market share. (McDonald, 2004, 210). The simplicity of the product life cycle concept makes it vulnerable to criticism,

especially when it is used as a predictive model for anticipating when changes will occur and one stage will succeed another, or as a normative model which attempts to prescribe alternative strategies should be considered at each stage. According to these criticisms, there are five basic issues that must be faced in any meaningful application of the concept (Day, 1981, 60):

- ✦ How should the product-market be defined for the purpose of life cycle analysis?
- ✦ What are the factors that determine the progress of the product through the stages of the life cycle?
- ✦ Can the present life cycle position of the product be unambiguously established?
- ✦ What is the potential for forecasting the key parameters, including the magnitude of sales? The duration of the stages and the shape of the curve?
- ✦ What role should the product life cycle concept play in the formulation of competitive strategy?

The following chapter will give a brief overview of various recommended marketing strategies since it is needed to change them over the lifecycle in order to create and keep the competitiveness of the product.

### 3. MARKETING STRATEGIES IN SPECIFIC STAGES OF THE PRODUCT LIFECYCLE

As previously stated, the product lifecycle concept provides the business entity with a solid foundation for making business decisions and strategies and realizing goals. If they want to keep the sales of a product profitable throughout the lifecycle, there are several things they can do. In that regard, it is important to know how the product lifecycle affects all the elements of the marketing mix. McDonald (2004, 208) states that the product must change throughout its lifecycle, and regarding that, every other element must also change, and all of that must correspond to the relevant elements from the environment (pricing policy, competition, the influence of suppliers and distributors, technology...).

“Using the term lifecycle for the development of a marketing strategy can also be difficult because the strategy is both the cause and the consequence of the product lifecycle. The current position of a product in its lifecycle can sug-



gest the best marketing strategies, and the marketing strategies created in such a way affect the product performance in the subsequent stages of its lifecycle. Nevertheless, the product lifecycle concept, if used cautiously, can help in the development of good marketing strategies in various stages of the product lifecycle.” (Kotler et al, 2006, 606).

Table 1 shows marketing strategies in specific stages of the product lifecycle, regarding the specific elements of the marketing mix.

**Table 1.** Marketing strategies in specific stages of the product lifecycle

	INTRODUCTION	GROWTH	MATURITY	DECLINE
PRODUCT	Offer a basic product	Offer accessories for the product, service, warranty	Introduce various brands and models	Gradually withdraw low-performing products
PRICE	Apply the cost-plus method	Determine the price for market penetration	Determine the price that matches or is better than the competitors' prices	Gradually lower the price
PLACE	Develop selective distribution	Develop intensive distribution	Develop even more intensive distribution	Gradually cancel unprofitable sales points
PROMOTION	Develop product awareness among early adopters and mediators	Develop awareness and interest in a mass market	Emphasize brand differences	Lower to the level required to keep the loyal customers
SALE INTENSITY	Push strong sales activities to encourage demand	Reduce to take advantage of high consumer demand	Increase to encourage brand change	Reduce to minimum levels

**Source:** Kotler et al (2006, 613)

The abovementioned leads to the conclusion that the business entity can and should manage their product by determining appropriate strategies for specific stages in the cycle. With the appropriate marketing strategy and business activities, it is definitely possible to influence the reduction and extension of specific stages in the product lifecycle.

#### 4. SMARTPHONES - BRAND REPRESENTATION AND LIFECYCLE

There are hardly any devices that impacted us and our lives more than smartphones. Over 2 billion people own at least one, and today everybody is more concerned about bringing their phone than their keys when they leave

the house. Smartphones, or mobile phones with advanced options and much more processing power than “regular” mobile phones, appeared on the market in the late 1990s, but they reached their *boom* with the launch of the Apple iPhone in 2007. The iPhone revolutionized the market with its features like the touchscreen and the virtual keyboard. The first smartphone with the Android operating system appeared on the market in late 2008, which is when the market “battle” between the iPhone and Android began. Since that moment, the smartphone market has a stable growth, and as time went by, numerous manufacturers appeared that “embraced” Android as their operating system.

In the next years, an additional one billion people are estimated to become mobile phone subscribers. The smartphone adoption rate is already at 60 % in the developed world and will lead smartphone growth over the next five years as the average selling price of smartphones continues to decline. This is estimated to add a further 2.9 billion smartphone connections by 2020. (SMART, 2019)

People are now spending more time on their smartphones than any other device. Smartphones are taking the central stage of consumer life. In the blog of Counterpoint (2017) states that almost half of respondents spent more than 5 hours per day on their smartphone. One in four users now spend more than 7 hours every day on their smartphone, these are true power users mostly running businesses on their phones or consuming digital content for long hours. Looking at regional trends, users spend more time on their smartphones in emerging countries than in developed countries. Malaysian consumers spend the most time on their smartphones across regions. More than 55% of users reported that they spend more than 5 hours per day on their smartphone. This trend will be prevalent in most emerging markets. Japanese smartphone users spend the least time with their smartphones. 43% claimed to spend less than 3h per day on their device (Counterpoint, 2017).

Most people replace their smartphones after a period of 2-3 years. It’s not because the smartphone has stopped working, but because of the fact that the smartphone may have become slow. The other motives can be: try something new, the operating system may have become old and may not be supporting new apps or newer versions of old apps, might want to upgrade to a smartphone offering more storage space or RAM, battery life etc. (NewsPatroling, 2017). As we can see from the graph 1, smartphones have changed the world in a remarkably short time frame. Mexican users replace their smartphone fastest, replacing

every 18 months. This behavior is likely a consequence of the high percentage of used devices in Mexico; almost one-third of the base uses a used device. One in three users in Mexico is likely to upgrade their devices every twelve months. On the other end of the scale, Japanese users reported that they replace their device every 26 months, the longest among all participating countries. This is partly due to the mature and aging user base with access to more premium, durable devices that do not require frequent upgrades (Counterpoint, 2017).

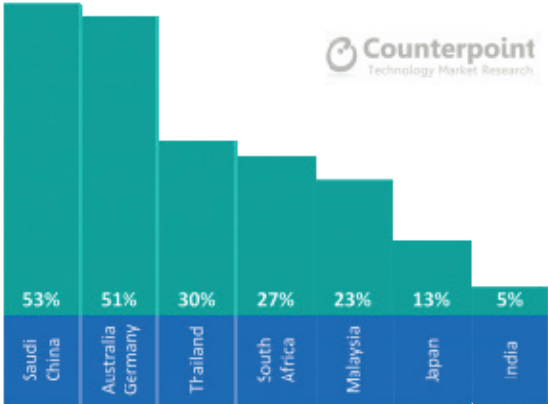
**Graph 1.** Average global smartphone replacement cycle



**Source:** Counterpoint (2017). Available at <https://www.counterpointresearch.com/smartphone-users-replace-their-device-every-twenty-one-months/>, access January 29, 2019

More than half of the Australian, Chinese, German and Saudi smartphone users revealed that they would be willing to spend more than US\$400 to replace their current device. These would be the target markets for brands looking to promote their premium portfolio. More than one-third of German and Australian users would be willing to spend more than US\$500 in their next smartphone purchase. Perhaps not coincidentally, Apple dominates the installed base in both countries, and more than 85% of the Apple users would not switch brands. Only 13% of Japanese users were willing to spend >\$400 for the purchase of their next device – even though Apple is also the dominant smartphone brand in Japan. This also explains the slowing upgrade cycles as Japanese consumers are generally more conservative than their peers in other markets (Counterpoint, 2017). The above can be seen in graph 2.

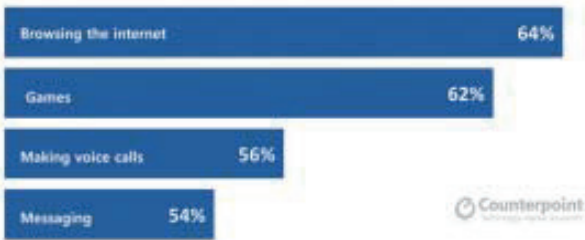
**Graph 2.** Percentage of Users Willing to Pay >\$400 for Their Next Smartphone



**Source:** Counterpoint (2017). Available at <https://www.counterpointresearch.com/smartphone-users-replace-their-device-every-twenty-one-months/>, access January 29, 2019

Browsing the Internet and Gaming are amongst the most popular activities on a smartphone across different countries. On average, 64% of the respondents browse the internet on their smartphone daily, while 62% use their smartphone for gaming. Voice calls remain as the preferred choice of communication across many markets (such as Germany and Japan) ahead of messaging compared to emerging markets in Asia and Africa, where messaging took the front seat. Watching videos and spending time on social networks are the fifth and sixth most popular activities on a smartphone (Counterpoint, 2017). The above can be seen in graph 3.











**Graph 3.** Top Use-Cases for Smartphone Users



**Source:** Counterpoint (2017). Available at <https://www.counterpointresearch.com/smartphone-users-replace-their-device-every-twenty-one-months/>, access January 29, 2019

Today, the most valuable brand on the global level is the American “Apple” (Figure 1). The top 10 also includes the Korean Samsung in the smartphone category, which is in seventh place. Based on all of that, Apple took full advantage of all the options and benefits that a brand can offer. Apple created a large circle of loyal consumers, which greatly facilitated the launch, promotion, and sale of new products. Whether it is the iPhone, the iPad, or the iMac, it is essentially, all the same, there are new models coming out every year and they find their buyers without any issues, due to a large, loyal consumer base. This data would not be very impressive if those products were not rather expensive. Even though there were never any issues regarding the quality of Apple products, a large number of their consumers buy their products regardless whether they are better than the competing products at that time, or whether the investment/return ratio is better for the competition, which is actually an ideal demonstration of loyal consumers. A specific example of that is the release of iPhone 7 on the American market, which practically caused chaos and “camping” for several days before the launch in front of Apple stores. Furthermore, the long-time supply chain leader and last year’s runner-up McDonald’s joined Apple, P&G, and Amazon in qualifying for the “Masters” category, which Gartner introduced in 2015 to recognize sustained leadership over the last 10 years (Supply chain management review, 2018).

**Figure 1.** The world's most valuable brands (2018)

	Rank	Brand	Brand Value	1-Yr Value Change	Brand Revenue	Company Advertising	Industry
	#1	Apple	\$182.8 B	8%	\$228.6 B	-	Technology
	#2	Google	\$132.1 B	30%	\$97.2 B	\$5.1 B	Technology
	#3	Microsoft	\$104.9 B	21%	\$98.4 B	\$1.5 B	Technology
	#4	Facebook	\$94.8 B	29%	\$35.7 B	\$324 M	Technology
	#5	Amazon	\$70.9 B	31%	\$169.3 B	\$6.3 B	Technology
	#6	Coca-Cola	\$57.3 B	2%	\$23.4 B	\$4 B	Beverages
	#7	Samsung	\$47.6 B	25%	\$203.4 B	\$4.5 B	Technology
	#8	Disney	\$47.5 B	8%	\$30.4 B	\$2.6 B	Leisure
	#9	Toyota	\$44.7 B	9%	\$176.4 B	\$3.8 B	Automotive
	#10	AT&T	\$41.9 B	14%	\$160.5 B	\$3.8 B	Telecom

**Source:** Forbes (2019). Available at <https://www.forbes.com/powerful-brands/list/#tab:rank0>, access January 3, 2019.

It is interesting that Apple, despite its position as a global leader concerning brands, is in the third place when it comes to market share (13.2%), after Korean Samsung (20.3%) and Huawei (14.6%). The reason for that is that Apple only sells smartphones in the high price range, while Samsung and Huawei also offer phones in the lower price range. Other manufacturers hold approximately 50% of the global market share (Figure 2).

**Figure 2.** Market shares held by smartphone manufacturers

Quarter	2017Q1	2017Q2	2017Q3	2017Q4	2018Q1	2018Q2	2018Q3
<b>Samsung</b>	23,2%	22,9%	22,1%	18,9%	23,5%	21,0%	20,3%
<b>Huawei</b>	10,0%	11,0%	10,4%	10,7%	11,8%	15,9%	14,6%
<b>Apple</b>	14,7%	11,8%	12,4%	19,6%	15,7%	12,1%	13,2%
<b>Xiaomi</b>	4,3%	6,2%	7,5%	7,1%	8,4%	9,5%	9,5%
<b>OPPO</b>	7,5%	8,0%	8,1%	6,9%	7,4%	8,6%	8,4%
<b>Others</b>	40,2%	40,1%	39,6%	36,8%	33,2%	32,9%	33,9%
<b>TOTAL</b>	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

**Source:** IDC (2019). Available at <http://www.idc.com/promo/smartphone-market-share/vendor>, access January 3, 2019.

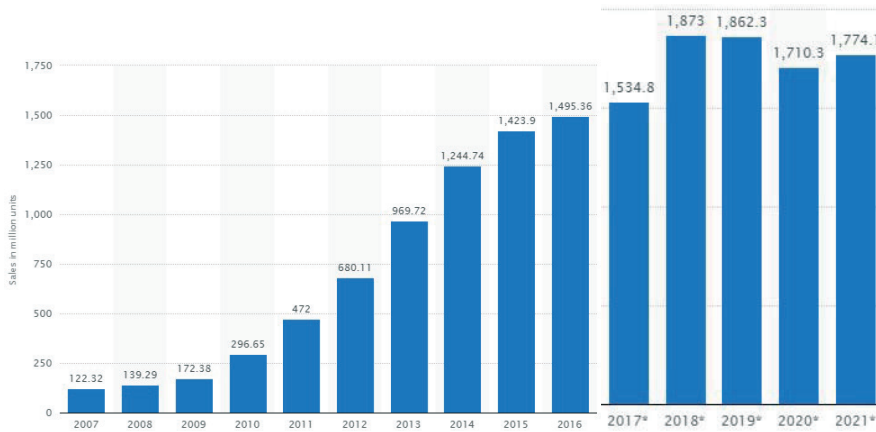
The way that the public perceives brands like Apple and Samsung greatly facilitates their sales and the market positions that they hold. The reason for it is the image that they created in the public, i.e. the perceived quality of their products. This fact is confirmed every time a new smartphone is launched, but also during the launch of other related products that they “dropped” to the market in the last several years. This is also one of the reasons for the occurrence of the “halo effect”, which further strengthens the mentioned manufacturers, especially Apple. Apple products often appear in American films today, as part of stealth advertising along famous actors, and they have become status symbols in a way, which is used quite efficiently in generating revenue.

If we take 2007 and the launch of the first iPhone as the beginning of the smartphone era, looking through the prism of the lifecycle of a smartphone as a generic product, this marks its market introduction stage. The period before the mentioned year can be considered as the product development stage in which no revenue was generated, instead, it only created costs resulting from investments into product development.

Graph 4 shows the total global sales and the sales projection for smartphones in the 2007 to 2021 period. During the first year, from today’s perspective, a “low” number of 122 million smartphones were sold, the following two years saw a growth in sales of 10% and 20%, respectively. After that growth, we can say that the market introduction stage ended. The growth stage started in 2010 when almost 300 million smartphones were sold. That year is also the first year when Samsung smartphones appeared, which will become the greatest competitor to Apple’s iPhones. In the following four years, the sales of smart-

phones grew in every cycle for almost 50%, and they reached 1.25 billion units in 2014, which is almost one-fifth of the world population. In 2015 and 2016, the growth in sales significantly reduced, i.e. the growth in 2015 was a little over 15%, while the growth for 2016 is about 5% and the total sales are almost 1.5 billion units. It is clear that the curve is shaping to be a classic product lifecycle curve and its growth rate is declining. The sales projection for smartphones shows and anticipates a mild drop in sales. This deviation is justified due to the fast-growing Asian, or more precisely the Chinese market.

**Graph 4.** Total sales and sales projections for smartphones in millions of units in the period 2007-2021



**Source:** Statista (2018). Available at <https://www.statista.com/>, access January 14, 2019.

It can be concluded that smartphones are in the maturity stage of the product lifecycle. The new competitors (mostly Asian) are entering the market, developing brand recognition and taking their market share, mostly based on competitive pricing. Advanced technology is not being the point of differentiation anymore, because the differences are decreasing. However, the brand still remains very important as a feature of a smartphone with which consumers identify themselves. For that reason, the lifecycles of leading brands, that have created this market from the very beginning, will be analyzed in the following chapter.

#### 4.1. THE LIFECYCLE OF APPLE AND SAMSUNG SMARTPHONES

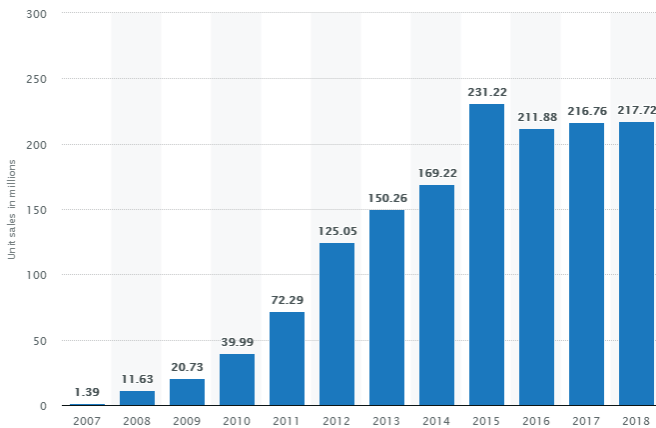
Considering that Apple and Samsung are among the 10 most valuable brands at the global level (Figure 1) and that together they hold about 30% of



the global smartphone market (Figure 2), further in the study we will show the position of Apple and Samsung smartphones on the product lifecycle curves.

Since their first smartphone (in 2007 and 2010), Apple and Samsung combined have sold over 2.5 billion units on the global market and in 2016 alone they had an income of \$160 billion. Graph 5 shows the global iPhone sales for the 2007 to 2018 period. During its first year, a little over one million iPhones were sold and 10 years later its sales were about 200 million units. In 2016, 212 million iPhones were sold, which is a drop of almost 10% when compared to 2015. It is interesting that it is the first drop in sales recorded since 2007 and the first iPhone series. The graphical representation of iPhone sales looks very similar to the representation of sales for all smartphones, and if we look at it as a lifecycle curve, it is also clear that the iPhone is transitioning from the growth stage into the maturity stage.

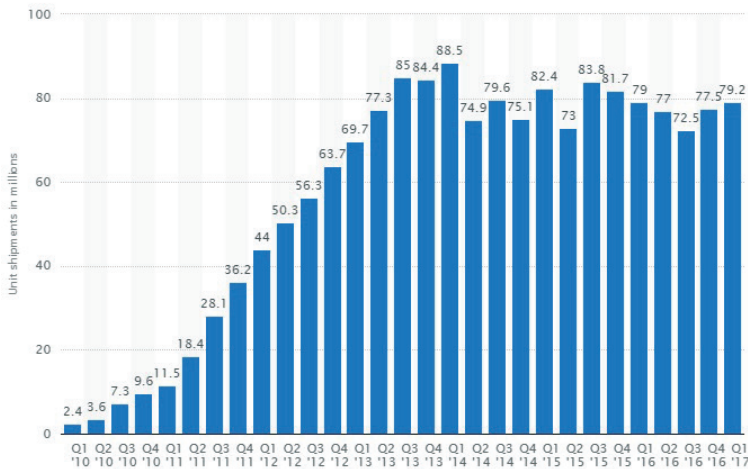
**Graph 5.** Unit sales of the Apple iPhone worldwide from 2007 to 2018 (in millions)



**Source:** Statista (2019). Available at <https://www.statista.com/statistics/276306/global-apple-iphone-sales-since-fiscal-year-2007/>, access February 6, 2019.

Graph 6 shows the global sales of Samsung smartphones for each quarter, in the 2010 to 2016 period. Very similar to Apple, Samsung shows exponential growth in the first four years of their presence on the smartphone market, from 23 million units sold in 2010 to 316 million in 2013. In the following years, the growth rate was declining, until it reached, almost identical to Apple, a drop in sales of approximately 5% in 2016.

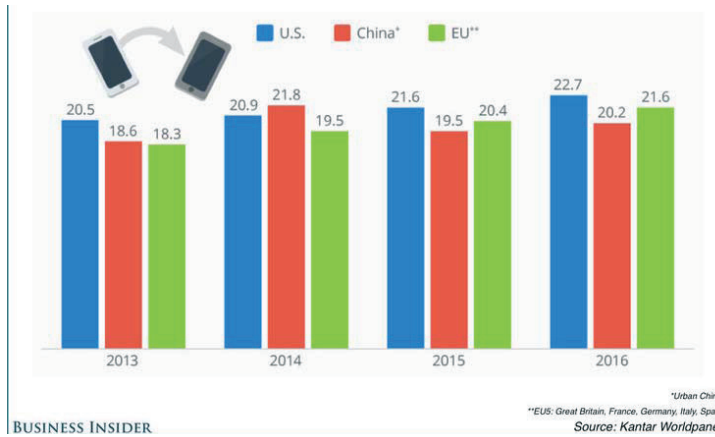
**Graph 6.** Sales of Samsung smartphones in millions of units, in the 2010 to 2016 period



**Source:** Statista (2018). Available at <https://www.statista.com/>, access January 14, 2019.

All of this suggests that Apple, i.e. iPhone, and Samsung smartphones are in similar positions if they are observed from the product lifecycle perspective. The mentioned manufacturers are constantly extending the lifecycles of their smartphones by launching new and improved models at regular intervals (once a year). However, if the product lifecycle concept is applied on several specific models (e.g. Samsung Galaxy S5, Samsung Galaxy S6, and Samsung Galaxy S7) that appeared on the market consecutively, in that case we can observe it in an alternative way, the one that creates a wave-like pattern with each new model that replaces its predecessor. That is, once each of these new models are launched, there is a sudden spike in sales which reaches a peak, followed by the launch of a new model and the marginalization of the older one (lower price, discounts, deals with telecommunication service providers, and similar), finally resulting in discontinuation. As mentioned previously in the text and Figure 3, the average time before a smartphone is replaced in the USA, China, and the EU (Great Britain, France, Germany, Italy, and Spain) is a little over two years. A good example of that can also be seen on the Croatian market, where telecommunication service providers today offer high-end models. Samsung offers models with a 2 to the 3-year gap, while Apple offers even somewhat older models at a significantly reduced price when compared to the current high-end models.

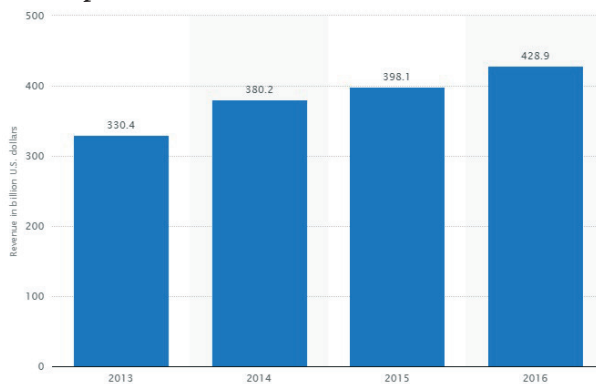
**Figure 3.** Average use of smartphones in months (USA, China, EU5) from 2013 to 2016



**Source:** Business Insider (2017). Available at <https://www.businessinsider.com/how-long-people-wait-to-upgrade-phones-chart-2017-3>, access January 3, 2019.

The total smartphone sales in 2016 (Graph 7) have not experienced a drop like Apple and Samsung, instead, they grew for almost 10% and they are almost \$430 billion today. This interesting situation is explained by the sudden growth of Chinese smartphone manufacturers (Xiaomi, Elephone, Meizu, ZTE, and others) that operate on the largest market in the world.

**Graph 7.** Income from smartphone sales on the global market for the 2013 – 2016 period



**Source:** Statista (2018). Available at <https://www.statista.com/>, access January 14, 2019.

Another thing that confirms the fact that smartphones are approaching the maturity stage is their average price, which has been constantly reducing from 2010 until today (Graph 8). In 2010, the average price of a smartphone was \$440 and in 2016 it was \$283. In the last several years, mid-range smartphones accounted for almost 50% of the total annual deliveries, which resulted in a constant reduction in prices. Samsung's Galaxy S series and Apple's iPhone dominate the high-end category. The mentioned numbers indicate that there is numerous and powerful competition on the global smartphone market today, and that is one of the main characteristics of the maturity stage.

**Graph 8.** Average smartphone prices on the global market for the 2010 – 2016 period



**Source:** Statista (2018). Available at <https://www.statista.com/>, access January 14, 2019.

## 5. RESEARCH

The research was conducted using an online questionnaire. The questionnaire contained 19 questions that were used to investigate the representation of specific smartphone brands and the main focus of the study, how often the study participants replace their devices and what were the reasons for their purchases. The research was conducted using a sample of 233 study participants and the aim was to determine the presence of smartphones in Osijek and the surrounding area. Table 2 shows a sample description of the research.

**Table 2.** Sample description

		<b>N</b>	<b>%</b>
Gender	Male	92	39,5
	Female	141	60,5
Age	18-25	148	63,5
	26-32	50	21,5
	33-40	22	9,4
	41-65	13	5,6
Monthly income (EUR)	200 - 350	127	54,5
	351 - 600	42	18
	601 - 1000	40	17,2
	>1000	24	10,3

Of the 233 study participants, only one does not own a smartphone. This says a lot about smartphones in the world today. Regarding brand preference, as expected, Samsung is in the first place (42.5%), followed by the iPhone (13.3%), while Huawei (7.7%), Sony (7.3%), HTC (6%), and LG (5.6%), respectively, are behind the market leaders. The shares held by other manufacturers are almost negligible. The listed six encompass almost 85% of all the study participants, Samsung and iPhone alone account for 56% of the study participants. The results are very similar to the already mentioned market share of the first three (Samsung, iPhone, Huawei).

The deciding factors when buying smartphones for approximately 60% of the study participants were features, price, and quality. A third of the participants mentioned brand and design as deciding factors, and the benefits provided by service providers are in the last place. The main properties that designate quality are advanced features and a long-lasting battery, for approximately 80% of the participants. The durability of the materials was mentioned by 60% of the participants, followed by design, price, and brand.

Half of the study participants (52.3%) are prepared to spend up to €250 for a smartphone, 29.2% of the participants are prepared to spend up to €500, and a small number of them (12%) are prepared to spend even more. The reason for that is the sample structure, consisting of mostly younger people with lower monthly expenditures. Even though we are aware that most people use popular brands and follow trends, it can be concluded that some of them purchase their mobile phones on the gray market (low prices), while some others buy their mobile phones from telecommunication service providers. The research has also shown that approximately one-half of the study participants are buying their

phones from telecommunication service providers, while the second and third place is taken by specialized stores and ads, with 29% and 15% respectively. Telecommunication service providers today offer numerous options, various plans tailored to all target groups, and mobile phones at affordable prices. The most common reason for buying a smartphone mentioned by the study participants is the affordable price (44.3%). After that, they are buying it for fun and the options offered by the phone (42.1%), for business (32.5%), to follow trends (19.7%), and as a status symbol (7.9%).

33% of the study participants own phones that are between one and two years old. If we also look at the participants with “younger” devices, it is easy to conclude that the Croatian people are very close to the average results of the EU countries mentioned earlier (Figure 3). Mentioned is also partially confirmed by the answers to the question “How often do you replace your smartphone?”. Namely, 43% of the participants answered that they do it every two years, while 50% of them answered with more than two years. The fact that 53% of the study participants have signed a service contract with one of the telecommunication service providers correlates to everything mentioned previously. A vast majority of participants (83%) have signed a 24-month service contract, which actually explains the smartphone replacements every two years, i.e. when the contract expires. Half of the study participants, 52% more accurately, are changing their smartphones after the contract expires. In addition, the most common reason for replacing smartphones is a malfunction, followed by the fact that their current smartphone is obsolete, that their service contract expired, and that a newer model of the phone appeared on the market. All of this information indicates that a lifecycle of a specific model is regularly two to three years. It is obvious that the telecommunication service providers have adapted to that, which results in the two-year contract offers, aside from that, the warranty period for most smartphones is two years.

The final question is very interesting and it offers even more interesting answers. The answer is given by 122 study participants (53.5%) to the question of how much time they spend using their smartphones every day was more than 120 minutes. This answer indicates a smartphone phenomenon that started 10 years ago.

## 6. CONCLUSIONS, LIMITATIONS AND IMPLICATIONS FOR THE FUTURE

The world we live in, the period of major technological achievement and a fast pace of life, reflects in everything around us, including products and their lifecycles. Product lifecycles are becoming shorter and this is most obvious in the area of high technology (“smart” phones, computers, and similar). Consequently, the business entities that want their products to be competitive must take into account the lifecycle stage in which their product currently is and simultaneously work to innovate and upgrade their products. All of this is necessary because the competition is more persistent now than it ever was.

The product lifecycle concept, as clearly shown in the study, represents a significant tool for managing a marketing policy, and ultimately, for managing the entire business policy of a business entity. If one is well acquainted with it and it is properly applied, business entities can react to market requirements in a timely manner and obtain a competitive advantage. However, along with all the positives of the product lifecycle concept and the benefits it provides, many authors are also critical, the most prominent criticism is definitely regarding the inability to accurately predict the duration of a specific stage, along with the fact that it is very difficult to determine the stage in which the product currently is. Of course, the final conclusion is that the usefulness of the product lifecycle concept is undeniable.

The research results have shown that Apple and Samsung hold the leading positions in the smartphone market and they are defining the higher price strategy accordingly. Considering a large number of other smartphone manufacturers, Apple and Samsung are responding to market requirements. They are currently in the maturity stage, in which they are collecting the highest revenues and achieving their highest success on the market. However, the average smartphone lifecycle has reduced significantly, due to the fast evolution of mobile technology which makes them obsolete prematurely and turns them into a disposable product. All of this is supported further through marketing campaigns, which indicates that the mobile phone industry is extremely competitive. The results of the primary research show that other smartphone manufacturers are also increasingly dominant among the users, mostly because of the lower price strategy, which was confirmed by more than half of the study participants. The users spend many hours using their smartphones today and they expect smart-

phones to satisfy all of their needs in life, including fun (internet, games, music), practicality (m-banking, m-wallet, organizer) and communication (voice calls and messaging through various applications). Communication was the reason for mobile phones appearance and nowadays is the least important necessity for many consumers.

In order to avoid the transition from the maturity stage to the decline stage, the observed smartphone manufacturers (Apple and Samsung) should seek a position on the market that utilizes their smartphone quality. Which means emphasizing brand differences, introducing various models to meet the requirements of all target groups (avoiding the focus on the higher price range), and developing an even more intensive distribution while simultaneously intensifying sales. One of the keys to success on the current market is continuous innovation, where existing products are modified or new products are created. In this way, business entities can obtain advantages and push back the competition. Of course, the innovation process is risky and if it is implemented improperly it regularly results in failure, significant financial loss, and a damaged image.

Even though the secondary research is limited only to Apple and Samsung, the authors believe that the research should be repeated and that other smartphone manufacturers that are conquering the smartphone market with their models and innovations, and affecting the competition (either by reducing prices or by constantly innovating and upgrading smartphone performances), should be included. In addition, the primary research has only been implemented in Osijek and the surrounding area, which is also a limitation, considering that it cannot be generalized to include the whole of Croatia, due to the lower standard of living, lower purchasing power, and reduced options for consumers at the observed area. Also, the research should be expanded to other areas in Croatia, and beyond, to discover and compare the reasons for purchases, the representation of specific brands, and consumer behavior.

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# INFLUENCER MARKETING: A GROWING TREND IN CROATIA

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## Abstract

*Influencer marketing has become very popular in the past few years and a crucial strategy within digital marketing to boost the company's sales and visibility. Since the expansion of the Internet and social media, platforms have affected the way of communicating with consumers, making it more personal, brands and companies are looking for a way to reach their audience more effectively; their targeted audience turn their back to mass media and spread attention to more than one social media platforms. In addition, consumers are more likely to positively perceive a message that comes from a trusted persona over sponsored content. The aim of this paper is to provide an overview of the of the current situation in influencer marketing in Croatia in order to show opportunities in this segment whose importance nowadays is obvious. This paper claims that influencer marketing in Croatia is in its growth stage, but still providing a lot of benefits for companies. There is room for improvement and growth and it is undeniable that this way of advertising will increase in usage in the future, as organizations become more and more aware of the benefits that this form of promotion delivers. The methodology is based on methods of compilation, analysis, synthesis and quantitative method in a descriptive approach to describe trends in Croatia's influencer marketing market. This research is of explorative nature and it attempts to provide an insight into the present scope of influencer marketing in Croatia and to anticipate future trends in this matter. There is a lack of prior scientific research studies*

*on the topic, so this paper's research is based on secondary data obtained from the relevant websites. In terms of scope, this paper focuses on the analysis of influencer marketing as an advertising channel in Croatia.*

**Keywords:** *influencer marketing, digital marketing, social media*

JEL Classification: M31, M37

## 1. INTRODUCTION

Since the growth of internet marketing communication has changed remarkably. The Internet has brought a completely new way of communicating especially after the expansion and growing popularity of social media platforms. These platforms offer for their users a chance to be more interactive, publish and consume content more freely (Aula, 2010, 44). In 2017 a number of social media users passes 3 billion, and growth trend shows no signs of slowing, with the number of active social media users growing at a rate of one million new users per day over the past quarter (Kemp, 2017). Social media marketing is related to relationship marketing, where the firms need to shift from „trying to sell“ to „making connections“ with the consumers (Gordhammer, 2009) and using social media does not only generate more business but connects with consumers on a higher level. Users are spending 1,72 hours per day on social platforms, which makes up 28% of all online activity. While the audience is certainly there, the power of influence is too, with 74% of consumers relying on social media to influence their purchasing decisions. With social media continuing to grow and having a great impact on consumers' purchasing decisions, advertisers have been forced to find new and unique ways of reaching consumers on these platforms (Woods; 2016, 5).

## 2. INFLUENCER MARKETING – THEORETICAL BACKGROUND

Influencer marketing – the term that has become very popular in the world of online marketing and a crucial strategy in digital marketing. But the concept behind influencer marketing is not new – companies have been using famous people to promote their products or services for years, even decades. Marketing campaigns featuring celebrity endorsers are thought to have a positive impact on people's attitudes and lead to positive behavioral intentions. The idea behind

celebrity-endorsed destination campaigns is simple: to draw attention to the endorsed destination and to complement the desired image values. Celebrities are the preferred choice because they act as role models and are powerful cultural, financial, and media figures and image creators (Van der Veen & Song; 2013, 1). Although celebrities have been endorsing products and services for years and impacting people's purchase decisions, for the past few years many companies and brands in all industries have been switching to influencer marketing as a form of social media marketing (Nujić et al.; 2018, 1262).

There is several difference between celebrity endorsements and influencer marketing; they are both connected to the product, brand or service promotion through an influential individual, but one of the biggest differences is their expertise. Influencers are usually considered as experts in the product or service segment they are promoting, which is why they are considered relevant and trustworthy, while celebrities do not necessarily have to be involved with product and they are only „lending“ their popularity to the product or service. Influencers create their own content; the brand they are representing creates a brief and influencers have the freedom to create content they know will work best with their audience, while celebrity endorsement involves agencies to create content; the brand creates and distributes the content. Another difference is that influencers are communicating with their audience (two-way communication) regarding the product they endorse, while celebrities usually do not interact with their fans (Nujić et. al; 2018, 1262-1263)

Social influence marketing is defined as a technique that employs social media (content created by everyday people using highly accessible and scalable technologies such as blogs, message boards, podcasts, microblogs, bookmarks, social networks, communities, wikis, and vlogs) and social influencers (everyday people who have an outsized influence on their peers by virtue of how much content they share online) to achieve an organization's marketing and business needs (Singh et al.; 2012, 19). Consumers trust recommendations from a third party (an influencer) more often than a brand itself. Aligning with an influencer does not only bring their audience, but they bring their audience's network as well. Because of the loyalty of their audience, an influencer has the ability to drive traffic to the company's site, increase social media exposure, and sell a product or a service through their recommendation or story about their experience (Matthews; 2013).

Social media influencers (SMIs) represent a new type of independent third-party endorser who shapes audience attitudes through blogs, tweets, and the use of other social media (Freberg et al.; 2011, 90). According to Brown et. al. (2008, 50), an influencer is a third party who significantly shapes the customer's purchasing decision, but may ever be accountable for it. Consumers trust recommendations from a third party (an influencer) more often than a brand itself. Aligning with an influencer does not only bring their audience, but they bring their audience's network as well. Because of the loyalty of their audience, an influencer has the ability to drive traffic to the company's site, increase social media exposure, and sell a product or a service through their recommendation or story about their experience (Matthews; 2013).

Social media influencers don't always have an equally large following as a celebrity, but their connection with their followers is much stronger and more engaged; a social media influencer can be seen as a peer and a friend, as they are typically more relatable than a highly famous person (Haapasalmi; 2017, 16). The power of influencers does not necessarily lie in their follower count, but in their ability to actually influence through authenticity and curation. (Weinswig; 2016).

People learn from example, and influencers lead by example for those who "follow" them. By observing examples through social media, people are more likely to adopt the behaviors exhibited by the influencer. Companies are using their resources via social media influencers in hopes that the experience that a consumer has with an influencer allows the behavior of the influencer to be adopted, that is, copied by the consumer (Glucksman; 2017, 79). Since potential buyers want to be like them, they raise value for the brand. This is also a great way of improving brand awareness, building trust and credibility, as well as a great way of reaching potential buyers and target market.

Influencers have the „power“ to affect purchase decision because they are considered as people of knowledge, authority, position or experience Since successful influencers have a certain niche, a company can generate more relevant leads. Furthermore, people do not perceive this way of marketing as „pushy“ and this kind of marketing feels fresh, creative and different (Nujčić et al.; 2018, 1262).

Influencers are the new celebrity endorsements. One research shows that 92% of consumers trust an influencer more than an advertisement or traditional

celebrity endorsement. Even though there are some similarities with celebrities and influencers, there is also several difference. Among all the others, one of the biggest differences is their expertise. Influencers are usually considered as experts in the product or service segment they are promoting, which is why they are considered relevant and trustworthy, while celebrities do not necessarily have to be involved with product and they are only „lending“ their popularity to the product or service (Nujić et al.; 2018, 1263). A big difference is in the way they have built their influence – influencers have built theirs through social media (Facebook, Instagram, YouTube, blogs or similar) and traditional celebrities gained their popularity and influence mainly because of traditional media and their talent (TV, radio, paper magazines and similar).

With 47% of customers using Adblock technology, traditional digital advertising channels often have limited effectiveness (Weingswig; 2016). This spike in the popularity of influencer marketing is attributed to the favorable results advertisers are seeing. A joint research study found that influencer marketing can trigger 11 times more return on investment than other forms of traditional advertising annually. This return on investment is measured in terms of reach, engagement, and ultimately sales, where a positive association exists as identified in another joint research study (Woods; 2016, 7). Influencer marketing has come about as an alternative to paid social media advertising, which incorporates a brand message as part of an influencer’s valuable online content creation. Ordinary users who voluntarily wish to take part in the influencer’s content is thus exposed to the brand message. Using influencers as a communication intermediary, there is almost 20% higher consumer trust that is associated with word of mouth, compared to that of other online advertising (Lampeitl & Åberg; 2017, 1).

Influencer marketing works mainly because the influencer has expertise in the type of products they are promoting. They tend to inspire engagement within their audience (two-way communication) and they can start a conversation with their followers. Influencers are content creators - they have creative freedom when promoting the brand’s product or service. An important point to note is that some companies make the mistake of treating influencers like celebrities and try to control what the influencer says, and how they promote the product. This could harm their relationship with the influencer and may affect the quality of content being produced. Influencers usually focus on a specific niche audience and have built their followers through social media and other

online channels (Barker; 2017). Influencers lead by example, recommending or reinforcing products that they like through advertorials. Therefore, viewers watching these examples may be more likely to adopt those behaviors exhibited by the influencer (Bandura; 1971, 3). The more the consumer attributes the communicator's review about a product to that product's actual performance, the more the consumers will perceive that the communicator is credible, the more the consumer will have confidence in the accuracy of the review, the stronger the consumer's belief that the product has the attributes mentioned in the review (Lee & Yuon; 2009, 476).

Influencer marketing is essentially virtual word of mouth, and consumers are much more likely to positively perceive and react to a message that comes from a trusted friend or persona over a sponsored post that comes from a company. Advertisers are trying to capitalize on communicating their message through social media influencers, who are trusted nearly as much as a friend (Woods; 2016, 6).

People consider word of mouth to be non-commercial nature which adds credibility to the received information. Furthermore, WOM is understandable to the recipient and it saves time and money spent on researching. It is obvious that favorable WOM is definitely increasing the purchase probability, while negative WOM has got a drastically opposite effect. It is also important to note that while positive WOM increases expectations, it also affects the level of satisfaction of those who decide to purchase the product, and it becomes much easier to leave the person unsatisfied due to his high expectations (Davydova; 2012, 4).

The Internet has enabled consumers to engage in electronic word of mouth communication (e-WOM) and unlike the traditional WOM, e-WOM typically occurs in an online environment where the sources of information are individuals who have little or no prior relationship with the consumer seeking information (Lin et al; 2012, 7-9). E-WOM can be generated in a variety of ways, such as emails, instant messages, websites, blogs, online community, newsgroups, chatrooms, hate sites, review sites, and social networking sites (Ishida et al, 2016, 5). Influencers have the means to influence others through their high connectivity, knowledge and character traits and social media offers influencers the opportunity for one-to-many WOM (Lampeitl & Åberg; 2017, 10). These key individuals, who gained a stronger voice and became influential, started to



draw the attention of marketers, who saw the opportunity to access a specific audience and to communicate marketing messages. (Galeotti & Goyal; 2009, 509). E-word of mouth has been greatly empowered through the strengthening of social media and it is, without a doubt, impacting the behaviors of customers.

Influencer marketing is providing benefits for companies, no matter the industry. People will always seek for other people's experiences and advice and will look up to notable people, so influencers may be the correct marketing strategy. According to Lee (2018), there are several advantages of influencer marketing:

- No ad blockers since influencer marketing result in an editorial that ad blockers will not touch;
- The only way to reach certain demographics and psychographics; some consumers do not watch TV, listen to the radio, read certain newspapers or magazines and do not watch billboards;
- A personal connection with the consumer, as the consumer perceives it;
- Brand building through the „halo effect“ - the influencer's positive relationship with the brand in the eyes of the consumer raises the consumer's awareness and opinion of the brand simultaneously;
- Copycat behavior of influencer's followers;
- Second order effects – some influencers provide hard links to the sponsor.

Nielsen's survey of 28.000 consumers in 52 countries reports that 92% of the consumers said they trust earned media, such as recommendations from friends and relatives, more than other types of advertising. (Aquino; 2013, 32). Furthermore, online survey reports that 81% of fans purchased a product based on an influencer's recommendation (Moxie; 2014, 11). Murphy and Schram suggest that influencer marketing is a way to get unique branded social content from a trusted influential source, syndication of content through all platforms, the ability to target micro niches at scale, higher click-through rates and lower cost per clicks than traditional display, fresh and lasting content and loyal partners that care and share (Murphy & Schram; 2014, 35).

According to a survey involving 14.000 respondents in the US, 70% of millennial consumers are influenced by the recommendations of their peers in buying decisions. The same survey reveals that 30% of consumers are more likely to buy a product recommended by a non-celebrity blogger. Consumers can relate



more to these influencers and value their opinions more than that of celebrity influencers (Barker; 2017).

Influencer marketing generates 11 times more ROI than traditional forms of marketing, and 94% of marketers have found it to be effective in 2016. This has resulted in influencer marketing budgets to be doubled in 2017. Influencer Marketing Hub conducted a study showing an increase of 325% in Google searches for the phrase “influencer marketing” in a year. This indicates the growing popularity of this marketing strategy. In the same study, influencer marketing was ranked as the fastest online customer-acquisition method, with 28% of respondents ranked it in the first position. It means that influencer marketing is nearly two times faster in acquiring customers than organic searches (15%) and nearly 10 times more important than those who concentrate on affiliate marketing (Influencer Marketing Hub; 2017).

Lee (2018) has also pointed out the risks of using influencer marketing:

- Brand damage if an influencer gets into a scandal;
- Regulatory intervention due to insufficient or missing disclosure of sponsored content;
- Helping influencers to make them „bigger“ by becoming their sponsor;
- Influencer fraud; it is easy to be blinded by influencer’s ratings, huge follower base and engagement counts so the company does not pay attention to „red flags“;
- Brand safety and control; when a company is trying to script influencer’s campaign, lack authenticity may show through. Of course, the higher risk is to let the influencer interpret the instructions given by the company, but the reward is also higher.

Companies must be aware that some of the influencers are in it only for the money and lack of enthusiasm for the product or service may show. They also must know they may have a different vision in mind for the marketing campaign, so before the campaign starts it has to be clear what are the campaign’s goals. One of the potential risks of using a certain influencer is that one part of brand fans may alienate from the brand (if they do not support the influencer). Even though there are some risks of using influencer marketing that can cause damages to companies, it is still one of the best ways to connect with the certain audience and to raise awareness among target audience (Nujić et al.; 2018, 1267).

## 2.1. MEGA, MICRO, MACRO, AND NANO INFLUENCERS

As social media is rising, the influencer marketplace is starting to take a recognizable shape. Influencers can be split into four categories; mega-influencers, macro-influencers, micro-influencers and even nano-influencers (Ismail; 2018)

On a global level, mega influencers are the highest-ranking category of social media influencer, they typically have more than a million followers. They are not necessarily experts in a certain topic and they often have a diverse audience. Relationship with their audience tend to be more distant but the reach of their posts is substantial (Ismail; 2018). Mega-influencers are A-list celebrities on social media and in „real life“, with a web of followers over 1 million. Reach of their posts is very high, so partnering with them gives companies a great way to raise brand awareness and can even influence the brand's exclusivity (Influicity, 2018).

Macro influencers are professional creators with a strong passion for a subject. This tier's following ranges between 10.000 and 999.000 and are professional social media personalities with a passion for a specific topic. They are not celebrities in a traditional sense, but their following consists of a large, loyal fanbase (Influicity, 2018). Macro influencers have a high reach in specific markets. With a distinct theme and substantive following, macro influencers allow marketers to tap into a large portion of a target audience. Furthermore, the quality of created content is on a very high level which leaves companies the opportunity to leverage in amplification efforts across social, web, broadcast and even out-of-home. One more advantage is their accessibility – they are easier to connect with than mega influencers (Influicity, 2018). Macro influencers have established a well-known name for themselves, have a certain reputation and have a loyal audience. It can be concluded that collaboration with macro influencers gives companies and brands visibility and exposure, it boosts sales and can be measured.

Micro influencers are real people with a strong relationship with their audience. This tier boasts a following under 10.000. They are real people with a strong voice online. Micro influencers support a unique set of advantages, exclusive to a smaller audience, such as increased audience trust, high followers' engagement and lower cost (Influicity, 2018). Micro influencers focus on a specific niche or area and are generally regarded as an industry expert or topic specialist (Ismail; 2018). As followers decrease, engagements increase. Influencers with

followings under 10.000 have an engagement rate between 4% and 8%, whereas influencers with over one million drop to 1.7% (Influicity, 2018).

Nano influencers are a relatively new breed of influencer. They tend to have a smaller number of followers - less than 1.000 followers. A nano influencer is someone who has influence within their community. The idea behind nano influencers is to get “regular everyday people” to influence a brand’s product or service to their friends and family. One of the benefits of utilizing nano influencers is that they have the highest level of engagement, but despite this, the typical audience size of a nano influencer does not have a great reach (Ismail; 2018)

### 3. INFLUENCER MARKETING MARKET IN CROATIA

Research methodology for this paper is based on methods of compilation, analysis, synthesis and quantitative method in a descriptive approach to describe trends in Croatia’s influencer marketing market. This research is of explorative nature and it attempts to provide an insight into the present scope of influencer marketing in Croatia and to anticipate future trends in this matter. There is a lack of prior scientific research studies on the topic, so this paper’s research is based on secondary data obtained from the relevant websites. In terms of scope, this paper focuses on the analysis of influencer marketing as an advertising channel in Croatia.

To quantify the influencer market in Croatia, authors have created a list of influencers on social media in Croatia, with an emphasis on Instagram. The sample is purposive, made of 300 experts - influencers in the Republic of Croatia. On the list are, among others, currently the most well-known influencers with the largest number of followers, as well as those with a smaller number of followers. In case of a smaller number of followers on Instagram, into account have been taken individuals who have influence and a greater number of followers on at least one other social network (YouTube, Facebook, Twitter). Social network Instagram was considered in the analysis, as it has seen a tremendous growth of users in Croatia in the last 3 years (Poslovni dnevnik, 2018). Celebrities who have become famous for their work in mass media are excluded from the list. Given there is no base of influencers in Croatia, the limitation of this approach is in the possible overlooking of the influencers.

The study has shown that 41.3% of Instagram influencers in Croatia is in the category of macro-influencers, with a number of followers between 10.000 and 999.999. Within this category, 6.3% of influencers have more than 100.000 followers. Furthermore, 43.3% of influencers fall into the category of micro-influencers with a number of followers between 1.000 and 99.999, and 15% are nano-influencers with a number of followers less than 1.000.

According to the author's research, an account with the highest number of followers at Instagram has 1.129.487 followers which are also the only account with over a million followers. This Instagram profile belongs in the category of Fashion and Cosmetics and Lifestyle.

Considering the above and given the global trends, same as underdeveloped influencer market in Croatia, it is evident that there is room for improvement and growth, both in the user's number of social networks and in the number of influencers. It is undeniable that this way of advertising will increase in usage in the future, as organizations become more and more aware of the benefits that this form of promotion delivers. Growing investments are expected in this segment of advertising and communication.

The most popular category (measured in the number of Instagram accounts) is Fashion and Cosmetics (33%), which is not surprising given the nature of this social network where photographs are published and used as a communication tool. Next category is Lifestyle (26%) followed by Gastro (18%), Travel (11%) and Fitness (8%). It was possible to select multiple responses, meaning one Instagram profile could fall into several categories.

Regarding legal regulations, with the rapid expansion of social media and influencer marketing over the last few years, the FTC has expressed concern about a lack of transparency in sponsored influencer and celebrity posts. They have issued a series of Social Media guidelines on the topic to make influencer marketing clearer. The guidelines make it very clear that endorsements must reflect the honest opinion of the endorser, and that they don't make any claims that would be considered deceptive if the advertiser made them directly. An online influencer must be careful that they don't mislead their audiences with untruthful statements (Influencer marketing Hub).

Furthermore, guidelines state that when there exists a connection between the endorser and the seller of the advertised product that might materially affect the weight or credibility of the endorsement (CFR, 2019). In Croatia, there

is a law regarding media that can be invoked for paid content, but there are no regulations that unambiguously involve the influencers on social networks. But even though there is no such law, an ad is defined as a paid notice and it is done with a fee and the purpose of promotion. This means the ad must be labeled as such, and if not, it can be considered unethical and illegal covert advertising. Legal (marking and separation) and ethical (no misleading) dilemma is a big challenge for influencer marketing.

Since Croatia follows global trends in online marketing, with rapid technology growth and use of social media, this kind of regulations will be imposed. This can be a challenge for influencers, who will have to find a way to integrate products they are promoting in a more creative way since people do not like to see posts that have stated sponsored content.

There are no specialized marketing agencies that deal exclusively with influencer marketing, but as this market develops, their emergence is doubtless. One more challenge is – what metrics to use to measure when evaluating efficiency? Croatia follows a global trend of measuring visibility, engagement, revenue and similar. It is difficult to measure the impact of influencer marketing but setting goals can help in defining metrics that are going to be measured (most used are reach, impressions, engagement, sentiment, conversion).

## 4. CONCLUSION

Social networks have developed to the extent that they have a great impact on consumer behavior. People believe other online users far more the mass media, they feel close to social media and therefore trust them. The assumptions are that, because of this, the phenomenon of influencers will continue to grow, forcing companies to adapt to these new trends.

An influencer is every individual who is exposed in an online environment (through social media) and because of their popularity can reach a great number of users. This is very attractive to marketers, who are trying to capitalize on communicating their messaging through social media influencers, who are trusted nearly as much as a friend.

Influencer marketing works mainly because the influencer has expertise in the type of products they are promoting. They tend to inspire engagement within their audience (two-way communication) and they could start a conver-

sation with their followers. Influencers are content creators - they have creative freedom when promoting the brand's product or service.

Future of online advertising, not only in Croatia but in general, is oriented on creative storytelling, rather than on traditional forms of advertising. Influencer marketing will continue to grow, but consumers are starting to be aware of sponsored content – influencers must find a new, creative way to engage their followers and prove their authenticity to their audience. Furthermore, companies often use influencers with more than 100.000 followers, but as the number of influencers begins to grow, organizations will start to use nano influencers more.

Influencer marketing is going to be legally regulated with all unknowns minimized. Regulations are necessary to ensure the consumer is protected and that the question of ethics is not questionable.

There is no research done solely for the Croatian market on the profitability of investing in influencer marketing and there is no research done for the Croatian market regarding consumer perception of the credibility of influencers, which can be the direction for future research.

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## BRANDING EDUCATION

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### **Abstract**

*Higher education is any form of education offered at post-secondary institutions of education, which after the end of study programme award diplomas or another higher education qualification. A richer market offer of higher education is a result of raising awareness of the key role of education in building a society of knowledge and advances in new technologies, as well as the influence of globalization itself. New technologies have resulted in even bigger internationalization and deregulation of higher education. The new centers of higher education are being created in the virtual world. The usual form of organization of higher education had to be physically available to the students in the form of big classrooms for lectures and exams. Due to technological advances, especially the internet, digital TV and mobile phones, higher online education has become a reality. E-learning or distance learning is the fastest growing trend in education. Moreover, technology is contributing to the idea of non-faculties entering the education sector, such as various vocational courses, training, etc. In a rich market offer, a client will choose the institution recognized by its successful brand. The paper will analyze the strategic thinking of the future*

*of education, as well as the importance of recognizing the benefits of the education itself.*

**Keywords:** *education, brand, marketing, strategy*

JEL Classification: I21, M30

## 1. INTRODUCTION

Higher education is any form of education offered at post-secondary institutions of education, which after the end of study programme award diplomas or another higher education qualification. A richer market offer of higher education is a result of raising awareness of the key role of education in building a society of knowledge and advances in new technologies, as well as the influence of globalization itself. New technologies have resulted in even bigger internationalization and deregulation of higher education. The new centers of higher education are being created in the virtual world. The usual form of organization of higher education had to be physically available to the students in the form of big classrooms for lectures and exams. Due to technological advances, especially the internet, digital TV and mobile phones, higher online education has become a reality. E-learning or distance learning is the fastest growing trend in education. Moreover, technology is contributing to the idea of non-faculties entering the education sector, such as various vocational courses, training, etc. In a rich market offer, a client will choose the institution recognized by its successful brand. For instance, if we want to improve our skills or learn how to work in the Excel sheets, we will look online and find a whole line of workshops and courses which offer the same service: learning and improving our skills in information technology, but their competitive advantage lies in the brand that they had built. Due to globalization, the organizations of higher education belong to the international market which attracts more students and consequently the competition is higher because of the open market.

Practical part, personalization, and digitalization represent three major innovative trends in the field of education, together with lifelong learning.

There is definitely a need for marketing even in the non-profit sector, organizations in such an environment have to conduct marketing research so that they could meet the needs of the public and to reply onto those needs with appropriate services and limited resources.

Marketing is a combination of all activities conducted by the users and service providers during the exchange of products for a specific sum of money, where necessity is the main exchange motivator and spender the central point of the business of every service provider. In this case, specifically, the service provider is an institution of higher education, a beneficiary is a potential student, while the necessity is the education itself.

Education has a pivotal role in the economic and social progress of developed countries. The quality of education is becoming more important for those who directly participate in it, or for those who use its services. The higher the level of society growth becomes, the more rigid are the demands for education quality. (Fundu;2006, 9-13)

## 2. STRATEGIC PLANNING IN HIGHER EDUCATION INSTITUTIONS

The environment of a higher education system consists of all the components around it that have a certain impact on its activity in society and on the market. There are two types of environmental factors: general and specific ones. General factors are those affecting all the organizations (not just higher education institutions) and are not critical for their existence as such. For example, those are economic and cultural contexts. Specific factors are those directly affecting the ability of a higher education institution to attain its objective. Those are the state, the market and the international higher education area (the so-called triangle of power in the higher education system). Therefore, the efficiency of higher education depends on the characteristics of the political and economic configuration of a certain country, as well as the connection of the higher education system to the international academic community. The function of these environmental factors is co-dependent. Decreasing the role of the state in regulating higher education not only facilitates but opens up a way to an active market. The flexibility of a certain country facilitates the connection between the national higher education system and the international higher education area. (Štimac et al.;2015, 572)

Every organization needs a strategy as an answer to constant changes in the markets. Each and every one of them creates its own path taking into account all its resources, aims, opportunities and position of the organization itself. Strategic planning represents the first step towards planning the marketing of

the organization. If a company plans reasonably, it allows predictability and a reaction on time to the changes in its environment. Organizations usually have annual, long-term and strategic plans. The realization of those plans occurs in three stages: Analysis, Planning, Implementation, and Control.

The contemporary systems of higher education are based on set strategies and plans for quality development. Thereby the quality of learning and teaching is the key area for all higher education institutions which want to ensure sustainable success in a dynamic environment of today. Leadership and management are two different, but important elements of formal academic management and individuals who play those rolls have an impact on the culture of learning and teaching in a significant way. As a part of the project of the Ministry of Science and Education Educa-T, with the aim of development and improvement of competence of teaching on colleges, subsidized by the European Union from the programme Erasmus+, the analysis of the condition and activity on universities in the Republic of Croatia has been conducted, with the aim of improving the quality of learning and teaching, where the results of quantitative research showed the following:

- The majority of Croatian higher education institutions incorporate in their strategic guidelines and plans of conduct the questions of development of quality of learning and teaching, however, the institutional framework, according to which these guidelines should be realized in the work of higher education institutions, is not sufficiently developed,
- There aren't any significant differences in the attitudes of management of higher education institutions, in terms of existence and implementation of the institutional framework for the improvement of the quality of learning and teaching, between private and public higher education institutions, as well as between different types of institutions (university constituents, colleges, and academies)
- the management of Croatian institutions of higher education understand the importance of the application of strategies and plans for the development of the quality of learning and teaching and the application of innovative methods in learning and teaching, whereby only student questionnaires are conducted regularly and systematically
- after the content analysis of the key strategic documents and plans for the development of quality of learning and teaching it has been con-

cluded that they include questions regarding the improvement of the quality of learning and teaching, but they don't fulfill other functions like motivating the employees and informing external actors

- ✦ the analysis of the application of innovative methods of learning and teaching has shown that the majority of institutions puts emphasis on the application of contemporary technologies in learning and teaching as support to different forms of online-learning and application of contemporary methods in teaching based on solving tasks at the interactive workshops. (Dužević et al.; 2017, 63-64). The strategic plan is a plan describing a way in which a company will adapt in order to take opportunities in the ever-changing environment, and therefore maintains strategic overlapping between the objectives and abilities of the company together with changing opportunities in the market. (Kotler;2006, 49). Every strategic plan consists of several elements: Mission, Strategic objectives, Strategic revision, SWOT analysis, portfolio analysis, objectives, and strategies.

The mission is actually the sole purpose of an organization and it should be oriented towards the market or towards meeting the main needs of clients. Many organizations define their mission by answering questions such as: What work do we do? Who are our clients? Why do we do this job? What is our company like? The mission should be motivating, based on special abilities, specific and realistic. The mission of the organization should be offering vision and direction for the next decade, it shouldn't be prone to changing throughout a few years. Strategic objectives develop from the company's mission. Mission means direction and philosophy of the organization, while the objectives represent results which are measurable. In order to accomplish their vision, institutions of higher education should focus their attention on the following activities:

- ✦ keeping the relevant feedback from clients (students) and processing data on the outcomes of learning in order to intervene in student programmes on time,
- ✦ matching the number of students and professors, or taking the notion that the size of groups and methods of teaching are in accordance with Bologna standards,
- ✦ organizing different types of lifelong learning
- ✦ examples of e-learning

- ✦ forming the organization network of teachers required for setting up the field classes, practical part,
- ✦ creating new and adding modern equipment to the existing classrooms and laboratories
- ✦ managing human resources in a way that the focus is on admitting excellent and renowned experts from the economy to new staff and on improving the existing staff by stimulating teachers to work on vocational training, publishing works, attending professional and science gatherings
- ✦ encourage publishing professional and school literature by the staff employed at institutions of higher education,
- ✦ establishing international cooperation with partner institutions of higher education, as well as with economic subjects and the local community,
- ✦ improving student standards by opening student restaurants and other facilities (sport, cultural and social activities).

A SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) means distinguishing between the results of internal and external revision which draws the attention on the key strengths and weaknesses of the company as well as the opportunities and threats the company is facing. (Kotler; 2006, 58) Opportunities represent the adaptation of the environment to the strengths of the organization. When assessing the opportunities, the management of the institution of higher education has to take into consideration how attractive the opportunity is and their chances of success. It is hard to expect the appearance of a perfect opportunity in the organization's environment which perfectly fits into its aims and resources. Therefore, the management has to estimate whether the level of earnings justifies the risk when carrying a decision. The institutions of higher education see the opportunities in:

- ✦ further increase of space resources
- ✦ increasing the mobility of students and teachers
- ✦ the realization of different programmes for lifelong learning
- ✦ supporting more e-learning in class
- ✦ organizing round tables and professional workshops with experts from the economy, former students and present students who will reflect the situation in the economy, labor market and development of teamwork.

- ♦ Further coordination of the curriculum to the needs of the labor market and economy,
- ♦ The possibility of applying for the projects funded by the EU, or the use of resources from the EU funds,
- ♦ Guest lectures by experts from abroad, together with local significant individuals.
- ♦ On the other hand, the possible threats in the environment of institutions of higher education are:
  - ♦ unfavorable situations and the structure of the economy,
  - ♦ frequent changes in the legislative framework,
  - ♦ unfavorable demographic image,
 human capital flight into another economy or country

These threats do not require the same amount of attention or concern. The head of the institutions of higher education should be aware of their appearance and possibility of the potential damage they may cause. The management should be primarily prepared for facing the most damaging and most probable threat of them all.

The strengths and weaknesses represent the key factors of success, they also represent the most important contribution to the success of the organization. They are being examined due to high competition and have to be based on facts.

Therefore, the strengths of the institutions of higher education are:

- ♦ firstly, the enthusiasm of the management and the professional faculty devoted to the growth of their institution
- ♦ awareness of the meaning of the improvement of quality,
- ♦ flexibility in modernizing the study programmes,
- ♦ active communication between the faculty and students,
- ♦ the staff kept up-to-date and their publishing activity
- ♦ guest lectures by the experts of the field
- ♦ field class and contacts with other institutions (non-educational) and economic entities,

while the weaknesses are:

- + insufficient number of staff for particular study programmes,
- + the big workload on the staff in class and abundance of administrative work
- + poor number of interdisciplinary research and study programmes,
- + insufficient co-operation/ between the curriculum and the economy needs and labor market,
- + insufficient number of working experts with the previous working experience in economy,
- + insufficient cooperation of economic entities in professional and research work
- + an insufficient number of study programmes held in English.

The purpose of strategic planning would be to find the ways in which a company can use its strengths in order to take attractive opportunities in their surroundings. (Kotler; 2006, 61) According to Strategic planning, an organization determines the work they will do, and afterward they define in detail the planning within every department. Certainly, the structures of organization defined as strategically important, have to work together in order to achieve the aims successfully.

It is not important to do some things better than others. Such organizations are more efficient from the operative point of view. Operative excellence can help the organization to keep the throne for a certain time, but other organizations will easily catch up if not even supersede them. The award goes to those companies which come up with new ways of creating values and delivering them to the markets they are aiming at. (Kotler, 2006, 19-22).

### 3. HIGHER EDUCATION AS SERVICE

Kotler defines a service as any other activity or benefit that one party offers to the other and which is in its essence intangible and doesn't result in ownership over anything. Services differ in the real sector and those in public ownership. There are five major characteristics of services:

1. Intangibility means that those services cannot be easily exposed, seen or heard, taste, smell before they are bought. Therefore, services are characterized by uncertainty, in order to minimize it, the clients look for



certain signs of quality. In this concrete example, the service relates to knowledge acquired at an educative institution, but the quality of gained knowledge and satisfaction with received service can be discussed only upon the completion of education. Due to the intangibility of the service of education, the clients will pay their attention onto visible and tangible characteristics such as classrooms, cabinets, image, and behavior of the employed professors, lecturers, equipment and technology used in the class as well as in communication.

2. Indivisibility means that it is not possible to separate the services from the service providers. Indivisibility is a characteristic especially common in education. The faculty of the institution of education is also a part of the offered service of education and is crucial in providing full service. A teacher cannot have a lecture in a classroom empty with students. Both teachers and students have a significant effect on the outcome of the provided service. The relationship built between the students and teachers certainly affects the quality of learning. Therefore, it is of crucial importance that the lecturers are appropriately educated in order to achieve a satisfying interaction with clients. Another characteristic of indivisibility is that during the provision of service there are other students in the classroom who also contribute to the satisfaction of clients.
3. The changeability of services means that their quality depends on the provision of service, time, location and the ways of providing service. Therefore, it is very difficult to control the quality of service. Because of this, very good marketing strategies cannot do much if service providers are not good at their jobs. The same provider can provide the same service to different clients in different ways, which can differ day by day as it depends on the interaction in the class, the mood of the clients, etc.
4. The passage represents the inability of storing services for postponed production or usage. This characteristic represents danger with changeable demand for services. The institutions of higher education use the possibility of employing freelance staff when the number of enrolled students increases.
5. The non-existence of ownership, the user of service usually has access to the service for a limited time. Referring to this, the institutions of higher

education have to work harder on branding their services and affection of the client.

Not until a while ago has marketing become necessary for the institutions of higher education, as well as for the other non-profit organizations. As traditional marketing probably cannot be successfully used in public services, it is therefore required to adopt the principles of traditional marketing based on the products to the service environment. Service organizations will use marketing services in order to create strong brands which are strongly positioned in the chosen targeted markets. Successful marketing in higher education would mean focus on clients and staff. The chain of services- profits consisting of five links are created in this way. The first one is internal service quality which represents a successful selection of faculty and their education, as well as a stimulating working environment which leads to the second link of satisfaction and the service productivity of employees, all of this leading to a higher value of service itself for the clients, leading again to the powerful performance of service companies. Therefore, every higher education institution would have three important marketing tasks:

- a) Differentiation management would be completed in three ways: through people, physical surroundings and process. Since the service is completed through people, they have a key role in satisfying clients. The organization can differentiate by more capable and reliable staff. The organization which makes a better selection of staff and is more focused on their education and growth can improve in this way the quality of performance of services which will eventually result in keeping the excellence of the performance itself. The institutions of higher education can also create superior physical surroundings where the service is provided, and in this way easily differentiate. Differentiation is definitely the priority of every organization in creating a strong brand.
- b) The control of the quality of services would mean perseverance in the consistency of providing services more successfully than their competitors. Successful organizations are aware that excellent quality leads to the competitive advantage which leads to bigger income and bigger profit. This was concluded on the round table meeting on Bologna process, held on 18 September 2018 at the Ministry of Science and Education in Zagreb. According to this, the institutions of higher education in Croatia

should be more concerned about the quality of education rather than on their form, which prevailed till then.

## 4. EDUCATION BRANDING

According to Kotler, a product is defined as anything that can be offered in the market with the purpose of drawing attention, initiating purchase or usage or spending, something which can satisfy wishes or fulfill needs. It includes physical products, services, persons, places, organisations, and ideas. According to him, the products are services which consist of activities, benefit or satisfaction offered on sale, intangible in its essence and not resulting in ownership. Every product consists of more levels, and every additional level on the basic product increases satisfaction and creates additional value for the clients.

Next to quality, creating a brand for the product and its maintenance is one of the main ways of positioning a product onto the market, used by marketing experts. The most accepted definition of a brand is the one set by David A. Acker "Brand is a name, idea, design, symbol or any other characteristic identifying a product or service of one seller and differentiating it from other producers." However, Kotler defines a brand as a name, idea, sign, design or combination of them, representing a producer or seller of the product or service. The brand is a very important part of a product to clients, and creating a brand gives additional value to it. The stronger the brand of a product, the bigger the value of the brand, which means the bigger the loyalty of customers and assured quality. Therefore, marketing experts should focus on clear brand positioning to their clients. According to Kotler, the brand is a complicated symbol which can have several levels of meaning:

1. Attributes, when we are thinking about a brand of a product, our first association are specific attributes of a product.
2. Benefits, clients will not think about the attributes of a product but of the benefits, they can bring. The tasks of the marketing experts would then be to turn the attributes into benefits, either functional or emotional.
3. Values, brand defines the value of the client itself. It defines the essence of a brand.
4. Culture, brand represents a certain culture.

5. Personality, clients might think of a product or service as a person, the brand then represents a person, or what that person might be like. The most important attribute of a brand.

If we apply Kotler's method onto education and if we change an example of Mercedes for an example of a University, we will notice the same values: students want the education of good quality in a reputable institution known for the excellent service and competence of the lecturers. They want to be aware that they are competitive on the market and that the acquired knowledge is a guarantee of success on a professional level, while on the personal level they want to feel self-confident, competent and up to all challenges. Just as a boy training football wants to have Nike trainers to help him in building a successful career, an ambitious student will wish to study on Harvard because they know that many successful businessmen graduated from there. (Vrban; 2014, 47)

Brand positioning will not be entirely successful unless every employee of the organization doesn't work on the promotion of a brand. A brand should initiate a sense of pride with employees so that the enthusiasm of employees spreads further onto clients and customers.

## 5. CONCLUSION

Technology, globalization and deregulation have had a significant impact on business and activities of the institutions of higher education. Technology development made the appearance of online learning possible, globalization opened up the market which resulted in an increase of competition in the efficiency of higher education, as well as in the increased possibilities for "recruiting" potential students.

Such institutions should be focused on the global market by introducing study programmes in English. Furthermore, they should maintain contact with other divisions of belonging University and even further, to create cooperation with other organizations on the international level.

Society changes and develops with time, the same occurs with education. Therefore, it is very important for the organizations dealing with education to recognize social changes on time and react to them by changing or matching their own services and doing business and finally needs of their users. An awareness of the main role of education resulted in an even bigger market offer,

and global experience showed that the most successful organizations are those which made a strong brand, and those which can recognize on time and set new trends in their businesses and offers. Those institutions of higher education which expect the worst develop the fastest in providing new services.

Many authors consider differentiation the most significant in achieving market success over competitors, and which should be based on innovations and unique form of provision of services expected from the organization.

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# IMPACT OF THE PERCEIVED KNOWLEDGE ON THE ATTITUDES TOWARDS ORGANIC FOOD PRODUCTS

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## **Abstract**

*Stimulating the consumption and consequently, the production, of organic food products is a desirable goal for every society. Especially so in countries like Croatia which bases its basic strategic development goals on the factors closely tied with environmental preservation and production of healthy food. In order to foster this desirable kind of consumption, it is necessary to deeply understand all of the predictors of the relevant purchasing behavior.*

*The necessary prerequisite for making a decision to purchase organic food, are positive attitudes towards those products and one of the main influential factors on those attitudes is knowledge. The present study, therefore, aimed to explore which specific dimensions of knowledge have the largest effect on positive attitudes towards organic food.*

*The study is based on the outcomes of a questionnaire completed by a sample of 411 household primary shoppers from Eastern Croatia. Two of the proposed dimensions of knowledge were generally oriented and two were specifically oriented. The findings of the study reveal that the most important predictor of positive attitudes towards organic food is knowledge of the effects of organic food consumption on the health. It means that in order to stimulate positive attitudes, it is most important to make consumers fully understand the positive effects of organic food on health. Also based on the research results, the relevant attitudes will be steered in the positive direction if consumers are educated on organic food products characteristics and sources. The two remaining, generally oriented dimensions of knowledge (knowledge of eco-labels and knowledge of environmental issues) were found to be insignificant, meaning that the present*

*research strengthens the view that specific knowledge is more strongly related to relevant attitudes rather than general knowledge.*

*This paper aims to add to the previous cognitions regarding the cognitive dimension of attitudes towards organic food.*

**Keywords:** *perceived knowledge, attitudes, organic food, Croatia.*

JEL Classification: L66, M39

## 1. INTRODUCTION

Considering a high growth potential of Croatia in terms of production and distribution of organic food products, this topic is of the utmost importance for all stakeholders interested in sustainable food industries. This is further emphasized by the fact that the production of organic food brings multiplicative positive effects on the whole economy. On the other hand, the existing literature does not provide sufficient information and knowledge about consumers, necessary for the development of marketing strategies in this growing market. (Brčić-Stipčević, Petljak & Guszak, 2013). Also, the existing knowledge is not sufficient to provide other social stakeholders the necessary information in order to foster the social change in the desired direction

An individual's attitude towards consuming a product is one of the most important antecedents for predicting and explaining consumers' choices across products and services, including food products (Honkanen et al., 2006). Organic food is the one that is produced without the use of chemical pesticides and fertilizers and which does not contain synthetic hormones. It is produced under legally defined methods, and its composition should match the general laws and regulations on the quality of food (Martić Kuran & Mihić, 2014, p. 181). Previous studies have associated organic food consumption with behavioural attitudes such as health consciousness, environmental consciousness, trust of organic food claims, desirability of organic food attributes such as taste, texture, freshness (Voon et al., 2011, Salleh et al., 2010; Michaelidou & Hassan, 2008; First & Brozina, 2009) and other attitudes such as attitudes toward local origin of products, fair trade (Tanner & Wölfling Kast, 2003) and reference knowledge (Amran & Nee, 2012; Saleki et al., 2012).

Personal attitude is usually defined as permanent mental or neural willingness gained from the experience, making the directive or dynamic influence on

an individual's response to objects and situations that he comes into contact with (Allport, 1935). Psychological attitude structure consists of three components: cognitive, affective and conative. Cognitive component includes the opinions, beliefs, and ideas about the object of the attitude, emotional refers to the feelings that are associated with the object of the attitude, and behavioral consists of the tendency or willingness to act in relation to the object of the attitude. When it comes to individuals' attitude formation, most contemporary psychologists take the cognitive approach. The focus on the cognitive component in most research stems from early research that showed a significant influence of knowledge and awareness on attitudes toward the environment. That early research assumes that knowledge affects attitudes and attitudes affect behavior. That is the so-called linear model.

The hypothesis that people who are better informed about environmental issues and their consequences have more positive attitudes and are more willing to act in accordance with such attitudes seems common-sense. However, empirical research has shown that proving this relationship, as well as the relationship with attitudes, is rather problematic. One of the basic assumptions is that very general knowledge is correlated with highly specific attitudes and specific behaviors. Research indicates that measures of specific attitudes (e.g., judgments about products or behaviors) rather than general measures of environmental concern (e.g., judgments about environmental problems) are likely to manifest in environmental behavior (Tanner & Wölfling Kast, 2003). It is necessary to take into consideration the possibility that attitudes of consumers toward different environmental issues as well as toward different environmental behaviors can vary. In that sense, there is also a need for more research looking into different dimensions of knowledge and the effects on specific attitudes. The present study aimed to explore which specific dimensions of knowledge have the largest effect on positive attitudes towards organic food in order to add to the previous cognitions regarding the cognitive dimension of attitudes towards organic food.

## 2. THEORETICAL BACKGROUND

Cognitive variables comprise knowledge, memory processes, intelligence, decision-making, and problem-solving behavior. Essentially, cognition relates to understanding – the manner of forming, applying and storing meaning in the individual's mind (Wagner, 2003, p. 192).



It can be said that the consumer's ability to differentiate between various decisions, acts and choices based on their actual impact on the environment is, in fact, the basic prerequisite for any environmentally oriented behavior. Thus, various environmental organisations, associations and governments of many countries invest substantial amounts of resources and make considerable efforts to overcome the barriers created by general ignorance and a lack of information, which prevent and/or discourage consumers from acting in accordance with their environmental beliefs, or even from forming such beliefs in the first place.

Makower and Pike (2009) point out that education (knowledge) leads to a high level of environmental awareness, but does not necessarily make a consumer an expert on environmental issues. He emphasizes that Americans (according to his research - A/N), even the greenest and most educated ones, want simple answers to environmental challenges we are faced with. Our minds function by processing information in terms of a simple cause and effect relationship. Therefore, economic operators must focus on the big picture and clarify the relationship between environmental challenges and their solutions, as well as specify the manner in which their products and services correspond to this relation. Banalisation must be avoided, but first of all, it is necessary to draw attention to these issues and only then to inform people about the details.

One of the main objectives of studying cognitive and emotional processes affecting the consumer's behavior is to make an impact on the consumer's knowledge. Knowledge can be defined as information stored in memory. Consumer knowledge is part of each person's overall knowledge defined as all the information stored in one's memory, used by a person to function in the role of a consumer (Kesić, 1999, p. 181). Market researchers have recognized this variable as a factor that affects each stage of the buying decision process and the manner in which customers obtain and organize information. This factor also defines the manner in which consumers evaluate products and services (Finisterra do Paco & Raposo, 2008, pp. 131-132)

Gambro and Switzsky (1996) define environmental knowledge as the students' ability (research was conducted among adolescents - A/N) to understand and evaluate the society's impact on the ecosystem. This knowledge is expressed by recognizing environmental issues, but also by understanding their causes, implications, and consequences.

Consumers' knowledge about environmental issues is a variable that is relatively difficult to measure. Due to specific characteristics of countries where research is conducted, scales measuring individuals' own perception of knowledge about environmental issues (such as those used in the research by Schlegelmilch and associates (1996) are often used instead of well-known and internationally tested scales measuring specific knowledge (such as the scale created by Maloney et al. (1975). Such scales do not necessarily draw a realistic picture of the actual level of knowledge. However, their advantage is that they are universally applicable, comparable, relatively simple to form and, depending on research objectives, sometimes render more adequate results. For instance, this is true for research measuring the level of perceived rather than actual knowledge as a measure of the subject's self-confidence, which can also be an important factor for environmental behavior. Such scales are frequently used in public opinion research, as well as in Eurobarometer surveys (probably the most extensive public opinion research today), which also follow environmental issues on a regular basis.

When it comes to objective measurement of knowledge, the problems are manifold. Firstly, the very nature of ecology, which comprises complex interactions between living organisms and the environment, complicates the understanding of this issue. Furthermore, regardless of its current relevance, it can be said that (at that time, in the 1970s, as well as today - N/A) an average person knows very little about ecology. Therefore, it is hard to develop a measuring instrument with a sufficient number of highly-likely, i.e. "easy" questions (Maloney & Ward, 1973). Also, the process of determining relevant environmental issues (topics) that must be considered while measuring knowledge is extremely complex. Finally, the manner of asking questions (and offered answers), as well as the manner of conducting the survey itself (the possibility of "cheating"), are extremely important as they may affect actual measurement results.

The relation between knowledge and environmental behavior does not seem to have a stable pattern. In the meta-analysis of 128 previous studies, Hines and associates (1987) determined that the average correlation coefficient between knowledge about environmental issues and ecological behavior is 0.30. This moderate, but statistically significant correlation was further confirmed in Grunert's research (1993) related to purchasing organic food products, as well as in the model developed by Chan and Lau (2000). On the other hand, Maloney and Ward (1973) did not find any significant correlations between those

variables and it must be mentioned that the research conducted by Arbuthnot and Lingg (1975) even showed a negative correlation. In brief, it can be concluded that the opinion about a positive correlation between these two variables prevails, partly due to empirical research results and partly due to logical reasoning and the general theory on attitudes and their impact on behavior. Namely, the hypothesis that people who are more informed about environmental issues and their consequences are more willing to act in accordance with such attitudes seems common-sense, but empirical research has shown that proving this relation is rather problematic.

Schan and Holzer (1990) assumed that low significance suggested in previous research can be attributed to the fact that scales used for measuring relatively abstract knowledge (general knowledge about ecology) are used for measuring highly specific activities.

Therefore, in this research, they used two different scales, one for abstract and one for specific/applicative knowledge (related to specific activities and strategies contributing to environmental protection). Authors concluded that a certain amount of information is required to make a particular behavior efficient for a specific purpose and that applicative knowledge acts as a moderating factor between attitudes and actual behavior. On the other hand, abstract knowledge has no such effects. Therefore, knowledge, particularly applicative (specific) knowledge, has an indirect effect on behavior.

Furthermore, it must be pointed out that a consumer can, but does not have to, be aware of or capable to realistically assess his level of knowledge about a particular environmental issue (“I do not know how much I do not know”). This stems from the fact that awareness of ignorance requires an individual to have at least a minimum amount of knowledge and the ability to adopt different attitudes towards that level of knowledge (“I want to and I must learn more.” or “This does not concern me at all.”).

According to Southern (1972), if children acquire a broad understanding of environmental issues, i.e. knowledge, they will gradually develop social/environmental awareness, i.e. adopt an attitude that will affect their environmental behavior and eco-friendly activities. Educational system can significantly affect environmental awareness of future consumers from an early age. Thus, many European countries have eco-kindergarten and eco-school programmes with integrated environmental education programmes.

We can conclude that, in general, knowledge about environmental issues represents a prerequisite and an important factor for developing critical awareness. Critical awareness enables individuals to analyze the environment with a critical eye and to realize the need to act with the aim of changing the current situation. In this manner, individuals can adopt adequate environmental behavior that is most efficient for making a positive impact on the current situation.

### 3. RESEARCH METHODOLOGY

#### 3.1. PARTICIPANTS AND PROCEDURE

The research is based on an in-person survey carried out on a convenient sample of 411 primary household shoppers from five counties in the Slavonia and Baranya regions in Croatia. According to Tanner and Wölfing Kast (2003, p. 85), primary household shoppers are defined as “the people who make purchasing decisions and regulate what the other members of the household eat”, therefore representing the most relevant source of information. In this research, primary shoppers were selected by placing a filter question (Are you the person that does the most grocery shopping for your household?) in the very beginning of the questionnaire.

The information obtained was analyzed using the statistical software package SPSS version 18.0. Statistical techniques of univariate analysis (frequency distribution, central tendency measures), multivariate analysis (reliability analysis, linear regression) and comparative analysis (ANOVA, t-test) were used. Table 1 shows a sample description.

**Table 1.** Sociodemographic characteristics of a sample (N=411)

		%
Gender	M	20.7
	F	75.2
Age at the time of the survey (years)	<30	25.4
	30-39	14.3
	40-49	31.8
	50-59	22.3
	>60	6.2
Education	Primary school	10
	High school	56.9
	Faculty	10.2
	Master's degree	17.5
	Doctorate	3.9
Place of residence	Village	29.2
	Suburb	17
	Town/city	51.6
Standard of living in a household	Bellow country's average	20.2
	At the country's average	69.6
	Above the country's average	9.2
Employment status	Student	6.6
	Unemployment	24.8
	Employment	56.4
	Retired	11.7
Household size	1-2	22.7
	3-4	53.5
	>5	23.9
Children in the household under 15 years old	0	70.8
	1	15.8
	2	9.5
	>3	3.9
Household income (€/month)	<500	16.1
	501-1000	31.9
	1001-1500	25.5
	1501-2000	14.4
	2001-2500	6.6
	>2500	5.1

**Source:** Author's work

### 3.2. INSTRUMENT AND MEASUREMENT

To explore the effect of perceived knowledge on the attitudes toward organic food products, five measurement scales were employed. Four scales refer to per-

ceived knowledge: knowledge of environmental issues in general, knowledge of eco-labels (for all types of products), knowledge of organic food products (their characteristics and sources) and knowledge of effects of organic food on individual's health (and the health of their family).

Two of the mentioned scales are more generally oriented (environmental issues and eco-labels) and the remaining two are specifically related to organic products. The last scale measures attitudes towards organic food products.

Measurement scales were created by authors or adapted from previous studies in this field. Each scale comprised a set of statements presented in Likert-type format with a five-point scale to capture the extent to which respondents agree or disagree with the statements in the questionnaire. Mejovšek (2003, p. 42) states that five-point Likert type scale is especially suitable for collecting data on populations that have educational systems with grades from 1 to 5, as individuals are used to thinking and evaluating things in terms of that range.

Items used for measuring each construct and reliability measure Cronbach's Alpha are provided in Table 2.

**Table 2.** Items and reliability measures of the constructs

Construct	Items	Cronbach's Alpha
Attitudes toward organic food	Purchasing organic food for me has more advantages than disadvantages.	,854
	Purchasing organic food seems attractive to me.	
	If I had the chance and resources I would want to purchase organic food.	
	Purchasing organic food would give me great pleasure.	
Knowledge of eco-labels	From different kinds of nutrition, I would choose one with dominant organic food.	,711
	The level of my knowledge of eco-labels is excellent.	
	In the stores, I can distinguish between environmentally friendly and harmful food products based on labels.	
Knowledge of environmental issues	I know which eco-labels are reliable and which are not.	,753
	I have a good knowledge of ecological certificates so I could recognize ecological products.	
	My knowledge about the ways I can contribute to environmental protection is excellent.	
	My knowledge about the ways producers can contribute to environmental protection is excellent.	

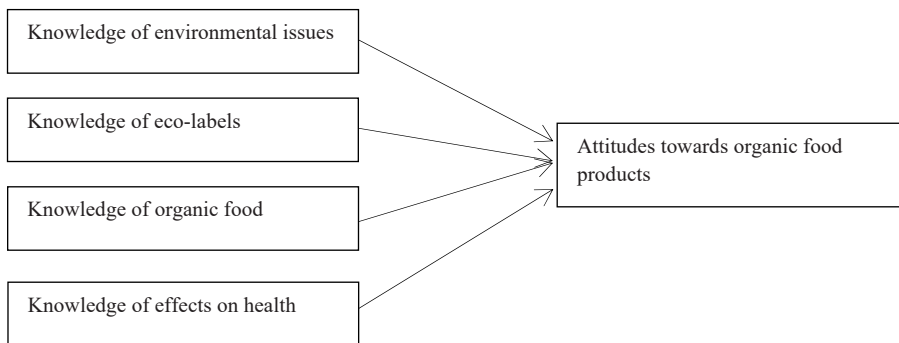
Knowledge of organic food products	My knowledge of organic food products is excellent.	,718
	My knowledge about the places where I can buy organic food is excellent.	
	I have adequate knowledge of buying organic food.	
	I feel informed enough to be able to purchase organic food.	
	I am familiar with the availability of organic food products.	
	I am familiar with the characteristics of organic food products.	
Knowledge of the effects of organic food on health	My knowledge about the influence of organic food on my health is excellent.	,788
	I know that organic food has a positive influence on my health.	
	I know enough about the nutrition characteristics of organic food.	
	The fact that organic food has fewer chemicals is good for my health.	

**Source:** Authors' work

## 4. RESEARCH RESULTS

The aim of the research was to determine the relationship between perceived knowledge and attitudes towards organic food products. The research model is presented in Figure 1. Linear regression tests using standard regression method were subsequently conducted to find out which knowledge dimensions could influence those attitudes.

**Figure 1.** The research model



**Source:** Author's work

The proportion of explained variance as measured by R-Squared for the regression is 25.4% as depicted in Table 3.

**Table 3.** Model summary

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	,504 <sup>a</sup>	,254	,247	,78817

a. Predictors: (Constant), knowledge\_eco-labels, knowledge\_env-issues, knowledge\_organic-food, knowledge effects-on-health

**Source:** Authors' work ANOVA results in Table 4, show that the model reaches statistical significance (Sig = 0,000).

**Table 4.** ANOVA results

## ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	82,634	4	20,659	33,255	,000 <sup>b</sup>
	Residual	242,274	390	,621		
	Total	324,908	394			

a. Dependent Variable: attitudes

b. Predictors: (Constant), knowledge\_eco-labels, knowledge\_env-issues, knowledge\_organic-food, knowledge effects-on-health

**Source:** Authors' work

Results obtained from the regression analysis are presented in Table 5. Based upon results, the predictive power of the following constructs was confirmed: knowledge of organic food products and knowledge of the effects of organic food on health. The influence of the remaining two constructs: knowledge of eco-labels and knowledge of environmental issues were found to be insignificant.

**Table 5.** Regression coefficientsCoefficients<sup>a</sup>

Model	B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		Std. Error	Beta			
1	(Constant)	1,526	,232		6,588	,000
	knowledge_organic-food	,243	,077	,190	3,179	,002
	knowledge_eco-labels	-,110	,081	-,076	-1,366	,173
	knowledge_env-issues	,033	,049	,034	,663	,508
	knowledge effects-on-health	,499	,059	,412	8,515	,000

a. Dependent Variable: attitudes

**Source:** Authors' work

The overall multiple regression model has worked well in explaining the variation in effects of organic food products (F=33,255; d.f. =4; p=0,000).



As presented in Table 5, knowledge of effects on health was found to have the largest significant positive influence on attitudes towards organic food ( $t=8,515$ ;  $p=0,000$ ;  $\beta=0,412$ ). Significant positive effect was also found in one more independent variable: knowledge of organic food products ( $t=3,19$ ;  $p=0,002$ ;  $\beta=0,190$ ). The influence of the remaining two variables was found to be insignificant: Knowledge of eco-labels ( $t=-1,366$ ;  $p=0,173$ ;  $\beta=-0,076$ ) and knowledge of environmental issues ( $t=0,663$ ;  $p=0,508$ ;  $\beta=0,034$ ).

## 5. CONCLUSION

Stimulating the consumption and consequently, the production, of organic food products is a desirable goal for every society. Especially so in countries like Croatia which bases its basic strategic development goals on the factors closely tied with environmental preservation and production of healthy food. The necessary prerequisite for making a decision to purchase organic food, are positive attitudes towards those products and one of the main influential factors on those attitudes is knowledge. This study, therefore, aimed to explore which specific types of knowledge have the largest effect on positive attitudes towards organic food.

Two of the proposed dimensions of knowledge were generally oriented and two were specifically oriented. The findings of the study reveal that the most important predictor of positive attitudes towards organic food is knowledge of the effects of organic food consumption on the health of an individual and his family. It means that in order to stimulate positive attitudes, it is most important to educate consumers and make them fully understand the positive effects of organic food on achieving health benefits. Also based on the research results, the relevant attitudes will be steered in the positive direction if consumers are educated on organic food products characteristics and sources.

The two remaining, generally oriented dimensions of knowledge (knowledge of eco-labels and knowledge of environmental issues in general) were found to be insignificant, meaning that the present research strengthens the view that specific knowledge is more strongly related to relevant attitudes rather than general knowledge. The general knowledge is presumably related to attitudes through some mediating or moderating variables.

The above mentioned presents one of the basic proposed directions of future research that could be directed towards discovering possible variables that moderate the effect of general dimensions of environmental knowledge on attitudes or relevant behavior. Also, the effect of other knowledge dimensions could be investigated. Furthermore, including demographics as a control variable would enable discovering possible differences based on gender, age group etc. Also eliminating one of the basic limitations of the present research regarding regional sample would provide results that are more generalizable. And finally, future research could strive to develop and test the scale for objective measuring of actual knowledge which could then be compared and discussed in relation to perceived knowledge.

This paper aims to add to the previous cognitions regarding the cognitive dimension of attitudes towards organic food. Understanding this, as well as other dimensions of those attitudes, will enable marketers to design the appropriate marketing strategies and provide other social stakeholders the necessary information in order to educate individuals in the way that will be most effective and most appealing to them.

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## HOW WOMEN BUY

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### **Abstract**

*This paper presents the results of the research about purchasing decision-making styles in Croatia. The research tested the applicability of the Consumer Style Inventory instruments to measuring consumer decision-making styles in the Croatian market. Unlike most domestic and foreign surveys so far, this study was not conducted on a student sample.*

*A small number of studies on this subject has been conducted in Croatia, so one of the aims of this research is to contribute to the knowledge in this area in the Croatian context. The CSI measurement system may help practitioners to gain a better understanding of how to position their products and services more effectively.*

*Since the general position of the author was that the difference in the gender decision-making styles is lost after attaining mature years (35+), have a higher level of education and employment, the general hypothesis is made that the differences in decision-making styles of consumers who are between 35 and 45 years of age, live in an urban environment and have higher education and*

*employment are missing or are very small. The study was conducted on 253 people who have precisely these characteristics.*

**Keywords:** *consumer behavior, segmentation, purchasing decision styles, women, Croatia*

JEL Classification: D10, D19

## 1. INTRODUCTION

Sproles & Kendall (1986, p. 267) define consumer decision-making style as a mental orientation that characterizes consumer choice when deciding which product to buy. The decision-making style is a key determinant of consumer behavior and possible gender stereotypes in decision-making styles could be useful information to experts in defining market communication strategies.

Shopping is a matter of fun, culture, and experience (Lehtonen & Maenpaa, 1997, p.141). Some authors believe that shopping is equally interesting to men and women and that they do it in a similar way (Otnes & McGrath, 2001, p.113). However, most find that gender is a basic prerequisite for understanding purchasing behavior, especially when it comes to impulsive purchasing that is more typical for women than for men (Campbell & Falk, 1997; Dittmar & Drury, 2000; Elliot, 1994; Faber, 1992; Roberts, 1998). According to some researches, women enjoy the purchasing process more than men, they spend more time (Jansen-Verbeke, 1987), and are more involved than men in the purchasing process itself (Dholakia, 1999). Generally, purchasing is perceived as a female activity (Lunt & Livingstone, 1992; Müller, 1998; Oakley, 1976). Although men spend more money than women, they buy more rarely (Arnold & Fischer, 1990; Cody et al., 1995) and make shorter purchases than women (McDonald, 1994).

Numerous researches on purchasing decisions have been made, but according to segments (by year) there are few, most of them are from the United States of America (Bettman, 1979; G.B.Sproles, 1985; Westbroke & Black, 1985), United Kingdom (Bakewell & Mitchell, 2006; Mitchell & Bates, 1998, Mitchell & Walsh, 2004), Germany (Mitchell & Walsh, 2004; Walsh et al., 2001), South Korea (Hafstrom et al., 1992), China (Fan & Xiao, 1998; Wang et al., 2004), Taiwan (Yang & Wu, 2007), Iran (Hanzaee & Aghasibeig, 2008), however most of them relied on the target group of students as homogeneous and

accessible. Rare researches, including the one done by Sinkovics et al (2010) have focused on the target groups different than the students.

This research by Nobilo et al (2017) contributes precisely by targeting a group of employed and well off people who have a higher purchasing power on the one hand, and on the other hand, lack of time to make purchases.

Almost all of these researches used a sophisticated version of the consumer decision-making questionnaire developed by Sproles & Kendall (1986) (CSI – Consumer Styles Inventory), which includes 40 statements that measure eight key features of consumer decision-making styles that affect their buying behaviour: (1) high-quality consciousness, (2) brand consciousness, (3) novelty-fashion consciousness, (4) recreational, hedonistic shopping consciousness, (5) price shopping consciousness, (6) impulsiveness, (7) confusion from over choice and (8) habitual, brand-loyal orientation towards consumption. Basic characteristics of the decision-making styles are listed in Table 1.

Theoretical differences in purchasing decision-making styles between women and men reflect mostly traditional views of the genders. However, times have changed, and various researches have tried to overcome old hypotheses. Various authors, including Mueller (1991), Underhill (2000), Anić et al (2010) made the following hypotheses on gender differences when it comes to decision-making on the purchase and continued their research based on these differences:

- ♦ Women are more prone to perfectionism than men
- ♦ Men tend to buy more brands than women
- ♦ Women are more prone to novelties and fashion than men
- ♦ Women tend to buy more for recreation and satisfaction than men
- ♦ Men are more price-sensitive than women
- ♦ Women tend to be more impulsive when buying than men
- ♦ Women will be more confused from over choice than men
- ♦ Women tend to buy more out of habit than men

**Table 1.** Characteristics of decision-making styles

Decision-making styles	Characteristics of decision-making styles
<b>High-quality consciousness</b>	Consumers prone to perfectionism search for the best quality products. They buy more carefully, systematically and compare products. These consumers are not happy with the average product.
<b>Brand consciousness</b>	This decision-making style measures the consumers' preference for buying more expensive and well-known brands. These consumers believe that the higher price of the product also represents its better quality.

<b>Novelty-fashion consciousness</b>	This decision-making style involves motivation to buy the latest, trendy product.
<b>Recreational, hedonistic shopping consciousness</b>	For customers who tend to buy for recreation and pleasure, it represents pleasure, recreation, and fun.
<b>Price shopping consciousness</b>	This decision-making style refers to the search for the products with the lowest prices. These consumers look for the best value for money and they search for stores to make the best purchase.
<b>Impulsiveness</b>	This factor measures consumer preference for impulsive purchases. Customers who have a high rating on this factor do not take into account how much they will spend and do not plan their purchases.
<b>Confusion from over choice</b>	This factor indicates the lack of confidence and consumers' ability to choose the right product. These consumers experience information overload, and therefore have difficulties making decisions.
<b>Habitual, brand-loyal orientation toward consumption</b>	This factor indicates consumer loyalty to certain brands and stores. Consumers are likely to buy the same brand in the same store by habit.

Source: Sproles, & Kendall, 1986

## 2. RESEARCH ON CONSUMER DECISION-MAKING STYLES IN CROATIA

There is very little research on consumer behavior in Croatia so every research on this subject is significant and welcome. Research by Anić et al (2010) refers to a convenient and homogeneous sample of 407 students in third and the fourth years of the Faculty of Economics in Zagreb. In this research, the authors used Likert's five-degree scale, with number 1 representing the claim "I strongly disagree" and 5 representing "I strongly agree".

In their sample, by analyzing the mean values, respondents gave the greatest significance to perfectionism (3.85), recreational shopping consciousness (3.48), habitual orientation towards consumption (3.44) and price shopping consciousness (3.22). The results of the chi-square test in their findings point to the conclusion that "in the segments of consumers prone to novelties and fashion, who tend to buy for recreation and pleasure, and in the segment of impulsive consumers, there is a higher share of female consumers. In the segment of consumers prone to high quality, there is a higher share of male consumers" (Anić et al, 2010, p.37). Since their research continues on earlier research and literary theory, it confirms the earlier hypothesis that women are more prone to novelties and fashion than men, as well as to shopping out of habit, impulsive shopping, and shopping for recreation and pleasure.



Contrary to the previous literature, their results showed that in a student sample:

- men are more prone to perfectionism than women,
- genders do not differ significantly according to price shopping consciousness, brand consciousness or confusion from over choice.

### **2.1. RESEARCH BY NOBILO, LANINOVIĆ, AND BILMAN**

As mentioned earlier, a small number of studies on this subject has been conducted in Croatia, so one of the aims of this research is to contribute to the knowledge in this area in the Croatian context. Unlike most domestic and foreign surveys so far, this study was not conducted on a student sample. Since the general attitude of the author before the research was that the difference in decision-making styles among the genders disappeared after attaining mature years (35+), have a higher level of education and employment, so the general hypothesis was made that the difference in decision-making styles with consumers who are between 35 and 45 years of age, live in an urban environment and have higher education and employment are missing or are very small. The study was conducted on 253 people who have precisely these characteristics. The sample used has the characteristics of a convenient sample because the persons in it were selected with regard to their accessibility.

This research was conducted 2018, in Croatia, through the author's websites and their social networks, so the sample has the characteristics of a commodity and homogeneous sample because the respondents were selected because of their availability.

#### **2.1.1. Instrument and research method**

The CSI (Consumer Styles Inventory) is an instrument that consists of a set of forty claims divided into 8 dimensions that measure consumer decision-making styles. The respondents expressed their agreement with five Likert scale items, number 1 signifying "I strongly disagree" and 5 "I strongly agree". The number and percentage of response and the average response value for individual dimensions in the questionnaire are shown in Tables 4 to 12. For the purposes of this study, we have created an online questionnaire consisting of



the CSI scale and the dimensions intended to encompass respondents' relevant socio-demographic data.

### 2.1.2. Description of participants

There were 376 participants in the research, out of which 166 men and 208 women (two participants did not identify their gender). Tables 2 and 3 show the structure of the sample according to the demographic characteristics.

In order to verify the differences between men and women in these demographic characteristics,  $\chi^2$  chi-square tests have shown that men and women differ significantly on income ( $\chi^2 (4) = 11.60, p = .021$ ) and work ( $\chi^2 (6) = 21.99, p = .001$ ). In this respect, the relative percentage of women in income categories up to 10,000 HRK is higher than the percentage of men, while in the case of income above 10,000 HRK the situation is reversed. As far as employment status is concerned, men have more often identified themselves as entrepreneurs, while women are more often employed in state-owned companies. Other differences in demographic characteristics were not significant.

Tables 2 and 3 show the structure of the sample according to demographic characteristics, age, gender, monthly household income, education, and employment status.

**Table 2.** Structure of the sample according to age and monthly household income

Age	Men		Women		Monthly household income	Men		Women	
	n	%	n	%		n	%	n	%
18-24	13	7.8	17	8.2	Up to 7,000 HRK	27	16.3	61	29.3
25-34	34	20.5	62	29.8	7,001 – 10,000 HRK	38	22.9	54	26.0
35-44	82	49.4	103	49.5	10,001 – 15,000 HRK	40	24.1	44	21.2
45-54	33	19.9	20	9.6	15,001 – 20,000 HRK	28	16.9	23	11.1
55+	4	2.4	5	2.4	Above 20,000 HRK	30	18.1	26	12.5
Not stated	0	0	1	0.5	Not stated	3	1.3	0	0

Source: Authors' research

**Table 3.** Structure of the sample according to education and employment status

Education	Men		Women		Employment status	Men		Women	
	n	%	n	%		n	%	n	%
High school	45	28.0	57	28.2	Unemployed	11	7.0	18	9.0
Business school	13	8.1	24	11.9	Entrepreneur	51	32.5	32	16.1
Undergraduate study	36	22.4	25	12.4	Employed in a private company	66	42.0	79	39.7
Graduate study	59	36.6	81	40.1	Employed in state-owned company	15	9.6	38	19.1
Postgraduate study	8	5.0	15	7.4	Employed in budget institutions	4	2.5	3	1.5
					Student	6	3.8	16	8.0
					Not stated	4	2.5	13	6.5

**Source:** Authors' research

Among the respondents, the highest percentage of them belong to the age group 35 to 44 years, up to 49.5% of them. If we join them with the age group of 25-34 years, it is the second most numerous in this study, that is 75.2% of the total number of respondents, so we can say that most of our sample is in the age group of 25 to 44.

Of the total number of respondents, the largest percentage of them are employed in private companies (40.7%), equally men and women, followed by entrepreneurs involving 23.3% of participants, and employees in a state-owned company involving 14.9% of participants. Looking at gender, men are more often entrepreneurs than women, while women are more often employed in state-owned companies.

As for monthly income, women are somewhat more represented than men in the category of income up to 10,000 HRK, while men are more represented in income categories above 10,000 HRK. Although our data do not allow the final explanation of the cause of these differences, the differences in income in our sample could be partly related to the differences in employment status and the place of employment of men and women. If the genders are observed separately, it is concluded that the percentage of men over women is higher in the groups above 15,000 HRK or above 20,000 HRK, which indicates the already mentioned problem of inequality in payments for women performing the same job and moving much more slowly up the career ladder to managerial positions.

In view of the above, we can conclude that we have achieved the goal. A sample of our participants is well represented by highly educated people between 35 and 45 years with an income of 7,000 to 15,000 HRK and living in cities.

### 2.1.3. Results

In the first phase of the analysis, we calculated the reliability coefficients of the assumed subscales to verify the justification for calculating the total results in this way, and correlation analysis to determine the direction and size of the relationships between the CSI's subscales. Table 4 shows descriptive characteristics of subscales, their reliability, and correlation.

**Table 4.** Descriptive characteristics, reliability coefficient and correlation among CSI's subscales

	M	SD	MIN	MAX	Cronbach $\alpha$	v2	v3	v4	v5	v6	v7	v8
High-quality consciousness	28.30	5.31	10	40	.76	.18**	.24**	.32**	-.09	-.16**	-.02	.21**
Brand consciousness	14.03	4.48	6	28	.80		.31**	.16**	-.14**	.22**	.11*	.20**
Novelty-fashion consciousness	14.78	3.97	5	24	.71			.50**	-.11*	.16**	.05	.11*
Recreational, hedonistic shopping consciousness	15.23	5.15	5	25	.84				-.06	-.04	-.03	-.04
Price shopping consciousness	10.41	2.35	3	15	.58					-.28**	.26**	.07
Impulsiveness	13.64	4.03	5	24	.69						.13**	-.05
Confusin from overchoice	11.30	3.94	4	20	.77							.03
Brand-loyal orientation toward consumption	13.84	3.01	4	20	.69							

\*\*  $p < .01$ ; \*  $p < .05$ ; M = arithmetic mean; SD = standard deviation; Min = minimum value that a respondent achieved; Max = maximum value that a respondent achieved

**Source:** Authors' research

Since Cronbach alpha values greater than .6 - .7 are considered acceptable, according to Hinton et al (2014), we can conclude that most of the presumed dimensions meet this requirement. Also, the most positive, but low, correlations between the subscales indicate the different object of measuring different sub-

scales, that is, the meaningfulness of differences between these subscales. Therefore, we consider it justifiable to calculate the overall results of the participants on the assumed subscales and to carry out further analyses.

In order to verify the existence of gender differences in purchasing decision-making styles, we conducted a multivariate analysis of a variance where the results on CSI subscales were dependent variables and gender an independent variable. The analysis showed that there were significant differences between men and women in purchasing decision-making styles (Wilks  $\lambda = .84$ ;  $F(8, 365) = 8.78, p < .001$ ). To see on which exact subscales of decision-making styles the mentioned differences exist, we conducted univariate analyses whose results are shown in Table 5.

**Table 5.** Univariate differences in the results on subscales of decision-making styles between men and women

		M	SD	F (df)	p
High-quality consciousness	Men	28.47	5.20	.22 (1, 372)	.641
	Women	28.21	5.42		
Brand consciousness	Men	14.79	4.40	8.84 (1, 372)	.003**
	Women	13.42	4.46		
Novelty-fashion consciousness	Men	13.60	3.91	28.13(1, 372)	.000**
	Women	15.72	3.77		
Recreational, hedonistic shopping consciousness	Men	14.19	4.90	12.63 (1, 372)	.000**
	Women	16.06	5.21		
Price shopping consciousness	Men	10.37	2.21	.09 (1, 372)	.760
	Women	10.44	2.46		
Impulsiveness	Men	13.55	4.00	.14 (1, 372)	.706
	Women	13.71	4.06		
Confusion from overchoice	Men	11.02	4.13	1.53 (1, 372)	.218
	Women	11.52	3.77		
Brand-loyal orientaton toward consumption	Men	13.55	3.14	2.81 (1, 372)	.095
	Women	14.07	2.89		

\*\*  $p < .01$ ; \*  $p < .05$ ; M = arithmetic mean; SD = standard deviation; F (df) = F-test value (degree of freedom); p = the achieved significance level of the obtained difference (0.1 goes with 1 % of risk, 0.5 goes with 5 % of risk)

**Source:** Authors' research

Table 5 shows that men and women differed significantly in purchasing decision-making styles, on the dimensions of brand consciousness, novelty-fashion consciousness and recreational, hedonistic shopping consciousness. More

precisely, men are more prone to buy well-known brands than women while women are more prone to novelties and fashion as well as shopping for recreation than men.

In Table 6, which shows the number and percentage of responses and the average value of responses on dimensions of high-quality consciousness the questionnaire on shopping style, it is evident that there is no gender difference yet again on neither dimension.

**Table 6.** Number and percentage of responses and the average value of responses on the dimensions of high-quality consciousness

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
High-quality is important to me when shopping.	M	1	1.4	4	5.8	19	27.5	28	40.6	17	24.6	3.81	0.93
	F	3	1.6	15	8.2	44	23.9	75	40.8	47	25.5	3.80	0.97
I do not think much or invest a lot of effort into my purchases.	M	15	21.7	16	23.2	21	30.4	10	14.5	7	10.1	2.68	1.25
	F	34	18.5	61	33.2	39	21.2	32	17.4	18	9.8	2.67	1.24
For the products I buy, I have very high standards and expectations.	M	2	2.9	6	8.7	17	24.6	30	43.5	14	20.3	3.70	0.99
	F	10	5.4	12	6.5	61	33.2	68	37	33	17.9	3.55	1.03
I buy very fast, the first product or brand that I come across and that is satisfactory.	M	21	30.4	15	21.7	13	18.8	16	23.2	4	5.8	2.52	1.30
	F	46	25	46	25	44	23.9	25	13.6	23	12.5	2.64	1.33
When buying a product, I try to make the best or the perfect choice.	M	2	2.9	1	1.4	13	18.8	28	40.6	25	36.2	4.06	0.94
	F	1	0.5	4	2.2	37	20.1	69	37.5	73	39.7	4.14	0.85
Generally, I try to buy the best quality.	M	0	0	4	5.8	17	24.6	26	37.7	22	31.9	3.96	0.90
	F	3	1.6	8	4.3	47	25.5	71	38.6	55	29.9	3.91	0.93

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
I make great efforts to choose the best quality products.	M	7	10.1	8	11.6	22	31.9	17	24.6	15	21.7	3.36	1.24
	F	13	7.1	26	14.1	66	35.9	54	29.3	25	13.6	3.28	1.09
The product does not have to be perfect or the best to satisfy me.	M	7	10.1	10	14.5	11	15.9	26	37.7	15	21.7	3.46	1.27
	F	14	7.6	34	18.5	49	26.6	51	27.7	36	19.6	3.33	1.20

Source: Authors' research

**Table 7.** Number and percentage of responses and the average value of responses on the dimensions of novelty-fashion consciousness ( $N_{\text{men}} = 69$ ;  $N_{\text{women}} = 184$ )

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
I usually have one or more pieces of clothing in the latest fashion styles.	M	27	39.1	13	18.8	18	26.1	9	13	2	2.9	<b>2.22</b>	<b>1.19**</b>
	Ž	36	19.6	39	21.2	48	26.1	45	24.5	16	8.7	<b>2.82</b>	<b>1.25</b>
I take into account that my wardrobe is regularly filled with novelties in line with changes in fashion.	M	34	49.3	19	27.5	11	15.9	3	4.3	2	2.9	<b>1.84</b>	<b>1.04**</b>
	Ž	54	29.3	45	24.5	49	26.6	29	15.8	7	3.8	<b>2.40</b>	<b>1.17</b>
Fashion and attractive style is very important to me.	M	10	14.5	13	18.8	28	40.6	15	21.7	3	4.3	<b>2.83</b>	<b>1.07</b>
	Ž	31	16.8	30	16.3	60	32.6	52	28.3	11	6	<b>2.90</b>	<b>1.16</b>

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
I shop at different stores and buy different brands to create diversity.	M	7	10.1	14	20.3	17	24.6	20	29	11	15.9	<b>3.20</b>	<b>1.23*</b>
	Ž	11	6	20	10.9	49	26.6	66	35.9	38	20.7	<b>3.54</b>	<b>1.12</b>
It is great fun to buy something new and exciting.	M	2	2.9	6	8.7	18	26.1	26	37.7	17	24.6	<b>3.72</b>	<b>1.03*</b>
	Ž	4	2.2	16	8.7	27	14.7	51	27.7	86	46.7	<b>4.08</b>	<b>1.08</b>

\* $p < .05$ ; \*\* $p < .01$

Source: Authors' research

Women more often have one or more pieces of clothing in the latest fashion styles ( $t(251) = -3.44, p = .001, d = 0.49$ ), more often they take care of wardrobe being regularly filled with novelties according to the changes in fashion ( $t(251) = -3.70, p = .000; d = 0.51$ ), they often shop in different stores and different brands to create diversity ( $t(251) = -2.10, p = .037; d = 0.29$ ) and, to a greater extent, they think it is a great fun to buy something new and exciting ( $t(251) = -2.38, p = .018; d = 0.35$ ), while genders do not differ in how much their fashion and attractive style is important to them.

**Table 8.** Number and percentage of responses and the average value of responses on the dimensions of recreational and hedonistic shopping consciousness in the questionnaire on shopping style ( $N_{\text{men}} = 69$ ;  $N_{\text{women}} = 184$ )

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
For me, shopping is not a pleasant activity.	M	19	27.5	10	14.5	20	29	13	18.8	7	10.1	2.70	1.33
	F	61	33.2	29	15.8	43	23.4	29	15.8	22	12	2.58	1.40
Going shopping is a very fun activity for me.	M	17	24.6	17	24.6	15	21.7	12	17.4	8	11.6	<b>2.67</b>	<b>1.34*</b>
	F	28	15.2	33	17.9	48	26.1	36	19.6	39	21.2	<b>3.14</b>	<b>1.35</b>

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
Going to stores is a waste of time for me.	M	12	17.4	19	27.5	19	27.5	8	11.6	11	15.9	2.81	1.31
	F	53	28.8	34	18.5	49	26.6	33	17.9	15	8.2	2.58	1.29
I enjoy shopping for pure fun.	M	29	42	9	13	16	23.2	9	13	6	8.7	<b>2.33</b>	<b>1.37**</b>
	F	44	23.9	27	14.7	46	25	36	19.6	31	16.8	<b>2.91</b>	<b>1.41</b>
I make quick purchases.	M	9	13	18	26.1	14	20.3	20	29	8	11.6	3.00	1.25
	F	24	13	44	23.9	65	35.3	33	17.9	18	9.8	2.88	1.15

\*p < .05; \*\* p < .01

Source: Authors' research

To a greater extent, women find shopping a very fun activity ( $t(251) = -2.47$ ,  $p = .014$ ;  $d = 0.35$ ) and they enjoy shopping for pure fun more ( $t(251) = -2.92$ ,  $p = .004$ ;  $d = 0.42$ ), while on other dimensions of recreational and hedonistic shopping consciousness there are no gender differences.

**Table 9.** Number and percentage of responses and the average value of responses on dimensions of price shopping consciousness in the questionnaire on shopping style ( $N_{men} = 69$ ;  $N_{women} = 184$ )

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
I shop as much as possible at discounted prices on special offers.	M	5	7.2	10	14.5	12	17.4	26	37.7	16	23.2	3.55	1.21
	F	12	6.5	19	10.3	57	31	40	21.7	56	30.4	3.59	1.21
Cheaper products are mostly my choice when shopping.	M	13	18.8	23	33.3	24	34.8	8	11.6	1	1.4	2.43	0.98
	F	41	22.3	44	23.9	66	35.9	20	10.9	13	7.1	2.57	1.16
I try to find the best value for money.	M	1	1.4	2	2.9	7	10.1	28	40.6	31	44.9	4.25	0.86
	F	2	1.1	3	1.6	29	15.8	51	27.7	99	53.8	4.32	0.87

Source: Authors' research

In Table 9, which shows the number and percentage of responses and the average value of responses on dimensions of price shopping consciousness in the



questionnaire on shopping style, it is evident that there is no gender difference yet again on neither dimension.

The results in Table 10 show that there is no gender difference in the dimension of impulsiveness in the questionnaire on shopping style.

**Table 10.** Number and percentage of responses and the average value of responses on dimensions of impulsiveness in the questionnaire on shopping style ( $N_{men} = 69$ ;  $N_{women} = 184$ )

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
I should plan my purchases more carefully than I have done so far.	M	14	20.3	11	15.9	24	34.8	12	17.4	8	11.6	2.84	1.27
	F	27	14.7	35	19	53	28.8	41	22.3	28	15.2	3.04	1.27
I am impulsive when shopping.	M	11	15.9	13	18.8	23	33.3	16	23.2	6	8.7	2.90	1.19
	F	45	24.5	37	20.1	59	32.1	27	14.7	16	8.7	2.63	1.24
I often buy something without thinking and regret it afterward.	M	21	30.4	21	30.4	16	23.2	8	11.6	3	4.3	2.29	1.15
	F	49	26.6	45	24.5	55	29.9	16	8.7	19	10.3	2.52	1.26
I take a lot of time to find the best deal.	M	12	17.4	18	26.1	17	24.6	15	21.7	7	10.1	2.81	1.25
	F	26	14.1	45	24.5	54	29.3	42	22.8	17	9.2	2.89	1.18
I pay careful attention to how much I spend.	M	4	5.8	10	14.5	15	21.7	25	36.2	15	21.7	3.54	1.16
	F	6	3.3	23	12.5	60	32.6	49	26.6	46	25	3.58	1.09

**Source:** Authors' research

**Table 11.** Number and percentage of responses and the average value of responses on dimensions of confusion from over choice in the questionnaire on shopping style ( $N_{\text{men}} = 69$ ;  $N_{\text{women}} = 184$ )

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
There are so many brands to choose from that I often feel confused.	M	14	20.3	14	20.3	24	34.8	9	13	8	11.6	2,75	1,25
	F	35	19	40	21.7	52	28.3	34	18.5	23	12.5	2,84	1,28
Sometimes it is difficult to choose which shop to buy in.	M	15	21.7	10	14.5	13	18.8	21	30.4	10	14.5	3,01	1,39
	F	28	15.2	41	22.3	45	24.5	44	23.9	26	14.1	2,99	1,28
The more I know about products, the more difficult it seems to choose the best one.	M	14	20.3	12	17.4	16	23.2	17	24.6	10	14.5	2,96	1,36
	F	27	14.7	43	23.4	48	26.1	40	21.7	26	14.1	2,97	1,27
I am confused by a lot of information that I get on different products.	M	19	27.5	19	27.5	18	26.1	10	14.5	3	4.3	2,41	1,17
	F	37	20.1	42	22.8	61	33.2	20	10.9	24	13	2,74	1,27

**Source:** Authors' research

There is no gender difference on neither of the dimensions of confusion from over choice in the questionnaire on shopping style.

**Table 12.** Number and percentage of responses and the average value of responses on dimensions of brand-loyal orientation toward consumption in the questionnaire on shopping style ( $N_{\text{men}} = 69$ ;  $N_{\text{women}} = 184$ )

Question		1 (I strongly disagree)		2		3		4		5 (I strongly agree)		M	SD
		n	%	n	%	n	%	n	%	n	%		
I have my favorite brands that I buy all the time.	M	6	8.7	5	7.2	22	31.9	30	43.5	6	8.7	3,36	1,04
	F	12	6.5	19	10.3	44	23.9	63	34.2	46	25	3,61	1,16
Once I find a brand or product that I like, I stick to them.	M	2	2.9	4	5.8	20	29	34	49.3	9	13	3,64	0,89
	F	7	3.8	12	6.5	60	32.6	74	40.2	31	16.8	3,60	0,97
I always go to the same shops when buying.	M	6	8.7	13	18.8	25	36.2	21	30.4	4	5.8	<b>3,06</b>	<b>1,04*</b>
	F	10	5.4	19	10.3	64	34.8	70	38	21	11.4	<b>3,40</b>	<b>1,00</b>
I regularly change the brands that I buy.	M	6	8.7	30	43.5	24	34.8	7	10.1	2	2.9	2,55	0,90
	F	24	13	58	31.5	77	41.8	19	10.3	6	3.3	2,59	0,95

\* $p < .05$

Source: Authors' research

To a greater extent, women go more often to the same shops when they go shopping ( $t(251) = -2.37, p = .019; d = 0.33$ ).

### 3. CONCLUSION

Results of this research show that mostly there is no significant gender difference when it comes to shopping decision-making style. We just found some differences in the dimensions of brand consciousness, novelty-fashion consciousness and recreational, hedonistic shopping consciousness. More precisely, men are more prone to buy well-known brands than women while women are more prone to novelties and fashion as well as shopping for recreation than men.

In the questionnaire in this type of research, it is about hypotheses that refer to most respondents and the question is whether such general theoretical

hypotheses can really give a deep insight into each target group? Of course not. Students shop differently from employed people in urban environments, and these shops differently from retired people. Even within the same target group, it is difficult to provide general, secure answers. Therefore, smaller research is required to examine specific groups and their behavior when purchasing specific products. Survey questions such as “I make great efforts to choose the best quality”, “I mostly appreciate well-known brands” and “The product does not have to be perfect to satisfy me” require a unique answer that is impossible to give because the category of products we buy is not specified. There is a drastic difference in consumer behavior when buying food, summer shirts, printer colors or garbage bags, for example. Also, the questions on expected quality are not tailored to the product categories, since we do not expect the same quality when purchasing table cloth and electrical equipment. Consumers think completely differently when deciding on purchase in different categories. It is also questionable, for example, what the word “best” refers to - price, quality or something else.

Typical examples of questionnaires on consumer behavior relating to research on decision-making also contain questions about whether brands advertised are also the right choice and the like, which is irrelevant in some categories in Croatia. If we take a mobile operator as an example, all of them are advertised, but “everyone” in Croatia means four, because the competition in the sector is not strong, as the market is small.

What is the future then? In any case, CSI could be re-examined in a way that some categories are changed, some new added and customized to the Internet, as some authors suggest (Sinkovics et al., 2010).

Also, theorists say that only 5% of our cognitive activities (decisions, emotions, actions, behavior) is conscious whereas the remaining 95% is generated in a non-conscious manner. (Van Rymenant, 2008, p.1). Therefore, neuromarketing advocates actually believe that traditional methods of research, such as consumer surveys and focus groups, are inherently inaccurate, as participants can never articulate their unconscious impressions of individual products. Pradeep, the founder, and CEO of NeuroFocus, a neuromarketing company in Berkley, California, says it is necessary to examine subconscious levels in the brain, as this is where consumers have developed an initial interest in the products, the likelihood of buying them and loyalty to them. Only “by measuring the brain

waves can we measure the attention, emotion, and memory and calculate a deeply under-conscious response to stimuli. What you find there is a whisper of the brain”, says Pradeep (Singer, 2010, p.1).

Regardless of all the above-mentioned difficulties and disadvantages of researches, they are still needed, and researches on decision-making styles are one of the more desirable, as it is a stable category. Of course, it is necessary to carry out statistical analyses, since it is not enough to consider only the observed differences in the observed phenomena at the measurement itself. Without a statistical test, no assumption can be made whether the observed differences are generally applicable or whether the result is random. It is important to know whether the result reflects the actual situation in the whole population, and that is what the degree of statistical significance is about.

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# ANALYSE DER CUSTOMER JOURNEY UND DIE AUSGESTALTUNG DIGITALER TOUCHPOINTS – EINE EMPIRISCHE ANALYSE ANHAND DES SPORTARTIKELHERSTELLERS ADIDAS

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## **Abstract**

*Im Rahmen der Customer Journey hat ein Unternehmen die Möglichkeit, an einzelnen Touchpoints mit dem Kunden in Interaktion zu treten. In diesem Zusammenhang spielen digitale Technologien eine immer wichtigere Rolle. Durch deren erleichterte technologische Anwendung hat sich die Anzahl der Touchpoints stark erhöht. Für Unternehmen bekommt daher das Touchpoint Management eine immer größere Bedeutung. Dabei müssen Unternehmen diese Touchpoints innerhalb der Customer Journey identifizieren, priorisieren und mit digitalen Kommunikationsformen ausgestalten. In der vorliegenden*



*Untersuchung werden anhand des ‚Consumer-Decision-Journey‘-Frameworks von McKinsey die Veränderungen im Kaufverhalten beschrieben und die wesentlichen Touchpoints identifiziert. Zudem wird in einer empirischen Studie die Customer Journey von Adidas untersucht, die wesentlichen digitalen Touchpoints identifiziert (u.a. Augmented Reality, Virtual Reality, Social Media, Fitness Videos, Apps und 3D-Produktion) und die Akzeptanz der Kunden für diese digitalen Touchpoints analysiert. Die Befragung wurde im November/Dezember 2018 mit einem Umfang von 195 Teilnehmern durchgeführt. Insgesamt geben die Erkenntnisse Einblicke, wie Unternehmen digitale Technologien erfolgreich an den Touchpoints der Customer Journey nutzen können.*

JEL Classification: M15, Z20

## 1. EINLEITUNG

Der Erfolg von Unternehmen wird wesentlich von einer erfolgreichen Bedürfnisbefriedigung der Kunden bestimmt (Nerdinger; 2003, 1). Unternehmensprozesse und -aktivitäten müssen an die Erwartungen der Kunden angepasst werden, um eine reibungslose Interaktion zu erreichen. Dies setzt voraus, dass Unternehmen das Kaufverhalten der Kunden beobachten und analysieren und bei Veränderungen schnell reagieren (Esch et al.; 2014, 49). Die zunehmende Digitalisierung eröffnet dabei neue Möglichkeiten in der Kundeninteraktion. Im Handels- und Konsumgüterbereich ist festzustellen, dass Unternehmen vermehrt auf digitale Technologien setzen, um den Ansprüchen der Konsumenten gerecht zu werden (Herbener; 2015, 63). Unter anderem zeigt sich dies beim Sportartikelhersteller Adidas. Das Unternehmen bietet seinen Kunden vermehrt digitale Touchpoints an, um auf individuelle Bedürfnisse einzugehen und so das Käuferlebnis zu steigern.

## 2. CUSTOMER JOURNEY

### 2.1 GRUNDLEGENDE ÜBERLEGUNGEN ZUR CUSTOMER JOURNEY

Zur Beschreibung des Kaufverhaltens von Kunden werden meist Mehrphasenmodelle herangezogen, wie bspw. das ‚Fünfphasen-Modell‘ von Kotler et al. (2017, 219). Der Nachteil dieser Modelle ist, dass Veränderungen im Kaufverhalten – bspw. bedingt durch zunehmende Digitalisierung – nicht berücksichtigt werden. Modelle zur Consumer Journey hingegen, wie bspw. die ‚Consu-

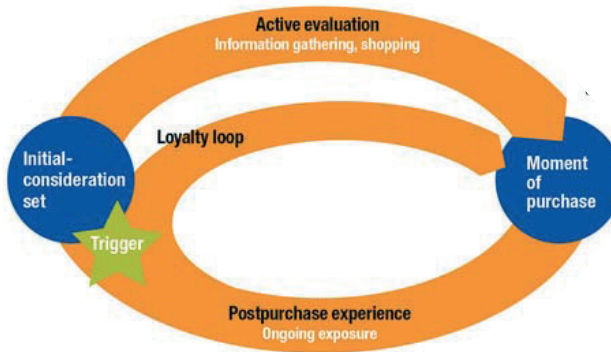
mer-Decision-Journey' von McKinsey, versuchen, diese Lücke zu schließen. Im Vergleich zu den Phasenmodellen des Kaufprozesses findet hier keine Abfolge von einzelnen Phasen in einer vordefinierten Reihenfolge statt. Vielmehr setzt sich der Entscheidungsweg der Konsumenten durch die Abfolge von mehreren Einzelmomenten zusammen (Cadonau; 2018, 38). Die Einzelmomente können flexibel durchlaufen werden, so- dass sich dadurch eine flexible und individuelle Abfolge ergibt, die die „erlebte Reise der Kunden“ beschreibt (Naskrent & Zimmermann; 2015, 3).

Bei diesen Einzelmomenten kommt es zur Interaktion zwischen Unternehmen und Konsument, die in beiden Richtungen stattfinden kann (Cadonau; 2018, 38). Unternehmen versuchen, durch Aktivitäten Einfluss auf die Kaufentscheidung zu nehmen, aber Konsumenten werden auch selbst durch das Heranziehen von Informationen und Bewertungen aktiv (McKinsey; URL1). Externe Faktoren, wie die Digitalisierung, steigern dabei die Unabhängigkeit der Konsumenten und stärken ihren Einfluss auf die Customer Journey.

## 2.2 CONSUMER-DECISION-JOURNEY NACH MCKINSEY

Das Modell der Consumer-Decision-Journey von McKinsey (McKinsey; URL1) stellt den Verlauf der Kaufentscheidung beim Kunden dar (siehe Abbildung 1). Insgesamt gibt es vier wesentliche Kontaktpunkte: Zu Beginn des Kaufprozesses berücksichtigen Konsumenten bestimmte Marken. Die Auswahl hängt davon ab, welche Marken die Konsumenten im Alltag wahrnehmen und mit welchen sie kürzlich in Kontakt gekommen sind.

**Abbildung 1:** Die ‚Consumer-Decision-Journey‘ nach McKinsey



Quelle: McKinsey; URL1

Als nächstes beginnen Konsumenten mit der Informationssuche. Zunächst konzentriert sie sich auf die Produkte, die ihnen bekannt sind. Während der Beurteilungsphase kann sich die Auswahl der ursprünglich bevorzugten Marken ändern. Zuvor nicht berücksichtigte Marken können die Aufmerksamkeit des Konsumenten erlangen und andere Marken verdrängen. Nach Informationssuche und Bewertung der Produkte wird abschließend eine Kaufentscheidung getroffen. Auch nach der Kaufentscheidung bestehen weiterhin Interaktionen zwischen Konsument und Unternehmen (Kruse et al.; 2017, 97f.), denn mit dem Erwerb beginnt der Beurteilungsprozess des gesamte Kaufprozesses. Unter anderem wird verglichen, inwieweit das Produkt die erhofften Erwartungen erfüllt und ob ein positives Erlebnis bei dem Konsumenten entstanden ist. Die Bewertung dieser Faktoren ist wichtig, da diese darüber entscheidet, ob der Konsument beim nächsten Kauf die gleiche Marke erneut berücksichtigt und durch ein positives Käuferlebnis die Loyalität beim Konsument steigt. So entscheidet er sich beim nächsten Einkauf wieder für die Marke und begibt sich in einen Loyalitätskreislauf (Stihler; 2000, 169-186).

### 2.3 HERAUSFORDERUNGEN FÜR DAS MARKETING

Die Customer-Journey wird durch die Digitalisierung wesentlich beeinflusst. Zahlreiche neue Kontaktmöglichkeiten mit potentiellen Konsumenten sind durch die Digitalisierung entstanden. Diese betreffen alle Bereiche der Customer-Journey.

Bereits in der ersten Stufe, dem ‚initial consideration set‘, hat sich die Anzahl der Touchpoints erhöht. Konsumenten kommen mit immer mehr und immer neuen Marken in Berührung, die sie nicht nur durch klassische Werbung wahrnehmen, sondern denen sie auch im Internet begegenen (Kruse et al; 2017, 4). Für Unternehmen hingegen erschwert dies, die Aufmerksamkeit der Konsumenten zu erlangen (McKinsey; URL2).

Auch bei der ‚active evaluation‘ kommt im Rahmen der Informationssuche der Digitalisierung eine besondere Rolle zu. Durch Social Media können Konsumenten Erfahrungsberichte austauschen, in Vergleichsportalen können Preise verglichen und auf Händlerseiten wie Amazon können Kundenrezensionen gelesen werden. Kaufentscheidungen der Konsumenten basieren mittlerweile zu 25% auf Informationen aus dem Internet (Stengel et al.; 2017, 127).

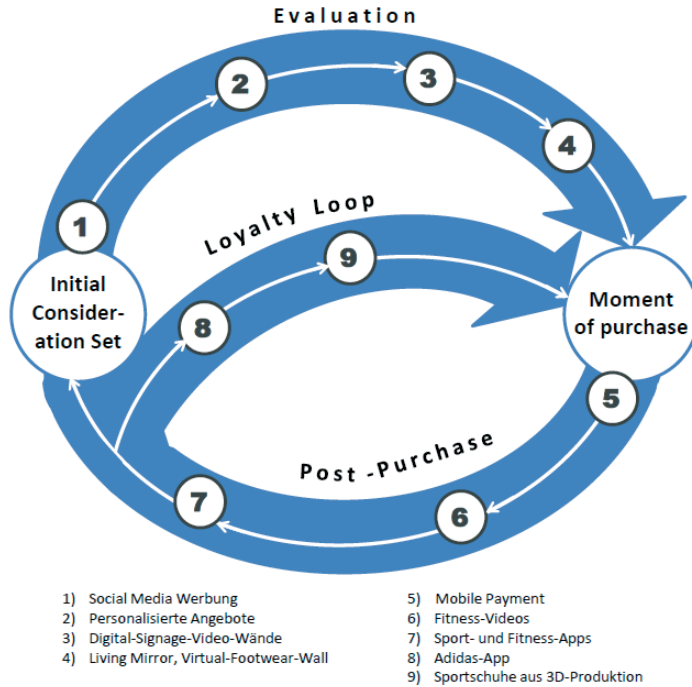
Auch beim ‚moment of purchase‘ gibt es mehrere Touchpoints. Die Erwartungshaltung vieler Konsumenten ist mittlerweile, dass Produkte nicht nur am POS angeboten, sondern diese auch zu ihnen nach Hause geliefert werden. Inzwischen ist dies ein wichtiges Kriterium, wonach sie Produkte auswählen (Kruse et al; 2017; 54). Werden ihre Erwartungen nicht erfüllt, bietet ihnen das Internet den Zugang zu zahlreichen Händlern aus der ganzen Welt. Die Konsumenten werden durch die Digitalisierung unabhängiger. Sie entscheiden, wo, wann und was sie kaufen (Ternés et al.; 2015, 7). Es entsteht eine Dezentralisierung des Konsums (Stengel et al.; 2017, 127).

Diese Vervielfachung der Touchpoints innerhalb der gesamten Customer-Journey stellt Unternehmen vor neue Herausforderungen, denn alle Kontaktpunkte zu bedienen, können sich viele Unternehmen nicht leisten (Kochann & Schneider; 2018, 14). Daher stellt sich die Frage, auf welche Interaktionsmöglichkeiten sie sich fokussieren sollten. Diese Priorisierung kann nur gelingen, wenn Unternehmen die richtigen Touchpoints identifizieren, nämlich die, die die Konsumenten am meisten bei ihrer Kaufentscheidung beeinflussen (McKinsey; URL1).

### 3. HYPOTHESEN

Im Rahmen der empirischen Erhebung soll am Unternehmen Adidas untersucht werden, welches die wesentlichen Touchpoints dieses Unternehmens sind und wie Konsumenten bei ihrer Customer Journey unterstützt werden können. Im Folgenden werden deshalb Hypothesen zu den wesentlichen Touchpoints innerhalb der Customer-Journey hergeleitet. Der Fokus liegt dabei auf den wesentlichen Technologien, die an diesen Touchpoints eingesetzt werden können. Einen Überblick hierzu gibt Abbildung 2.

**Abbildung 2:** Die ‚Consumer-Decision-Journey‘ mit wesentlichen digitalen Touchpoints bei Adidas



**Quelle:** Eigene Darstellung

### Augmented Reality

Die Augmented-Reality-Technologie wird bisher selten von Unternehmen an Touchpoints eingesetzt. Dabei kann die Technologie über verschiedene digitale Geräte angewendet und in vielfältiger Form eingesetzt werden (Stengel et al.; 2017, 52). Eine spezifische Anwendungsmöglichkeit stellt der Living Mirror dar. Bei dieser Technologie handelt es sich um einen digitalen Bildschirm, der mit Kameras ausgestattet ist, die Personen erfassen und sie auf den Bildschirm projizieren. Über den digitalen Bildschirm kann der Konsument Modeartikel aus dem Sortiment des Unternehmens auswählen und sich über den Bildschirm in der Kleidung betrachten, ohne sich tatsächlich umziehen zu müssen. Für den Konsumenten entfällt das physische Auswählen von Produkten, der Transport der Kleidungsstücke in die Umkleide und die Anprobe. Das Anprobieren der Artikel erfolgt dabei per Click über den Bildschirm (Kruse et al; 2017, 245f.). Der Einkauf gestaltet sich dadurch einfacher und bequemer. Ein weiterer Vor-

teil ist die Größe des verfügbaren Sortiments. Die Konsumenten haben Zugriff auf das Gesamtsortiment an Produkten und Größen – mehr als am POS oft möglich wäre. Diese Vorteile des Living Mirror lassen folgende Hypothese zu:

H<sub>1</sub>: Der Living Mirror wird von Konsumenten für das Anprobieren von Sportartikeln den Umkleidekabinen vorgezogen.

Eine weitere Möglichkeit von Augmented Reality ist das virtuelle Einblenden von Informationen zu Produkten. Anhand von Lokalisierungsdiensten wird die Umgebung der Person ermittelt und mit der Unterstützung technischer Geräte können Informationen zu nahe liegenden Produkten angezeigt werden. So können sich Konsumenten im Store über ihr Smartphone produktspezifische Eigenschaften, wie Preis, Materialverarbeitung und Funktionsweise, anzeigen lassen (Kruse et al; 2017, 245f.).

Der Käufer profitiert von der Anwendung, da ihm Informationen zur Verfügung stehen, die vorher für ihn gegebenenfalls nicht wahrnehmbar waren. Vor allem bei einem hohen Kundenaufkommen können sich Konsumenten zunächst selbst informieren. Zudem ist es möglich, die Informationen in vielfältiger Weise darzustellen. Unter anderem kann die Visualisierung anhand von Bildern und Videos erfolgen. Daraus ergibt sich folgende Hypothese:

H<sub>2</sub>: Konsumenten empfinden die Augmented-Reality-Anwendung über ihr Smartphone als nützlich, um sich über Sportartikel zu informieren.

Adidas versteht sich selbst als ein innovatives Unternehmen (Adidas Geschäftsbericht; 2017, 83ff.). Eines ihrer Ziele ist es, innovative Produkte zu entwerfen, die den Sportlern Höchstleistungen ermöglichen (Adidas; URL1). Der Einsatz von neuen Technologien in der Customer-Journey, wie Augmented-Reality, kann die Wahrnehmung der Konsumenten auf das Unternehmen beeinflussen. Da die Augmented-Reality-Anwendung recht neu und technisch vielseitig ist, hinterlässt sie bei Konsumenten einen innovativen Eindruck (Universität Siegen; 2017). Es ist deshalb zu vermuten, dass sich der innovative Eindruck der Technologie auf die Wahrnehmung der Marke Adidas positiv niederschlägt.

Zudem wird davon ausgegangen, dass vor allem jüngere Konsumenten, die mit der Digitalisierung aufgewachsen sind, auch die Augmented-Reality-Technologie sowie deren Vorteile kennen. Bei älteren Konsumenten wird hingegen davon ausgegangen, dass sie mit der Technologie weniger vertraut sind. Sie ne-

hmen eher die Komplexität der Anwendung wahr und sehen daher weniger die innovativen Vorzüge von Augmented-Reality. Daher ergibt sich folgende Hypothese:

H3: Je jünger die Konsumenten sind, desto stärker nehmen sie durch den Einsatz von Augmented-Reality-Technologie Adidas als eine innovative Marke wahr.

## Virtual Reality

Eine weitere mögliche digitale Anwendung ist die Virtual Reality Technologie. Die Anwendung kann ebenfalls in vielfacher Form an den Touchpoints zum Einsatz kommen. Eine Möglichkeit stellt die Virtual-Footwear-Wall dar, die bereits in ausgewählten Adidas-Stores eingeführt ist. Über die Footwear-Wall können Konsumenten das gesamte Produktsortiment von Adidas einsehen und produktspezifische Informationen abrufen (CIP Marketing; URL). Zudem werden durch die Funktionen der Technologie die üblichen Store-Aktivitäten der Konsumenten, wie die Informationssuche, Beratung und Auswahl, unterstützt. Konsumenten können alle Aktivitäten über den Bildschirm ausführen. So stellt die Virtual-Footwear-Wall eine hilfreiche Technologie zur Unterstützung der Kaufentscheidung der Konsumenten dar. Es ist daher Folgendes zu erwarten:

H<sub>4</sub>: Konsumenten nehmen die Virtual-Footwear-Wall als Unterstützung für die Kaufentscheidung wahr.

Ferner ermöglicht die Virtual-Footwear-Wall den Konsumenten, auf Produktinformationen zuzugreifen, die sie zuvor lediglich vom Geschäftspersonal erhalten haben. Durch die Technologie sind die Konsumenten am POS unabhängiger. Mit der Virtual-Footwear-Wall können sie sich eigenständig informieren. Da die Technologie die Beratungsfunktion technisch und individualisiert weitestgehend übernehmen kann, ist anzunehmen, dass Konsumenten diese Technologie einer persönlichen Beratung vorziehen.

H<sub>5</sub>: Die Virtual-Footwear-Wall ersetzt für Konsumenten die Beratung durch das Service-Personal.



## Social Media

Die Social Media Plattformen zeichnen sich vor allem durch ihre anschauliche und visuelle Darstellungsform aus. Für Unternehmen bieten diese ein attraktives Umfeld, um ihre Produktwerbung zu platzieren. Die Visualisierung ermöglicht es, zu den Konsumenten eine emotionale Bindung aufzubauen (Heymann-Reder; 2011, 33f.). Dies führt zu der Annahme, dass Konsumenten eine positivere Einstellung zu Werbung auf Social Media haben als im Vergleich zu klassischen Medien, wie TV oder Print-Formaten.

H<sub>6</sub>: Konsumenten empfinden Werbung in sozialen Netzwerken als eher relevant im Vergleich zu Werbung in klassischen Medien.

In Bezug auf Adidas bietet vor allem Instagram visuell ansprechende Werbeformate an. Beispielsweise können über die ‚Shopping in Instagram‘-Funktion Produkte in einem natürlichen Umfeld dargestellt werden. So kann Adidas etwa eine Sportszene zeigen, in der die Werbeträger Adidas-Produkte tragen. Konsumenten erkennen an der Darstellungsform nicht direkt, dass es sich um Werbung handelt. Falls sie jedoch an der Instagram-Story interessiert sind, gelangen sie per Klick auf die Instagram-Page von Adidas. Der Vorteil ist, dass Nutzer die Werbung im Vergleich zu anderen Medien wie Fernsehwerbung weniger aufdringlich wahrnehmen (Instagram Business; URL). Daher ist zu erwarten, dass die ansprechende visuelle Darstellungsform auf Instagram bei Konsumenten eine höhere Bereitschaft auslöst, sich über Produkte zu informieren.

H<sub>7</sub>: Werbung auf Instagram löst bei Konsumenten eine höhere Bereitschaft aus, sich nach der Beobachtung der Werbung weiter über das Produkt zu informieren.

## Fitness-Videos

Digitale Touchpoints können auch von Adidas genutzt werden, um Beziehungen zu ihren Kunden zu intensivieren. Eine Möglichkeit besteht für Adidas in der Kommunikation von Trainings-Videos auf Social Media Plattformen. In diesen Videos können etwa Spitzensportler ihre persönlichen Fitnessübungen beschreiben und vorführen. Der Einsatz von erfolgreichen Sportlern wird bewusst gewählt, da dadurch die Konsumenten die geleisteten Erfolge der Sportler mit Adidas in Verbindung bringen. Dies kann zu einer stärkeren Wah-



rnehmung von Adidas als Leistungssportmarke führen. Die Video-Formate stehen ebenfalls im Einklang mit der Strategie von Adidas, die Käufer bei ihrem sportlichen Erfolg zu unterstützen (Adidas URL3; U4f.). Darüber hinaus wird Adidas nicht nur als Sportartikel-Produzent gesehen, sondern als ein Assistent oder Coach, der beim persönlichen Training zur Seite steht. Daher wird angenommen, dass die Sport-Videos aufgrund der persönlichen Ansprache die Bereitschaft bei Konsumenten steigert, sportlich aktiver zu werden, dass die Videos mit den Eigenschaften von Social Media zusammenpassen und eine Verbreitung der Videos über diese Plattform stattfinden kann.

$H_8$ : Sport-Videos steigern die Bereitschaft von Konsumenten, sportlich aktiv zu werden.

$H_9$ : Die Verbreitung der Sport-Videos über Social Media passt mit dem Image der Werbepattform überein.

In der Nachkaufphase findet bei Konsumenten eine Beurteilung des Kaufprozesses statt. Die Sport-Videos können den Käufern ein Gefühl der Bestätigung für ihre Kaufentscheidung geben. Sie nehmen durch die Videos wahr, dass auch Spitzensportler auf Adidas setzen und ziehen gegebenenfalls daraus den Rückschluss, dass sie eine gute Entscheidung getroffen haben. Es wird angenommen, dass durch den Einsatz von erfolgreichen Sportlern die Konsumenten den Eindruck gewinnen, dass die Marke Adidas zum sportlichen Erfolg beiträgt. Ob sich dies auf die Einstellung der Konsumenten auswirkt, wird anhand der folgenden Hypothese untersucht.

$H_{10}$ : Der Einsatz von erfolgreichen Sportlern in den Videos verstärkt bei Konsumenten den Eindruck, dass die Sportmarke zum sportlichen Erfolg beiträgt.

## Video-Wände

Des Weiteren können digitale Technologien auch für das Store-Design eingesetzt werden. Eine Möglichkeit bieten digitale Video-Wände, die in den Schaufenstern von Geschäften eingesetzt werden können. Überdimensionale Video-Wände sind besonders aufmerksamkeitsstark und wecken das Interesse potenzieller Kunden (BIZ Community; URL). Durch die visuelle Darstellung in Form von Bildern und Videos findet bei Konsumenten eine emotionale Aktivierung statt. Je stärker diese emotionale Aktivierung, desto intensiver wird

die Aufmerksamkeit der Konsumenten in Richtung des Geschäftes gelenkt (Interrogare; 2012). Es wird daher vermutet, dass die Video-Wände die Bereitschaft auf einen Store-Besuch bei Konsumenten steigern.

$H_{11}$ : Video-Wände steigern bei Konsumenten das Interesse auf einen Store-Besuch.

### Mobile Payment

Konsumenten können ihr Smartphone nutzen, um über Shopping-Apps ihren Einkauf im Geschäft zu bezahlen. Mit dieser Bezahlmethode sind Konsumenten unabhängiger, denn sie müssen sich weder an der Kasse anstellen, noch sind sie für das Bezahlen auf die Angestellten angewiesen (W&V; URL). Dadurch, dass Konsumenten, unabhängig vom Kundenaufkommen an Kassen, jederzeit bezahlen können, verringert sich ihre Wartezeit. Die Zeitersparnis wirkt sich zudem auf die Stimmung der Kunden aus und Konsumenten verlassen das Geschäft deutlich entspannter und zufriedener (Andriulo et al.; 2014, 208). Daher nehmen wir folgendes an:

$H_{12}$ : Konsumenten ziehen das Bezahlen ihres Einkaufes im Geschäft über ihre Smartphones dem an den Kassen vor.

### 3D-Herstellung

In der Sportartikel-Branche bietet der 3D-Druck ein neues Verfahren zur Herstellung von Sportschuhen. Adidas setzt diese Technologie bereits in seinen Speedfactories ein (3D Natives; URL2). Durch dieses Verfahren können die Sportschuhe deutlich schneller hergestellt und die Produktion erhöht werden (3D Natives; URL1). Aufgrund der technischen Neuheit werden folgende beide Hypothesen in Bezug auf die 3D-Herstellung untersucht:

$H_{13}$ : Konsumenten ziehen Sportschuhe aus der 3D-Herstellung den bisherigen maschinell/handgefertigten Sportschuhen vor.

$H_{14}$ : Konsumenten sehen die Zukunft der Sportschuh-Produktion in der 3D-Herstellung.

## Push-Nachrichten

In Verbindung mit der Beacon-Technologie kann eine individuelle Kommunikation mit Smartphone-Besitzern hergestellt werden (Even; 2015, 15f.). Dabei richtet sich die Kontaktaufnahme an Personen, die sich im Umkreis des Geschäftes befinden. Mit Hilfe der Technologie kann über installierte Shopping-Apps der Standort der jeweiligen Smartphone-Besitzer bestimmt werden. Nutzer, die sich in der Nähe des Geschäfts befinden, erhalten personalisierte Nachrichten oder personalisierte Angebote (Leopold & Reuter; 2017, 361). So können die Adidas-Stores das Kundenaufkommen in ihren Geschäften steuern und steigern. Durch verschickte Coupons oder Rabatte soll dabei die Hemmschwelle für einen Store-Besuch bei Konsumenten gesenkt werden. Im Vergleich zu anderen Zustellungsmethoden, wie per Post oder Zeitung, können Konsumenten Coupons sofort im Geschäft einlösen. Zudem ist diese Variante für Unternehmen kostengünstiger (Schulten et al.; 2015, 52).

Konsumenten nehmen laut Untersuchungen die personalisierte Ansprache über Push-Nachrichten als positiv wahr, da sie sich dadurch direkt angesprochen fühlen (Venzke-Caprarese; 2014, 841). Zudem empfinden sie die Bereitstellung von personalisierten Nachrichten sowie von Angeboten über die Shopping-App als bequem. Aus diesen Gründen wird davon ausgegangen, dass Konsumenten dem Erhalt personalisierter Angebote positiv gegenüber stehen und eine hohe Bereitschaft aufbringen, diese einzulösen. Folgende Hypothesen können daraus abgeleitet werden:

$H_{15}$ : Das Versenden von personalisierten Angeboten über Apps steigert das Interesse bei Konsumenten an einem Store-Besuch.

$H_{16}$ : Das Versenden von personalisierten Angeboten an Konsumenten über die Adidas-App steigert die Bereitschaft, Adidas-Produkte zu kaufen.

## Sport- und Fitness-Apps

Wie am Beispiel der personalisierten Angebote deutlich wurde, bieten Apps die Möglichkeit, mit Konsumenten zu kommunizieren. Darüber hinaus bieten die Applikationen zahlreiche weitere Anwendungsformen als Touchpoints. Adidas bietet bereits ein Portfolio aus verschiedenen Apps an, die zur Optimierung des Sport-Trainings sowie der Umsetzung einer gesunden Ernährung geeignet sind (Schulten et al.; 2015, 52).

Aus Sicht von Adidas dienen die Apps der Stärkung der Unternehmenspositionierung. Dabei ist der Grundgedanke der Apps, die Nutzer bei ihren sportlichen Zielen zu unterstützen. Konsumenten sollen dadurch den Eindruck gewinnen, dass die Produkte und Applikationen von Adidas zum sportlichen Erfolg beitragen (Adidas URL3; U4f.). Anhand der folgenden Hypothese soll daher die sportliche Wahrnehmungsempfindung durch die Nutzung der Apps untersucht werden.

H<sub>17</sub>: Die Nutzung von Fitness-Apps steigert das Empfinden der Konsumenten, sportlich erfolgreicher zu sein.

Ein weiterer Vorteil der Applikationen besteht darin, dass Adidas diese nutzen kann, um Konsumenten über Eigenschaften von Produkten zu informieren. So erhalten Konsumenten über die Apps Hinweise zu hilfreichen Produktfunktionen. Vor allem zu technischen Artikeln, wie die Adidas-Laufuhren, sind Tipps für eine optimale Nutzung hilfreich. Konsumenten ermöglicht dies, die Artikel besser in ihr Training einzubinden. Es wird dadurch sichergestellt, dass sie die vielseitigen Funktionen des Produktes wahrnehmen und nutzen können. Dies ist ein Grund, der zu der Annahme führt, dass Konsumenten, die häufiger die Sport-Apps von Adidas nutzen, mit ihrer Kaufentscheidung zufriedener sind. Zudem ist davon auszugehen, dass die Nutzung von Sport-Apps sowie neuer Sportkleidung eine zusätzliche Motivation darstellt, sportlich aktiv zu werden. Dies wirkt sich positiv auf das eigene Wohlempfinden aus und steigert die Zufriedenheit mit der Kaufentscheidung. Daher nehmen wir folgendes an:

H<sub>18</sub>: Die Häufigkeit der Nutzung von Sport-Apps wirkt sich auf die Zufriedenheit der Konsumenten mit ihrer Kaufentscheidung positiv aus.

#### 4. FRAGEBOGEN UND DATENERHEBUNG

Die Datenerhebung erfolgte mit Hilfe eines selbst entwickelten standardisierten Fragebogens auf der Onlineplattform Unipark. Nach Durchführung eines Pretests setzte sich der finale Fragebogen der Umfrage aus 27 geschlossenen Fragen (a) zum allgemeinen Kaufverhalten von Sportartikeln sowie zu sportlichen Aktivitäten, (b) zum Einsatz von digitalen Technologien während des Einkaufes von Sportartikeln und (c) zur Soziodemographie des Befragten zusammen (vgl. Fragebogen im Anhang). Da neue digitale Technologien nicht allen potenziellen Käufern bekannt sein dürften, wurden zu den Technologien ‚Living Mirror‘, ‚3D-Druck‘, ‚Augmented Reality‘, ‚personalisierte Angebote‘,

‚Self-Check-Out-Systeme‘ und ‚Virtual-Footwear-Wall‘ Beschreibungen sowie Bilder eingefügt, um diese Technologien zu erklären und zu veranschaulichen. Die Messung von Perzeptionen erfolgte dabei auf fünf-stufigen Likert-Skalen.

Die zu erreichende Zielgruppe setzte sich aus Studierenden der Hochschule Pforzheim zusammen. Eine zufällige Bruttostichprobe wurde aus dem Studierendenpanel StudieQUEST der Hochschule Pforzheim gezogen. Die Umfrage wurde zwischen dem 29.11.2018 und dem 13.12.2018 online gestellt. Um die Response Rate zu erhöhen, erfolgte zusätzlich eine Ansprache über die Plattformen Facebook und LinkedIn. Nach der Datenbereinigung ergab sich für die Hypothesenüberprüfung eine Nettostichprobe von  $n=195$  Probanden. Bei einer leicht rechtsschiefen Altersverteilung waren die Befragten durchschnittlich rund 25 Jahre alt.

## 5. ERGEBNISSE

Dass Probanden einen Living Mirror dem Anprobieren von Sportartikeln in der traditionellen Umkleidekabine vorziehen ( $H_1$ ), konnte auf Basis der gegebenen Nettostichprobe nicht verifiziert werden. Vielmehr zieht mit 74 Prozent der Befragten die Mehrheit signifikant häufiger ( $p=0,000$ ) die traditionelle Umkleidekabine dem Living Mirror (26 Prozent) vor.

Zu einem nicht-signifikanten Ergebnis kommen wir bei der Prüfung der Hypothese, ob Digital Natives – also Befragte, die mit digitalen Technologien aufgewachsen sind und deshalb 30 Jahre und jünger sind (Ziehe & Stevens; 2012, 7) – eine Augmented-Reality-Anwendung über ihr Smartphone als nützlicher empfinden, um sich über Sportartikel zu informieren, als die Digital Immigrants ( $H_2$ ). Wenngleich der Anteil der über Dreißigjährigen mit nur rund acht Prozent der Befragten eher gering ist, ergibt der Mann-Whitney-U-Test mit  $p=0,256$  keinen signifikanten Unterschied hinsichtlich der Einschätzung des Nutzens von Augmented-Reality-Anwendungen zwischen den beiden Altersgruppen. Zwar konnte ein signifikanter linearer Zusammenhang ( $p=0,021$ ) zwischen dem Alter der Probanden und der Wahrnehmung von Adidas als innovativer Marke durch den Einsatz von Augmented-Reality-Technologie festgestellt werden. Allerdings ist der Erklärungsanteil mit  $R^2=2,7$  Prozent nur sehr gering ( $H_3$ ).

In der Umfrage wurden die Teilnehmer danach zu der Technologie der Virtual-Footwear-Wall befragt. Es wird davon ausgegangen, dass Konsumenten die

Anwendung als Unterstützung für ihre Kaufentscheidung wahrnehmen ( $H_4$ ). Insgesamt zeigt sich aber, dass nur rund 40 Prozent der Befragten die Virtual-Footwear-Wall als Unterstützung für ihre Kaufentscheidung wahrnehmen, also diesem Statement ‚eher‘ oder ‚vollkommen‘ zustimmen (Top-2-Box). Mit rund 60 Prozent sieht die Mehrheit keinen kaufunterstützenden Mehrwert in dieser Technologie. Allerdings ergibt sich ein signifikanter und positiv-monotoner Zusammenhang (Kendall's Tau-b=0,522;  $p=0,000$ ) bei den Statements, wie stark ein Befragter über die Virtual-Footwear-Wall relevante Informationen wahrnimmt und dem Gefühl, dass diese Technologie kaufunterstützend wirkt. Dies liegt vor allem daran, dass ein erheblicher Teil der Befragten in der Virtual-Footwear-Wall keine Unterstützung für die Kaufentscheidung sieht und gleichzeitig der Meinung ist, keine relevanten Informationen über die Anwendung zu erhalten. Es zeigt sich somit, dass nicht alle Probanden die durch die Technologie erzeugten Informationen explizit wahrnehmen. Deshalb mag auch das Ergebnis nicht verwundern, dass nur 35 Prozent der Befragten die Virtual-Footwear-Wall einer Beratung durch Service-Personal vorziehen ( $p=0,000$ ). Auch  $H_5$  ist auf Basis der vorliegenden Stichprobe somit nicht verifiziert.

Soziale Medien bieten aufgrund ihrer visuellen Darstellungsmöglichkeiten eine potenziell ansprechendere Plattform für Werbungen als die klassischen Werbeformen ( $H_7$ ). Allerdings empfinden die Befragten in unserer Stichprobe die Werbung in sozialen Netzwerken insgesamt als nicht relevanter, denn die Messung der Relevanzdifferenz mit Hilfe eines gepaarten t-Tests ergibt keinen signifikanten Unterschied ( $p=0,718$ ). Auch  $H_6$  lässt sich somit nicht verifizieren.

Es kann aber davon ausgegangen werden, dass bestimmte Medienkanäle bei Konsumenten eine unterschiedliche Bereitschaft auslösen, sich nach der Wahrnehmung von Werbung weiter über ein Produkt informieren zu wollen ( $H_7$ ). Die Plattform Instagram zeichnet sich beispielsweise sehr durch eine ansprechende visuelle Aufmachung aus, sodass insgesamt rund 43 Prozent der Befragten aufgrund von Instagram-Werbung eine höhere Bereitschaft bekunden, sich über ein Produkt weiter informieren zu wollen. Der Vergleich zu anderen Werbemedien mit Hilfe des Wilcoxon Tests ergibt eine signifikante Überlegenheit dieses Werbekanals gegenüber der Plakatwerbung ( $p=0,004$ ), YouTube ( $p=0,000$ ), Facebook ( $p=0,000$ ) und Zeitungswerbung ( $p=0,000$ ). Lediglich im Vergleich zum Medium TV konnte kein signifikanter Unterschied festgestellt werden ( $p=0,508$ ).

Gezeigte Sport-Videos steigern dabei die Bereitschaft, selbst sportlich aktiv zu werden ( $H_8$ ). Insgesamt wird diese Meinung von 73 Prozent der Befragten geteilt. Lediglich rund 27 Prozent der Befragten folgen dieser Einschätzung nicht. Die Verbreitung der Sport-Videos über Social Media formt daneben das sportliche Image der Werbepattform ( $H_9$ ). Insgesamt vertreten rund 69 Prozent der Befragten die Auffassung, dass sich Social Media Plattformen besonders für die Verbreitung von Fitness-Videos eignen. Lediglich rund acht Prozent der Befragten vertreten die Einschätzung, dass sich die Verbreitung von Fitness-Videos nicht mit dem Image der sozialen Medien vereinbaren lässt. Nur 32 Prozent der Befragten glauben dabei an den Zusammenhang der Bekleidungsmarke mit dem sportlichen Erfolg eines Spitzensportlers. Hypothese  $H_{10}$  lässt sich deshalb nicht verifizieren.

Im Rahmen der Überprüfung der Hypothese  $H_{11}$ , ob Video-Wände bei Konsumenten das Interesse auf einen Store-Besuch steigern, wurden den Probanden zunächst positive und negative Adjektive zur Wahl gestellt, welche die Befragten möglicherweise mit Video-Wänden assoziieren. Es wurden insgesamt vier Adjektiv-Paare gebildet, dessen Zustimmungen auf einer bipolaren Skala gemessen wurden (siehe Frage 12 des Fragebogens). Diese Adjektivpaare erklären signifikant und zu rund  $R^2=53$  Prozent die Bereitschaft, einen Store besuchen zu wollen ( $F(3,191)=82.82$ ;  $p=0,000$ ). Dabei muss die Videowand nicht einladend ( $p=0,071$ ), sondern lediglich ansprechend ( $p=0,000$ ) und interessant ( $p=0,004$ ) wirken.

Digitale Technologien ermöglichen zudem neue Bezahlmethoden. Allerdings sprechen sich rund 75 Prozent der Befragten weiterhin für den traditionellen Bezahlvorgang an der Kasse aus. Lediglich 25 Prozent der Teilnehmer ziehen das Bezahlen per Smartphone vor. Entgegen der Hypothese  $H_{12}$  ziehen die Konsumenten somit moderne Bezahltechnologien nicht vor.

Ähnlich zurückhaltend verhalten sich die Befragten bei der Frage nach einem Kauf von Sportschuhen aus einer modernen 3D-Herstellung. Obwohl rund 78 Prozent der Befragten zumindest teilweise die Meinung vertreten, dass die 3D-Herstellung die herkömmliche Produktionsweise von Sportschuhen zukünftig ersetzen wird ( $H_{14}$ ), ziehen nur rund sieben Prozent der Befragten bereits heute derartig produzierte Sportschuhe vor, während rund 24 Prozent die Sportschuhe aus traditioneller Produktion bevorzugen. Immerhin 69



Prozent ist die Produktionsmethode egal. Hypothese  $H_{13}$  kann zum heutigen Zeitpunkt deshalb nicht verifiziert werden.

Gleichartig verhält es sich mit Hypothese  $H_{15}$ : Zwar können Konsumenten über die Adidas-Apps mit personalisierten Angeboten angesprochen werden, allerdings lässt sich statistisch kein signifikanter Zusammenhang zwischen den personalisierten Angeboten und dem Interesse für einen Store-Besuch feststellen ( $p=0,263$ ). Der Zusammenhang zwischen personalisierten Angeboten in der Adidas-App und der Bereitschaft Adidas-Produkte unabhängig vom Point-of-sale zu kaufen, ist zwar signifikant ( $p=0,006$ ), der Erklärungsanteil ist mit  $R^2=0,038$  aber nur äußerst gering.

Adidas bietet vier Sport- und Fitness-Apps an. Diese sind für unterschiedliche Trainings- und Gesundheitsbedürfnisse ausgelegt. Hauptsächlich sollen die Applikationen den Nutzern bei der Erreichung ihrer sportlichen und gesundheitlichen Ziele unterstützen (Adidas; URL2). Daher ist es von Interesse, mehr darüber zu erfahren, ob Nutzer sich durch die Verwendung der Apps sportlich erfolgreicher fühlen. Die Teilnehmer der Umfrage wurden gebeten, auf einer Likert-Skala anzugeben, wie sehr sie der Aussage zustimmen, dass die Verwendung von Sport- oder Fitness-Apps sich positiv auf ihren sportlichen Erfolg auswirkt. Die Frage wurde allerdings nur den Teilnehmern der Umfrage vorgelegt, die eine Sport- oder Fitness-App verwenden. Dies trifft für 51 Prozent der Befragten zu. Nur rund 39 Prozent der Befragten, die eine Sport- oder Fitness-App nutzen, haben dabei den Eindruck, dass sie sich durch die Nutzung sportlich erfolgreicher fühlen. Mit rund 61 Prozent vertreten viel mehr Befragte eine gegenteilige Meinung, weshalb Hypothese  $H_{17}$  nicht bestätigt werden kann. Dieses Ergebnis wird umso bedeutender, als dass sich auch Hypothese  $H_{18}$  nicht verifizieren lässt: Mit der Häufigkeit der Nutzung von Sport-Apps geht keine monotone Veränderung der Zufriedenheit der Konsumenten mit ihrer Kaufentscheidung für ein Adidas Produkt einher. Der p-Wert für Kendall's Tau-b liegt mit  $p=0,552$  weit über der Signifikanzgrenze von fünf Prozent.

## 6. FAZIT

Die Möglichkeiten der Kommunikation mit den Kunden während ihrer Customer Journey über digitale Touchpoints ist vielfältig. Die vorliegende Untersuchung hatte zum Ziel, für die Sportartikelmarke Adidas die wesentlichen und relevanten Touchpoints zu identifizieren und die Präferenzen der Kunden



für die digitalen Technologien zu untersuchen. Dabei hat sich insgesamt ein eher zurückhaltendes Bild für die neuen Technologien ergeben. Eher etablierte Werbeformen, wie die Bereitstellung von Werbung auf Instagram oder das Posten von Sport-Videos auf Social Media, werden vom Kunden insgesamt als positiv wahrgenommen. Werbung auf Instagram motiviert Kunden, sich weiter über die Produkte von Adidas zu informieren, und Sport-Videos in Social Media steigern die Bereitschaft, sich sportlich zu betätigen. Allerdings werden eher innovative Technologien zurückhaltend bewertet. Die empirische Erhebung hat gezeigt, dass die klassische Umkleidekabine einem Living-Mirror noch immer vorgezogen wird und dass die klassische Bezahlung an der Kasse den neuen Bezahlformen immer noch überlegen ist. Ähnlich verhält es sich mit Virtual-Footwear-Walls oder Video-Wänden, die bei den Befragten nur auf mäßiges Interesse stoßen.

Hier gilt es in Zukunft zu beobachten, in wieweit neue digitale Technologien es schaffen werden, die Kunden zu begeistern und die derzeit noch bestehende Skepsis zu überwinden.

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## APPENDIX: Fragebogen

### Frage 1

Wie häufig kaufen Sie für gewöhnlich Sportartikel innerhalb eines Monats ein?

Bitte wählen Sie eine Antwortmöglichkeit aus.

- Gar nicht
- 1 Mal
- 2 Mal
- 3 Mal
- Mehr als 3 Mal

### Frage 2

Welchen Kanal nutzen Sie für gewöhnlich am häufigsten, um Ihre Sportprodukte zu kaufen?

Bitte wählen Sie eine Antwort aus.

- Flagship-Store (z.B. Adidas-Store)
- Fachgeschäft (z.B. Intersport)
- Kaufhaus (z.B. Karstadt)
- Online Shop (z.B. Amazon)
- Andere, bitte nennen

### Frage 3

Welche ist Ihre favorisierte Sportmarke?

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Bitte wählen Sie eine Antwort aus.

- Nike
- Asics
- Adidas
- Under Armour
- Puma
- Andere, bitte nennen

### Frage 4

Wie häufig machen Sie in einer gewöhnlichen Woche Sport?

---

Bitte wählen Sie eine Antwort aus.

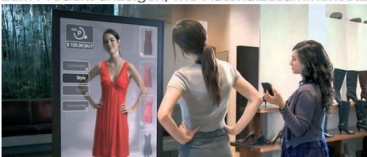
- Gar nicht
- 1 Mal
- 2 Mal
- 3 Mal
- Mehr als 3 Mal

### Frage 5

Welche der beiden Möglichkeiten würden Sie beim Anprobieren von Sportartikeln im Geschäft favorisieren?

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Beim Living Mirror handelt es sich um einen digitalen Bildschirm, wie auf dem Bild zu sehen ist. Dieser ermöglicht es, sich virtuell in Kleidung zu betrachten, ohne sich dabei umzuziehen. Über den Bildschirm lassen sich zudem weitere Informationen zum Produkt anzeigen, wie Materialzusammensetzung, verfügbare Kleidungsgröße und Farbe.

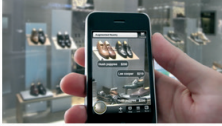


- Living Mirror
- Umkleidekabine

### Frage 6

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie den folgenden Aussagen zustimmen.

Die folgenden Fragen beziehen sich auf die Augmented-Reality-Technologie. Es handelt sich hierbei um eine App, die es ermöglicht, sich im Geschäft weitere Informationen zu Produkten anzeigen zu lassen. Diese ermöglicht es, Informationen wie Materialeinsatz, verfügbare Größen und Produktbewertungen vorheriger Käufer zu betrachten.



	Stimme überhaupt nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu
Augmented-Reality erleichtert es mir, Produkte im Geschäft zu vergleichen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Der Einsatz von Augmented-Reality verstärkt die Wahrnehmung der Marke Adidas als innovativ.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Augmented-Reality gibt mir einen guten Überblick über die wichtigsten Informationen eines Produktes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Augmented-Reality-Anwendung empfinde ich als Unterstützung für meine Kaufentscheidung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 7

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie den folgenden Aussagen zustimmen.

Die Virtual-Footwear-Wall ist ein digitaler Bildschirm, der in Geschäften zum Einsatz kommt. Er ermöglicht, Schuhe im Detail zu betrachten und sich produktspezifische Informationen anzeigen zu lassen, wie Materialeinsatz, Anwendungsbereiche, verfügbare Farben. Die Virtual-Footwear-Wall kann dabei von Nutzern eigenständig bedient werden.



	Stimme überhaupt nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu
Die Virtual-Footwear-Wall erleichtert es mir, Produkte im Geschäft zu vergleichen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Über die Virtual-Footwear-Wall erhalte ich relevante Informationen für mich.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Virtual-Footwear-Wall unterstützt mich bei meiner Kaufentscheidung.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 8

Welche Möglichkeit würden Sie vorziehen, um sich im Geschäft über Produkte zu informieren?

Bitte wählen Sie eine Antwort aus.

- Virtual-Footwear-Wall
- Beratung durch Service-Personal

### Frage 9

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie den folgenden Aussagen zustimmen.

	Stimme überhaupt nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu
Werbung in klassischen Medien (z.B. TV, Print) empfinde ich als relevant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ich nehme Werbung in sozialen Medien als relevant wahr.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 10

Bitte bewerten Sie anhand der angegebenen Skala wie sehr Sie den folgenden Aussagen zustimmen.

	Stimme gar nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu	Weiß nicht
Werbung auf Instagram steigert meine Bereitschaft, mich weiter über das Produkt zu informieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Werbung im TV steigert meine Bereitschaft, mich weiter über das Produkt zu informieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plakatwerbung steigert meine Bereitschaft, mich weiter über das Produkt zu informieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Werbung in Zeitungen steigert meine Bereitschaft, mich weiter über das Produkt zu informieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Werbung auf Facebook steigert meine Bereitschaft, mich weiter über das Produkt zu informieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Werbung auf YouTube steigert meine Bereitschaft, mich weiter über das Produkt zu informieren.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 11

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie den folgenden Aussagen zustimmen.

Die folgenden Fragen beziehen sich auf Fitness-Videos von Adidas. Bisher ist lediglich das Konzept zu den Fitness-Videos verfügbar. Im Allgemeinen werden die Videos so aufgebaut sein, dass bekannte Spitzensportler Übungen aus ihrem eigenen Training zeigen und zudem hilfreiche Tipps für den sportlichen Erfolg geben.

	Stimme gar nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu
Spitzensportler verkörpern, dass die Wahl der Bekleidungsmarke Einfluss auf den sportlichen Erfolg hat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solche Fitness-Videos passen gut mit dem Kommunikationsstil der sozialen Medien zusammen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Die Fitness-Videos empfinde ich als Motivation, um selbst sportlich aktiver zu werden.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 12

Welche der jeweiligen Adjektive empfinden Sie bei der Betrachtung von Video-Wänden in Geschäften?

Bei den Video-Wänden handelt es sich um große Bildschirme, die in den Schaufenstern der Geschäfte platziert sind. Diese geben Bild- und Videoformate wieder, wie auf dem Bild zu sehen.



langweilig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	interessant
hässlich	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ansprechend
abschreckend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	einladend
untergehend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	hervorhebend

### Frage 13

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie der folgenden Aussage zustimmen.

	Stimme gar nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu
Die Video-Wände würden mich zu einem Besuch des Geschäftes bewegen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 14

Würden personalisierte Angebote Sie zu einem Besuch von Sportgeschäften bewegen?

Personalisierte Angebote werden Nutzern über eine App auf das Smartphone gesendet und zeichnen sich durch eine direkte Ansprache aus. Dem Nutzer werden unter anderem Rabatte und Gutscheine für ein spezifisches Geschäft angeboten.

Ja

Nein

### Frage 15

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie der folgenden Aussage zustimmen.

	Stimme gar nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu	Weiß ich nicht
Ich empfinde den Erhalt von personalisierten Angeboten auf meinem Smartphone als positiv.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 16

Welche der beiden Möglichkeiten würden Sie beim Bezahlen im Geschäft vorziehen?

Mit der Bezahlmethode des Smartphones ist gemeint, dass der Käufer die App des Unternehmens nutzt, um das Geld zu überweisen. Dabei kann er den Bezahlvorgang eingeständig abschließen.

- Smartphone
- Kasse

### Frage 17

Welche Art der Herstellung ziehen Sie bei Sportprodukten vor?

Die 3D-Herstellung ist ein Verfahren, bei dem die Sportschuhe durch eine Art von Drucker angefertigt werden, wie das Bild verdeutlicht.



- 3D-Herstellung
- herkömmliche Produktion (maschinell/handgefertigt)
- Die Art der Herstellung hat keine Bedeutung für mich.

### Frage 18

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie der folgenden Aussage zustimmen.

	Stimme gar nicht zu	Stimme eher nicht zu	Stimme teils zu	Stimme eher zu	Stimme vollkommen zu	Weiß ich nicht
Das 3D-Herstellungsverfahren wird die herkömmliche Produktionsweise von Sportschuhen ersetzen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Frage 19

Haben Sie eine Adidas-App auf Ihrem Smartphone installiert?

- Ja
- Nein



### Frage 20

Haben Sie auf Ihrem Smartphone eine Sport- oder Fitness-App installiert?

---

- Ja
- Nein

### Frage 21

Wie häufig nutzen Sie die Sport- oder Fitness-App für Ihr Training innerhalb einer Woche?

---

- Gar nicht
- 1 Mal
- 2 Mal
- 3 Mal
- Mehr als 3 Mal

### Frage 22

Bitte bewerten Sie auf der angegebenen Skala wie sehr Sie der folgenden Aussage zustimmen.

---

- |   | Stimme gar nicht<br>zu | Stimme eher nicht<br>zu | Stimme teils zu       | Stimme eher zu        | Stimme<br>vollständig zu |
|---|------------------------|-------------------------|-----------------------|-----------------------|--------------------------|
| Durch die Verwendung von Sport- oder Fitness-Apps fühle ich mich sportlich erfolgreicher. | <input type="radio"/>  | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>    |

# UGC AND FGC AS THE NEW CHALLENGES FOR TOURIST DESTINATION MANAGEMENT

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## **Abstract**

*Social media has fundamentally changed the operation of the tourism market and tourism marketing and has taken control of destination management from their managers.*

*This paper aims to gain knowledge about the destination management and the role of user-generated content (UGC) and firm generated content (FGC) in the context of tourist destination choice. Customer perception toward UGC and FGC on four social media platforms (Facebook, YouTube, TripAdvisor, and Booking.com) was collected via an online survey on a sample of 1,057 Croatian tourists and users of social media in July 2016. The method of non-probability and snowball sample was applied. The data were analyzed using descriptive and inferential statistics with the support of SPSS 17.*

*The results show that when tourist choose a destination, UGC has greater significance than FGC which is particularly emphasized on platforms TripAdvisor and Booking.com, that puts new challenges for marketing managers of tourist destinations regarding promotion and management of their tourist des-*

*tinations. This paper offers the first insight into the relationship between UGC and FGC, and destination management in Croatia in the tourist destination choice setting.*

**Keywords:** *user-generated content, firm generated content, marketing management, tourist destination management, social media*

JEL Classification: M31, Z33

## 1. INTRODUCTION

Information technology, as well as social media in the context of tourist destinations, and also companies in tourism, have led to revolutionary changes (Kim, 2007: 14) by changing their business from the foundation (Kim, 2007: 14; Munar, Gyimothy and Cai, 2013: 8) and the paradigm of marketing communication (Mangold and Faulds, 2009; O'Hern and Kahle, 2013: 29). In particular, they have led to a shift in the value chain in tourism through the transfer of power and accountability from their own centralized power of enterprise and destination, to millions of creative users around the world who are interested in sharing their opinions, experiences and attitudes (Munar, Gyimothy and Cai, 2013: 8, O'Hern and Kahle, 2013: 29), thus reducing the control of marketing managers over the product of their tourist destinations (Munar, 2011: 299).

Social media allows tourists to communicate with hotels or local tourist attractions, and provide feedback on the provided service. Suppliers and consumers increasingly appreciate the opinions, criticisms, and concerns of tourists who become more reliable and more trusted sources of information than providers themselves (Miguens, Baggio and Costa, 2008: 27). But in addition to the benefits for users and suppliers, social media has developed into an internet marketing tool that enables businesses and tourist destinations to access the market, learn about consumer trends and consumer communication (Holzner, 2009) in a way that can be translated into market share and income (Albee, 2010).

The essence of social media is the information sharing (Albee, 2010), and they may be generated by the firm (Eng. Firm generated content - FGC) and by the user (Eng. User-generated content - UGC) (Bruhn, Schoenmueller and Schäfer 2012: 771; Godes and Mayzlin, 2009; Vickery and Wunsch-Vincent, 2007). It is crucial to differentiate social media communications from these two sources because social media communication generated by firms is always un-

der the control of marketing managers, while the one generated by the users is independent from the firm (Bruhn, Schoenmueller and Schäfer, 2012: 771).

FGC characteristics are completely controlled by marketing managers and they transmit positive communication about brands (Bruhn, Schoenmueller and Schafer, 2012: 775; Godes and Mayzlin, 2009). Majority of the tourism companies, national tourism organizations and local destination marketing organizations spread out their massive amount of information through social media (Jacobsen and Munar, 2012: 40), and FGC has enabled them mass-driven promotion adjusted to the features of particular, narrow market segments (Krešić, Miličević and Boranić Živoder, 2011: 82), and creation of user profiles and personalized offers (Borouji Hojehghan and Nazari Esfangareh, 2011: 312), as well as personal communication with existing and potential tourists.

On the other hand, UGC represents the association and influence of consumer's participation on the web (Poster, 2006). Thanks to it, tourists have easy access to information and share their experiences, comments, and suggestions easily in an informal and collaborative way (Miguens, Baggio and Costa, 2008: 27). This can have a significant impact on the way consumers choose tourist destinations because UGC allows them to access points of view and opinions (O'Connor, Höpken and Gretzel, 2008) of other tourists.

Content from both sources is published on social media platforms. Given the popularity, the number of users and the importance for tourism, the focus of this research is on UGC and FGC published on four social media platforms, more specifically on Facebook as an example of social networking site, YouTube as an example of a content sharing site, and TripAdvisor and Booking.com as an examples of review sites. This approach to the observation of social media is called in literature Platform-and-content-based approach, and it has been observed by several scientists such as Illum, Ivanov and Liang, 2010; Munar, 2011; Xiang and Gretzel, 2010; and others. Although these four platforms represent different types of social media, whereby each platform has its own unique architecture, culture, and norms, they have a significant influence on the choice of a tourist destination and for this reason, they have been chosen as the most relevant for this research.

Basically, so far, little research has been carried out on the way organizations in tourism evolve with the Internet and the use of social media, and how they involve potential consumers (Hays, Page and Buhalis, 2013: 213). But what

previous studies have shown suggests that marketing managers of tourist destinations have poor knowledge of new technologies based on the Web, as well as their lack of opportunities to learn more about them (Hays, Page and Buhalis, 2013: 213; O'Connor, 2008). In addition to these findings, research conducted by Hays, Page and Buhalis (2013) has shown that most tourist destinations do not use the full potential of social media when it comes to interaction and engagement with consumers, as well as that social media are still not widely recognized and/or appreciated as a key instrument of marketing strategies and are often insufficiently funded and neglected. This shows that there is a significant need to develop new and improved ways to increase the awareness and acceptance of new technologies by marketing managers of tourist destinations (Byeong, 2011: 5).

Therefore, the aim of this paper is to provide an insight into the importance of UGC and FGC when tourist choose tourist destination, and to turn the attention of marketing managers of tourist destinations on the importance of managing their published content. Furthermore, the aim of the paper is to demonstrate the importance of these forms of content on a particular social media platform. This paper contributes to the literature on marketing management in tourism in three ways. First, marketing managers of tourist destinations have to understand the relationship of tourists to the content published on social media, which is the key for destination choice. Second, this primary research is the first attempt to gain insight into the relationship between UGC and FGC, and destination management in an emerging market, such as the tourism industry in Croatia. Third, the findings provide guidelines for marketing managers of tourist destinations for more advanced management of social media content.

## 2. LITERATURE REVIEW

### 2.1. TOURIST DESTINATION MARKETING MANAGEMENT AND SOCIAL MEDIA

Today's consumers have greater control over the market and their media-related habits. Moreover, with increased participation on the Internet, consumers have a greater influence over the products and brands they are considered to buy (Sharma and Rehman, 2012), and in the future the most successful destinations will be those who leave the traditional hierarchical approach from top

to bottom and embrace the bottom-up approach and the co-creation branding strategy (Oliveira and Panyik, 2015: 53). The systematic and continuous existence of tourist destinations in electronic distribution is imperative for all destinations that want to be competitive on the world tourist market (Krešić, Miličević and Boranić Živoder, 2011: 75; Xiang and Gretzel, 2010), so the management of information and communication technologies is constantly being mentioned as one of the most uncomfortable issues for marketing managers in tourism (O'Connor, 2008).

Those tourist destinations and tourism companies that have recognized the importance of social media as time (Dholakia and Bagozzi, 2001; Drury, 2008; Kirtis and Karahan, 2011: 267) and money-efficient marketing tool (Byeong, 2011: 4; Dholakia and Bagozzi, 2001; Drury, 2008; Hays, Page and Buhalis, 2013: 213; Kirtis and Karahan, 2011: 267), of global reach (Hays, Page and Buhalis, 2013: 213; Kirtis and Karahan, 2011: 267), through them try to realize their goals (Indrupati and Henari, 2012: 56) and affect tourists choice and behavior (Dholakia and Bagozzi, 2001; Drury, 2008; Garrigos-Simon, Alcamo and Ribera, 2012: 1883; Jalilvand and Samiei, 2012: 604). On the one hand, social media help them to connect with suppliers, different partners, and other market participants, on the other hand, to connect with potential and existing customers in order to gain competitive advantage (Chalkiti and Sigala, 2008; Indrupati and Henari, 2012). McKinsey's report on the use of social media in organizations has shown that as much as organization networks, it becomes more successful in the long run thanks to the multiplier effect of social media (Sherman, 2011). Social media also encourage tourist organizations to use, develop and increase their knowledge sharing skills with consumers and other market participants (Chalkiti and Sigala, 2008), because there is the belief that when tourist destinations use social media, they can provide tourists with more reliable information and content (Byeong, 2011: 31).

By using social media and the Internet as marketing tools, tourism organizations have also gained different advantages in access to the market (Constantinides and Fountain, 2008: 240, Holzner, 2009), cost reduction for promotion (Jalilvand and Samiei, 2012: 604), income growth, market research, database development and customer retention (Morrison et al., 1999). Furthermore, marketing managers in tourism can actively and consistently learn through social media about consumer trends (Holzner, 2009) and consumer behavior (Garrigos-Simon, Alcamo and Ribera, 2012: 1883, Jalilvand and Samiei, 2012:

604, Lee and Hu, 2004; Miguens, Baggio and Costa, 2008: 2) “to listen” to the consumer’s voice about the organization and its products (Constantinides and Fountain, 2008: 240), and in an economical way to collect user-generated content (Godes and Mayzlin, 2004) as a source for improving their products and services (Lee and Hu, 2004). Firms and destinations can provide a better service to consumers and gain insight into product innovation by using UGC (Lim, Chung and Weaver, 2012: 199).

Social media has an increasingly important role in the marketing of tourist destinations (Pan, MacLaurin and Crotts, 2007), forming their image and brand, as well as their communication with consumers (Jalilvand and Samiei, 2012: 604). Generally speaking, social media make it easier for the public to reach the way they want to be reached (Ginnakouris and Smihily, 2013). Wang, Yu and Fesenmaier (2002) claim that since people can overcome time and space and “be” anywhere and anytime, organizations need to adapt and accept this new virtual space as a marketing tool that is capable of organizing people’s knowledge and wishes according to the destination they may want to visit. As a consequence, Internet marketing gradually becomes the main force (Fesenmaier et al., 2003), and due to the drastic and global growth of social media, organizations of all sizes and different industries look to social media marketing as a mandatory element of their marketing strategy (Hanna, Rohm and Crittenden, 2011: 272) and consumer relationship management (Thomas, 2010).

## 2.2. SOCIAL MEDIA CONTENT

Content that is published on social media is an integral part of the content on the Web and can be distributed in the context of three categories; textual, visual and audio content. Such content, among other things, may include text, images, videos, and sounds (Figueiredo et al., 2013: 222), animations, graphics (Smith and Chang, 1997: 12) as well as combinations of above-mentioned.

The before-mentioned forms of social media content can be generated from two different sources, from the firm (firm generated content - FGC) and from the user (user-generated content - UGC) (Bruhn, Schoenmueller and Schäfer, 2012: 771; Godes and Mayzlin, 2009; Vickery and Wunsch-Vincent, 2007). The difference between these two sources is that the content from the firm is always under the control of firm marketing managers, while the content from the user is independent of the firm control (Bruhn, Schoenmueller and Schäfer,

2012: 771). Previous research reveals that consumers knowingly differentiate these two sources of information (Bruhn, Schoenmueller and Schäfer, 2012) and they trust the user-generated content more than they believe in marketing managers' opinions. Given the exponential increase in the volume of published UGC and FGC (Ghose, 2008), this paper describes the characteristics of each of them separately.

### 2.2.1. *The firm generated content (FGC)*

The firm generated content is the type of online content directly created and managed by the firm (Jonas, 2010: 121). In existing literature there are various names for this form of content, some of which are firm-created social media communication (Bruhn, Schoenmueller and Schäfer, 2012), farm-produced content (Jonas, 2010), firm-published online content (Ghose, 2008), marketer-generated content (Lim, Chung and Weaver, 2012), and finally firm-generated content (Kumar et al., 2015). The name FGC is used in this paper for its simplicity but also for the similarities with the name for the other form of content that is observed in this paper, ie user-generated content.

Since the FGC is the multi-layered construct (Kumar et al., 2015), its four main features are as following:

- it is controlled by marketing managers,
- it conveys a positive communication about the brand,
- it can initiate UGC about the firm, and
- it has an important impact on consumer behavior and buying decision.

As FGC is fully under the control of marketing managers, its trustworthiness is lacking in the eyes of consumers (Bruhn, Schoenmueller and Schäfer, 2012: 784). Hovland, Janis and Kelly (1953) have defined trustworthiness as a level of trust in the intent of the communicator to communicate the statement that he/she considers being the most valid. Therefore, the trustworthiness of the information published on companies profiles naturally associated with the success of companies branding (Gefen, 2000). In addition to trustworthiness, two more constructs are important in the context of the FGC; trust and credibility of the source. Mutual trust is important both for those who generate information and for those who receive this information in the online world (Boyd and Ellison, 2008; O'Connor, 2008). Previous studies have shown that con-



sumers trust fellow consumers more than the marketing experts (Lim, Chung and Weaver, 2012) of a particular company or tourist destination.

The FGC transfers only positive information that contributes to increasing firm or destination brand awareness (Bruhn, Schoenmueller and Schäfer, 2012; Godes and Mayzlin, 2009; Yoo, Donth and Lee, 2000), reinforces the positive attitude of the brand (Bruhn, Schoenmueller and Schäfer, 2012; Kumar et al., 2015: 3) and brand image (Bruhn, Schoenmueller and Schäfer, 2012). In addition, brand communication improves the brand's market value, which increases the likelihood that the mark will be included in a consumer-considered set, and will shorten the decision-making process and turn the choice into the habit (Yoo et al., 2000).

Marketing managers through the FGC have the power to influence the communication between consumers (Mangold and Faulds, 2009) by creating a framework or creating a platform where consumers can express their opinions, attitudes, and brand information. Godes and Mayzlin (2009) demonstrate how firms through FGC can create mouth-to-mouth promotion. They also prove that this so-called mouth-to-mouth promotion, generated by the firm increases sales over time and leaves an unmistakable impression on consumer's opinion (Mangold and Faulds, 2009). Similar findings have been made by Kumar et al. (2015) according to which the FGC can help firms to familiarize consumers with their promotion, current offers and prices, which ultimately has a positive and significant impact on consumer behavior and purchasing decision.

### 2.2.2. *User-generated content (UGC)*

With great certainty, it can be argued that UGC is the most researched area of social media, and it seems to be a very important subject of further research in this area. There are several different definitions and classifications of UGC in the literature. For Williams et al. (2010: 117) UGC is a practice that enables the general public to publish comments and reviews, and for Boyd and Ellison (2008) an important means through which consumers express and communicate with others; this is what was created at the time of sociability, as well as an object that is represented by sociality (Smith, Fischer and Yongjian, 2012: 102). Munar (2011) defines it as the information that is digitally formatted by the user and is available via the Internet, and for some authors, it is a modern version of WOM (Litvin, Goldsmith and Pan, 2008; Williams et al., 2010: 117).

As for the FGC, many different terms for UGS are used, such as consumer-generated content (O'Guinn, Allen and Semenik, 2009), user-driven content (Miguens, Baggio and Costa, 2008: 1), user-created content (Vickery and Wunsch-Vincent, 2007), and by far the most widely accepted term is the user-generated content (eg. Akehurst, 2009; Ghose, 2008; Smith, Fischer and Yongjian, 2012).

Previous research has shown that UGC is a stand-alone source of information, especially from the recipient's point of view (Xie, Miao, Kuo and Lee, 2011), and is an important tool for customers to get product information or the information about the quality of service (Chevalier and Mayzlin, 2006). UGC can help in informing and educating tourists and marketing managers, and in facilitating the implementation of tourist transactions. Besides being a source of information, it appeared that the UGC can affect customer's decision-making and purchase intent (Yoo and Gretz, 2008b). The value of UGC is generally underestimated, but its importance is not denied because the information it provides is most commonly summarized and relevant, which makes it much easier for users to search for desired information (Akehurst, 2009: 58).

Trustworthiness is considered to be a key element of success in the online world (Flavian, Guinali and Gurre, 2006) and an important factor in the behavior of users on the Internet (Vishwanath, 2003). The reason for this lies in the greater risk consumers perceive when using this medium (Harris and Goode, 2004). Therefore, more empirical research has been carried out in the context of trust in using and generating UGC (Nielsen, 2009, Sharma and Rehman, 2012). Studies have shown that in the context of online communities and user-generated content, the trust has a significant impact on the intention to seek information from other members of the community (Ridings, Gefen and Arinze, 2002), and that even 66% of respondents trust UGC on social media (Sharma and Rehman, 2012). As well as that many respondents trust user reviews more than they believe in the opinion of experts or marketing managers.

Numerous studies have confirmed that information on the Internet published by an independent source (such as UGC) is a much more reliable source of information than those published by the firm (FGC) (Jonas, 2010), as well as that consumers trust more the information received from their colleagues (Litvin, Goldsmith and Pan, 2008). The reason for this can be found in the fact that consumers prefer to rely on informal and personal communication

sources (eg other consumers) in making purchasing decisions instead of formal and organizational sources such as promotional campaigns (Marsden, 2006). Indeed, colleagues' recommendations are extremely efficient and useful because the source of information does not generate any benefit from the consumer's subsequent intentions (Schiffman and Knauk, 1997), and as a result, colleagues are considered as more objective sources of information (Nielsen, 2009).

Thus, tourist destinations and firms are no longer the primary sources of communication about brands (Berthon, Pitt and Campbell, 2008), and marketing and brand managers can assume that the communication about the brand will grow through UGC communication (Smith, 2011). Despite the fact that previous researches have shown that there is a positive correlation between FGC and consumer spending, there is a significant prevalence of the amount of published UGC over the FGC on social media. Reasons for this should be sought in the number of independent consumers over the number of firms and destinations, as well as in the likelihood that consumers will first seek the post of another consumer than marketing experts. Furthermore, the UGC published about certain products and services is more popular than the FGC. Therefore, it seems that UGC attracts far more people than the FGC (Lim, Chung and Weaver, 2012).

### **2.3. PROPOSED HYPOTHESIS ABOUT THE RELATIONSHIP BETWEEN UGC AND FGC WHEN CHOOSING A TOURIST DESTINATION**

In the existing literature, there was a consensus that consumer communication is an influential source of information transfer (Dellarocas, 2003). The emergence of social media platforms build consumer-to-consumer communication, and in particular, speed up communication between unknown consumers (Duan, Gu, and Whinston, 2008). In tourism, consumers expressly value consumer-to-consumer communication, and recommendations on social media when deciding on a tourist destination choice (UGC) (Bruhn, Schoenmueller and Schäfer, 2012: 784). Leisure tourists prefer to collect information from other individuals rather than from official sources such as firms or tourist destinations (Midgley, 1983). For example, Murray (1991: 19) has found that personal information sources (UGC) are more preferred over impersonal information sources (FGC) for the services, which is also important for the choice of tourist destinations (Prebensen, Skallerud and Chen, 2010) and the way how it is managed.

Since social media provides the ability to communicate with hundreds, even thousands of other users around the world, marketing managers of firms and destinations are no longer the only source of products and services communication (Mangold and Faulds, 2009). The information exchanged through social media can have a significant impact on how consumers buy (chose) a tourist destination, because they provide them access to different points of view and opinions (O'Connor, Höpken and Gretz, 2008) of other tourists, and it reduces the perceived risk and uncertainty before buying (Walker, 2001). In addition, tourists perceive UGC as a more reliable source of information from the FGC (Akehurst, 2009: 55; Gretzel and Yoo quoted in Ye, Law and Gu, 2009) therefore it is assumed that UGC has greater significance than FGC when choosing a tourist destination. Thus, the following hypothesis was formulated.

**H1:** UGC has greater influence than FGC during tourist destination choice.

### 3. METHODOLOGY

#### 3.1. MEASUREMENT

In conjunction with previous studies that argue the management of social media in tourism, a pilot study was conducted to examine the variables of social media, UGC, and FGC for the purpose of choosing a tourist destination. For the purpose of determining the variables, preliminary pilot research was carried out, which included the synthesis of the findings obtained by secondary research. More precisely, the research of previous experiences through two focus groups, the focus group on a sample of experts in the observed area, and the focus group on a sample of tourists. Experts from the field were Internet promotion specialists and marketing managers employed on social media platforms who were involved in maintaining and communicating with end-users. The focus group of tourists was the average Croatian leisure tourists who use social media on a weekly basis, and who had generated the UGC on social media at least one time. Based on the findings, the first version of the highly structured questionnaire was created in the Croatian language. The questionnaire was tested on five respondents and was discussed with marketing managers of tourist destinations. Questionnaires' flaws were identified, a new version of the questionnaire was created. The same test process and discussion about the questionnaire was repeated on two more occasions. Finally, the final version of the questionnaire was

created using Google's Forms application. All applications were measured using 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

### 3.2. DATA COLLECTION

The sample consisted of Croatian tourists, who are also users of at least one of the four observed social media platforms (Facebook, YouTube, TripAdvisor, and Booking.com). The data were collected in a way that from July 1 to July 7, 2016, to more than 7,000 respondents were sent an e-mail with a link to the survey questionnaire. Each contacted respondent was asked to fill out the questionnaire, and to forward the e-mail with the questionnaire access to his/her contacts. In order to increase the attention and interest of the respondents for participation in the research (Illum, Ivanon and Liang 2010: 340; Mangold and Faulds, 2009: 362), the researchers also organized a prize game "Wellness weekend for two in thermal spa Jezerčica". On July 22 and July 23, to all previously contacted respondents were sent an e-mail with a reminder to participate in the research.

Link to the questionnaire access remained active until October 17, when the last response was received, the total is 1,099. Further analysis found that 42 questionnaires received were not usable for analysis, and data processing continued on the basis of 1,057 valid questionnaires. Data were analyzed using descriptive and inferential statistics, with the support of SPSS 17.

### 3.3. DEMOGRAPHIC CHARACTERISTICS

1,057 respondents, mostly women, participated in this research. Out of a total of 1,057 surveyed tourists, 73.1% were female, while 26.9% of respondents were male. Considering the age of respondents, tourists aged between 25 and 34 (Table 1) dominated. The average age of respondents is approximately 37.4 years. Among those surveyed are those with a bachelor's degree (46.9%) and then the ones with master's degree and university specialists (14.9%). The average monthly income of respondents is approximately 7.237 in.

**Table 1.** Profile of respondents

Characteristics	Frequency	Percentage (%)	Characteristics	Frequency	Percentage (%)
Gender			Level of education		
Male	284	26,9	High school degree	153	14,5
Female	<b>773</b>	<b>73,1</b>	Bachelor's degree	135	12,8
Total	1.057	100,0	Bachelor's degree	<b>496</b>	<b>46,9</b>
Age (Years)			Master's degree/ university specialist	158	14,9
18 – 24	123	11,6	PhD	115	10,9
25 – 34	<b>414</b>	<b>39,1</b>	Total	1.057	100,0
35 – 44	284	26,9	Personal monthly income		
45 – 54	155	14,7	Up to 4.000 kn	157	14,8
55 – 64	73	6,9	4.001 – 8.000	<b>452</b>	<b>42,9</b>
65 and more	5	0,5	8.001 – 12.000	231	21,8
Unknown	3	0,3	12.001–16.000	56	5,3
Total	1.057	100,0	16.001 and more kn	12	1,1
			Unknown	149	14,1
			Total	1.057	100,0

**Source:** Authors survey

### 3.4. RESULTS

The analysis of the importance of the published UGC in relation to the published FGC was first conducted for each of the four platforms of social media, but to be able to make general conclusions about the importance of content published on social media platforms which are important for tourism and to test the hypothesis stated, a collective analysis for all four platforms together is presented in the second part of this chapter.

The respondents' opinions regarding **the importance of published UGC in relation to the published FGC** on each of the observed social media platforms when choosing a tourist destination are presented in Table 2. Evaluations of respondents' range in the total range from "I strongly disagree" (grade 1) to "I strongly agree" (grade 5). There are a total of the highest number of claims, 769 exactly, which are rated with grade 4, "I agree", followed by grade 3 "I neither agree nor disagree".

**Table 2.** The degree of acceptance of the claim about the importance of UGC in relation to the FGC when choosing tourist destinations

Statement	Platform	The degree of acceptance of the statement					Total
		1 = strongly disagree	2 = disagree	3 = neither agree, nor disagree	4 = agree	5 = strongly agree	
The content posted by my friends / other tourists is more important than the official description of the tourist destination on the platform.	FB	138	128	<b>224</b>	212	145	847
	YT	217	172	<b>273</b>	208	126	996
	TA	6	15	73	132	<b>170</b>	396
	BC	22	43	142	<b>217</b>	207	631
	Total	383	358	712	<b>769</b>	648	2.870

**Source:** Authors survey

The significance of UGC in relation to the FGC on each of the platforms (FB, YT, TA, and BC) when choosing a tourist destination can be expressed more precisely on the basis of the arithmetic mean from Table 3. The smallest significance of UGC compared to the FGC is on the platform YouTube (2.85), a little stronger on the Facebook (3.12), while it is the strongest on Booking.com (3.86) and TripAdvisor (4.12). The dispersion of respondents' opinion is moderate for each observed platform (variation coefficients are between 23% and 46%).

**Table 3.** Descriptive indicators of acceptance of claims about the importance of UGC in relation to the FGC when choosing tourist destinations

Statement	Platform	Descriptive indicator		
		Arithmetic mean	Standard deviation	Coefficient of Variation
The content that my friends/other tourists have published on the platform is more relevant than the official description of the tourist destination.	FB	3,12	1,314	42
	YT	2,85	1,319	46
	TA	<b>4,12</b>	0,943	23
	BC	<b>3,86</b>	1,059	27

**Source:** Authors survey

The following analysis was conducted to determine the significance of published UGC versus FGC on all observed platforms together when choosing a tourist destination. The strength of this significance will be expressed in the analysis by an average rating of respondents for the observed statement. The average below 3 will be considered that UGC has **less significance** than the FGC when choosing a tourist destination, while an average of more than 3 would consider UGC to have **greater significance** than the FGC when choosing a tourist destination. Significance will be assessed as a whole with the inferential statistic (all four platforms together), and significance for each of the observed platforms will not be observed separately as it is done in Table 3. As mentioned in Table 4, the arithmetic mean with the corresponding standard deviation and coefficient of variation is shown.

**Table 4.** Descriptive indicators of the importance of UGC in relation to the FGC (FB, YT, TA, and BC together) when choosing a tourist destination

Statement	Arithmetic mean	Standard deviation	Coefficient of Variation
The content that my friends/other tourists have published on the platform is more relevant than the official description of the tourist destination.	3,33	1,313	39

**Source:** Authors survey

Note: The total number of reviews of 2.870 is made of 847 Facebook users, 996 YouTube users, 396 users of TripAdvisor and 631 users on Booking.com.

According to the result shown in Table 4, it is concluded that UGC has a greater significance than the FGC when choosing a tourist destination (3,33). In this way, H1 is accepted, ie UGC has greater influence than FGC during tourist destination choice. Higher ratings with the platforms TripAdvisor (4,12) and Booking.com (3,86) shown in Table 3 have contributed to the accepting of the hypothesis.

It is also necessary to ascertain whether the social media platforms differ statistically between each other, due to the fact that the respondents attribute to UGC over the FGC. This was determined by an H test whose results are listed in Table 5.



**Table 5.** Platform comparison considering the importance of UGC over FGC according to respondents' ratings

Variable	Platform	Number of ratings	Middle range	$\chi^2$	df	p
Importance of UGC over FGC depending on a platform.	FB	847	1302,52	402,683	3	<0,001
	YT	996	1145,18			
	TA	396	1932,39			
	BC	631	1759,47			

**Source:** Authors survey

The results in Table 5 show that respondents do not give a similar significance to UGC over the FGC when the four platforms are considered. This significance is **statistically significantly different** ( $p < 0.001$ ). The smallest significance of UGC over FGC was attached to YouTube, then to Facebook, then to Booking.com, and the largest on TripAdvisor. The same order of importance of UGC over FGC can be seen in Table 3, where arithmetic means are stated (3.12, 2.85, 4.12 and 3.86). From the same Table, it can be seen that the respondents using TA and BC are more homogenous in their ratings of UGC over FGC significance (coefficients of variation are 23% and 27%) compared to those using FB and YT (coefficients of variation in them 42% and 46%).

#### 4. DISCUSSION AND CONCLUSION

The presented results extend existing knowledge of the importance of UGC and FGC when choosing a tourist destination, which is extremely valuable for marketing managers of tourist destinations. In line with previous research on UGC and FGC in other scientific areas, activities, and parts of the world, this research conducted in Croatia as an extremely propulsive tourist destination has shown that tourists prefer UGC over FGC in the context of choice of a tourist destination. This means that they prefer to collect information from other individuals than from official sources created by marketing managers of companies or tourist destinations. The findings of this research are also in line with the findings carried out by Bruhn, Schoenmueller and Schäfer (2012). Furthermore, the study concludes that UGC published about tourist destinations is more popular than the FGC and attracts more people than the FGC, which is also consistent with the research conducted by Lim, Chung and Weaver (2012).

The research has shown that according to the features of the observed platforms, the smallest significance is the one of UGC compared to the FGC on the platform YouTube because the YouTube is the platform with the least UGC, and the largest amount of FGC compared to other observing platforms. It is followed by the Facebook, which in spite of the significant overtaking of UGC compared to published FGC has relatively little meaning in the observed context as it is still the primary site for communication with friends and acquaintances, and less for collecting information about tourist destinations. On the other hand, UGC is extremely important at TripAdvisor and Booking.com because these sites are primarily based on the reviews, and the reviews are those that contribute to their popularity and browsing by tourists. As a result of this survey, marketing managers of tourist destinations and tourism organizations should turn the focus from Facebook and YouTube as a platform through they primarily promote their tourist destinations and products, and turn to tourist reviews of the destinations they manage published on TripAdvisor and Booking.com. This research confirms Gillin's (2007) earlier statement that there is evidence that consumer reviews published on social media are much more powerful as marketing tools than product reviews by experts, and that consumers are increasingly able to directly influence a firm's marketing results by contributing to their user-generated content (Bruhn, Schoenmuller and Schäfer, 2012; O'Hern and Kahle, 2013).

As a result, marketing managers of tourist destinations in their addressing target markets should focus more on UGC than on the FGC, and use it for their benefit by learning about trends in the tourist market, as well as the behavior of tourists. They have to "listen" the voice of consumers about what to do about a tourist destination and its products, and in a cost-effective way collect UGC as a source for product and service improvement in the future.

Achieving competitive advantage in times of rapid change demands from tourism participants to clearly understand the direction of these changes and their impact on business or destination management (Dwyer et al., 2009: 63). The competition on the international tourist market is becoming more pronounced, so in the long run will succeed only destinations with the best management (Buhalis, 2000: 104) and knowledge. Hence, the more knowledge about trends that support tourism development, the greater the ability of destination managers and entrepreneurs in tourism to formulate strategies that will achieve the competitive advantage of their destinations (Dwyer et al., 2009: 63).

## 5. LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Limitations are evident in the exclusive focus of the study on four platforms of social media. Also, the four observed platforms represent three different types of social media. Facebook is a social network, YouTube is a content sharing site, while Booking.com and TripAdvisor are review sites which further complicates their comparison and inference. In addition, Facebook and YouTube are the sites where tourism and travel-related topics are just one small piece of content amongst the amount of other content, while the TripAdvisor and Booking.com have an exclusive focus on tourism and travel. Lack of research is also the type of sample used (nonprobability sample).

In addition to observing the importance of UGC and FGC published on some social media platforms, future research should also focus on content types published on platforms, and conduct sentiment content analysis (text, images, and videos) or with SAS Enterprise Text Miner programme try to predict the future behavior of tourists based on the integration of text, ie. the words and their meaning when selecting destinations. However, not only in Croatia, but also in the world of social media research in tourism, researchers are still faced with very much unexplored space for further research not only in the context of consumer behavior on the tourist market and choice of tourist destinations, but also in the context of business and marketing communications of tourist destinations on social media.

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# HOW TO PLAN AND MEASURE DIGITAL MARKETING ACTIVITIES IN REAL ESTATE AGENCY? DEVELOPMENT OF NEW INTEGRAL PLANNING FRAMEWORK

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## **Abstract**

*This study presents a new conceptual framework for digital marketing planning in real estate agencies. Earlier research (Mahmutović, 2018) suggests that more than half of 311 surveyed real estate agencies in Europe are doing business without formal marketing and digital marketing plans. These agencies achieve poorer business results compared to those who plan. They lack the capacity to adapt themselves to the new business ecosystem and to fully exploit the possibilities of digital technology to enhance their marketing activities, and their business performance. For small businesses with a limited number of employees and modest knowledge in the field of digital marketing planning, it becomes difficult to implement marketing theory in practice. They are lost in the abundance of opportunities offered by new technologies and most often, they*



*exploit a very small number of these possibilities. This is especially expressed in the context of situation analysis and analytical tracking of the achievement of the set goals, i.e. the measurability of the results as one of the great advantages of Internet technologies. The existing planning frameworks relate mainly to the general marketing planning process, and most new ideas in the field of digital marketing planning came from practitioners and companies specializing in digital marketing services. The idea of this paper is to fill this gap and using existing academic and practical knowledge to develop a new integrated framework for digital marketing planning in real estate agencies, including the proposal of a framework for the development of Key Performance Indicators (KPIs) in real estate agencies.*

**Keywords:** digital marketing, e-marketing, marketing planning, real estate, key performance indicators

JEL Classification: M31, R39

## 1. INTRODUCTION

Today companies are competing in a dynamic, unstable and high-risk environment. With the development of the Internet and other digital technologies, for companies, it is increasingly challenging to identify competitors and monitor customer behavior (Fotiadis & Stylos, 2017). Many fail because they lack the capability to adapt themselves to the new business ecosystem. Many small and medium-sized firms, including real estate agencies, are doing business without formal plans. Earlier research shows that 58% of real estate agencies in Western Balkan countries and EU countries do not have marketing and digital marketing plan (Mahmutović, 2018). A marketing plan can be defined as the procedure, set of logical steps that one company follows, to achieve detailed goals or objectives it sets in narrow timeframe with limited resources. Some managers think that planning is only needed for large companies, some think that they are doing well even without formal planning, while some think the business environment is changing too fast, which prevents the use of plans. Kotler et al. (2005) emphasize that formal planning brings benefits to all types of companies, small and large, new and mature. Failure in planning means planning of failure. Planning encourages systematic thinking. It encourages the company to define clearly its goals and policies, influences the company's efforts to coordinate better and highlights clear standards of performance for control. In the last five

decades, there have been a large number of research studies into the relationship between planning and organizational effectiveness, and positive impact of planning on firm's growth and development (Ansoff, 1969; Unni, 1981; Bracker et al., 1988; McDonald, 1989; Fletcher and Hart, 1989; McColl-Kennedy et al., 1990; Piercy, 1991; Weinrauch et al., 1991; Mahmutović, 2018).

McDonald (1989, 1992) suggested that strategic marketing planning is an approach to business that can enable even the smallest competitors to survive successfully. Reviewing the findings of other authors who have criticized the marketing planning process, McDonald (1989) summarized difficulties in marketing planning. He defined ten barriers:

1. Confusion between marketing strategy and tactics.
2. Isolation of marketing function from business operations.
3. Confusion between marketing function and marketing concept.
4. Prevailing organizational structures along functional lines.
5. Lack of skills in in-depth analysis.
6. Confusion between process and output.
7. Lack of core marketing management knowledge and skills.
8. Lack of disciplined, systematic approach to marketing planning.
9. Need to prioritize objectives.
10. Need for a more appropriate marketing culture.

We think that even today, any marketing planning framework should try to close the theory/practice gap in respect to these marketing planning barriers.

Most of the existing literature deals with the general marketing planning process and its impact on business performance, and a very small number of academic authors devoted themselves specifically to the planning of digital marketing. Most new ideas in the field of digital marketing planning came from practitioners and companies specializing in digital marketing services. According to the author's knowledge, no one has yet offered a specific framework for digital marketing planning in real estate agencies, and the main purpose of this work is to fill that gap.

Brooksbank (1996, 1999) explained the basic marketing process and offered a practical framework for the smaller business. His planning framework is underpinned with three fundamental principles: adopt a marketing orientation, employ a comprehensive planning approach, and "keep on" marketing planning. His framework starts with business-customizing phase and goes through four

main phases: analyzing, strategizing, implementing and controlling. In his earlier work Brooksbank (1991) pointed out that for maximum effectiveness, a marketing plan should aim to conform to each of the seven characteristics he identified as essential characteristics of successful companies: strong top management support, compiled by staff and not for staff, thoroughly researched, external competitive focus, proactive/visionary, personalized/specific and continually reviewed.

Similarly, Paul Smith (2011) introduced one of the most known marketing planning frameworks called SOSTAC. It comprises six stages: situation analysis, objectives, strategy, tactics, actions, and control. Model is easy to learn and understand, and it is very suitable for digital marketing, which led us to use it as a ground for our framework development.

The long-term digital marketing plan should put a special emphasis on three key areas. First, identify significant changes and trends in the macro environment and changes of the competitive forces in the microenvironment. Second, develop and communicate the value proposition for customers who use online services in the buying process. Third, define the necessary technological infrastructure and database architecture, essential to provide value to customers. New technologies like CRM systems, as well as integrated databases that allow personalized communication sometimes require up to several years to develop and deploy, so they should be part of the long-term plan.

The annual plan is a short-term plan that describes the current situation of the company, its goals, strategy, action programs, budget, and control. Short-term operational digital marketing plans deal with the use of communication techniques and channels to attract new customers and clients (such as search marketing and online advertising) and their retention and engagement (incentive programs, customer contact strategies through opt-in e-mail marketing integrated with traditional media such as phone and direct mail).

The process of creating a digital marketing strategy and digital marketing plan is no different than creating other marketing plans. We can even say that it is quite strange that today companies make separate plans for “digital” and “offline” because customers do not look so separate on the company business.

Companies that do not have a clearly defined digital marketing strategy and digital marketing plan face different problems:

- ✦ They do not know where they are going and what they want to achieve;
- ✦ They do not know their market share;
- ✦ They do not have a clearly defined value proposition that should help them to position better;
- ✦ They do not know their customers/clients;
- ✦ Their digital marketing activities are not integrated with other channels;
- ✦ They do not optimize their digital marketing activities.

## 2. DEVELOPMENT OF DIGITAL MARKETING PLANNING FRAMEWORK FOR REAL ESTATE AGENCIES – NEW INTEGRAL APPROACH

In order to develop a new integrated framework for digital marketing planning in real estate agencies, we used elements of three models: the SOSTAC™ planning framework, the RACE framework (based on the REAN framework) and the model of the five-phase purchasing decision-making process.

SOSTAC™ is already a well-known general framework for the development of various types of plans (corporate, marketing, advertising plans, etc.). Paul Smith (Smith, 1999) has developed it, and it includes six stages in the planning process: situational analysis, goal setting, defining strategy, determining tactics and activities and defining a control system.

The model of the purchasing decision-making process (Kotler, 2000) suggests that the customer passes through the five levels in making a decision: problem identification, searching for information, developing alternative solutions (buying decisions), buying and post-buying behavior. If we omit the first phase, we can say that the potential buyer of real estate go through the remaining four phases, which are an integral part of our framework, and each phase corresponds to one of the stages of the RACE model. In the proposed framework, for each stage in the decision-making process, appropriate digital channels and activities (tactics) are proposed as well as key performance indicators.

RACE is a practical framework developed by company Smart Insight, based on the REAN model developed by company Quru Analytics, which helps to manage and improve the results of digital marketing. It consists of four steps, i.e. online marketing activities designed to help the company and its brand to

engage its customers throughout the customer lifetime. The acronym “RAC” (reach, activate, convert) deals with the questions of how to attract and reach customers/clients and encourage them to engage in activities that will lead to the desired conversion. “E” (engage) deals with the question of how to encourage a satisfied client to become a „lawyer/advocate“, who will continue to use the services of the agency, but also positively promote and advocate it to other customers.

The first step in the RACE model for agency is to “reach” potential clients and buyers, which involves building brand recognition, i.e. promotion of agency and its services on other websites and online media, in order to attract visitors to the agency’s website, social media page or micro website on other web services such as online classifieds platforms. In our planning framework, we recommend six digital channels for attracting visitors (potential customers and clients): search marketing, marketing on social networks, online PR, online partnerships, opt-in email, and interactive advertising.

The second step is to “activate” (InterAct) visitor, which involves interacting with the visitor and encouraging him to continue his customer journey after he reached the agency’s website, mobile application or another digital channel.

For example, the activity can be registration on the agency’s website, signing up for a newsletter, asking for more information about services and buying/selling process, searching a real estate database offered by the agency, or registering interest in selling or renting a property through the agency.

Accordingly, the goals that the agency can define in this step can be a specific number of registered potential buyers or sellers, the number of the newsletter sign-ups, the number of ad views, and so on. Interaction can also include sharing content on social networks, like recommending content to friends or writing reviews. The fact is that many companies have a bounce rate of more than 50%, so encouraging visitors to interact with site content is one of the major challenges for each agency.

The third step is “convert”, which involves converting visits (visitors) into sales leads (potential customers and clients) and sales (customers and clients). Since the real estate agency communicates with two key stakeholders, potential buyers of real estate and potential clients (sellers and renters who could hire an agency), the sales lead refers to inquiries for the purchase of specific real estate and inquiries for agency services. In the second step, the agency seeks to convert

the sales lead into the conclusion of a contract, which is usually preceded by the conversion of the sales lead into scheduling a client's visit to the agency.

The fourth step is „engage“, which involves building a long-term relationship with the client/buyer, through multiple agencies and client interactions using various paid, owned and earned media touch points such as website, social networks, e-mail or direct interactions. Engagement can be measured by measuring repeat activities such as sharing content from an agency's website by users on social networks. In addition, the agency should measure the percentage of active (registered) users, the activity of newsletter subscribers, as well as to measure client satisfaction and, if possible, the number of recommendations they have published.

The essence of the new integral framework for planning digital marketing activities in real estate agencies is to apply the stages of the RACE model within certain phases of the SOSTAC framework and within certain stages of the purchasing decision-making process. This integral approach will enable the company to re-examine the opportunities for engaging customers/clients and selling to them at different touch points in which the company contacts customers, whether it's web, mobile, e-mail or online social channels.

In the following table, we propose an integral framework for digital marketing planning in real estate agencies.

**Table 1 – An Integral Framework for Digital Marketing Planning in Real Estate Agencies**

<p><b>PHASE</b></p> <p><i>Situation Analysis</i> Where are we currently?</p>	<p><b>Activity in the planning process</b></p> <p><b>SITUATION ANALYSIS</b> How well does the agency currently use digital media? 1. <b>PEST analysis</b> (analysis of the political, economic, social and technological environment that shapes real estate market) 2. <b>Analysis of the website visitors and customers/clients</b> (Who are they? How many of them? Which channels they prefer? What are they searching online?) 3. <b>Benchmarking Competition</b> (Who are competitors? How they act online? What is their OVP? The new types of competitors - FSBO Portals?) 4. <b>Analysis of the online partners</b> (Who are existing and who are potential partners: mediators and syndication partners such as classifieds sites and property search engines; affiliate partners; link partners; advertising partners). How valuable are partners? How to better manage relationships with partners?) 5. <b>A SWOT analysis</b> (What are our online strengths and weaknesses, opportunities and threats? To what extent do we use ICT technologies? Do we also have a database of users/customers/ clients? Does our database enable personalized communication? Are we properly linking online with offline activities? Do our e-mail and online advertising campaigns achieve the desired results? Who are our referrals and what is their quality? What are the experiences with mobile marketing? What is the quality of our website?) 6. <b>Analysis of web site</b> (Is the web site user-oriented? Is it optimized for search engines? Is it customized for different devices?)</p>																
<p><i>Objectives</i> Where do we want to arrive?</p>	<p><b>DEFINING THE OBJECTIVES:</b> What goals do we want to achieve and what Key Performance Indicators (KIP) should we use? 1. <b>Vision and mission</b> (How will digital channels help customers/clients? What value will we provide online? What benefits will the agency have from digital marketing activities in terms of efficiency and profitability?) 2. <b>Defining goals</b> ("5S" Goals: Sales goals; Enhancing the service through extra benefits for customers/clients from online activity; Communication goals; Saving (costs) goals through the web publishing, process automation, self-service, fewer communication costs; Sizzle - Extending brand online) 3. <b>Defining Key Performance Indicators (KIP) (Google Analytics)</b></p>																
<p><i>Strategy</i> How to get there?</p>	<p><b>STRATEGY:</b> How can we achieve our goals? 1. <b>Segmentation and selection of target markets</b> 2. <b>Positioning and defining Online Value Provision (OVP)</b> 3. <b>Defining the engagement strategy and content strategy</b> 4. <b>Integrated communication strategy</b></p>																
<p><i>Tactics &amp; Actions</i> Strategy details and tactics details; systems, processes, instructions, and checklists</p> <p>Reach customers / clients (recognizability and attendance)</p>	<p><b>TACTICS:</b> Which digital marketing activities shall we implement (optimize)?</p> <table border="1"> <tr> <th>Channels (Tactical Tools)</th> <th>Activities</th> </tr> <tr> <td>General search engines</td> <td>Search Optimization</td> </tr> <tr> <td>Property search engines</td> <td>Online advertising</td> </tr> <tr> <td>Social networks</td> <td>Pay Per Click</td> </tr> <tr> <td>Web publishers (portals, classifieds)</td> <td>Affiliate and Partner Marketing</td> </tr> <tr> <td>Blogs</td> <td>Online PR</td> </tr> <tr> <td></td> <td>Social Media Marketing</td> </tr> <tr> <td></td> <td>Content Syndication (XML and RSS)</td> </tr> </table> <p><b>Key Performance Indicators (KPI)</b></p> <p>Number of visitors Number of unique visits Bounce rate Number of fans/followers Number of incoming links Number of searches by "agency name" Number of mobile app downloads</p> <p><b>Phase in the buying process</b></p> <p><b>Collecting information</b></p>	Channels (Tactical Tools)	Activities	General search engines	Search Optimization	Property search engines	Online advertising	Social networks	Pay Per Click	Web publishers (portals, classifieds)	Affiliate and Partner Marketing	Blogs	Online PR		Social Media Marketing		Content Syndication (XML and RSS)
Channels (Tactical Tools)	Activities																
General search engines	Search Optimization																
Property search engines	Online advertising																
Social networks	Pay Per Click																
Web publishers (portals, classifieds)	Affiliate and Partner Marketing																
Blogs	Online PR																
	Social Media Marketing																
	Content Syndication (XML and RSS)																



	<b>Activate Buyers / Clients</b> (interaction and lead generation)	<b>Channels (Tactical Tools)</b> Agency website Blog Social media page Mobile application Other interactive tools	<b>Activities</b> Homepage optimization Landing pages optimization AB and multivariable testing of web site elements Lead generation techniques Techniques for registering new customers Techniques for registering new clients Techniques for newsletter subscription management	Time spent on the website Number of comments, sharing and likes on social networks Number of real estate inquiries Number of inquiries per visitor Number of registrations on the website Number of newsletter subscriptions A number of subscriptions for e-mail notifications - alerts (like new offers, price changes, etc.).	<b>Developing alternative solutions</b>
	<b>Convert</b> (sales and profits)	<b>Channels (Tactical Tools)</b> Agency website Blog Social media pages Mobile application Other interactive tools	<b>Activities</b> Conversion rate optimization	Number of queries converted into scheduled appointments (property showing) Number and rate of leads converted into sales Number of concluded mediation contracts based on online inquiries Earned profit	<b>Buying</b>
	<b>Engage</b> (loyalty and advocacy)	<b>Channels (Tactical Tools)</b> Agency website Blog Social media pages Mobile application Other interactive tools	<b>Activities</b> Content marketing strategy (enable content sharing on social networks, allow users to interact with content: ad ratings, etc.) E-newsletters and promotional e-mails E-contact strategy Support for users Mobile marketing Social CRM	Repeated use of agency services Number and quality of referrals Number of repeated visits Number of positive comments, sharing and likes on social networks The number of blog articles reposted on other web pages Number of ad referrals by visitors to other users. Number of mentions (agency name)	<b>Post sales behavior (advocacy)</b>
<b>Control</b>					
	<b>CONTROL:</b> <b>Do we achieve the goals set?</b> 1. Based on set goals, define which data (key performance indicators) will be tracked every day, every week, every month, quarterly ... 2. Express key performance indicators through volume, quality, and value. 3. Measure performance (what's happening?) 4. Diagnosing Performance (why it happens?) 5. Take corrective actions (what should we do: strategy review, modify goals or tactics?)				

Source: author



### 3. DIGITAL MARKETING METRICS IN REAL ESTATE AGENCY – FROM OBJECTIVES TO KEY PERFORMANCE INDICATORS

Real estate agencies should develop a performance management system to be able to adequately monitor and measure key performance indicators in order to control the achievement of the set goals and take timely corrective measures. In other words, in order to answer the question „whether we achieve the set goals“, the real estate agency must define key performance indicators that will be regularly monitored and measured to know „what is happening“, use them to diagnose “why something is happening” and “what needs to be changed”, i.e. which corrective actions need to be taken.

Before we propose a framework for the development of key performance indicators (KPI) for real estate agencies, we will briefly summarize the basic objectives that digital marketing can achieve in real estate agencies, which are the foundation for the development of a KPI. The “5S” model, developed by Chaffey and Smith (2008), suggests that real estate agencies should develop their digital marketing objectives in five areas:

1. Sell - grow sales (improve the sale of real estate and sale of brokerage services);
2. Serve - add value (improve serving customers/clients);
3. Speak - get closer to customers/clients through dialogue and participation (improve communication);
4. Save - save costs;
5. Sizzle - branding.

Each of the defined objectives should be specific, measurable, attainable, realistic and clearly timed.

Regarding the sales objectives, the real estate agent needs to set clear targets regarding the desired effect of digital marketing activities on real estate sales, as well on the number of brokerage contracts signed with new clients. In both cases, we are talking about the indirect contribution of online activity to total sales revenue, and to a number of signed contracts. These general objectives need to be broken down into sub-objectives called key performance indicators (KPIs). KPIs contribute to the achievement of the set objectives, and we can track and measure them (KPIs) using online analytical tools like Google Analytics.

In the area of serving potential buyers and clients, the agency needs to identify clear objectives for improving its service through online channels. Service enhancement can be achieved in two ways. The first way is by providing additional benefits to customers and clients, through the innovative service upgrade (e.g. providing better information, personalization, and new online services). The second way is by using online channels to listen to customers and clients and gain ideas for enhancing existing services and marketing initiatives.

In the field of communication, the main objective of the agency is to achieve two-way communication with the aim of getting closer to potential buyers and clients, understanding of their needs and requirements and building trust with them. Beside of classic marketing communication goals such as informing, persuading and reminding, a particularly important goal of bidirectional communication is the “listening” to the customers/clients. This can be achieved by tracking their communications in an online environment or by conducting online surveys, all with the goal of learning about their interests, needs, demands, and online habits. The ability to better target customers and clients by using different types of online targeting (geographic, psychographic, behavioral, contextually), as well as the ability to track the results of marketing communication campaigns in real-time, provide the ability to continuously optimize promotional slogans and other campaign parameters in order to achieve optimal results.

In the area of cost savings, the agency needs to define the areas in which it wants to make savings by using the online channels. Savings related to staff costs, printing costs, postal costs and communication costs. Innovations and the implementation of new online services, such as virtual panoramas, video presentations, detailed photo galleries, Google maps showing infrastructural objects in the environment, enable potential property buyers to make quality “virtual inspection” of specific properties from the comfort of their home, 24 hours per day. This reduces the number of field trips, transportation costs, and labor costs.

In addition to reducing the costs of “agents”, savings can be achieved with administrative staff responsible for placing ads on different online property portals. Thanks to online data exchange capabilities using technologies such as XML and RSS, manual ad insertion can be replaced with automated synchronization of agency database to a larger number of property portals and clas-

sifieds, which enables significant time and money savings, increase data quality and reduce errors of manual data entry.

Regarding the branding goals, the agency should define clear objectives related to the performance of its own brands such as reach, brand recognition, and brand appeal. Pavlek (2008) points out that branding as a process starts from creating an identity, the diversity that consumer will experience through the signals, accept as value, and create their own preferences. By providing new and different experiences in an online environment, the agency can achieve recognition, create interest and excitement of online users, enhance the online value proposition, and make it's brand recognizable ("hot brand").

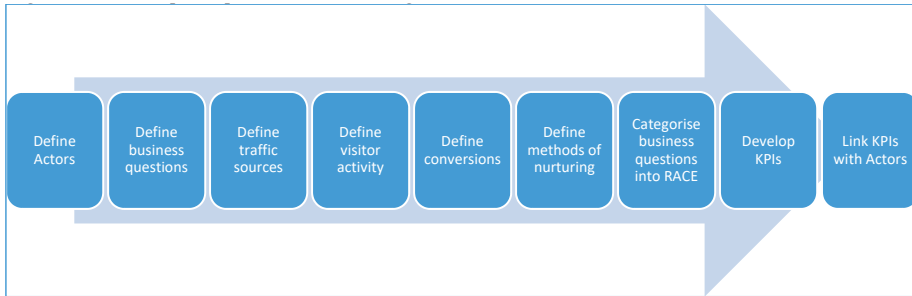
Each of the projected digital marketing objectives of a real estate agent needs to be more thoroughly elaborated on sub-objectives or key performance indicators (KPIs) that can be adequately measured by analytical tools.

#### 4. PROPOSAL OF FRAMEWORK FOR THE DEVELOPMENT OF KEY PERFORMANCE INDICATORS (KPIs)

Web Analytics Association (2007) defines three types of web analytical measures: numbers, ratios, and KPIs (key performance indicators). Numbers are the most basic units of measure, such as the number of visits made to a particular web site, or the number of unique visitors to a particular web site within a given time period. Ratios represent the relationship between two numeric values, e.g. the number of web pages viewed per one visit. KPIs can be expressed in the form of a number, but more often, they are expressed in terms of the ratio. KPIs are based on business strategy and business goals. That is why this type of measure contains the term "key", and the list of appropriate KPIs depends on the type of business and the type of website.

Using the original Jackson S. (2009) 9-step model for key performance indicators development, based on the REAN model, to highlight the process of developing key performance indicators, we propose a new framework based on the RACE model.

**Image 1** – KPI development process in real estate agencies based on the RACE model



**Source:** author

The first step in developing KPIs is defining “actors”. Actors can be divided into two groups: *technical personnel* related to web analytics system and *marketing staff* including company owners. In technical staff related to the web analytics system, we can include interest groups such as web administrators, SEO specialists, and web analytics, while marketing staffs can include marketing managers, ad campaign managers, and online editors. All of them are in charge of undertaking certain activities or corrective measures, based on the data obtained by KPIs measurement.

If the agency does not have enough resources to hire a web analyst, it should consider outsourcing, because KPIs design process requires at least one person, which will be in charge of the technical part of collecting, validating, formatting data and designing metrics based on the capacity of web analytics tools.

After establishing the “actors”, it is necessary to define business questions that the actors want to get the answer through key performance indicators. This process should take place through a workshop where the moderator will ask the actors on which business questions they would like to get the answer, and what they would like to know about the traffic on the agency site, and why they would like to know it. A quality workshop should result in 20-40 business questions.

The next step is to define traffic sources, that is, those online and offline channels through which the agency attracts potential buyers and clients on its web site. These sources can be search engines, specialized property search engines, social networks, classifieds, blogs, newspaper ads, paid online ads etc. In short, the goal of this step is to identify three to five most important traffic sources that send visitors to the agency web site.

The fourth step is to define the activity of a visitor. In this step, the agency needs to define “active” behavior in the context of the activity or process that a

visitor should perform on the web site to be considered as sufficiently active, i.e. engaged. This can be particularly interesting in order to answer the question of which sources of traffic to the web site bring “active/engaged” visitors, as the answer will enable the agency to evaluate the effectiveness of individual channels. For the agency, a visitor who stays on the site for more than ten minutes and reviews the twenty properties, which clearly shows his interest in the real estate, is more important and valuable than the one who leaves the site after only one page has been viewed.

As an example of the definition of engagement real estate agency can define three categories:

- + Lightly engaged visit: minimum of four viewed pages, lasting at least 60 seconds.
- + Engaged visit: minimum of eight viewed pages, lasting at least 150 seconds.
- + Highly engaged visits: minimum of 10 viewed pages of at least 240 seconds.

Defining activities should be carried out carefully, starting with the analyze of processes that exist on the agency’s web site, such as: analyzing the time required to fill in a registration form or newsletter application, filling out a real estate search form, filling in a real estate request form. Then, the agency should perform analyzing of statistical data about average retention on specific web pages and identification of the most important web pages.

The next step is to define conversions. The goal is to define the most important conversions according to the perception of actors. Example of conversion can be converting received “e-mail lead” to scheduling a meeting with a potential buyer and showing him a real estate, or scheduling a meeting with a potential client (property owner) and concluding a brokerage contract with him.

The sixth step in the process is defining the method of nurturing, retaining the engagement of users. Engagement starts after the user is activated, or after he performed a certain conversion. For example, it can be a user who has registered to receive agency newsletters or e-mail notifications with the latest offers, so the agency is now sending him a newsletter periodically, and the engagement can be rated by the number of reading newsletters or by the number of repeated visits.

The next step is to categorize questions into four categories of the RACE model. Examples of questions are presented in the following table.

**Table 2 – Examples of business questions for defining KPIs in real estate agencies**

No	Question	RACE phase
1.	What is the best channel to reach the user in terms of the number of visitors to the agency website?	Reach
2.	Where (how) can we attract more visitors to the website?	Reach
3.	How can we activate visitors of our web site?	Activate
4.	How can we keep visitors longer on our web site?	Activate
5.	How to encourage visitors to register on the web site?	Activate, Convert
6.	How to encourage visitors to sign up for the newsletter?	Activate, Convert
7.	How important are search engines in generating traffic to our blog?	Reach
8.	How important are search engines in generating visits to our ads?	Reach
9.	How can we better track and measure our promotional activities?	Reach
10.	How to encourage visitors to submit a query for a particular property?	Convert
11.	How to encourage visitors to submit a request for mediation in the sale of their property?	Convert
12.	How well does web site navigation work?	Activate
13.	How successful are our display ads?	Reach
14.	How do visitors search for our real estate offer?	Activate
15.	How effective are different ad headlines?	Activate
16.	How can we track the user's route from the moment of click on the display ad to the moment of conversion?	Activate Convert
17.	How many inquiries have we received from users who have heard a radio commercial for our site?	Reach Convert
18.	How many inquiries have we received thanks to specific classifieds site?	Reach Convert
19.	Which topics in our blog or facebook page are most read?	Reach Engage
20.	Which blog topics are most shared on social networks?	Engage
21.	Which parts of the web site have the greatest potential to exploit social networks in terms of activation?	Activate
22.	How do visitors use mobile devices to access our site?	Reach
23.	How can we increase customer loyalty?	Engage
24.	When and how often do we need to change content on the homepage?	Activate Engage
25.	How does a visitor spend time on our web site, what does he do?	Activate Convert Engage
26.	How many visitors did not complete the registration process (on a newsletter, or registering a user account, or sending a query to the agency)?	Activate Convert
27.	How do we track the lead generating process?	Activate Convert

28.	Does the quality and number of photos in ads affect the number of visits to certain properties?	Activate
29.	To what extent can we use internal display ads to promote services on your site without being too intrusive for visitors?	Activate
30.	Would the use of virtual panoramas increase the number of queries for a particular property enough to justify the cost of a new service?	Activate Convert

**Source:** author

Once the questions for each of the RACE model stages have been defined and the matrix with the set of questions for each of the RACE phases is created, the process continues with creating key performance indicators. This process can be presented in a few steps:

1. Determine which values (numbers) or ratios are needed to answer the question.
2. Identify reporting requirements.
3. Establish a benchmark.

The basic measures necessary to answer most of the questions are the number of unique visitors, the number of visits and the number of pages viewed. Depending on the analytical tools available to the agency, it is possible to develop a large number of measures that can help answer the questions asked.

How fast and how frequently actors (managers, online editors, etc.) can take corrective measures based on KPIs results is one of the questions that need to be asked before reporting.

Benchmark is the reference value with which the measured KPIs will be compared, in order to diagnose the condition or determine the positive or negative deviation of the measured KPIs in relation to the desired values. The best reference values are own data, i.e. monitoring and comparing KPIs over several periods. One of the options available to agencies is the standard deviation as a measure of statistical dispersion. By using standard deviation, it is possible to diagnose situations in which data significantly deviate from average.

The last stage in the process of developing KPIs is linking KPIs with actors, or persons in charge of carrying out certain activities. It makes no sense to develop KPIs unless appropriate activities are undertaken, based on the measured KPIs. An example of a KPI such as “cost per acquisition – CPA” (e.g. price per one registered user) can show how to link KPI with the actor. The web analyst measured the CPA for two different channels, such as contextual advertising on Google, and advertising with display ads on web portals. The marketing man-

ager analyzes the results and finds that the cost per acquisition using contextual advertising is 2 Euros, while the cost per acquisition through the display ads is 5 Euros. Based on these results, the marketing manager gives an order to the advertising agency to stop spending money on display ads and redirect the budget to contextual advertising. In the following table, we present a few examples of KPIs to measure the performance of digital marketing in real estate agency.

**Table 3 – Examples of KPIs to measure the performance of digital marketing in real estate agency**

KPI name	How to calculate	Description	RACE phase	Actions
Visitors per channel ratio (VPCR)	A number of visitors who have come through the specific channel divided by the total number of visitors.	It shows the best source of traffic to the web site in terms of the number of visitors. Helps in answering questions 1, 7, 8 and 13.	Reach	Manage promotional campaigns to focus on channels that provide more visits. Use in combination with engagement index and cost per visit to determine the source of traffic with the highest ROI.
Cost per visit per channel (CPVPC)	The total cost of the channel divided by the total number of visits through the channel.	It shows the best sources of traffic to the website in terms of costs. Helps answer the questions: 1 and 2.	Reach	Manage promotional campaigns to focus on the most favorable channels that provide traffic. Use in combination with the ratio of the number of visitors per channel to determine the source of traffic with the highest ROI.
Cost per active visit per channel (CPAVPC)	Total channel costs are divided by the total number of active visits through the channel.	Shows the best sources of traffic in terms of the cost ratio for an active (engaging) visit. Helps answer questions 2 and 4.	Reach	Manage promotional campaigns to focus on the most cost-effective source of active visits. Discard the costly campaigns that lead to inactive visits.
Visits to the specific content through the channel ratio (VSCPC)	A number of visits to content category per channel divided by the total number of visits to that category of content.	It shows the best sources of traffic in terms of consuming a particular category of content. Helps answer questions 2 and 3.	Reach	Manage promotional campaigns aimed at focusing on sources of more visits to a specific category of web site content.
Link click-through rate (LCTR)	The total number of clicks on a link divided by the number of page views (the page where the link is placed)	Indicates link performance on the page. Helps answer questions 12, 16, 25.	Activate	Optimize the link text and position if the percentage is too low.



Bounce rate per page (BRPP)	A number of single interaction visits to a page divided by total number of visits to a page.	Shows the performance of each page in relation to others, based on visitors who have not taken any action. Helps answer questions 12, 14, 15, and 24.	Activate	Optimize traffic sources to be more relevant to the content of a given page, optimize keywords and headlines, and increase the number of relevant links on the page.
The rate of abandonment of the registration process (ARRP)	The number of successful registrations divided by total number of visits to the registration page	It shows the performance of the registration process. Helps answer the questions: 3, 5, 6, 10, 11 and 26.	Activate	Optimize the registration process, observe it as a tunnel, and eliminate all the defects that lead to the abandonment of the registration process.
The index of the time spent on the page (PTI)	Total time spent on the page divided by the total number of visits to the page.	Shows the most popular pages in terms of retention on the page and helps answer the question 24.	Activate	If a visitor does not keep enough time on the web page, it needs optimization in terms of better title, clearer text, and reorganization of the content.
Visitor engagement index (VEI)	The number of active visits divided by the total number of visits.	The activity index is used to determine which type of visit is most active from the perspective of activation and reach of visitors. Help give answers to questions 4, 23, 24, 27 and 29.	Activate	The least active visits should be encouraged by using effective links and quality content, in order to encourage more readings, more clicks, downloads, and more.
Click-through rate on internal display ads (IBCTR)	The number of clicks on the internal banner divided by the number of pages on which the banner is located.	It shows the most effective and least effective internal display ads. Helps give answers to questions: 24, 27, and 29.	Activate	Internal display ads (banners) with the worst results should be optimized in terms of content and better positioning.
Content Consumption Index (CCI)	Number of page views in a particular category divided by the total number of page views	Indicates the most interesting content on the web site. Helps give answers to questions: 14, 21, and 24.	Activate	It helps to decide which content should be improved, or even to make decisions about the rejection of a particular category of content.
Conversion Rate (CR)	The number of confirmed conversions divided by the total number of visits.	It shows the number of visits that resulted in the desired action (conversion). Helps to provide answers to questions: 5, 6, 10, 11, 17, 18, and 27.	Convert	Helps identify traffic sources that provide the highest conversion rates.
Cost per Conversion - Action (CPA)	The total cost of the channel divided by the number of conversions through the channel.	It shows which traffic sources are the most cost-effective in the context of conversions. Helps to provide answers to questions: 5, 6, 10, 11, 17, and 18.	Convert	It should be comparable across channels, along with monitoring the cost per engaged visit. Activities relate to streaming budget to those sources that provide the most active visits and conversions.
E-mail Opening Rate (EOR)	The total number of opened e-mail messages divided by a total number of sent email messages.	It shows how many subscribers to the newsletter are active and read e-mails. Helps to answer question 9.	Activate Engage	Indicates an eventual need to optimize newsletter messages (titles, content, formats, e-mail database, etc.).

Email Link Click Through Rate (ELCTR)	The number of clicks on a link within an email message divided by the total number of opened e-mail messages.	Indicates how effective links are within the newsletter e-mail. Helps to answer question 9.	Activate Engage	Indicates the need to optimize the offer (calls to action, banner design) or better personalization of the content.
Return Visit Index (RVI)	The number of repeat visitors is divided by the total number of visitors	It shows how many visitors return to the web site in a given time period. Help give answers to questions 23 and 29.	Engage	Improve the initiatives that attract the visitor to visit the web site again, such as adding new content.

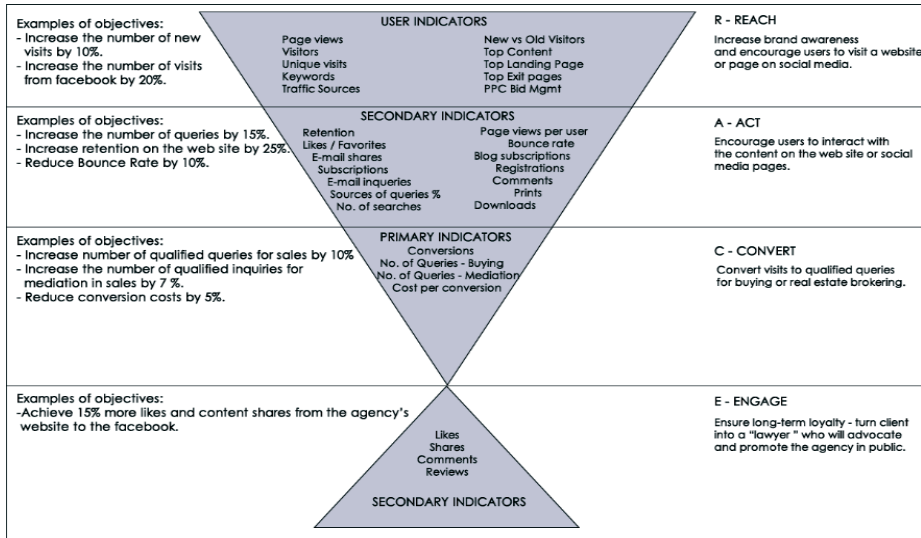
**Source:** author

For easy visualization of the links between the objectives and key performance indicators, we propose a new visual model of defining goals and indicators for each phase of the RACE model. The idea for the model came from a pyramidal approach to the goals developed by Joe Pulizzi<sup>1</sup>.

Objectives and indicators are presented in the form of a reverse pyramid, which represents a sales tunnel through which customers/clients pass through the process of purchase, that is, until the moment when the agency will achieve the desired conversion (e.g. qualified query, contract conclusion, etc.). The pyramid consists of three parts: primary objectives, secondary objectives, and user objectives.

<sup>1</sup> <https://contentmarketinginstitute.com/2013/06/measuring-impact-content-marketing-strategy-pyramid-approach/> (5.11.2018.)

**Image 2 – A visual model for defining goals and indicators of digital marketing in real estate agencies**



Source: author

Objectives related to primary indicators are those goals, which are most interested in agency owners or managers: sales, number of concluded mediation contracts, cost savings. Therefore, these are goals related to achieving desired conversions, such as the conversion of a visitor into a potential buyer through the receipt of a “qualified query”, or the conversion of a visitor into a potential client through the receipt of inquiries for mediation in the sales process. The objectives associated with secondary indicators help achieve the primary objectives. For example, the number of qualified sales inquiries depends on the total number of queries and the quality of the received queries. A more engaged web site user represents a more specific potential customer/buyer. Ability to analyze the quality of visitors that come from the specific online source (channel), enables managers to make better decisions about budget allocation for online advertising.

Objectives related to the user indicators are those on which online content creators often rely on to help achieve secondary objectives, including site visits, a number of web site reviews, ranking on search engines, and so on.

## 5. CONCLUSION AND RECOMMENDATION FOR FUTURE RESEARCH

Planning helps real estate agencies to better adapt to the new “digital” market environment and to take full advantage of the opportunities of digital technologies to improve their marketing activities and business performance. In this paper, the author uses an analytical approach, combines three existing models, and develops a new integrated framework for digital marketing planning in real estate agencies. The framework helps real estate agencies develop a digital marketing strategy and plan digital marketing activities with a holistic approach. The big picture includes a strategic approach that also elaborates on specific digital marketing activities for customer engagement during customer lifetime. The framework is built on a theoretical basis, but also includes the good practice of digital marketing that the author has gained through many years of work in the industry. In the second part of the paper, a framework for the development of key performance indicators (KPIs) in real estate agencies has been proposed. It will help real estate agencies to adequately monitor and measure KPIs in order to control the achievement of the set goals and take timely corrective measures. Converting goals into KPIs, which can be further measured by free analytical tools like Google Analytics, will greatly help agencies to more clearly define the purpose of the website and the goals they want to achieve, and to use that knowledge already in the web site development phase. The development of KPIs will encourage real estate agencies to discover new advanced features of analytic services, such as custom dimensions within the Google analytics service. Custom dimensions allow the agency to connect data (on real estate, customers/clients) from its own CRM system to the data collected by Google Analytics, which provides new, highly valuable market information that agencies can use to adapt to the market or to improve their marketing approach to business. This leads to a better marketing orientation of the agency, which, according to previous research, leads to the improved business performance of the company. Developing a framework for the identification of the essential custom dimensions and their use for obtaining answers to important business questions can be the basis for future work. In addition, testing the framework within small businesses in similar industries is a new challenge for researchers. The proposed integrated digital marketing planning framework should also help ease syllabus planning in the field of digital marketing and entrepreneurial marketing at

higher education institutions. It can also serve as a basis for courses and training within the professional associations of real estate brokers.

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## USER SATISFACTION WITH HOTEL SOFTWARE TOOLS: AN EMPIRICAL RESEARCH

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### **Abstract**

*The purpose of this paper is to evaluate user satisfaction in the hospitality industry with existing software that helps to synchronize hotel Property Management Systems with booking platforms that they use. The aim of the research is to answer the question to what extent the hoteliers use the ICT tools offered on the hospitality market and how satisfied they are with their performance. This paper gives an overview of hotel ICT solutions such as Property Management Software, Online Reservation System, Central Reservation System, Mobile Versions of Booking System, Channel Management Software, Business Intelligence Software, Revenue Management Software, and Yield Software. In addition to the work organization within the online sales segment and/or revenue management department, the purpose is to see to what extent the dynamic parameters of the work process are synchronized in real time. The research was conducted on a sample of the 11 hotel chains in Croatia (130 ho-*

tels). Descriptive statistics were used in the analysis of the results. Satisfaction with some ICT tools clearly indicates that respondents are most satisfied with the online reservation system, and at least satisfied with the Yield software. The scientific contribution of this work is reflected in the research of the most actual hospitality topic, which is the rate and inventory placement on online sales channels through the use of hotel software tools, which is a recommendation for further scientific research that gives important implications for theory and practice. Although research has been carried out in detail, limitations of the conducted research may be reflected in the fact that research was carried out at hotel chains in Croatia and therefore research has a spatial limitation since it is carried out solely on the example of one state, i.e. there is no comparison with other, similar or different destinations in the world.

**Keywords:** Hotel Software Tools, Property Management Systems, Hotel Revenue Management, Reservation Synchronization Processes, Online Distribution Channels

JEL Classification: L83, Z30

## 1. INTRODUCTION

The tourism industry has been radically transformed by Internet-related technologies (Zhang et al., 2017). ICTs provide a powerful tool that can bring advantages in promoting and strengthening the tourism industry's strategy and operations (Ayanfulu & Yekini, 2016). With the increasing demand for intensive information from customers and hotel managers, hotels have adopted computer-based IT facilities to improve operational efficiency, reduce costs, and enhance service quality (Law & Jogaratnam 2005, Buhalis & Law 2008, Law et al. 2013, ). With the use of IT in their businesses, hotel managers expect that their profit margins and financial returns will increase. Improving productivity is the primary role of information technology (IT) in the lodging industry, while information resources have long played a crucial role in conducting successful lodging operations (Ham et al., 2005). According to Filieri & McLeay (2013), tourism and hospitality managers are realizing that managing online intermediaries may provide them with benefits over their competitors. Hospitality and tourism managers have been and will continue enhancing their competitive advantages by focusing their resources on the virtual business environment to capture the lucrative online business (Anuar et al. 2013, Sigala et al. 2001).



The market offers a number of technology solutions for hotels that can replace the existing reservation process synchronization systems and thus improve the operational and strategic effects of the hotel (Bilgiham et al. 2011, Daghfous & Barkhi 2009). Many studies have focused on the analysis of the application of these solutions by the hotel as well as the advantages that arise from the application of information technology (Winata & Mia 2005, Lam et al. 2007, O'Connor & Murphy 2004, Šerić & Gil Saura 2012, Chathouth & Law 2011, Sigala 2001, Buhalis & Law 2008, Ham et al 2005, Ayanfulu & Yekini 2016, Erdem & Jiang 2016). These surveys identified a large number of IT solutions in the hotel industry.

Furthermore, although research has been carried out from the perspective of hotel managers and their satisfaction with the existing hotel software, the problem of synchronization of reservation processes has not been investigated in detail.

Therefore, the aim of this paper is to explore in detail the application of IT solutions and data management in the hotel context from a manager's perspective and to answer the question to what extent the dynamic parameters of the work process are synchronized in real-time. This paper focuses on the application of IT tools to tourism/hospitality business in Croatia. The research was conducted by Sales Managers, Reservation Department or Revenue Management Department. The authors researched the ways to close sales when capacity was upgraded, how to change rates on OTA portal systems, how to change rates on hotel websites, and how to change the BAR rate on GDS. The purpose is to see in what extent the dynamic parameters of the work process are synchronized in real time.

This paper gives an overview of hotel ICT solutions such as: Property Management Software (PMS), Reservation System on the Web, Central Reservation System (CRM), Mobile Versions of Booking System, Channel Management Software, Business Intelligence (BI) Software, Revenue Management (RM) Software and Yield Software (chapter 2.). The third chapter contains an overview of the research methodology. The research findings are given in the fourth chapter. Finally, the conclusion includes the notes on the role of IT tools in the hotel industry and the level of synchronization of reservation processes using IT tools. There are also some limitations of this research.

## 2. AN OVERVIEW OF HOTEL ICT SOLUTION

### 2.1. HOTEL CENTRAL RESERVATIONS SYSTEM

A *Hotel Central Reservations system* or *CRS* is the central hub of hotel group's operations, centralizing the data from all hotel property management systems (PMS), call centers and phone reservation systems (Siteminder, 2019). CRS is a computerized reservation software that maintains a hotel's room availability, rates, guest information, payment processing, and hotel information all in one place. A CRS provides hotel room rates and availability for many different distribution channels such as the Global Distribution System (GDS), Internet Booking Engine (IBE), Online Travel Agency (OTA), 3rd party websites etc. (Xhotels, 2019). Essentially speaking it is an application with various functionalities to manage a hotel's distribution/bookings. Bookings are made via multiple sources (OTA, travel agencies, the IBE on the hotel's own website), and all reservations sources will appear in the system via interfaces. Its main functions are the administration of room allocations (of single properties and hotel chains) as well as control and monitoring of rates and availability in the distribution channels. A CRS is beneficial for a hotel because it allows reservations to be checked and booked with a simple search. It also allows revenue managers or front office managers to easily adjust the prices corresponding to demand multiple distribution channels and platforms at the same time (Toh et al. 2011; Schegg et al. 2013). It is kind of a mission control software for hotel distribution. Popular CRS systems include Travel Tripper (CRS), Travelclick (iHotelier CRS), Windsurfer CRS by SHR, Clock CRS, Vertical Booking CRS, Sabre (Synxis CRS) et al. (HotelTechReport, 2019).

### 2.2. ONLINE HOTEL RESERVATION SYSTEM

The *Online Hotel Reservation System (OHRS)* is an online web-based system with specified majorities in the field of hotel online reservation system. Online hotel reservations are becoming a very popular method for booking hotel rooms. Travelers can book directly on an individual hotel's website. An increasing number of hotels are building their own websites to allow them to market their hotels directly to consumers. Non-franchise chain hotels require a "booking engine" application to be attached to their website to permit people to book rooms in real time. One advantage of booking with the hotel directly is the use

of the hotel's full cancellation policy as well as not needing a deposit in most situations (Delizo & Esguerra 2013, Bemile et al. 2014). It lets the hotel in charge of over margins and pricing strategy. It enables one to check available inventory and complete an online booking form making the reservation process more efficient and less time-consuming. The clients can settle room rates and special offers at no extra cost (Loon et al. 2018, 14). Hotels have adopted several strategies to direct potential guests to their own websites. They often engage in data mining of their customer profiles, which are collected from their frequent-guest program databases or from information provided by guests upon check-in. Direct mail and magnet emails are sent to their past guests inviting them to return by providing them with bonus frequent-guest program points, or other incentives. Hotels can also lure guests by giving a "best rate guarantee," which promises that they will match lower prices found on OTAs (Toh et al., 2011).

### 2.3. MOBILE VERSIONS OF BOOKING SYSTEM

In 2016, 2.1 billion people have a smartphone. For many of those people, it's the only way they access and interact with the internet. By 2020, smartphone ownership is estimated to reach an astonishing 2.87 billion people, helping to expand the World Wide Web to more people than ever before. Last year, mobile internet usage surpassed desktop usage. As a result, a large portion of users is now using smartphones to look for a hotel and book travel. Murphy et al. (2016) revealed that the European online travel market is expected to grow more rapidly than the overall traditional travel market that is linked nowadays to a larger number of bookings being arranged on mobile devices. The hospitality industry has taken opportunities by launching Mobile Hotel Reservation Services that enable customers to access their favorable hotels with only a single click of a button (Wang & Wang 2010, Law et al. 2014). *Mobile booking systems* are, at their very basic, a mobile-friendly version of an online booking system. With mobile booking software embedded in the hotel website, a potential customer can arrive on hotel website via their mobile, discover your service and book directly from their smartphone or tablet (BookingLive, 2019). If the hotel wants to compete for mobile bookings, the hotel needs a mobile-friendly website to drive more mobile bookings. Mobile websites come in two different formats: Responsive and Optimized. A responsive website responds to the device that is being used to view it. It's the same website as the desktop one, however it loads differently depending on the mobile device. This is a good option if a hotel

wants a hotel website to be consistent across desktop and mobile platforms. If the hotel wants to go one step further, the hotel can think about developing an optimized website: a website completely different from hotel desktop version. It can still contain a lot of the same information but can be customized for mobile visitors giving them an even better user experience (ChardsBeds, 2019).

#### **2.4. PROPERTY MANAGEMENT SYSTEM**

*Property Management System (PMS)* is a local hotel administration system used for reservation, availability and occupancy management, check-in/out, images, guest profiles, report generation etc. PMS is also known as the Hotel Operating System (Hotel OS). PMS is one of the best data management software that helps in recognizing the knowledge of employees and being as source of information in the hotel industry to increase the business and its features helps in managing the property effectively and it can be upgraded according to their guest service with much higher facilities and also have access to all staffs with proper rights in their respective departments (Mohideen Moyeenudin et al. 2018, 327). This application is used in-house (in an individual hotel) to control the onsite property activities. The PMS can be connected with other applications such as the hotel point-of-sale (POS) or the CRS (Krželj-Čolović & Cerović 2013, Dzhandzhugazova et al. 2018). The interface to a CRS is an additional option in order to transfer availability, reservations and guest profile information. Additionally, various interfaces are available to create further links to internal and external systems such as room key systems, restaurant and banquet cash registers, minibar, telephone and call centers, revenue management etc. There are many PMS providers available on the markets today, that provide various software solutions for all sizes of hotels. The Capterra website evaluates 359 such PMS software providers (Capterra, 2019).

#### **2.5. CHANNEL MANAGEMENT SOFTWARE**

*Channel Management (also Multi-Channel-Management)* refers to the techniques and systems used by hotels in line with their distribution policy. This management method includes content management as well as data reconciliation in various distribution channels. Channel Manager for hotels keeps availability and rates always in synchronization on all connected channels and hotel website (Sabee Apps – Cloud Hotel Management, 2019). It means the updat-

ing of the hotel information, of room rates and availabilities across all distribution channels, such as hotels website, third parties (OTAs, IDS, ADS) and the CRS/GDS. Effective channel management solutions should improve efficiency by providing a centralized way to control multiple channels. Using a Channel Manager is a smart way to save time and avoid errors. There is no need to update dozens of extranets manually, as nowadays you can do that just from one system. Channel management software is often used by hospitality business owners and those who oversee and manage room bookings for a hotel or inn. These tools often integrate with hotel reservations software or hotel management software to coordinate bookings with other hotel operations. Channel management software may also work in tandem with various marketing software to increase bookings across channels. Best Channel Management Software is Cloudbeds, Bookwize, eZee Centrix, Phobs, RezGain et al. (G2 Crowd, 2019).

## 2.6. GLOBAL DISTRIBUTION SYSTEM

*Global Distribution System (GDS)* is a large computer network and at the same time, a reservation tool that passes hotel inventory and rates to travel agents and allows them to make bookings (Law, R. et al., 2014). The first development with regard to online distribution was initiated by the introduction of GDS, which was an airline computer-reservation system working as technical electronic intermediaries (Buhalis and Licata 2002, Tom Dieck et al. 2018). Independent travel agents, online agents, and travel agencies now use increasingly more sophisticated GDS systems to search for the best available travel and accommodations and rates for their clients. Agents will make airline and hotel reservations (in real time) for clients, and they will complete their research and bookings within minutes (Travel Technology & Solution, 2019). GDS is used by various travel segments and serves many different companies including airlines, ground handlers, hotels, railways, car rental companies, airports, cruise lines, and ferry operators. The property's information (rates, inventory, etc.) are loaded into both the GDS and ODD (Online Distribution Database) which connects hundreds of internet travel portals and OTAs. The benefits of GDS for the hotels are Worldwide exposure of the hotel, B2B and B2C distribution, Targeting all Travel Agencies independently of the GDS (distribution platform they may use), 24/7 travel agent access to hotel inventory, 24/7 travel agent access to a hotel full descriptive and multimedia content. There are three important GDS systems: Travelport (Galileo, Apollo, Worldspan), Amadeus and SABRE.

## 2.7. BUSINESS INTELLIGENCE SOFTWARE

According to Investopedia, *business intelligence (BI)* is “the procedural and technical infrastructure that collects, stores and analyzes the data produced by a company’s activities. Business intelligence is meant to take in all the data generated by a business and present easy-to-digest performance measures and trends that will inform management decisions.” Essentially, it is the act of making data-driven decisions based on data analysis and data visualization in order to better a business’s strategy and success. BI tools allow managers to make more accurate decisions based on the data analysis to reduce costs, increase profits, and all in all, improve the business. Instead of manually sorting through the data from a hotel’s PMS, POS, revenue management tools, reservation systems, etc., BI tools help speed up the manual work and automate the decision-making efforts that would have taken hoteliers more time and effort to produce (Park, 2018). There are many BI platforms available to the hospitality industry with the objective of assisting hotel with business intelligence decisions, however, they differ by specialization. Some BI tools target independent hotels or enterprise groups, a few tools offer customizable features and niche products, while others are more specialized to certain processes like revenue management or F&B related decisions. According to Capterra, the biggest and most well-known BI tools across industries are Tableau, Qlik, SAP Business Objects, IBM Cognos, and Microsoft Power BI. Within the hotel industry, BI tools are currently mainly used in Revenue Management, but this will eventually grow to hotel operations and more. Hotel Tech Report lists several tools in the Revenue Management category: Juyo Analytics, Hotel IQ, In Touch Data, Hotelistat, Datavision, and SnapShot Analytics (Hotel Tech Report, 2019).

## 2.8. REVENUE MANAGEMENT SOFTWARE

*Revenue management (RM)* is traditionally defined as being the art and science of forecasting demand while simultaneously adjusting the price and availability of products to match that particular demand (Queenan et al., 2011). The definition of revenue management has evolved as its application has moved from maximizing yield or average daily rate (ADR) to maximizing revenue – with the current focus on property-wide profits rather than just rooms revenue. In essence, one can now think of RM as managing customer behavior at the individual level via price and availability of constrained resources to maximize



profits (Anderson & Xie 2010, 54). Some of the pioneering organizations of RM in the hotel industry were Marriot, Hilton, Sheraton, Starwood, and InterContinental (Kimes, 2003). In the last decade, the rapid development and integration of technology-based tools, such as social media and mobile-device-based channels, have also influenced the way RM is practiced in the hotel industry (Erdem & Jiang, 2016). The processing of large databases is impossible without appropriate RM software and hotels that employ it gain a strategic advantage over those that rely on intuitive decisions only and have improved financial performance (Ivanov, 2014). RM software usually includes several modules: database module, a demand modeling module, forecasting module and controls and recommendations module (Ivanov, 2014). The popular RM software for the hotel is Xotels, IDeaS, RateGain, sports pilot, Atomize, et al. (Hotel Tech Report, 2019).

## 2.9 YIELD MANAGEMENT SOFTWARE

The process of effective *yield management* (YM) involves understanding, anticipating and reacting to consumer behavior (to ultimately maximize revenue). By optimizing yield management, an independent hotel or a chain of hotels can adjust its prices, to meet the total demand characteristics of its markets. In the hotel sector, YM generally consists in determining the minimum tariff the hotel can charge for a stay, taking into account the marginal costs resulting from the production of an additional unit. Controlling demand by a differentiated tariff policy is a common practice in the hotel trade. The hotel industry differentiates its tariffs according to the season, the date of payment, the length of stay, and the time of departure. The temporal frame is central to regulating hotel tariffs (Sahut et al, 2016). Today, smart yield managers or yield management teams use specifically developed software, particularly when formulating variable pricing strategies.

## 3. METHODOLOGY

The purpose of this research is to evaluate user satisfaction in the hospitality industry with existing software solutions that help to synchronize hotel Property Management Systems with booking platforms that they use. The aim of the research is to answer the question to what extent the hoteliers use the ICT

tools offered on the hospitality market and how satisfied they are with their performance. In addition to the work organization within the online sales segment and/or revenue management department, the purpose is to see to what extent the dynamic parameters of the work process are synchronized in real time.

The research was conducted in the period from March 2015 to January 2016 and included 11 largest hotel chains in the Republic of Croatia, namely 130 hotels, which are part of domestic and/or foreign brands. The research was conducted by Sales Managers, Reservation department or in the Revenue Management department.

In this study, the survey method was used. The research instrument was a structured questionnaire consisting of three parts. The first set of questions was related to some of the basic features of hotel chains, such as the number of hotels in the company, the category of hotels, the total number of rooms and employees in the hotel chain. The second set of questions were designed to allow managers to express their satisfaction about the hotel ICT solution such as Property Management Software, Online Hotel Reservation System, Central Reservation System, Mobile Versions of Booking System, Channel Management Software, Business Intelligence Software, Revenue Management Software, and Yield Management Software.

**Table 1.** Survey method (third part)

#	Question
1	When the hotel is fully booked who or which system closes sales?
2	Who or which system changes rates on the OTA??
3	Who or which system changes rates on the hotel website?
4	Who does the BAR rate adjustments on the internet?

The third part of the questionnaire contained identification questions about online booking and synchronization of the hotel reservation processes. The questions are about how to close sales when hotels are fully booked, how to change rates on OTA portals, how to change the rates on a hotel website and how to change BAR rates on GDS (Table 1). The results were analyzed by using the software package SPSS (Statistical Package for the Social Sciences). The data were analyzed by using the method of descriptive statistics.



## 4. FINDINGS

Average grades of hotel satisfaction with each system are shown below. Managers have been given the opportunity to evaluate their satisfaction using the five-stage Likert scale, where 5 represents the highest rating and 1 is the lowest (Table 2).

**Table 2.** Evaluation of the manager’s satisfaction by using hotel software

Items	Mean	SD
Property Management System (PMS)	3.22	0.416
Online Hotel Reservation System (OHRS)	4.25	0.558
Central Reservation System (CRM)	4.18	0.710
Mobile Versions of Booking System	4.00	0.537
Channel Management Software	4.20	0.623
Business Intelligence (BI) Software	4,00	0.000
Revenue Management (RM) Software	3.71	0.948
Yield Management (YM) Software	3.09	1.449
Overall average rating	3.83	-

(Note: Likert scale rating covers 5 degrees, where rating 1 is very satisfied, and rating 5 very unsatisfied).

**Source:** author’s research

The average rating of the hotel system’s satisfaction ranges from 3.09 to 4.25. The results of descriptive statistics indicate that respondents are very satisfied with the Online Reservation System ( $M = 4.25$ ) and the Channel Management Software ( $M = 4.20$ ). They are at least satisfied with the capabilities provided by Yield Management Software ( $M = 3.09$ ). Most of the ratings are in the upper part of the rating scale, which is the total average rating, according to which the respondents are satisfied with the hotel systems used. Apart from Yield Management Software, respondents are also content with Property Management Software ( $M = 3.22$ ). The standard deviation values show very slight deviations of the data from the average value, i.e. from the arithmetic mean.

When organizing business within the online sales segment and/or revenue management departments, the following questions are asked to determine the extent to which the dynamic parameters of the work process are synchronized.

**Table 3.** The way of closing sales when the hotel is fully booked

Closing sales when the hotel is fully booked	Frequency	Percentage
Person	114	87.7
System	16	12.3
Total	130	100.0
Name of system		
Opera	8	6.2
PHOBS	4	3.1
No answer	118	90.8
Total	130	100.0

**Source:** author's research

The results show that when the hotel is fully booked the hotel sales capacities are most often closed by the person (87.7%). The hotels that use the capacity locking system often use the Opera system in relation to the PHOBS system (Table 3).

**Table 4.** The way of changing rates (rate adjustment) on OTA portals

Rate adjustment on OTA	Frequency	Percentage
Person	107	82.3
System	23	17.7
Total	130	100.0
Name of system		
Channel Managers: Synxis and PHOBS	17	13.1
Person and TRUST	8	6.2
Ideas/PHOBS	5	3.8
My Fidelio	8	6.2
PHOBS	8	6.2
Valhalla	2	1.5
Rate Gain	37	28.5
No answer	45	34.6
Total	130	100.0

**Source:** author's research

Table 4 shows that hoteliers continue to manually change their rates on OTA portals, as the results show that the rates are most frequently changed by a person (82.3%). For the rate adjustment on OTAs, the Rate Gain (28.5%) system is most commonly used.

**Table 5.** The way of changing rates (rate adjustment) on a hotel website

Rate adjustment on a hotel website	Frequency	Percentage
Person	84	64.6
System	46	35.4
Total	130	100.0
Name of system		
Synxis (person via Synxis)	17	13.1
Ideas/PHOBS	5	3.8
My Fidelio	8	6.2
PHOBS	22	16.9
Valhalla	2	1.5
No answer	76	58.5
Total	130	100.0

**Source:** author's research

Even the rate adjustment on hotel own website in most hoteliers is not synchronized because the PMS systems used by hoteliers are not 2 way connected to the reservation system. According to the numbers of the above research, the results show that in most hotels in the sample (64.6%) rates on the web are changed by people. Still, 35.4% of the hotel uses the rate-changer system on their own web site, and although this system is not a hotel PMS (which would be ideal), it's a more cost-effective solution. Hotels that use the system to change rates on the web are most often using the PHOBS system (16.9%) and Synxis (13.1%). As such, 35.4% of hotels have a higher level of data synchronization, although it is not in real time because it takes at least half an hour for the data to reach the end destination (table 5).

**Table 6.** The way of adjusting BAR rates on GDS

Adjusting BAR rates on GDS	Frequency	Percentage
Person	112	86.2
System	18	13.8
Total	130	100,0
Name of system		
PHOBS	18	13.8
No answer	112	86.2
Total	130	100.0

**Source:** author's research

In 86.2% of hotels in the sample, the BAR rates on the Internet or GDS are adjusted by people. Hotels that use the rate change system on the internet use the PHOBS system (Table 6) for this purpose.

## 5. DISCUSSION AND CONCLUSION

Today's hotel software solutions development as well as web portals participating in the sales process of hotels or hotel chains completely determine the concept of rate distribution and sales strategies, especially marketing activities and sales promotion of services offered. The goal is to reduce manual entry and have up-to-date rates, accurate room occupancy levels – ARI (availability, rates, and inventory) (Ling et al., 2015). If the ARI connection is not well set up and synchronized to the maximum as current technology allows, there is a risk of overbooking as well as rate parity policy violations.

The results of this paper show that the managers of revenue management departments are moderately satisfied with the tools that exist in the market. It should be added to this statement that as the technological revolution of online rates placement and adjustment has occurred abruptly hotel sales and revenue management departments have to adjust to current conditions either by monitoring and budgeting through excel tables or by with hotel systems if they are lucky. (Chathoth & Law, 2011). However, today's guest requests through online sales channels are still a huge challenge.

These research results suggest that hoteliers continue to believe in their own estimates rather than software solutions, that the software they use does not offer the ability to synchronize the online room capacity availability in real time. For this reason, in the various steps of reserving or booking the capacity, it is still the person who makes and executes the decisions.

This conclusion is corroborated by the results of research that show how systems are used in the following percentages for the main tasks of Revenue Manager:

- When closing hotel sales due to overbooking 12% of the hoteliers use the software to do it.
- When adjusting rates on OTA portals, 17% of hoteliers use some hotel system.

- ♦ When changing rates on a hotel's own website, 35% of hotel managers use some hotel system.
- ♦ When adjusting rates on GDS, 13% of hotel managers use some hotel system

The scientific contribution of this work is reflected in the research of the most actual hospitality topic, which is the rate and inventory placement on on-line sales channels through the use of hotel software tools, which is a recommendation for further scientific research that gives important implications for theory and practice. Although research has been carried out in detail, limitations of the conducted research may be reflected in the fact that research was carried out at hotel chains in Croatia and therefore research has a spatial limitation since it is carried out solely on the example of one state, ie there is no comparison with other, similar or different destinations in the world.

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## IMPACT OF POLITICAL MARKETING IN DIGITAL ENVIRONMENT ON GENDER (DOES POLITICAL MARKETING IN DIGITAL ENVIRONMENT IMPACT MORE WOMEN OR MEN?)

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### **Abstract**

*Marketing aims to satisfy consumer needs on the one hand and satisfy the needs of entrepreneurial subjects by gaining profits on the other. In the 21<sup>st</sup> century, the basis of business and marketing is the Internet, i.e. digital advertising. By comparing entrepreneurial and political subjects, a conclusion arises that marketing of political subjects aims to gain votes, i.e. the long-term positive perception of the public towards certain candidates or parties. Political subjects use modern techniques of marketing in order to accomplish their goals. The term political marketing refers to a set of techniques that aim to contribute to*

*the adequacy of candidates in reference to their potential body of voters. The goal of political marketing is to familiarize the highest possible number of voters with a candidate or a party they represent, to emphasize the differences from the competition and to optimize the number of votes necessary to gain during a campaign in order to win the elections.*

*This paper presents results of research whose main goal was to determine the effect of political marketing in a digital environment on gender, i.e. the analysis examined whether political marketing in the digital environment affects more men or women. Voters in IV and VIII electoral units were analyzed during the election campaign for Croatian Parliament in 2016. The hypothesis is: "Political marketing in the digital environment has a lesser impact on men than on women". The research was conducted through a questionnaire among potential voters. The examined group is defined as a stratified sample. Two electoral units were chosen due to their differences; IV as a primarily rural electoral unit and VIII as a primarily urban electoral unit. The conclusion was that political subjects and political marketing in the digital environment have a greater impact on women than on men, but differences are not as drastic. Generally speaking, the impact of political marketing on voters in the Republic of Croatia is very low. This research contributes to a better understanding of e-marketing implementation. Results can be used for the purpose of improving political e-marketing.*

**Keywords:** *marketing, political marketing, digital environment, impact on voters*

JEL Classification: M31, M39

## 1. INTRODUCTION

Influence of marketing activity is incredibly difficult to define and classify. One of the most popular branches of marketing in the 21<sup>st</sup> century is neuromarketing. The term represents a multidisciplinary scientific branch that encompasses a combination of marketing and neurology in which scientific methods measure emotional reactions of consumers, such as breathing pace, heartbeat, body movement and sweating. The goal of the aforementioned scientific discipline is to discover how the brain reacts to a certain marketing move. Scientifically proven fact states that 70 to 80% of purchase decisions are made without planning and unconsciously explains the growth of investment and research of new scientific disciplines. Consumers make decisions emotionally but try to

explain them rationally. Experts dealing with neuromarketing research the human brain in order to get closer to the customer. The fact is that each market is surrounded by a large competition. In a struggle among sellers, sophisticated ways of attracting attention are used, as well as advertising aimed at a precisely segmented audience, research that is becoming more unusual.

Marketing attracts great attention of all participants of the market competition. Today's marketing aims at pleasing the needs of consumers on one side and pleasing the needs of entrepreneurial subjects by gaining profits on the other. In very competitive advertising industry, science is becoming an important tool in clearly determining what kinds of marketing campaigns and products refer to a potential consumer. The only goal of marketing is to sell a certain product or a service. It denotes a business concept of entrepreneurial subjects. With market development and growth of competition, influences of marketing activities on the market are intensified as well. 21<sup>st</sup>-century marketing is based on e-commerce, or in other words, on the Internet.

Most users are always in proximity to their mobile devices that are usually connected to the Internet. Due to that reason, e-marketing and digital management are positioned as an unsurmountable part of business subjects' strategy. Besides focusing on transferring marketing activities on the Internet, modern marketing experts connect knowledge of marketing and neuromarketing in order to be more successful. By researching and analyzing political marketing, a question arises; is there a difference between business subjects and political parties? Marketing of political subjects has a goal of gaining votes, or in other words, a long-term positive perception of the public towards a certain candidate or a party. In the Republic of Croatia, political marketing is active during the election campaign, while during the realization of the political term it comes down to informing citizens on current events on a daily basis.

Political subjects use modern techniques of marketing in order to achieve their goals. The term political marketing refers to an aggregate of techniques whose goal is to contribute the adequacy of a candidate with reference to his potential voter body. The goal of political marketing is to familiarize the highest possible number of potential voters with a candidate or a party they represent, to emphasize the differences compared to the competition as well as opponents, and to optimize the number of votes necessary to gain in order to win the election using minimum resources. As well as business subjects, political subjects

use all familiar marketing techniques, including neuromarketing, in order to achieve bigger sales, or as political subjects, to gain a higher number of votes on the elections. Digital marketing is explained by political subjects in a way that they are trying to reach hesitant voters who will, due to their presence, circle their candidate's number on the elections.

This paper analyzes the impact of political marketing in a digital environment with regard to gender, or in other words, whether political marketing in a digital environment affects more women or men. The hypothesis is: "Political marketing in the digital environment has a smaller influence on men in comparison to women". The aforementioned hypothesis is brought with an assumption that men in the Republic of Croatia follow political events more than women, which results in decision making about a selected candidate or a party prior to elections and election campaigns.

The paper uses research conducted by the author (Stilin) who used a part of the research for a Ph.D. thesis titled "Political marketing in the digital environment". The paper is based on primary and secondary research. Methods of analysis, questionnaire, interview, compilation and synthesis we used. This research contributes a better understanding of the use of e-marketing in political campaigns. Results can be used to improve political e-marketing, as well as serve as a framework for further research. Voters of IV and VIII electoral units we analyzed during the election campaign for Croatian Parliament in 2016 with a goal of determining the influence on decision making concerning parties and candidates of a certain age segment of voters, by which it is determined which role social networks, or digital marketing plays, and which age group is under bigger influence of Internet media when choosing parties and candidates.

## **2. IMPACT OF POLITICAL MARKETING IN DIGITAL ENVIRONMENT ON GENDER**

Nowadays marketing is not explained by its old definition: story and sales, but by new meaning that fulfills the needs of consumers. Marketing activities are done during the entire lifespan of a product, trying to find new consumers and keep the current ones by improving the attractiveness and product quality, based on facts provided by the sales results and managing repeated orders. There are various definitions of marketing:

- ♦ Marketing is a process that plans and conducts creation of ideas, products, and services by determining their price, promotion and distribution in order to achieve trade that realizes goals of subjects and organizations (Dibb et al. 1995: 4).
- ♦ A social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others (Kotler, 2001: 17).
- ♦ Marketing is a social process in which subjects and groups achieve what is needed and wanted by creating, offering and freely trading products and services of certain value with others (Renko, 2009: 5).
- ♦ Modern marketing denotes a business activity that connects manufacture with consumption in order to maximally and with profit fulfill the needs of a society that occurs on the market as demand (Rocco, 1994: 19-20).

As it is commonly seen in all marketing definitions, it is a process that ensures the sale of products or services in a way that satisfies the needs of consumers, that is to inform them of what they need. Marketing creates the need and tries to find those individuals who have a demand for these products. Based on the above definitions, the concepts of political marketing and political marketing in the digital environment will be analyzed. Political entities behave like business entities. They use market information in order to influence shaping the products they offer. Each political subject is oriented towards voters. Of course, there is a difference between marketing and political marketing. The biggest difference is that political marketing offers promises. Political subjects offer their program that aims to create interest in voters in order to result in entry to the polls and choosing a certain candidate. Buyers, or in this case, voters after elections do not have certainty whether his candidate will, in case of victory, implement the promised program and bring desired changes.

Below, the paper will theoretically present political marketing in a digital environment and present the results of the research of the impact of political marketing in a digital environment on the user's gender.

## 2.1. POLITICAL MARKETING

The most complete definition of political marketing is: "Political marketing is a set of techniques whose goal is to contribute the adequacy of a candidate

with regard to his potential body of voters, to familiarize the largest number of voters and each of them individually with the candidate, to emphasize the differences with regard to competition and opponents and to optimize the number of votes necessary to gain during the campaign using minimum resources (Bongrand 1997: 15). It is necessary to emphasize that political marketing is not only the utilization of marketing techniques in politics. Strategic political marketing process consists of the following phases (Lees-Marshment et al, 2010: 5-8):

1. Market research – using various methods, such as questionnaires, focus groups, interviews, with the goal of market segmentation. The first phase of political marketing process strives to research exactly what voters want from political subjects. This phase is conducted prior to the making of a campaign and political program.
2. Designing a political product – in the next phase, political subjects design their product according to research results and their personal beliefs. Certainly, the political program cannot be completely done according to market wishes because voters' wishes can differ from the basic ideology of a political party.
3. Product adaptation – political subjects have to present a political program that is feasible. If elections are won with the false and unrealized program, defeat on the next elections is inevitable.
4. Implementation – political subjects are expected to implement the program.
5. Communication – for successful communication of a program, it is necessary to engage marketing experts to lead a political campaign. Political marketing is a specialized form of marketing, not every marketing agency knows how to carry out.
6. Campaign – during a campaign, a party continuously promotes a key message or a slogan they perform with on the market. The goal is to reach the highest possible number of voters, which is achieved through political marketing in a digital environment. Mass media are used in order to achieve greater visibility among voters.
7. Elections – marketing communication is carried out with the goal of winning the elections. The goal of each party is to gain the highest possible number of terms and to partake in the implementation of authority.
8. Realization of the program (product delivery) – it is logical that political subjects, following the elections, realize a promised program.

9. Follow-up of market orientation – following the elections, political parties continue to implement their marketing campaign in order to have a good rating up until the next elections.

As evident, the strategic political marketing process is a complex process that brings long-term success. Political subjects through such activity achieve credibility, which results in a growth in a number of votes on the elections. However, it must be emphasized that this is only a theory. In the Republic of Croatia, political marketing is in most cases implemented only during election campaigns. Interesting is a comparison between before and after, which refers to the implementation of a political program. A small number of promises is fulfilled, and programs are removed from political subjects' websites. It is surprising that voters go to the polls and choose the same or similar political subjects. In the business world and classical marketing that sells a product or a service, such situations are repeatedly condemned by the market, which results in closing. In politics, promises are easily forgotten and media receives news that direct attention of the public in another direction.

The goal of each political marketing is coming to power. Following the comparison of phases of political marketing, one could conclude that there are no differences between products of business subjects and products of political subjects. In both cases, the marketing process begins with market research, designing a product, market adaptation and influencing the market in order to accept the product. Main participants of political marketing are political subjects (political parties, public organizations, pressure groups, terrorist organizations, governments...), media and citizens (Tomić et al., 2008: 39-40). Main channels used by political marketing are electronic media (radio and television), print media (daily and weekly press, magazines...), display media (posters, billboards), interpersonal communication channels (personal contact) and the Internet. In the next part of the paper, political marketing through the digital environment is presented. In the 21<sup>st</sup> century, the basis of each communication is the Internet. Each communication, regardless of a channel, must be coordinated and at the same time released to all channels. Today's average citizen watches less television or reads papers, but spends more time online. Due to that fact, more resources are invested in digital marketing, and political marketing is based on marketing in a digital environment.



## 2.2. POLITICAL MARKETING IN DIGITAL ENVIRONMENT

The digital environment, or in other words, marketing in a digital environment represents a term e-marketing. The stated term is fully explained by the following definition: "Electronic marketing (short for e-marketing) is defined as a process of creating an offer, determining the price, distribution, and promotion with the goal of profitable fulfillment of buyers' needs and wishes through intensive use of digital technology potentials (Ružić et al., 2014: 39)." Influence of the Internet is nowadays immeasurable. Because of that, political subjects use e-marketing in order to achieve the best results on the elections. The Internet has changed lives and shaped new trends. New technologies influenced the development of new forms of communication and promotion. Nowadays every Internet user has access to an e-mail and other information and promotion channels. Political marketing in a digital environment has a large potential. All media increase information flow, but the Internet is the leader.

When defining the role of the Internet, John Street emphasizes: "Traditionally, citizens have been passive recipients of political information from their papers, radio stations, and television channels. They have enjoyed a modest degree of participation through letters columns, phone-ins and the like, but for the most part, they have been consumers of political information. The internet appears to change all this, enabling people to become more involved, to interact with the political realm (Street, 2003: 180)". The main advantage of the digital environment is that it can transfer a large amount of information to every corner of the world. Politicians cannot allow themselves to lead a campaign without a website, social networks profiles, and other techniques of Internet presence. The activities above are used to get closer to voters, while voters have more direct contact with them.

We have now come to the term presented in the introduction – neuromarketing. The term represents a combination of marketing and neurology that uses scientific methods to measure emotional reactions of consumers, such as breathing pace, heartbeat, body movement and sweating. The goal is to discover how the brain reacts to certain marketing activity. Neuromarketing has proven to be a powerful tool for understanding the motives of consumers' decisions and, more importantly, for performing a hidden influence on their decisions. It uses the technology of comprehensive brain display to measure brain activity and by that get subconscious responses of consumers to stimuli such as brands, products, packaging, promotion and other marketing elements; in other words,



all relevant questions of satisfaction, commitment, and loyalty. In other words, the stronger the positive emotions created in consumers by a certain slogan, picture or an advertisement, the more valuable the marketing message.

Research shows that a higher level of presence of positive emotions during purchase is connected with consumer's motivation, who will, in such conditions, decide on the purchase of a certain product. Of course, the highest number of decisions on purchase is brought without planning and subconsciously. 70-80% of purchase decisions are brought subconsciously in the brain, even before the buyers-consumers experiences the result of decision making as their own and self-willed in their consciousness. There are six motivational and emotional areas in the brain. Psychological research have proven that a man, apart from vital needs, nutrition, sleeping, sexuality and basic motivational and emotional areas, so-called "Big 3" that determines thinking and action of consumers, which are balance (stability, safety, order), dominance (status, power, gain) and stimulation (curiosity, wish for experiencing, creativity). Each buyer brings a decision emotionally but tries to explain it rationally. Neuromarketing deals with research into the human brain in order to get closer to the consumer and promote its product or service more successfully. Knowledge of how the brain functions pay off greatly. Due to that fact, neuroeconomists invest resources to discover how the bringer of all decisions functions - the brain. There are various techniques for measuring what happens in the brains of consumers faced with a product.

Based on the aforementioned research, political subjects conclude that an excellent tactic is to be omnipresent. Neuromarketing plays with senses; it influences the listener of a certain message to react in a way that suits the advertiser. Big companies design marketing techniques with the help of medicine and other sciences, doing experiments on consumers in order to determine what happens in consumers' brain when they hear or see a certain advertisement. One of the studies shows how there is a greater chance that a person who votes in the election and is indecisive who to vote for, will opt for a person or a political party that positively influences their brains. Also, there is a greater chance that political subjects will gain a higher number of votes if they continuously promote themselves in the most visited places nowadays – the Internet.

Due to that fact, political subjects use all available digital marketing methods, neuromarketing, and guerilla marketing as well, in order to increase chances of winning the elections. Today political subjects create a competitive advantage us-

ing political marketing. The goal of e-marketing is to commence a dialogue with voters, which is enabled by the Internet in a quick and affordable manner. The entire election process and political action is a process of communicating. Development of electronic media and use of the Internet has influenced new approaches to shaping political content. It is an additional source of information for interested voters, as well as a way of finding disinterested voters. The Internet has become an ideal channel for accomplishing relevant tasks important for campaign success.

The most important tasks of each political campaigns facilitated by the digital environment are (Stilin, 2019: 149-150):

- ✦ Organization of pre-election campaign – simple use that enables effective and quick communication and flow of information and materials. It enables sending of the advertising material, sending the invitations, coordination of tasks... It increases the efficiency of political action and perfects the process of preparation.
- ✦ Mobilization of members – Internet is good for mobilizing party members and voters, recruitment of volunteers and transmitting messages on why their engagement is important and necessary for campaign success.
- ✦ Collecting funds for a campaign – the Internet is used for the collection of donations for the pre-election campaign. The aforementioned refers to the United States of America. In the Republic of Croatia, pre-election campaigns are financed by the budget of the party, donations, membership fees...
- ✦ An informative resource for media and voters – political parties and candidates use their Internet presentation largely for their media work.<sup>1</sup> Using the Internet, they prepare press release and information for other media. Through political subjects' websites, they place information as archive material.
- ✦ Segmentation of voters with regard to beliefs – the Internet enables segmentation of the market, or in other words, communication with potential voters. Political subjects create content that will attract their political like-minded fellows. The goal is to attract the user and make him interested in a political program, which can result in voting on the elections.

Political marketing that alongside traditional marketing techniques uses digital environment has a great potential for achieving success. Strategically

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<sup>1</sup> Tomić, Z.: Political marketing - principles and application. University of Mostar, Mostar - Zagreb - Sarajevo, 2014, pg 469.

planned e-marketing communication can help political subjects in relationship with the external and internal public. It is necessary to emphasize how the website and social networks communication widens the available communication channels, reaches the public, enables change of public opinion, enables dialogue without a mediator, and brings politicians closer to the public... In conclusion, political marketing in a digital environment is a fundament of each election campaign of a serious political party. The impact of political marketing on gender will be presented further in the paper.

### 2.3. RESEARCH OF THE IMPACT OF POLITICAL MARKETING IN A DIGITAL ENVIRONMENT ON GENDER

The research hypothesis is: "Political marketing in the digital environment has a lesser impact on men in comparison to women". Voters from IV and VIII electoral units were analyzed during the election campaign for Croatian Parliament in 2016. Impact of political marketing in a digital environment on gender is analyzed, in other words, whether political marketing in a digital environment affects men or women more.

The aforementioned hypothesis is set with an assumption that men in the Republic of Croatia follow political events more than women, which results in bringing decisions about candidates or parties prior to elections or election campaigns. As mentioned in the introduction, the paper uses research conducted by the author (Stilin) who used a part of the research for his Ph.D. thesis titled "Political marketing in the digital environment". The study is based on primary and secondary research.

The research was conducted through a questionnaire among potential voters. Promocija plus from Zagreb used CATI system during the political campaign for parliament elections in August 2016 to conduct a questionnaire on a representative sample of participants in a political process in IV and VIII electoral units.

The goal of the questionnaire was to examine a sample of Internet users' about voting and following the campaigns in two electoral units. The sample in question is defines as a stratified sample. The process of stratification was conducted based on counties and the size of the settlement for the individual electoral unit. Two units were chosen due to their differences; IV as a predominantly rural unit and VIII as a predominantly urban electoral unit.

IV electoral unit chosen as a predominantly rural unit encompasses:

- ✦ Virovitica – Podravina County and
- ✦ Osijek – Baranja County.

VIII electoral unit chosen as predominantly urban unit encompasses:

- ✦ Istra County and
- ✦ West part of Primorje – Gorski kotar County (cities and municipalities: Baška, Cres, Crikvenica, Dobrinj, Kostrena, Kraljevica, Krk, Lovran, Mali Lošinj, Malinska – Dubašnica, Matulji, Mošćenička Draga, Omišalj, Opatija, Punat, Rab, Rijeka, Vrbnik).

In IV electoral unit, research was conducted on 703 participants. All participants use the Internet, while 490 of them use social networks. The difference is in the frequency of Internet and social networks use. Some participants use the Internet and social networks daily, while some users use the Internet and social networks several times per day. In the following paragraphs, questionnaire results researching the impact of political marketing in a digital environment on gender will be shown.

**Table 1** – Gender structure of participants in IV electoral unit

	TOTAL	
	N	%
Male	307	43,7%
Female	396	56,3%
Sample (N)	703	100,0%

Made by the author based on the conducted research

Table 1 shows the gender structure of participants in IV electoral unit. In VIII electoral unit research was conducted on 700 participants. Similar to IV electoral unit, all participants use the Internet.

**Table 2** – Gender structure of participants in VIII electoral unit

	TOTAL	
	N	%
<b>Male</b>	<b>268</b>	<b>38,3%</b>
<b>Female</b>	<b>432</b>	<b>61,7%</b>
<b>Sample (N)</b>	<b>700</b>	<b>100,0%</b>

Made by the author based on the conducted research

Table 2 shows the gender structure of participants in VIII electoral unit. As in IV electoral unit, a larger number of participants are female. Further, in the paper, an answer according to gender will be analyzed to a question “Did you make your voting decision prior to an election campaign or during the election campaign?”. In IV electoral unit 78,5 % answered that they brought the decision prior to a political campaign, while 29 or 9,45 % of participants brought the decision during the campaign. 24 of them still had not made the decision, while 8 of them emphasize how the campaign will not influence their decision. A small percentage of participants do not know whether the decision was made during or prior to the election campaign. The aforementioned data reveal that an election campaign has little influence on the citizens of the Republic of Croatia because over 80 % of participants made their decision about voting prior to the election campaign.

**Table 3 – IV electoral unit men – Did you make your voting decision prior to or during the election campaign?**

	TOTAL	
	N	%
I made a decision before prior to the campaign	241	78,5 %
I made a decision during the campaign	29	9,45 %
I still have not made a decision	24	7,82 %
The campaign will not affect my decision	8	2,61 %
I do not know	4	1,3 %
I refuse to declare my views	1	0,33%
Sample (N)	307	100,0%

Made by the author based on the conducted research

**Table 4 – IV electoral unit women – Did you make your voting decision prior to or during the election campaign?**

	TOTAL	
	N	%
I made a decision before prior to the campaign	301	76,01 %
I made a decision during the campaign	44	14,33 %
I still have not made a decision	33	10,75 %
The campaign will not affect my decision	10	3,26 %
I do not know	7	2,28 %
I refuse to declare my views	1	0,33%
Sample (N)	396	100,0%

Made by the author based on the conducted research

Table 3 and 4 show answers according to gender to question: “Did you make your voting decision prior to or during the election campaign?”. In IV electoral unit there is no significant difference between men and women. In both cases, about 80 % of participants made the decision prior to the campaign. The difference that needs to be emphasized is that 14, 33 % of women made a voting decision during the campaign, in comparison to 9, 45 men.

Below is an analysis overview of the same question in the VIII electoral unit.

**Table 5 – VIII electoral unit men – Did you make your voting decision prior to or during the election campaign?**

	TOTAL	
	N	%
I made a decision before prior to the campaign	210	78,5 %
I made a decision during the campaign	29	9,45 %
I still have not made a decision	24	7,82 %
The campaign will not affect my decision	8	2,61 %
I do not know	4	1,3 %
I refuse to declare my views	1	0,33%
Sample (N)	268	100,0%

Made by the author based on the conducted research

**Table 6 – VIII electoral unit women – Did you make your voting decision prior to or during the election campaign?**

	TOTAL	
	N	%
I made a decision before prior to the campaign	301	76,01 %
I made a decision during the campaign	44	14,33 %
I still have not made a decision	33	10,75 %
The campaign will not affect my decision	10	3,26 %
I do not know	7	2,28 %
I refuse to declare my views	1	0,33%
Sample (N)	432	100,0%

Made by the author based on the conducted research

Tables 5 and 6 show answers according to gender to a question: “Did you make your voting decision prior to or during the election campaign?”. In VIII electoral unit as well as in IV electoral unit, there is no significant difference

between women and men. A similar percentage of participants regardless of gender make their voting decision prior to the election campaign. In an urban environment, a lesser percentage of women and men make their voting decision during the campaign, which is an interesting piece of information. The difference in percentage is not great, but it represents interesting data. Both electoral units thereby confirm that Croatians make their decision prior to the elections and that the election campaign, and thus political marketing, do not influence greatly the results of the elections.

**Table 7.** – IV electoral unit – Did you follow the candidates’ campaign on the Internet and social networks?

Division of answers within each subgroup of participants (line)		I actively followed the campaign on the Internet	I saw the campaign on the Internet, but I did not actively follow	I did not see the campaign on the Internet	Campaign on the Internet does not affect me	Sample (N)
GENDER	Male	19,5%	29,0%	51,1%	0,3%	307
	Female	12,1%	33,6%	53,5%	0,8%	396

Made by the author based on the conducted research

Table 7 shows the results of following the political campaign in the digital environment. Results are almost identical for VIII electoral unit. There is no significant difference between men and women. Campaigns are equally visible to everyone, but men follow them actively to some extent. The fourth item on the list is surprising; according to it, 50 % of participants did not see the campaign on the Internet, which is almost impossible. Political subjects advertised on websites, social networks, search engines and other communication channels, which means that an active Internet user could not avoid them.

**Table 8** – IV electoral unit men – Did the Internet campaign affect your decision?

	TOTAL	
	N	%
Yes, I found out information about candidates during the campaign	13	8,72 %
No, they did not affect me	135	90,6 %
I refuse to declare my views	1	0,68 %
Sample (N)*	149	100,0%

Made by the author based on the conducted research

Out of 149 participants who saw the campaign in the digital environment, only 13 of them stated that the campaign affected them, which is only 8,72 %. According to stated information, it can be concluded that men in IV electoral unit were affected by the political campaign in the digital environment in a very small percentage.

**Table 9** – IV electoral unit women – Did the Internet campaign affect your decision?

	TOTAL	
	N	%
Yes, I found out information about candidates during the campaign	27	14,92 %
No, they did not affect me	152	83,97 %
I refuse to declare my views	2	1,10 %
Sample (N)*	181	100,0%

Made by the author based on the conducted research

Out of 181 female participants who saw the campaign in the digital environment, 27 of them stated that the campaign affected them, which is only 14,92 %. Compared to men, it is concluded that the initial hypothesis is confirmed – men are affected less by political marketing in a digital environment. The analysis of the same question item for VIII electoral unit follows.

**Table 10** – VIII electoral unit men – Did the Internet campaign affect your decision?

	TOTAL	
	N	%
Yes, I found out information about candidates during the campaign	10	8,7 %
No, they did not affect me	104	90,43 %
I refuse to declare my views	1	0,87 %
Sample (N)*	115	100,0%

Made by the author based on the conducted research

Out of 115 participants who saw the campaign in the digital environment, only 10 of them stated that the campaign affected them, which is only 8,7 %. The result is identical to IV electoral unit, which means that there is no difference in the impact of a political campaign in the digital environment in urban and rural areas among men. 90,43 % states how campaign did not affect them. The aforementioned is a devastating fact, given very large investments in marketing experts who carry out the complete political campaign that includes the digital environment as well.



**Table 11** – VIII electoral unit women – Did the Internet campaign affect your decision?

	TOTAL	
	N	%
Yes, I found out information about candidates during the campaign	13	7,18 %
No, they did not affect me	165	91,16 %
I refuse to declare my views	3	1,65 %
Sample (N)*	181	100,0%

Made by the author based on the conducted research

Out of 181 female participants who saw the campaign in the digital environment, only 13 of them stated that the campaign affected them, which is only 7, 18 %. Compared to men from VIII electoral unit, a political campaign in the digital environment had a lesser effect on women than on men.

To conclude, as stated in the introduction, Croatian voters make their voting decision prior to elections. Dissatisfied people left Croatia or do not vote on the elections. Most voters support certain parties due to their beliefs or personal gain. Croatia is a country with a very large percentage of workers employed in the public sector, which results in long-term voting for the party in power. Analysis of research results yielded the hypothesis: “Political marketing in a digital environment has a lesser impact on men than on women” is partially confirmed. In IV electoral unit, impact on men is 8, 7 %, while it is 7, 18 % on women. Generally concluded, IV and VIII electoral units observe a slightly bigger impact on women. The aforementioned result creates an opportunity for parties and marketing experts to improve the final e-marketing product, and to focus on women who represent a potential difference in the elections.

### 3. CONCLUSION

Marketing is based on satisfying the needs of consumers. Experts are trying to find new consumers and keep the existing ones by improving the attractiveness and quality of the product and based on knowledge gained through the sales results and management of repeated orders. According to all definitions of marketing, it can be explained as a process that ensures sales of products or services by satisfying the needs of consumers, i.e. by informing them on their needs.

Political marketing is a synonym to marketing, but on another market and with a different product. It denotes a set of techniques that aim at contributing to the adequacy of candidates with regard to their potential body of voters, to familiarize the largest possible number of voters with candidates, and each of them individually, and to emphasize the differences in comparison with competition, as well as opponents and to optimize the number of votes necessary to gain during the campaign using minimum resources. The goal of each political marketing is gaining political power. Main channels used by political marketing are electronic media (radio and television), print media (daily and weekly press, magazines...), display media (posters, billboards), interpersonal communication channels (personal contact) and the Internet. Political marketing combines traditional techniques with the digital environment, which has great potential for achieving success.

“Political marketing in a digital environment has a lesser impact on men than on women” is partially accepted. The research was conducted among voters of IV and VIII electoral units during the campaign for Croatian Parliament in 2016. Results yielded show that political marketing in a digital environment has a greater impact on women than on men. Political marketing in the digital environment has a great potential that is not fully used by Croatian political parties due to the political climate, consumers’ habits and traditional body of voters due to a lack of awareness of its potential.

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THE JOSIP JURAJ STROSSMAYER UNIVERSITY OF OSIJEK  
FACULTY OF ECONOMICS IN OSIJEK - CROATIA  
POSTGRADUATE DOCTORAL STUDY PROGRAM IN MANAGEMENT  
HOCHSCHULE PFORZHEIM UNIVERSITY - GERMANY  
CROATIAN ACADEMY OF SCIENCES AND ARTS

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INTERDISCIPLINARY MANAGEMENT RESEARCH XV  
INTERDISZIPLINÄRE MANAGEMENTFORSCHUNG XV



Under the auspices of the President of the  
Republic of Croatia

Opatija, 2019

***Published by:***

Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek, Croatia  
Postgraduate Doctoral Study Program in Management  
Hochschule Pforzheim University, Germany  
Croatian Academy of Sciences and Arts

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***Technical editor:***

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Aleksandar Erceg, Ph.D., Editor, Faculty of Economics in Osijek, Croatia

***Design:***

Krešimir Rezo, graf.ing.  
Krešendo, Osijek

***Print:***

Studio HS internet d.o.o. Osijek

ISSN 1847-0408

Conference Proceedings is indexed in databases which are listed at the official web conference  
page: <http://imr-conference.com>

This publication is partly financed by Ministry of Science and Education of the Republic of  
Croatia.

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## VORWORT

Es ist uns ein Vergnügen, das Konferenzband "Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV" vorstellen zu können. Ein Buch aus dieser Reihe ist zum ersten Mal 2005 erschienen, als Resultat der Zusammenarbeit zwischen der Wirtschaftsfakultät in Osijek, Kroatien und der Hochschule Pforzheim, Deutschland, und insbesondere durch das Magisterstudium des Management. Die Zusammenarbeit der zwei genannten Partnerinstitutionen ist unter anderem durch jährliche wissenschaftliche Symposien gekennzeichnet, auf welchen interessante Themen aus verschiedenen Bereichen der Wirtschaft und des Managements vorgestellt und folglich in einem Band veröffentlicht werden. Jedes Jahr ziehen die wissenschaftlichen Symposien Akademiker anderer kroatischer, sowie ausländischer Universitäten, einschließlich Deutschland, Ungarn, Polen, Rumänien, Slovenien, Montenegro, Bosnien und Herzegovina, Serbien, Indien, Irland, Czechien, Israel, Italien, Sudafrica, Kanada, Litauen, Kosovo, Türkei, Belgien, Schweiz, USA, Slowakei, Dänemark, Mazedonien, Mexico, Zypern und Großbritannien an, die ihren wissenschaftlichen und professionellen Beitrag zur Diskussion über zeitgenössische Fragen aus dem Bereich des Managements leisten. Die Aktualität der behandelten Fragen, der internationale Charakter im Hinblick auf Themen und Autoren, die höchsten Standards der Forschungsmethodologie sowie die Kontinuität dieser Konferenzreihe wurden auch von der internationalen akademischen Gemeinde erkannt, weswegen sie auch in internationalen Datenbanken, wie Clarivate Web of Science, Thomson ISI, RePEc, EconPapers und Socionet, zu finden ist.

Die neueste Ausgabe von "Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV" umfasst 104 Arbeiten geschrieben von 257 Autoren. Der Erfolg früherer Ausgaben ging über die Grenzen der Länder hinaus, deren Autoren schon traditionell Teil der Reihe waren. Jedes der Autoren leistete einen bedeutenden Beitrag zu diesem fachübergreifenden Managementforum.

Als Herausgeber dieses Bandes hoffen wir, dass diese Reihe auch weiterhin Akademiker und Professionelle dazu bewegen wird, in Forschung und Beruf die höchsten Standards zu beanspruchen, und dass es weiterhin als Ansporn zu weiteren Formen von Zusammenarbeit unter Teilnehmern dieses Projektes dienen wird.

Dražen Barković, professor emeritus

Prof. Dr. Bodo Runzheimer

## FOREWORD

It is our pleasure to introduce the book “Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV” to you. The first volume appeared in 2005 as a result of co-operation between the Faculty of Economics in Osijek (Croatia) and Pforzheim University (Germany), particularly through the postgraduate programme “Management”. The co-operation between these partnering institutions has been nurtured, amongst else, through annual scientific colloquiums at which interesting topics in various fields of economics and management have been presented and later published in the proceedings. Over the years, the scientific colloquiums have drawn the attention of academic scholars from other Croatian universities, as well as from other countries including Australia, Germany, Hungary, Poland, Romania, Slovenia, Montenegro, Bosnia and Herzegovina, Serbia, India, Ireland, Czech Republic, Israel, Italy, South Africa, Canada, Lithuania, Kosovo, Turkey, Belgium, Switzerland, USA, Slovakia, Denmark, Macedonia, Mexico, Cyprus and the United Kingdom each making a contribution in academic and professional discussion about contemporary management issues. Actuality and importance of the issues discussed, the international character of the book in terms of authors and topics, the highest standards of research methodology and continuity in publishing have been recognized by the international academic community, resulting in the book of proceedings being indexed in world-known data bases such as Clariavate Web of Science, Thomson ISI, RePEc, EconPapers, and Socionet.

The latest edition, i.e. ““Interdisciplinary Management Research XV/ Interdisziplinäre Managementforschung XV” encompasses 104 papers written by 257 authors. The success of former editions has echoed beyond the traditionally participative countries and authors.

As editors we hope that this book will continue to encourage academic scholars and professionals to pursue excellence in their work and research, and to provide an incentive for developing various forms of co-operation among all involved in this project.

Dražen Barković, professor emeritus

Prof. Dr. Bodo Runzheimer



# STRATEGY MANAGEMENT



# SCENARIOS FOR SMALL AND MEDIUM ENTERPRISES (SMES) PROVISIONS IN THE NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA) RENEGOTIATION - A CRITICAL ANALYSIS OF CHALLENGES AND OPPORTUNITIES

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## **Abstract**

*The aim of this paper is to set some scenarios for small and medium enterprises (SMEs) from a critical analysis of the provisions in the North American Free Trade Agreement (NAFTA) renegotiation, its challenges, and opportunities. The critical analysis departs from the questionable position of the withdrawal from NAFTA and their consequences for SMEs of not giving continuity through a process of renegotiation among the three partners. The method used is the critical analysis based mainly in some sources of information, analysis*

*of results of NAFTA, and the strategic examination of its challenges and opportunities for SMEs. Finally, the analysis establishes some possible scenarios post-NAFTA renegotiation and some strategic proposals for the SMEs.*

**Keywords:** Challenge, NAFTA, opportunity, renegotiation, scenario, SMEs.

JEL: F13, F15, F20, F41, F43, F51, F53, F61, F62, N82, N86.

## 1. INTRODUCTION

The global economy has changed significantly in the last three decades especially due to technology advances with the widespread use of the internet for e-commerce and trade, affecting consumer habits, communication and managerial practices, supply chain management, etc. While the notion that trade is an engine of economic growth (Kravis 1970) and Lewis (1980) benefiting all the involved participants, an assumption that cannot easily be refuted theoretically, however, free international trade has never been implemented.

The approval of NAFTA in 1993 brought the three North American Countries, Canada, United States, and Mexico into an economic rationale according to the conclusions of international free trade theory which claim that allows each country for specialization based on comparative advantage. Free trade through specialization benefits all countries involved promoting economic efficiency and growth (Kondonassis and Malliaris, 1996).

Despite the serious and broader concerns of disparities in income and cultural and ethnic differences that could pose serious obstacles for economic and market integration among the three partners of NAFTA, 24 years of implementation and operation, the results confirm that the agreement has benefitted all the three partners. It also has confirmed that the two neighbors of United States, Canada, and Mexico are of considerable foreign-policy importance, (Ann Krueger (1992), which is to say that the political dimension is linked to economic decisions in NAFTA.

The renegotiations of NAFTA is a unique opportunity for economic analysts, to investigate, analyze and contrast the new and the old issues that have motivated the North American economic and market integration. Proponents and critics of the renegotiation of NAFTA agree on modernization and reevaluation of the agreement considering the challenges and opportunities, although they have contrasting views on the process of revision.

This paper addresses the main concerns on NAFTA provisions renegotiation and its impact on SMEs making a critical analysis of recent developments in strategic terms of challenges and opportunities. Finally, this paper develops some scenarios and make some proposals.

## 2. NAFTA RENEGOTIATIONS

NAFTA entered into force on January 1, 1994, as the first of a new generation and most comprehensive free trade agreement negotiated at the time (Villarreal and Fergusson, February 27, 2018). NAFTA was instrumental in developing closer trade and investment relations among the three countries: the United States, Canada, and Mexico. Through NAFTA, the United States and Canada could have more access to the Mexican market after the removal of tariffs and quotas and the U.S. market was opened to increased imports from Canada and Mexico. Tariffs phased out for sensitive products such as sugar and corn, after 15 years when the agreement went into effect to become duty-free.

NAFTA removed investment barriers, protected investors and provided mechanisms for the settlement of disputes. Hufbauer and Schott (1992) suggested that Mexico anticipated that NAFTA would reduce the threat of U.S. protectionism, would reinforce trade reforms and would provide Mexican SMEs with more opportunities for export to the United States. As a consequence, Mexico would raise the employment and income which could further increase the gains of Canadian and U.S. small and medium-sized business. For example, NAFTA integrated the motor vehicle industry by removing protectionist policies. NAFTA included liberalization commitments and specific exceptions to national treatment.

NAFTA lock in trade and investment liberalization among the three countries. Since NAFTA, the three partners have relationships of cooperation on issues of mutual interest, expanding economic linkages and forming integrated production, distribution, logistics, and marketing chains, improving working conditions and living standards of employees and consumers Villarreal, and Fergusson (February 27, 2018).

NAFTA market has become the largest destination for small and medium enterprises of partners. Mexico and Canada were the largest destinations of U.S. small and medium-sized enterprises with more than 95 percent of their



exports in 2014. Some economic analysts contend that Mexican economic reforms added resilience to its economy that will bring greater economic growth. The recent financial and fiscal reforms in Mexico create more competition in the banking sector increasing the access to finance and credit for small and medium-sized business

NAFTA represented the first opportunity for establishing labor and environmental provisions in a new type of relationships of cooperation among the NAFTA partners. However, some critics blame NAFTA for a decline in labor conditions, employment, and wages in the United States and for lack of improvement on labor and environmental standards (Hufbauer, Cimino and Moran 2014; U.S. Chamber of Commerce 2015).

The North American Free Trade Agreement initiated in 1994 linking the Canadian, Mexican and United States economies creating a market with 490 million consumers. The renegotiation talks began in August 2017. The economic model emerged out from NAFTA arrangements faces new challenges. The interdependence on trade among the three partners of NAFTA is challenged by a high percentage of U.S. content on Canadian and Mexican exports.

United States has officially proposed for updating the trade agreement with its Summary of Objectives for the NAFTA Renegotiation centered on modernization to address a fairer deal expanding rules of origin to include more U.S. content and to balance trade reducing bilateral trade deficits with Canada and Mexico. NAFTA renegotiation and modernization has been a priority for the U.S. Government and now it is also for Mexico.

The reason behind the U.S. renegotiation is because NAFTA is characterized by the President as the “worst trade deal,” that has resulted in a trade deficit with Mexico and Canada and has stated several times the potential withdrawal from the agreement. NAFTA renegotiation is a constructive alternative to strengthen economies. However, it is very debatable the use of trade agreement provisions to overcome the trade deficit because macroeconomic fundamentals determine trade imbalances (Bergsten, 2017). Renegotiation of NAFTA is more likely to affect the composition of trade partners, but it is very questionable its impact on the trade deficit. If in the renegotiation of NAFTA, there are no clear provisions it is not clear how is possible to reduce the trade deficit.

U.S. is seeking in the NAFTA renegotiations to enhance trilateral cooperation on security and energy sectors having more open access to invest and trade

in the oil sector. On the part of Mexico may seek to enhance the energy sector, mainly the state-owned PEMEX oil Company, to compete in the market.

Renegotiation of NAFTA includes the issues of energy trade, government procurement, IPR protection, rules of origin, and small- and medium-sized businesses. NAFTA has significantly benefitted the motor vehicles, auto parts, agriculture industries, and the small and medium businesses.

Only a few small and medium-sized businesses follow the key issues and potential outcomes of the renegotiation process of NAFTA.

### 3. BACKGROUND OF THE SMES

Small and medium business are living in an era of tremendous global development and change which requires decision making and policy implementation confronted by challenges and opportunities to shape their own developments and serve their best interests. The industrial sectors of automobiles, motor vehicles and parts, agriculture and small and medium enterprises have been significantly received benefits from the creation of NAFTA. Exports from the United States to Mexico have grown in motor vehicles and parts 262 percent. Agricultural exports to Canada and Mexico have increased by 350 percent.

Mexico and Canada are the largest market destinations for U. S. small and medium-sized enterprise's (Dubbett, and Sengenberger, 2018). NAFTA generates multi-million-dollar industries in the SMEs in most of the American states because of its business facilities and commercial advantages. In its 24 years of operation, 33 states have sold more goods and services to Canada and Mexico than to the rest of the United States. In 2016, the last exercise prior to the declaration of the commercial war, exports to Canada ranged from 9,000 million dollars from Washington State to 23,700 million dollars from Michigan. While the sales to Mexico went from the 2,000 million of Hawaii to the 91,700 of Texas.

Fiscal reforms in Mexico incentivize participation of SMEs in the formal, tax-paying economy by offering credit, home loans, insurance, retirements. Among the SMEs, NAFTA seeks to boost formal-sector productivity and employment. Small-and medium-sized enterprises employ over 60 percent of Mexican workers including the informal sector. Millions of jobs created by SMEs depend on NAFTA trade, which remains critical to workers, owners,

and companies to generate new opportunities. However, productivity in Mexican small businesses fell by 6.5% per year between 1999 and 2009 while during the same period, large companies increased by 5.8% per year (McKinsey Global Institute 2014).

Majority of small and medium enterprises (SMEs) participate and use NAFTA to save costs, in cross-border transactions although sometimes they remain dangerously passive as to its outcome. Since NAFTA went into effect, Mexico and Canada have evolved into the largest two export destinations for U.S. small and medium-sized businesses (U.S. Chamber of Commerce 2017). Across Canada, there are 109,000 small and medium-sized member businesses (Canadian Federation of Independent Business, 2018) out of which one in five are involved in foreign trade.

The issue of growing and strengthening small-to-medium enterprises (SMEs) that accounts for 90 percent of the worldwide business, is an important business case (Gasiorowski-Denis, 2015). SMEs constitute over 90 percent of exporters of goods and services in the three countries members of NAFTA. Currently, SMEs two-thirds import and one-third export either products or services (CFIB, 2018).

The resource-based theory and the capability theory of firms sustain that the internationalization process of SMEs requires resources and capabilities (Martineau and Pastoriza, 2016). Also, the institutional theory suggests that institutions and public policy play an important role in strategic decision making about locating, scaling and linking SMEs to value-added chains of investment, design, production, logistics, marketing, and international trade. Also, institutions and public policy supporting investments, credit, certification process, etc., are relevant to the internationalization processes of SMEs.

Competitive economics is critical for SMEs to cross-border trade and international trade procedures to achieve cost-effective solutions through the access to technology delivering speed, ease, and security such as the block change technology. Borders among the three countries have thickened due to the enforced security measures damaging the trade relationships. This situation gives an opportunity to find initiatives and procedures based on reciprocal collaboration to facilitate cross-border trading.

SMEs engaging in international markets make major contributions to the economy by being more productive Baldwin and Gu (2003) become more likely

to export (Melitz, 2003 and Baldwin & Gu, 2003) and having higher revenues, paying higher wages (Mayer & Ottaviano 2008), investing more on research, innovation and development having higher rates of technology adoption (Lileeva and Trefler 2010).

The innovation of SMEs boosts production, employment, and more competition to benefit consumers. Innovation in SMEs can come after better access to credit and other financial instruments that enable international and cross-border trade. Small and medium-sized enterprises (SMEs) can innovate and develop the capacity to conduct cross-border transactions of goods and services through the use of the internet, digital devices, reducing cost and space of firm size required. SMEs are heavy web and internet users to trade and to source products and services internationally. Besides, SMEs with high web use realize a higher percentage of sales growth on average and low web users had no presence or sales decline.

Martineau and Pastoriza (2016) suggest that education, experience and growth orientation personality of the SMEs owners are relevant factors in decision making to export. SMEs owners with a higher level of education and management experience are more positively correlated with export propensity because they are enabled to likely become an exporter of products and services.

Small and medium enterprises (SMEs) under the framework of the North American Free Trade Agreement (NAFTA) have to keep searching for new markets. Small and medium enterprises (SMEs) are efficient exporters contributing significantly to the economy of NAFTA members. Small and medium-sized enterprises among the NAFTA countries make up a growing percentage in the share of international trade. The state's members of NAFTA are committed to provide support and stimulate to establish mechanisms for SME to meet requirements for trade liberalization, encouraging greater participation by SMEs in regional supply chains aimed to export orientation. The agreement includes a Trilateral Dialogue to increase the efforts for access of SME to the North American Free Trade market.

Given the importance of the North American free market, many SMEs are concerned about the renegotiation process of NAFTA. Protecting the free trade fundamentals in the negotiations of NAFTA is a relevant matter to have settled the small and medium enterprises (SMEs). Matters on SMEs subject

to negotiations are the markets, strategic information sharing, and cooperative activities with other local, domestic and international business.

The renegotiation of the new NAFTA normal has positive and negative impacts on SMEs, generally determined by geography and industry. Large companies from the e-commerce sector have supported small and medium-sized enterprises (SMEs) to marketing, distribute and sell products to foreign markets, for example, “e-Bay enabled SMEs,” were exporters in Mexico, Canada, and in the United States. Regarding e-commerce, Mexico faces substantial challenges regarding public distrust on digital and online systems, low internet connectivity, etc. Despite this problem, the e-commerce market has grown (Export.gov, 2017).

SMEs need to adapt quickly the new trade arrangements to the new NAFTA normal in order to avoid potential harm manufacturing and services while benefitting others.

#### 4. CHALLENGES OF SMES

A report of the OECD (2017) stated that “...a key challenge for many SMEs is to identify and connect to appropriate knowledge partners and networks”. The success for the SMEs depends on their “their access to strategic resources... such as education and training, innovation and infrastructure.”

The North American Free Trade agreement is a challenge for SMEs to gain preferred access to more than 500 million consumers. NAFTA partners are the largest destinations for small-business exports between each other. For example, U.S. small and medium-sized business represented more than 95 percent of all its exports equivalent to 25 percent of total value into the Canada and Mexico markets. 95 percent of U.S. SMEs are small and medium companies’ exports into the other members of NAFTA, Canada, and Mexico. The largest export destinations of U.S. small and medium-sized enterprises (SMEs) are Canada and Mexico representing more than 95 percent in 2014 and becoming the largest markets for U. S. (International Trade Administration 2016).

Canadian small and medium-sized firms that already trade with the other NAFTA parties, U. S. and Mexico, are not very or somewhat familiar with the agreement (Kelly, 2018). However, exports from Canada and Mexico to U. S.

have risen substantially since NAFTA. Similarly, cross-border investment has increased significantly as well. Over the past three years, the Canadian

Canadian and Mexican SMEs are facing the uncertainties of the NAFTA renegotiation with the possibility of the trade deal collapse.

SMEs face several challenges to position themselves getting support to achieve resources and capabilities aimed to create, develop and reinforce the links within the international value chain. Free trade among the three countries has been complex and diverse because the final product could have combinations of value added from all trading partners. Trade tariffs and trade barriers disrupt production chains of SMEs, which increase costs for consumers, reduce efficiency and competitiveness in production and thousands of lost jobs.

An important challenge is the reduction of low-value shipments requiring minimal custom paperwork and costs by supporting the digital marketplace and promoting inclusivity for SMEs. Engaged SMEs leverage digital platforms to access different markets. The existent integration in North America translates into high opportunity costs derived from inconsistent and incompatible regulations.

The eco-system for SMEs shares policy information among the different regions to access to the best practices of financial processes connected through a web portal that allows encoding invoices. SMEs optimize some internal processes of export initiatives through digitalization such as payments, invoices, settlements, and reconciliations to improve speed, security and ease of trade transactions. However, Hufbauer and Wong (2011) found that savings to customs, express shipping, SMEs and consumers from raising the threshold outweighed lost government revenue.

The majority of female-owned SMEs (51.9) and non-female SMEs owned (9.3) of all SMEs (49.7) grew between 1 percent and 10 percent of an average annual revenue between 2012 and 2014. The export propensity of Canadian small-sized SMEs in 2014 was 20.7 percent meaning the share of all SMEs that export Canadian female-owned SMEs follow the same trends as all SMEs but outshine female owned non-exporters in larger size located in export-intensive industries, education and experience, more likely to be born outside Canada (Office of the Chief Economist, 2016).

The propensity of micro-sized SMEs, between 1 and 4 employees, was 53.0 percent, tiny SMEs between 5 and 19 employees were 34 percent, small SMEs between 20 and 99 employees 11.1 percent and medium-sized SMEs between 100 and 499 employees were 1.6 percent. The industries of manufacturing, wholesale trade, and professional and technical services, have the highest export propensities of enterprises for exporting. In Canada, Ontario is the location where SMEs have greater propensity to export likely tied to industry (Office of the Chief Economist, 2016).

There is also increasing participation of female-owned exporting SMEs, as it has been reported by the Chief Economist (2016). According to this report, SMEs female owned represented only 15.7 percent and only 11.1 percent of all exporting SMEs. The data used is from the Survey on Financing and Growth of Small and Medium Enterprises with over 97 thousand female SMEs. This report examines the characteristics and differences between majority of female-owned SMEs exporters and non-exporters.

Canadian SMEs exporters are larger and have more control and ownership over relevant resources and capabilities than the other SMEs non-exporters (Orser et al. 2010). Investors and owners of SMEs challenge regulations using broad language and designed to further policies related to issues of environment, labor, safety, health, etc. (Hufbauer and Schott 2005).

Female's owners of businesses tend to be smaller more oriented towards local markets and less likely to participate in international markets. Female owners of exporting SMEs in Canada are larger in terms of number, more educated and experienced than non-exporting SMEs owned by non-females. Female SME exporters are more traditionally export-intensive industries, although they are smaller and are less likely to participate in less export-intensive than non-females (Office of the Chief Economist, 2016). Female SME owners face perceived and real obstacles to growth (Orser 2007) although may be less interested in growth as a revenue (Poggesi, Mari, and De Vita 2016).

## 5. RENEGOTIATION CHALLENGES OF NAFTA

Small and medium-sized enterprises is an issue for NAFTA renegotiation that could be modernized using as a reference other more recent agreements such as the TPP, considering recent technological and scientific developments,



managerial and regulatory practices. Regulatory challenges brought SMEs under the investor-state dispute resolution provisions of NAFTA have to be overcome as a source of controversies.

SMEs are being discouraged for growing and expanding businesses by the rising tensions in NAFTA renegotiations and the imposition of marginal trade tariffs. Also, the related industry is already suffering from the trade tariff already imposed on steel and aluminum by the United States, such as the documented case of the firm in the boating industry. Local business could suffer from the withdrawal as the case of Boating Ontario representing several SMEs across the province with more than 30,000 direct and indirect jobs is projecting a 20 percent job reduction in 2019. Rutherford, K. /CBC 2018).

Any disruption to the economic relationships of NAFTA could have economic adverse effects for the three partners on productivity, competitiveness, employment, investments, etc. Low skilled employment would decline by 125,000 for Canada and 951,000, for Mexico respectively (Walmsley and Minor 2017). Any change to NAFTA has a broad and varied impact on Canadian, Mexican and even United States small and medium businesses. If the United States decides, as it has been threatening, to pull out of NAFTA, trade with Canada will revert to 1988 signed Canada-US trade agreement (Galarneau, February 24, 2017). The case of Mexico is different not having a previous US-Mexico trade agreement and the impact on Mexican SMEs will be devastating.

Today the three economies are economically interdependent in such a way that any decoupling would be an economic catastrophe and risking the cooperation and shared intelligence to deal with strategic challenges. Among these strategic challenges are migration and regional security, free movement of goods and services, coordinated response to natural disasters and pandemics, etc. (Anderson, 2017).

United States is being renegotiated NAFTA with the goal of slapping tariffs on imported goods from Canada and Mexico driving to small and medium business owners to face a triple whammy that could wipe out the value of their business and their life's work. The Canadian province, Ontario and the cities of Monterrey in the State of Nuevo Leon or Naucalpan in the State of Mexico have a substantial manufacturing small and medium enterprises that are highly dependent on exports to the U.S. to survive. This situation may lead to small and medium-sized businesses to be sold by the owners who have worked very



hard in their lives are pushed to the only count on selling their business to have healthy finances.

Canada's trade commissioners and the Mexican government are concern about the imposed trade tariffs by the U.S. government and committed to including small business in the NAFTA trade agenda. Governments of Canada and Mexico support small and medium businesses to renew NAFTA on new grounds in international trade of goods and services despite the threats of U.S. imposed trade tariffs, which are damaging the U. S. SMEs.

SMEs business hiring is slowing cutting back jobs of companies, hurting workers by the escalating trade disputes. Employment and investments of car dealers in Canada and Mexico could be at risk if automobiles and auto parts tariffs happen imposed for imports to the United States and the new NAFTA deal is not secured.

Importers and exporters SMEs on NAFTA are under attack of aggressive trade policies such as the tariffs. United States has hit back the other members of NAFTA, Mexico, and Canada, for retaliating against tariffs with WTO complaint. The main challenge facing SMEs on NAFTA renegotiation is to reach an agreement with clear and stable regulations supporting the free fair trade and investments flows in North America, providing certainty to all the economic agents involved. Under the assumption that free trade must be a fair trade, Canadian small and medium firms have urged their government to stand against any increase on trade tariffs and at the end charging the duties and sales taxes to the consumers. Tax regimes and other legislation of each country member of NAFTA affect the SMEs and have an impact on final consumers. Tariffs are driving up the costs of imports needed by companies, including the SMEs.

Small and medium businesses have a passive approach to the NAFTA renegotiations considered to be a sense of fatalism. Most of the SMEs casually follow or are not following the NAFTA discussions and only a few small and medium-sized business have contingency plans in the event of U.S. Withdrawal from NAFTA. If the threat of U.S. to withdraw from NAFTA is achieved, there will be legal challenges from small, medium and large business to claim compensation for damage, members of Congress may take legislative action or blocking funding to carry out the withdrawal.

The existing substantial research demonstrates that smaller and medium companies are likely to be hardest hit by the uncertainty of NAFTA withdrawal

because they respond to policy uncertainties by reducing investments, jobs, and risks (European Commission, 2016), which tend to be harder to absorb when having few customers to spread risk among them. The cost of U.S. withdrawal from NAFTA would increase the cost to more than \$ 50 billion U.S. Dollars.

A little more than half of and medium-size businesses are aware that the discussions will lead to a successful renegotiation of NAFTA or with little effects. Less than half of SMEs are aware that the withdrawal from NAFTA would have negative effects in the industry and the other half is aware of a negative effect on individual businesses. Canadian small and medium-sized businesses are aware of the need to back up a plan to face the tariff disputes.

The outcomes of NAFTA renegotiations will have direction on policy implications for the broader relationship of economic cooperation on investment, trade, labor, environment, etc., among the parties. The renegotiated NAFTA partners have an opportunity to develop policy guidelines and constraints to SMEs on trade interventions to prevent and preclude new trade frictions in the future. The new generations require that NAFTA renegotiation expands upon further liberalizing trade and investment, creating new markets of goods and services to provide further benefits in terms of job creation, better wages, major quality and lower prices of goods and services, economic efficiency, etc.

Some of the relevant challenges that NAFTA renegotiation have they should include stronger and more enforceable labor regulations and protections, provisions on potential currency manipulation, and stricter rules of regional origin. The complexity of the rules of origin application add to the traditional trade costs some additional administrative costs for small and medium enterprises which lead not to be benefited of NAFTA tariff preferences and take advantage of the most favored nation (MFN) tariffs to import products and services. NAFTA's rules of origin are toughest and burdensome for SMEs as an estimated 7 % in compliance costs. Tightening rules of origin add costs to trade that in turn could be costly to consumers and may introduce inefficiencies for businesses (Freund. 2017).

More than half of small and medium-sized businesses will pass down the costs of tariffs to consumers or absorb costs and reducing investments, which lead to reduce competitiveness. NAFTA renegotiations have the potential to affect an impact on developments made on issues of common interest between

the three countries for the last two decades in cooperation in areas of security, energy, and competitiveness, migration, etc.

Concerns over NAFTA labor and environmental provisions challenge the renegotiation of NAFTA. Environmental regulations and programs could be challenged under a framework of the trade agreement and not under national trade laws to guarantee a legitimate nondiscriminatory implementation. Environmental regulations, standards, issues, and concerns are usually challenged under dispute resolution mechanisms (Gaines 2007, Sinclair 2015). Sustainable development should be a core commitment in any new framework of renegotiated NAFTA. Renegotiation of NAFTA's implies the inclusion of regulations related to environmental concerns to manage the environmental challenges (Torres 2002, Carpentier 2006).

For example, Canada had faced 35 challenges on environmental regulations concerning pollution control, resource management, toxic waste disposal, mining, lumbering, etc. (Sinclair 2015). An ongoing action is a challenge brought by an oil and gas company against a Quebec's fracking ban (ICSID 2017). The United States has been challenged by 20 claims including six challenges to environmental regulations and resource management and have not paid out compensation (Alvarez and Park 2003). Mexico has faced 22 challenges of which only 4 cases involved environmental issues. The most critical has been the case of *Metalclad* as an abuse of the investor-state dispute settlement structure. This case confirms that the dispute mechanisms systematically favors investor interests to the detriment of the environment and the public.

It seems that the proposals on trade policymaking in NAFTA renegotiation encompasses environmental and social concerns and issues including income distribution, public health, labor rights, worker dislocation, and poverty alleviation, etc. As a priority on the NAFTA negotiation, labor, and environmental standards should be updated, improved and enforceable to comply, for example with the Trade Promotion Authority (TPA) objectives for labor.

## 6. OPPORTUNITIES

The NAFTA renegotiation offers a unique opportunity for economic analysts to investigate, analyze and contrast the issues related to SMEs that have motivated the economic integration process in North America. SMEs have a

large stake in NAFTA renegotiation because they have a very significant market of products and services. Renegotiation of NAFTA is a new opportunity for SMEs to assess cross-border market conditions and opportunities to improving trade related to labor and environmental collaboration.

The renegotiation of NAFTA could provide an opportunity to modernize certain related issues to SMEs exports and imports. Small and medium-sized enterprises is an issue for NAFTA renegotiation that could be modernized using as a reference other more recent agreements such as the TPP, considering recent technological and scientific developments, managerial and regulatory practices. Modernization of NAFTA building on shared interests, commercial and security ties requires to SMEs to update technological developments and agree on new rules of governing digital flows, financial services, e-commerce, export of digital goods and services, energy, etc., to take full advantage of new opportunities. For that, it is also required protection of intellectual property on digital contents.

The renegotiation of NAFTA offers the opportunity to governments of the three countries of North America to create fair trade for SMEs and protect their local interests in accordance to the business communities in order to build relationships of cooperation and harness the benefits of the agreement. Also, NAFTA renegotiated could contribute to creating new opportunities for investment and trade for small and medium-sized enterprises in North America, having a positive effect on employment.

The renegotiation of NAFTA has the opportunity to make it more progressive by strengthening among other provisions, the ones related to SMEs, labor, and environment. International trade when expanding the export markets must benefit the three countries members of NAFTA, ensuring that exports and imports of products and services for small and medium-sized companies can be done easily, with cost efficiency, thus benefitting consumers and SMEs.

The opportunity cost of low-level achievements and commitments in NAFTA is higher due to the existing deep integration among the three national economies and markets. A set of negotiating objectives to update NAFTA provisions could prioritize fair free trade of goods and services of SMEs, inclusive and responsible by incorporating mechanisms of cooperation related to labor environment standards, energy security, transparency and anti-corruption, etc.

Among the NAFTA negotiating objectives should be included provisions on government anticorruption (Corchado, 2017). Also, trade relations should not remain separated from security cooperation in the relationship (Wilson, 2017).

The governments of Canada, the United States, and Mexico agree on the inclusion of a small and medium-sized business chapter in the renewed agreement, even amid the uncertainties of the renegotiation process of NAFTA. However, the awareness of the renegotiations of NAFTA remains low, but interest in partnering with small and medium companies among the parties as an opportunity to develop in international markets is high. The Canadian and Mexican governments have committed to modernizing NAFTA by staying at the negotiating table, although the renegotiation is unclear.

The modernization of NAFTA requires to update the new labor, digital and environmental developments strengthening data privacy and intellectual property rights. Renegotiation of NAFTA offers an opportunity to address the issues of efficient environmental regulations and SMEs trade and environment dynamics to establish goals, programs, procedures, and institutional arrangements toward a more sustainable future (Rockstrom and Klum 2015, Sachs 2015).

For everyone small and medium-sized business harmed by free trade under NAFTA, there were five that came out ahead and got insulated from international competition (Canadian Federation of Independent Businesses 2018). Also, SMEs owners born in foreign countries are more likely to export despite that they may have fewer opportunities compared to national – born owners (Orser et al., 2010). A small or medium business owner being born outside the country of citizenship might make it more likely to seek international opportunities, but it might make it harder to grow a business, a key component of exports. More education, experience and being born in a foreign country are factors that lead to greater export opportunities.

U. S. small and medium business leaders would like to expand NAFTA as an objective of an opportunity to grow U.S. exports in both Canada and Mexico, the neighboring and partner countries, but the trade tariffs recently imposed are complicated and are a large burden for the renegotiation.

Small and medium firms are up to the challenge of building relationships with local and foreign business communities to harness the benefits of rene-

tiated NAFTA. The cross-border growth of SMEs is lagging behind, missing business opportunities on their contributions to local marketplaces and economies, mainly for not having full access to infrastructure, credit, knowledge, regulatory expertise and competitive technology (Gasirowski-Denis, 2015). A regional vision on small and medium-sized business opportunities could help ramp up the infrastructure of all the three partners.

## 7. PROPOSALS OF CHANGES AFTER RENEGOTIATING NAFTA

Any change on NAFTA should affect small and medium business as different, varied and broad as the nature of business itself. Renegotiations of NAFTA have an impact on manufacturing and services SMEs not only determined by industry and location while potentially affecting by benefitting those of one country and harm others from the other countries, such as the case of textile manufacturers and clothing retailers.

A fair-trade deal for SMEs must have reciprocal duty-free access for goods and services and trade balanced to expand competitive market opportunities for the three NAFTA partners.

Mexican SMEs have great limitations that restrict integration and position themselves at the lowest levels of the value chain, mainly due to the competition of US and Canadian SMEs. Thus, technological transfer and economic impact are not the best for the regions where the SMEs are settled. Mexican SMEs explore possibilities to get involved and integrated into international investment, production, logistics, and trade flows, as it has been reported by the analysis of Hernández and Carrillo (2018) on aeronautics companies taking advantage of strategic global market location, availability of resources and capabilities, favorable public policy and administration and local integrators.

However, local SMEs to get insertion and integration into the value chain of the aeronautics sector require to meet several factors (Hernández, 2015) and to overcome barriers related to a vertical integration (Carrincazeaux & Frigant 2007) large investment, dynamics of production and quality issues.

In Baja California, some SMEs counting on access to required resources and capabilities entered the aerospace sector. The study of Hernández and Carrillo (2018) found that SMEs holding a certification may have the capacity to supply

at different levels of the value chain after overcoming the obstacles of meeting the requirements of production and facing the complexity of management.

NAFTA affects employment and jobs in small and medium-sized enterprises that rely on high-volume trade with neighboring partner countries. The death of NAFTA may result in potential vanquish of jobs at the small and medium-sized businesses that rely on trade between the country members. In other words, among the benefits, the SMEs create the needed employment. To address employment, jobs and wages challenges posed by technological developments and macroeconomic policies to EMS, it is not through protectionism but through restraining a robust social safety net through provided by better regulations and strong enforceable labor laws.

SMEs in the dynamic industrial sector offer diversification of products and services for potential and real international markets. However, NAFTA renegotiated should not include increased levels of protection and strengthen the rules of origin by increasing contents requirements for one partner.

The proposal on the rules of origin should be based on North American content to avoid contentions among the countries.

SMEs need to adapt to whatever the changes of the renegotiation details might be which may involve a disruptive flurry of activities. Changes on NAFTA normal as the result of negotiations will affect profoundly the business models of SME due to disruptions on reserves and redundancies to protect against interruptions on the value supply chain. Suppliers supporting the activities of SMEs are being destabilized by the ongoing trade renegotiations giving rise to speculations and doubts on trade policy. To emerge from this period of trade and economic destabilization, SMEs need to have and maintain a strong resolve as well as the capacity to nimble respond managing change out of this tumultuous chaotic situation (Galarneau, 2017)

After renegotiations of NAFTA, the SMEs will need to identify their new consumer markets and to design new business models, new suppliers, logistics and transportation modes of goods, etc.

Stakeholders and public-private partnerships could be involved in the formulation of public policies and influence SMEs regulations to improve and make easier cross-border trade. The public-private partnership is a model that can serve to SME for knowledge sharing and make information accessible such



as the partnerships between MasterCard and IDB Export-Import Bank and the International Trade Commission.

Small and medium-sized businesses are optimistic about the renegotiations of NAFTA despite that prospects turn around their upbeat attitude due to escalating disputes between the proposals of partners. SMEs remain as hot commodities to be sold as they should expand their current business while buyers are willing to pay more. Thus, SMEs to be sold are growing and increasing the median revenue in the marketplace.

On the NAFTA renegotiations, an issue that is a priority for Mexico is the inclusivity of SMEs. Negotiated NAFTA could encourage greater participation by SMEs in trade and boost competitiveness. Transparency for SME and macroeconomic knowledge are potential issues to be developed. A core value of the renegotiated NAFTA should be transparency and accountability of market regulations to expand opportunities of SMEs for public institutional engagement with a proper governance system arrangement to set up the new agreement.

The NAFTA renegotiation should address the effects of the potential impacts of trade on the environment, labor and associated social conflicts such as the proposed environmental reviews of trade agreements (Salzman 2001). The renegotiated NAFTA could state that each country's environmental laws, regulations, and standards must reflect national priorities and preferences to be considered NAFTA-consistent unless a challenge can demonstrate the contrary, with convincing evidence. Therefore, local environmental challenges can remain in all three countries and must be nondiscriminatory. NAFTA renegotiation should draw from the experience of the model developed by the European Union.

## **8. NAFTA RENEGOTIATION SCENARIOS AND PROPOSALS**

Canada and Mexico are already preparing for a post-NAFTA scenario, waiting for some conciliatory signal from the other partner in NAFTA, United States, after the threat of withdrawing from the agreement, but still in dialogue. In fact, both countries are launching to seal new business alliances and negotiating with the Trans-Pacific Partnership and with nine other markets. However,



if United States withdrew from NAFTA, Canada and Mexico are willing to maintain it.

Mexican and Canadian small and medium-sized business need to prepare to an eventual break up of NAFTA. However, trade ministers of the three partners have stated to be committed to “an accelerated and comprehensive negotiation process that will upgrade our agreement and establish 21st century standards to the benefit of our citizens”. (Office of the USTR 2017).

One possible scenario for Canadian SMEs if NAFTA dies, is the resurrection of the Canada-U.S. Trade Agreement while the scenario for Mexican SMEs is to move to the World Trade Organization (WTO) tariffs. In the scenario of ending the NAFTA, Canada has the option to apply the bilateral free trade agreement between Canada and the United States. Resurrecting the Canadian-U.S. bilateral free trade agreement is a limited option for SMEs of both countries since it still requires action from the Canadian Parliament and U.S. Congress. It is hard to imagine passing on an opportunity for SMEs. Mexico has the option to pursue a bilateral agreement with Canada and the United States.

For a small or family-owned business that not have the resources and capabilities to develop some business strategies to survive and grow under the scenario of the NAFTA withdrawal. It is important for SMEs to find ways and establish initiatives for strategic alliances and partnerships to complement business efforts with collaboration among other institutional public and private organizations to maximize competitiveness and efficiency.

In a scenario in which NAFTA continues as an agreement between Canada and Mexico, SMEs from both countries, exporting or importing could operate under the actual tariffs and rules and the challenge could be the transshipment of products and services between Canada and Mexico through the U.S. territory. In this scenario, the U.S., could impose non-tariff barriers, longer inspections at the borders, etc., just to make trade between Canada and Mexico more complex and difficult. U. S. has mused about imposing 20% tariff on imports from Mexico aiming to fund construction of a border wall.

SMEs should design scenarios in front of the potential NAFTA withdrawal and their differentiated impacts on trading among the parties. The scenario should prepare SMEs for the potential end of NAFTA. One of these scenarios, “Just in case Plan” has been designed for the Small Business in Western Canada

establish a committee to promote government procurement and identification of opportunities for training, a business interested in becoming trading partners, development of databases, consultations and other activities related.

Granting access to Canadian sub-federal procurement, US federal government procurement, and Mexican government procurement system is beneficial for SMEs suppliers and providers of goods and services. This granted access to government procurement would provide business opportunities for SMEs, increasing transparency y reducing institutional corruption.

Entrepreneurs and business managers of SMEs will need to design and implement a long-term strategy with short term alternatives to ultimately achieve success in this new world order of trade protectionism (Galarneau, 2017). SMEs have to source the best available data and information to design and implement strategic decisions to face uncertainties.

Regarding the NAFTA renegotiation issues on agriculture-related objectives should be the proposal to establish new regulations for seasonal and perishable products with the corresponding separate domestic industry provisions in antidumping and countervailing duties proceedings Decisions on antidumping and countervailing duties can be challenged through a mechanism to review determinations before an extraordinary challenge committee (ECC).

A major issue for NAFTA renegotiation is the mechanism of Investor-State Dispute Settlement (ISDS) to afford greater protection to domestic and foreign investors. NAFTA renegotiation proposes effective and adequate protection of intellectual property rights.

The proposals for NAFTA negotiations include government procurement practices and opportunities for government contracts to U.S. firms, severely restricting opportunities for Mexican and Canadian companies. Currently, NAFTA prohibits preferential treatment and gives equal access to the three partners companies. Foreign SMEs firms and domestic SMEs have the same rights, protections, and benefits which require national governments to give “fair and equitable treatment”, compel fair compensation for expropriated property (Hufbauer 2016) and challenge discriminatory treatment.

Institutional comprehensive programs and policies are needed to support SMEs to achieve and upgrade potential capacities and develop organizational and technological capabilities, which may be aimed to facilitate access mecha-

nisms that allow them to insert in the integration and internationalization processes of value-added chains. Financial and other programs aimed to strengthen the international trade processes of SMEs are necessary to support these companies that provide important benefits to the economies of the country members of NAFTA.

Workers would like to have higher wages in the case of Mexico, but government considers that the labor policy is a domestic matter and should be excluded the discussion in renegotiations of NAFTA (Quinn and Martin, 2017).

Entrepreneurs and business managers of SMEs will need to design and implement a long-term strategy with short term alternatives to ultimately achieve success in this new world order of trade protectionism (Galarneau, 2017).

The renegotiated NAFTA should be more flexible than the original one in many provisions related to SMEs, including on rules of origin that could soon become obsolete. The new NAFTA has the opportunity to fully take into account the potential development of a vertiginous technological change.

To make an analysis of the main factors involved in the process of NAFTA renegotiation to help the decision and policymakers to meet the challenges posed to SMEs by the recent developments in the economic process of globalization, political power, regional market, fair trade, investment, technological changes, etc., all the stakeholders must be engaged in the design of policy solutions to the difficult and complex challenges confronting the SMEs in the renegotiated NAFTA.

## 9. CONCLUSIONS

NAFTA renegotiation is a good opportunity to realize the economic cooperation relationships among the SMEs of partners as a new habit of a fair-trade strategic partnership in order to take full advantage of all the economic opportunities it has created. The renegotiated NAFTA must facilitate trade by small-and-medium-sized enterprises, considering that these SMEs constitute a majority of exporters in the U.S. and Canada.

NAFTA as the North American free market has given SMEs an unprecedented amount of opportunities and choices that have enabled to realize the critical components of trade liberalization. NAFTA has been largely beneficial to the three country members and should be renegotiated, modernized to reflect

developments and maintained because it is a valuable opportunity SMEs to embolden the gains provided by NAFTA. Focus on issues that sidestepping controversy that make a positive difference for SMEs in the renegotiated NAFTA could create more jobs of quality and provide the workers with more security.

Business leaders, politicians, government officials, business organizations, communities, companies, employees, etc. all should be concerned on the processes of NAFTA renegotiations to expand opportunities on fair trade and environmentally sustainable development.

Provisions in NAFTA renegotiation could be used to modernize it through the deepening of commitments and further cooperation of SMEs addressing all the challenges. All the options should be on the table for modernizing NAFTA through a process of renegotiation, to boost North American competitiveness of SMEs and better address the conditions of international trade, commerce, and investment, challenge regulations for liberalizing and reforming the agreement.

Renegotiation of NAFTA should further advance trade liberalization of SMEs goods and services instead of protecting national trade interests and avoiding regulations that reduce trading opportunities such as more restrictive rules of origin or public procurement requirements.

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# STRATEGY AS AN INSTRUMENT OF SUSTAINABLE DEVELOPMENT OF THE CROATIAN ISLANDS

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## **Abstract**

*The root of social crisis originates in the goals of human activity and the way in which man transforms the natural capital into his private capital. Consequently, alternative ways of development have been looked for, which need to respect the harmony between nature (environment) and the human community. There are various ecological parties in the society such as state, economic entities, and civil society. They may also have their own ecological policy, but they need to act simultaneously in order to achieve the ecological goals of the society. Everything depends on the ecological awareness of the society. When human activities start to affect the natural resources, sustainability acquires social significance. This is the reason why the concept of sustainable development needs to be interpreted both scientifically and professionally and not in accordance with the current interests of different interest groups. Tourism, the*



*driving force of both the Republic of Croatia and its islands, results in intense pressure on its coastal area during the tourist season. Recent law regulations try to align the economic and ecological policy of the state. Consequently, the Croatian Parliament passed the Island Act in order to encourage sustainable development of its islands through the project conducted in accordance with the provisions of the Initiative and the Smart Islands Declaration. Bearing in mind the abovementioned starting points, the center of this thought is recognition and analysis of the present situation in terms of sustainable development of the Croatian part of the Adriatic and implementation of the Smart Islands Declaration. The findings of this paper, as well as some of the subjective opinions, are dedicated to all the interested parties which may find them helpful when looking at certain encouraging but also warning indicators.*

**Keywords:** *strategy, sustainable development, the Smart Islands Declaration, the Republic of Croatia*

JEL Classification: Q01, Q56

## 1. INTRODUCTION

Contemporary lifestyle around the world, unfortunately, triggers an increasing level of violence towards man and nature. Likewise, the aggressiveness of tourism, the most prospective industry of the day, threatens the areas that are relentlessly being exploited. The concept of sustainable development appeared as a compromise solution which, besides further economic growth and development, implies social prosperity and ecological sustainability. The sustainable development of tourism assumes a complete change in the developmental paradigm, i.e. of most of the assumptions which the present development of the Republic of Croatia was based on. Sustainable development indicates the ways and manners of economic development and, when it starts to stall, it needs to be discarded and replaced with other ways and models because keeping the existing ones would lead to harmful consequences for the entire society. In this way, sustainable development is accomplished through the dynamic economy with full employment, economic, social and territorial cohesion, a high degree of education of citizens, a high level of protection of health and environmental protection.

## 2. SUSTAINABLE DEVELOPMENT OF TOURISM

Sustainable development of tourism can be defined as a balanced economic and social tourism and the tourism that is endurable for the environment. Sustainable development of tourism, based on ecological principles, occurs as a contemporary stage of tourism development and the reply to the unsustainability of mass tourism. Sustainable development of tourism meets the needs of tourists and domestic population and at the same time preserves the resources for future development. The concept of sustainable development of tourism is not an “anti-developmental” concept, although it points out the limits of development, which need to be considered when tourism development is considered. Sustainable development of tourism starts from the assumption that resources are limited and searches for a way to define these limits and, in accordance with it, possible boundaries of development (Vujić, 2005, 23).

**Table 1.** Characteristics of sustainable development of tourism

ECONOMIC PROSPERITY	Competitive and cost-effective business activity
	A high-quality source of employment
SOCIAL BALANCE AND COHESION	Tourism which improves the quality of life of the local community
	The involvement of the community in tourism planning and management
PROTECTION OF THE ENVIRONMENT AND CULTURAL HERITAGE	Reduction in pollution and environmental degradation globally and locally
	Tourism which enhances the distinctiveness and diversity of cultural heritage

**Source:** [http://www.rolandberger.hr/media/pdf/rb\\_press/Roland\\_Berger\\_Tourism\\_Croatia\\_20081121.pdf](http://www.rolandberger.hr/media/pdf/rb_press/Roland_Berger_Tourism_Croatia_20081121.pdf), (access 16.03.2019.)

For achieving the long-term sustainability of tourism development, it is essential:

- to understand, recognize and meet the needs of tourists because, if their needs aren't met, they will share the negative implications of their personal experience with everybody around them, which greatly harms the image of the destination
- to provide the prerequisites for a profitable business activity of the subjects on the market;
- to invest in education and training of the employees in tourism at all levels because of the distinct personal contact with guests and the need for educated management, and to insist on the protection and renewal of natural resources as a primary resource of the Croatian tourism;

- ♦ to respect cultural values and diversity of localities and residents, i.e. destinations and their inhabitants, who have a direct benefit from tourism development. Their relationship towards tourism and tourists is vital for the impression a country leaves and it influences the satisfaction of guests and the overall level of tourism benefit;
- ♦ to ensure the continuous active role of a country, which greatly effects the tourist potential of a country through the development of infrastructure, updating the legal legislation, etc. In the long term, it has enormous benefits from tourism development.

The management of sustainable development is increasingly developing when human activity negatively influences the natural processes and sustainable development moves beyond scientific debate and develops as a social process of the 21<sup>st</sup> century (Črnjar & Črnjar; 2009, 82).

### **2.1. FACTORS OF SUSTAINABLE DEVELOPMENT IN TOURISM**

The key factor in the implementation of sustainable development in tourism is certain people, who contribute to it by having different roles and actions. Primarily, these are tourists, whose behavior directly effects sustainability. Tourists also cause numerous kinds of natural disorder, particularly in the animal kingdom (Črnjar & Šverko, 1999, 41). Furthermore, in this category, there are the companies whose business activity relates to tourism, i.e. the employees of these companies who directly or indirectly effect the sustainability because of their need to renovate their facilities for the accommodation of tourists. Construction in tourism is one of the biggest causes of devastation, especially the coastal one, because of the need to organize the free time of tourists including numerous sports and recreational areas for tourists. The local population is one of the factors of tourism development, but it also plays the part in the development of sustainable tourism of a tourist destination in terms of the culture of the local community, which is inevitably and irreversibly being changed by the development of tourism. The local community needs to be able to accept the new inputs, in the case of tourism the tourists, either for a shorter or a longer period and despite this continue to function without social disharmony that these inputs can lead to if the development is not carefully planned (Vujić, 2005, 17). Finally, public services also have a direct or indirect influence on sustainability. All the mentioned types of ecological influences of tourism - both

the ones caused by the organizers of tourism and the ones caused by tourists themselves - are most evident on the homogenous natural localities which are often the most developed and visited in terms of tourism as well, such as traditional coastal and mountain areas, and in those rural zones which have become completely involved in tourism. According to the Developmental Action Plan of the Green Tourism (Institute for Tourism, 2016, 8-10), the most significant influence on the environment is generated when travelling to and from a destination, i.e. by the transport of tourists and the emission of the greenhouse gasses and other polluting agents related to it into the air, water and the sea. Unregulated increase in tourist capacities is a great consumer of the most attractive and valuable space, it generates focused pressures on resources and environmental functions, creates problems in the logistics of the communal services and aesthetically devastates the scenery. Some commonly known examples of excessive construction of the coast can be found in numerous developed tourist destinations of the mass tourism of the Mediterranean and in the last ten years in a growing number of cases of tourist development on the Croatian coast. On one hand, the healthy and attractive environment is one of the basic resources for most kinds of tourism, which means that its preservation is one of the key prerequisites of their competitiveness and sustainability. The Developmental Action Plan<sup>1</sup> (Institute for Tourism, 2016, 13) further proposes that the green practice in tourism has a positive effect on informing and raising awareness of the visitors of the importance and direct experience of the possibilities of the choices and practices that are environmentally more responsible. The green tourism can play an important role in one of the leaders in the transition towards the green economy.

The main instruments and measures for the sustainability or making tourism “greener” include: recognition and appreciation of the aspects of environmental sustainability of the developmental plans in tourism at all levels, from the national to the local level of a tourist destination; plans that appreciate structural capacity by zoning the activity in space and time and, thus, protect the attractive basis, i.e. they don’t allow those tourist activities that degrade the resourceful basis of the area; investment of the public sector in public goods which constitute

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<sup>1</sup> The Action Plan was presented in 2016 and was based on the Developmental Strategy for Tourism to 2020 with the purpose of determining the steps to develop one of the key tourist products in the years that follow. The intention of the Action Plan is to serve as an additional catalyzer to use from the European structural and investment (ESI) funds and Union Programs.

the infrastructure for the green tourism, including the protection and sustainable management of natural and cultural heritage, better waste management, public transport, water management, and the like; creating the surroundings which encourage and support the investment in the green tourist products and making the current tourist products greener, which includes tax reliefs and stimulations for the green investments; integral technical, financial, marketing and administrative support for small and medium-sized enterprises; enabling networking; education; enabling the implementation and providing credibility of the environmental standards; investments of the private sector in making tourist products greener through the investments in the green technological solutions, implementation of the processes and procedures which decrease environmental pressures; monitoring the “sustainability” of the tourist development by using some of the developed standards and indicators of sustainability of tourism at all the levels of service provision in tourism, from the national level and the level of destination to the level of a singular subject; active and adaptive management of the “green” processes by integrated usage of all the mentioned measures and based on the information gathered by a set system of sustainability observation; raising the awareness of tourists of the ways they can contribute to a more sustainable and higher quality tourism. They, the natural and cultural heritage and the community they visit that accommodates them all benefit from that kind of tourism.

## **2.2. SUSTAINABLE DEVELOPMENT AS THE NEW PARADIGM OF TOURISM DEVELOPMENT IN THE REPUBLIC OF CROATIA**

Thinking about the future of a country like the Republic of Croatia is an extremely complex task because it assumes a complete change in the developmental paradigm, i.e. of most of the assumptions which the present development has been based on. The importance of tourism as a social and economic phenomenon has been confirmed by an increasing number of people involved in tourism. The Republic of Croatia, as one of the most significant tourist destinations in the Mediterranean, has a long tourist tradition and outstanding developmental abilities. Its goal is to profile itself as one of the highest-quality tourist destinations of the Mediterranean and Europe. Tourism is one of the most important triggers of economic development in the Republic of Croatia. It, directly and indirectly, generates around 22% of gross domestic product and more than 40% of the overall export, which undoubtedly places it among the key components of the national economy and foreign trade exchange. In the Repub-

lic of Croatia controversies regarding the sustainable development of tourism are still existent, particularly in terms of the right understanding of the concept of sustainable tourism, the readiness to take actions by all the actors because of the sustainable tourism and the development of efficient techniques that could help achieve sustainable development of tourism. There are also many doubts regarding the destination that can be considered sustainable, i.e. which type of travel fits into the standards of sustainability. All the early strategies of the development of the Croatian tourism (since the 1990s) have put emphasis on the development of sustainable tourism.

All the remaining crucial documents are important for the Republic of Croatia and related to a sustainable environment and the development of sustainable tourism (such as the National Environmental Action Plan, Sustainable Development Strategy, Area Development Strategy) place importance to environmental responsibility as well as the sustainable development of tourism. Each of them provides guidelines on the direction that should be taken in order to protect the environment – the primary resource in tourism. Therefore, the Report on the Environmental Situation for the Republic of Croatia<sup>2</sup> (Agency for Environmental Protection, 2014, 86) indicates that the flow of tourists in the Republic of Croatia is still primarily related to coastal counties (96%) and summer months (from June to September). Despite continuous activities for encouraging a more even and balanced regional distribution of tourist flow, these efforts still fail in bringing relevant developments. Therefore, coastal counties still bear the greatest burden. This is especially related to the protected areas of coastal counties, including the specific localities of national parks, which are exposed to growing tourist intensity, which again represents a potential danger for ecosystems of the area but also for the quality and attractiveness of that tourist destination. The vital role will be played by the necessity of a more balanced distribution of the burden on both coastal and continental tourist destinations and the prolongation of tourist season. For this purpose, the abovementioned Report emphasizes, specific programs and measures will be necessary at the national level, which will financially and technically facilitate these developments. The increase in tourist

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<sup>2</sup> In 2014 the Agency for Environmental Protection issued a Report on the Environmental Situation in the Republic of Croatia. The tool used for the creation of the Report was the National List of Indicators although cooperation with the European Agency for Environment, the local level data which are the component part of the Document database of the sustainable development and environmental protection (Report on the Environmental State of the Local and Regional Authorities, i.e. counties and cities) as well as the global examples of best practices (the UN) are also essential.

flow and the characteristics of a specific type of tourism increase the pressure put on the environment. Increased water consumption, increased disposal of wastewater, increased amount of waste, traffic emissions that pollute the air, noise, all of these represent pressure that demands systematic monitoring according to a unique methodology and an obligation for collecting and processing data and defined bearers of responsibility. Only then will the realistic estimation of the level of influence of tourism on the environment will be possible and the creation of guidelines and measures for decreasing this pressure.

**Table 2.** The objectives of the Environmental National Action Plan in relation to the tourist sector

OBJECTIVE	STATUS
The protection of all the potentials of resources and their systematic valorization	There is no single and complete cadaster and atlas of the tourist attractions of the country, nor is there a set accommodation capacity of the most important and sensitive tourist destinations
A balanced development devised on the principle of sustainability	Taking measures through projects and activities for sustainable and balanced development of tourism is encouraged although mainly locally (the county and city level). There are no data on the pressure tourism puts on the quality of the immediate environment, which are essential for achieving this objective
A more significant role in increasing the quality of the immediate environment	Projects and activities for improving and restoring neglected tourist destinations and communal infrastructure, whose initiative and implementation local authorities are competent for, are limited and intermittent. Some tourist destinations are highly successful in this sense. There is no coordinate and intersectoral interdisciplinary approach led by the relevant Ministry

**Source:** [http://www.haop.hr/sites/default/files/uploads/dokumenti/06\\_integrirane/dokumenti/niso/Izvjescje%20o%20stanju%20okolisa%20u%20RH\\_%202009-2012.pdf](http://www.haop.hr/sites/default/files/uploads/dokumenti/06_integrirane/dokumenti/niso/Izvjescje%20o%20stanju%20okolisa%20u%20RH_%202009-2012.pdf) (access 20.03.2019.)

There is the general estimate that the objectives are getting fulfilled partially, meaning that some work is being done related to all the objectives. However, most of the key measures which need a systematic approach are not implemented.

### 3. STRATEGIES AND PRINCIPLES OF THE MANAGEMENT OF THE SUSTAINABLE DEVELOPMENT OF TOURISM

Management of sustainable development is new knowledge and the practice of achieving entrepreneurial objectives, i.e. the ones related to the survival of



man and his life quality. It enters a tourist destination as one of the very important factors of business activity. Sustainable development management implies the initiative and partnership of all the actors at the global, national, regional and local level in terms of the implementation of the spatial and ecological standards. Users of various products and services and a growing number of citizens expect a better relation to sustainable development, which is also increasingly getting used as a competitive advantage of certain tourist destinations (Vujić, 2005, 60). The fact is that the Republic of Croatia hasn't implemented the national campaign for sustainable development yet and that there is a deficit of the professionals for different aspects of sustainable development. Currently, at the county and state level, there is a lack of (Vujić, 2005, 83):

- sustainable development managers, competent for correct methodological and professional guidance of a local authority into the sustainable development process;
- methodological reference books for managing different aspects of the process of sustainable development;
- educational programs for professional employees and chosen representatives in the counties and local authorities, which would help them become acquainted with the principles of sustainability and their role in this process;
- the collections of the indicators of sustainability professionally; with their help we could estimate if the state in certain spheres of lives of our county is improving or deteriorating;
- the scientific and professional core group, which would do a research on the trends and interdependence of various phenomena in a county and suggest the actions that need to be taken in order to change the state for the better, based on the sustainability indicators;
- a point for contact/questions for every domain of the sustainable development – the local authorities have nowhere to turn to when they need advice on sustainability;
- a network of the Croatian, European and global organizations, which promote sustainable development

The most appropriate way to make the general principles of sustainable development take root in practice is to create the presumptions for gaining the objectives of sustainable development. For that purpose, the Ministry of Tourism launched the website "Sustainable Development Croatia" (<http://www.odrzivi>.



turizam.hr) in 2012, which still collects and organizes information relevant to sustainable tourism: from sharing the news and the best practice examples to the database of knowledge and resources. The experience of the most visited countries, including the Republic of Croatia, has shown that looking at the problem of development in tourism solely through economic effects is not enough. Therefore, simultaneously with the development of the awareness of the need for co-existence with the environment, a need for strategic tourism management has been developed as well, which is extremely important because of the development of tourism but also because of the environmental protection and the development quality in general. The importance of strategic management in tourism stems from the fact that the process of enabling and conducting the principles of sustainable development at all the levels of management is long-lived. Strategic management in tourism should make sure that the Republic of Croatia reaches the position of one of the most respectable and successful European destinations in the next 15-20 years. The priorities are a balanced and well-designed development besides the protection of all the resource potentials and their fuller valorization, strengthening, and development of various new types of tourism, better-distributed tourism in terms of time, with the activities available for a longer period throughout a year. Despite the National Strategy of the Environmental Protection and despite the fact that this is one of the prerequisites for integration into Europe, sustainable development is still low on the list of priorities of the decision makers at all the levels – from the local to the national one ([www.mzoiip.hr/doc/strateski\\_plan\\_ministarstva\\_zastite\\_okolisa\\_i\\_prirode\\_za\\_razdoblje\\_2015-2017\\_\\_1.pdf](http://www.mzoiip.hr/doc/strateski_plan_ministarstva_zastite_okolisa_i_prirode_za_razdoblje_2015-2017__1.pdf)). The reason can be found in the weak knowledge of the complex problem of sustainable development in the entire society as well as the misunderstanding of the consequences of uncontrolled development in tourism. The law regulations of the Republic of Croatia are trying to adjust the economic and ecological policy. A certain number of important documents have been issued, which emphasize the need for sustainable development including the sustainable development of tourism. Among them, spatial plans of all levels have specific strength because these documents are binding. Difficulties occur because of the lack of spatial plans, especially at the local authority level, and because of the failure to comply with the spatial plans, where there are ones.

### 3.1. THE “SMART ISLANDS” INITIATIVE- KEY CHALLENGES OF ACHIEVING THE SUSTAINABLE DEVELOPMENT OF THE REPUBLIC OF CROATIA

The most sensitive natural systems of the Republic of Croatia are in the Adriatic Sea, its coast and islands. This is the area where various processes take place, which depends on the mutual influence of the sea and the mainland (Čorić & Debeljak-Rukavina, 2008, 960). The developmental pressures and negative influences on the natural systems are most evident. In that regard, the Adriatic needs to be paid special attention to in terms of its usage and protection. The pressures on the ecosystem of the Croatian part of the Adriatic (polluters such as the overall level of phosphorus and nitrogen, heavy metals, organic and fecal pollutions) are more evident in the vicinity of port cities and large river mouths, but they are also significant in smaller places because of the porous septic tanks and bad sewage system. The rest of the Adriatic has a relatively low level of the pressure caused by the polluters, which is why the state in the Adriatic, in general, is satisfactory. Sanitary quality of the sea on the beaches is high (98.5%), which classifies the Croatian part of the Adriatic into the cleanest maridal areas of the Mediterranean and Europe. During the tourist season, the coastal area and the islands are exposed to extensive pressure. Tourism is the main source of the economic activities of the area, with a constant rise of approximately 3% of tourist a year, which consequently puts huge pressure on the coastal area throughout the tourist season. The main goal of the protection of the Adriatic, its coast and islands is to promote sustainable management of the Adriatic, its coast and islands and to preserve maritime ecosystems by decreasing the intake of waste and foreign microorganisms and pathogens into the sea from all sources of pollution by giving the support to the local communities, especially the inhabitants of the islands but by restricting the influence of economy, tourism in particular, on the environment.

The Smart Islands Declaration, the initiative of local authorities of the islands and other island stakeholders, states that the goal is the development of smart, inclusive and successful island communities for the innovative and sustainable Europe. The Initiative stems precisely from the isolation of islands, which forces them to think about how to enable the optimal usage and management of the resources and how to contribute to the sustainable and balanced development, which will make use of the island potentials (geographical elements, natural and human resources, products). Further on, the “Smart Islands” Initiative advocates

localized activities, which lead to noticeable changes through maximal usage of comparative advantages of the islands, encouraging local growth and prosperity and contributing to the goals of the EU in the field of energetics, climate changes and adjustments, innovations, circular economy, transport and mobility, the blue growth and European digital agenda. European islands have been trying the new forms of sustainable living for years through the innovative inclusive management, which leads to a higher social involvement of all the social groups; further on, through different business models and implantation of new services; through the usage of the most modern technologies for the optimization of the resource and infrastructure management; through educating the population and raising awareness of the visitors about the sustainable development. Through entrepreneurial innovations, which result from the realistic needs, the islands developed a series of examples of the best practices in the field of sustainable local development, setting an example for all the non-island continental communities in Europe and around the world. Next, according to this document, the smart island is defined as an island area which successfully adapts itself to the climate changes combining the decrease in the effects of climate changes and adjustment to them, all with a view to enabling sustainable local and economic development and the rise in life quality of all the inhabitants by means of smart ways of integrated management over infrastructure, natural resources and the environment as a whole, using the information and communication tools and promoting the innovative and inclusive ways of management and funding. The abilities of the “Smart Islands” Initiative would be the result of the natural ability of the islands to develop as specific ecosystems, establishing the balance between the dynamics of movement of their population, availability of resources and the performance of economic activities. For this purpose, the Ministry of Regional Development and European Funds at the conference in 2018 suggested developmental directions for the Republic of Croatia until 2030: a competitive and smart, recognizable, green, connected, safe, inclusive and citizen-oriented country.

The development of smart islands is related to the island areas characterized by sustainable local and economic development and high quality of life as they achieve excellence in several key fields. Besides the abovementioned issues, the key area of intervention is also being mentioned in line with the Smart Island Declaration, so the following can be set: an active participation in the adjustment and mitigation of the climate changes and strengthening the resilience to them at the local level, faster usage of advanced technologies in order to enable

the optimal management and local resources and infrastructure usage, decrease in the usage of fossil fuels by increasing the sustainable usage of renewable sources of energy and energetic efficiency, promoting sustainable ways of mobility on the island including electro-mobility, decrease in the lack and shortage of water using the unconventional and smart way to manage water resources, generating the areas with no waste disposal by promoting the principles of circular economy, preservation of the characteristic natural and cultural capital of the islands, diversification of the economy of the islands by making use of the specificities of the islands when creating the new and innovative local activities, strengthening and promoting the social inclusion, education and citizen support and encouraging the shift to alternative, long-term, sustainable and responsible kinds of coastal tourism and the tourism of the interior of the islands.

### 3.2. KVARNER BAY ISLANDS AS THE EXAMPLES OF SUSTAINABLE DEVELOPMENT AND THE “SMART ISLAND” INITIATIVE

This part of the research paper gives an overview of the island of Rab as one of the centers of the development of the Croatian tourism on its islands and as a recognized tourist attraction, which knows how to respond to the needs of a growing number of tourists besides having the natural beauty as the major factor of tourist flow. Tourist valorization of the island of Rab has already begun at the beginning of the 19<sup>th</sup> century when steamship lines were set up, which used to connect the northern and southern Adriatic.

**Table 3.** Tourist flow of the island of Rab through history

YEAR	ARRIVALS	OVERNIGHT STAYS
1924.	1.224	-
1930.	11.023	123.845
1936.	12.252	124.961
1951.	15.633	139.481
1961.	31.129	324.098
1971.	85.976	842.189
1981.	185.642	1.754.046
1988.	228.684	2.112.298
1996.	113.502	874.201
2005.	215.986	1.550.882
2010.	226.763	1.722.243
2015.	255.633	1.910.485
2018.	292.371	2.212.668

**Source:** created by the authors

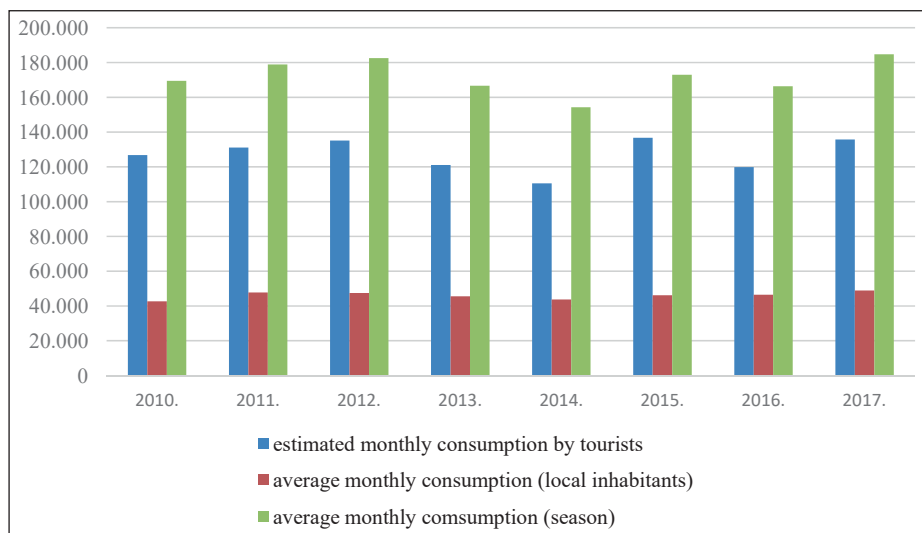
According to the data shown in the table, the development of the number of tourists can be monitored from the moment the records of arrivals began to be kept until the present day. Strictly speaking, the tourism industry and organized arrivals to Rab were possible only when the Italian army of occupation left the island with the signing of the Treaty of Rapallo in the 1920s. Regular growth in the number of tourists from the first records until today can be seen. The period of a light ascent in the 1930s was followed by stagnation in the period between and after the Second World War. After that, there is a regular growth in the number of tourists. In the 1980s this number rises rapidly, and the number of arrivals and overnight stays is identical to the present state. The armed conflict of the 1990s had a detrimental effect on the economy and tourism. Consequently, this period shows a typical fall in the number of arrivals followed by a new ascent at the end of the 20<sup>th</sup> century until today, with the tendency to increase further in the future.

The island of Rab shows a constant in terms of tourist travels, i.e. a continuous rise of tourist arrivals. This situation demands an adequate approach to the issue of the pressures on water resources and enabling enough drinking water for both the permanent and temporary residents who are on the island in the specific moment. In other words, this requires the engagement of the entire community and the cohesion of all the working groups in order to find a useful approach and solution to the issue of water supply for the entire island during tourist season. Constant monitoring of the states and processes in tourism and water supplies needs to be the priority of the governmental authorities of the island in order to respond adequately to the needs and the demand of the temporary and future conditions. The island of Rab has a certain amount of its own supplies of drinking water, which have been used in case of the increased demand, seasonally and during water reductions from the mainland by the southern line of the water supply system. With the increased tourist flow in summer months, the local population resorts to their own supplies almost entirely during the peak of the season, in summer months, when the number of tourists is highest as well as the demand.

Water consumption during tourist season and outside this period can be analyzed following the delivered water data per season from 2010 to 2017. A period outside season is defined as the period starting from January until May and from October until December while a seasoning period is defined as the period from June to September. The average consumption outside the season

for the period considered is approximately 370,000 m<sup>3</sup> of water. Water consumption outside the season never exceeds 400,000 m<sup>3</sup> a year with 2017 being the closest to this number. The average consumption during the tourist season for the period considered is approximately 687,000 m<sup>3</sup>, with a maximum of 738,000 m<sup>3</sup> in 2017.

**Chart 1.** Estimated touristic consumption (m<sup>3</sup>)



**Source:** Vrelo d.o.o. Rab (access 15.04.2019.)

In order to reach the average monthly water consumption of tourists, the average monthly consumption outside the season is deducted from the average monthly seasonal consumption for each year. This kind of approximation of the average monthly consumption of water by tourists ranges at least from the rounded 110,500 m<sup>3</sup> (in 2014) to 135,700 m<sup>3</sup> at most (in 2017). According to that, a conclusion can be reached that the water consumption in tourist season almost doubles, which confirms the fact that the number of tourists is a truly significant factor for supplying the island with drinking water.

**Table 4.** Water delivered per settlement by the water supply system in Rab in 2017 (m<sup>3</sup>)

SETTLEMENT	INVOICED WATER				
	HOUSE HOLDS	%	ECONOMY	%	Σ
Banjol	149.744	66,91%	74.062	33,09%	223.806
Barbat	123.405	89,81%	13.997	10,19%	137.402
Kampor	78.534	52,91%	69.891	47,09%	148.425
Mundanije	27.991	90,82%	2.828	9,18%	30.819
Palit	113.969	66,27%	58.014	33,73%	171.983
Grad Rab	25.372	37,26%	42.727	62,74%	68.099
Supetarska Draga	88.301	86,48%	13.805	13,52%	102.106
Lopar	126.594	52,37%	115.129	47,63%	241.723
Σ / AVERAGE (%)	733.910	65,27%	390.453	34,73%	1.124.363

**Source:** Vrelo d.o.o. Rab (access 15.04.2019.)

The table shows that almost 2/3 of the delivered water is used in households, which can be explained by the fact that family accommodation generates the largest proportion of the tourist overflow (over 50% of the share in terms of overnight stays, followed by the campsites by 19% and the hotels by 17%, while the remainder belongs to the crafts and companies and the non-commercial accommodation). In terms of the overall share of the households, the largest settlements of the island are also the biggest consumers having a significant number of apartments (e.g. Banjol, Lopar, Barbat, Palit) while in terms of the relative share the settlement of Mundanije takes the lead, which is together with the town of Rab the smallest settlement regarding the number of inhabitants. The invoiced water in the economy is primarily related to service activities and the facilities closely connected to tourism, such as hotels/hostels, restaurants, shops, crafts, health institutions, etc. The largest share belongs to the settlements with adequate related infrastructure, and these are Lopar, Banjol, and Kampor. Rab has the relatively highest consumption as the only urban settlement on the island. Considering the permanent inhabitants and the increase in the number of the area users in summer, which exceeds the number of 50,000 a month in relation to the overall population, it is apparent that this concerns distinct seasonal differences in the exploitation of the water resources and imposes the burden on the island area. As sustainable tourism can be defined as the tourism which completely covers the temporary and future economic, social and environmental impacts, takes care of the needs of visitors, environment and destination, the island of Rab consequently needs to strive to enable long-term



harmony of the supply and demand, all of this in the manner that the needs of permanent and seasonal area users are met without much damaging effect on the environment or water supplies. For that reason, considering only water consumption at the height of tourist season, the island of Rab has all the grounds for the implementation of the model of the Smart Islands Initiative.

In March 2017 a delegation of the Croatian representatives, together with the representatives of the other European countries, signed the above-mentioned Smart Island Declaration. The “Smart Island” Initiative extended the focus to water and waste, besides the existing one given to energy, transport and information and communication technology, directly connecting the principles of the circular economy. Despite numerous problems with which the islands face, especially a continuous depopulation, the Initiative is directed towards finding the concrete measures.

In October 2018 the town of Krk hosted the Smart Islands Conference, whose goal was to inspire the development of the local authorities and show that sustainable management in unique environments, such as islands, can have the desirable effect on the social community. The examples from the island of Samso and the island of Bornholm (Denmark) were presented, whose representatives showed how they succeeded in stopping depopulation, organizing the system of circular economy and enabled sustainable life on the islands. The conclusions of the 7<sup>th</sup> Krk Energy Conference as a part of the European Climate Initiative, which took place in December 2018, clearly indicate that the island of Krk has a clear intention to be the first independent and CO<sub>2</sub> neutral island of the Mediterranean.

European Commission’s EU Island Secretariat has recently issued a list of 26 European island communities which are chosen to, with the support of the professionals, initiate the transition towards the clean sources and forms of energy. Among them, six island communities have been singled out, including the Cres and Lošinj archipelago, which will, as pilot projects, be directly assisted in the creation of the energy transition plan. The first public event, a part of this initiative, is the Clean Energy Days of the Islands of Lošinj and Cres, which were marked on 8<sup>th</sup> and 9<sup>th</sup> March 2019. The conference consisted of numerous lectures, discussions, and consultations, which tried to answer many questions related to the energy future of islands. The intention is to include all the stakeholders in the transition process from the fossil fuels to clean energy: public



administration, entrepreneurs, catering professionals, farmers, as well as all the people who can somehow contribute to the energy transition of the island. It was mentioned that Costa Rica is the first country with the zero rates of CO<sub>2</sub> and meets the energy needs from renewable sources for 312 days a year. The island of Samsø in Denmark has already met all the needs for energy from the renewable sources and this is the goal that the island of Krk is hoping to reach until 2030. This year the construction of the biggest Croatian solar-powered power plant is going to start on the island of Cres and the island of Unije is included in the Horizon 2020 European program. The idea behind it is to offer the solution and reply to the economic crisis, investments in the future business activities and development, solutions to the questions of the EU citizens related to their material security and the environment as well strengthening of the global position of the EU in terms of research, innovations, and technologies. The Clean Energy Days of the island of Lošinj and Cres resulted in signing the memorandum, which binds the island representatives to create the Energy Transition Agenda of the islands of Lošinj and Cres in 6 months.

#### 4. CONCLUSION

The biggest problems of the Croatian islands include limited resources, availability, institutional mechanism and dependence on foreign influences. For that reason, the signatories of the Smart Islands Declaration will try to try to enable that the natural abilities of island develop as specific ecosystems, establishing a balance between the dynamics of the movement of its population, the availability of resources and economic activities. The strategy as an instrument of sustainable development of the Croatian islands is particularly necessary for cooperation, support to the island communities and other actors, all with a view to finding the right integrated and sustainable ways of managing the resources and infrastructure that could enable strengthening of the activities of research and development, coordinate investment in projects and improve the life quality on the islands by their implementation. Considering the trends in the application of the environmental sustainability in the Republic of Croatia, a conclusion can be reached that the Republic of Croatia, as a relatively developed tourist destination, follows the global and EU trends and often takes part in the pilot projects which test new tools and practices. In addition, the development of the island of Rab needs to be based on strategic developmental planning and

taking prompt decisions. The effectiveness of the development itself depends significantly on the character of local authorities, which need to stimulate developmental thinking, record problems and constantly serve as initiators of mobilization of all the participants.

The environmental sustainability of the Croatian tourism is to a high degree recognized among the priorities in terms of strategies and plans, although the reality lags behind considerably because of an incomplete integration in the developmental plans, with its still modest share in the overall and diverse offer and the unestablished incentive and stimulating surroundings with all the standard elements such as informing, awareness raising, educating, technical assistance, financial support, networking, promotion, and similar elements.

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# THE IMPACT OF DEREGULATION AND LIBERALIZATION IN THE PHARMACEUTICAL MARKET IN CROATIA AND POTENTIAL STRATEGIC DIRECTIONS OF DEVELOPMENT

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## **Abstract**

*Pharmacy, as the most accessible form of healthcare in primary health care, has experienced numerous changes in the last 30 years, primarily by changing the social order in the nineties, when the market competition was introduced in the pharmacy sector.*

*Major changes of that time have resulted in various proprietary structures within the pharmacy system, which are still visible today, and are one of the main obstacles in defining the strategic directions of pharmacy development.*

*That is particularly visible in terms of business policy, pharmacy service, the profitability of the pharmacy system as well as possible directions for upgrading the pharmacy system.*

*Of course, the influence of liberalization and deregulation should be added to the trends that are present in European countries in terms of pharmacy systems.*

*Croatian pharmacy, both traditional and conservative, has, in certain segments, fallen under the influence of liberalization and deregulation trends.*

*In this paper, we used the primary research presented in the PhD thesis "Strategic Directions of the Pharmacy Development in Croatia", which included all the key actors within the pharmacy system, pharmacist and patient survey and in-depth interviews with key actors within the pharmacy business as well as the interviews with the pharmacists with master's degree in Pharmacy who perform daily pharmacy activity.*

*In this way, we wanted to examine the liberalization and deregulation of the market in terms of ownership structure and liberalization and deregulation affecting the quality of pharmacy services and the availability of medicines to the (end) user.*

*The future model should consider the quality of pharmacy services, drug availability and business sustainability of the model.*

**Keywords:** *pharmacy strategy, liberalization, deregulation, pharmacy, pharmacy ownership structure*

JEL Classification: L10, L43

## 1. INTRODUCTION

Pharmacological methods have been present in Croatia since the country's very beginnings. Since the reign of Rome in Croatia, the production of medicines has been evolving, a claim which is supported by the archaeological findings near Trogir, Nin and Benkovac (Grdinić, 1996, p18) where different pharmaceutical equipment was found, and this discovery speaks volumes about the historical standing of pharmacy and its importance to Croatian society.

However, with the many changes of societal organization, the entire pharmacy profession is also being transformed, which is highly noticeable during the last few decades, especially when it comes to its relationship with the State. The State, of course, remains the most significant factor in health care's organization, and its role is being further transformed by the introduction of private market elements. Along with the transformed role of the State, tendencies for re-organization within the health care systems are also present, mostly in regard to decentralization and privatization. (Kovač, 2013, p561)

The huge changes that are taking place in the health care sector have affected pharmacy as well, which needs to be adjusted to accommodate these new trends. It is especially true in the pharmaceutical industry upon which pharmacy largely depends, and, according to Barbić, these changes are coming, and these conditions in the industry will differ drastically from those of a decade ago. Amid the unfavorable economic conditions, the acceleration of pharmaceutical expenses has slowed, impacting the overall expenses of the healthcare industry. Conditions in the domestic market in comparison with the world

market are even more challenging, especially regarding the high accumulated expenses of health care. (Barbić T, 2013, p3)

For all these aforementioned reasons, it is important to emphasize the role of pharmaceutical services, which some of the authors define as following: "Service is an activity or a benefit that one side can offer to another, it is mostly intangible and it does not result in ownership of anything. Its role can, but it doesn't have to be, connected with a tangible, physical product." (Kotler & Armstrong, 1991, p603)

With that segment in mind, the development of pharmaceutical services needs to be properly perceived as it becomes the focus of the pharmaceutical activities, unlike in previous times when the focus was medication. Especially so when we know that pharmaceutical workers are the most available health care workers, which is confirmed by data that shows that the EU currently has 154.000 public pharmacies. Thus, they are the most widespread health care facilities in Europe, employing more than 400 000 pharmacists (highly qualified health care workers) and 600 000 secondary employees. (<http://www.hljkc.hr/Portals/0/BLEUPRINT-HR-final-10-07-2013.pdf>)

The role of the pharmacist is becoming more and more complex - current literature highlights the multifaceted role of the community pharmacist. Evidence of the effectiveness of community pharmacy/ community pharmacist interventions exists for lipid, diabetes, and hypertension management and for preventive services such as weight management, osteoporosis prevention, and flu immunization services. (Pradeep et al, 2010, p866)

However, according to some studies, a complete liberalization and deregulation of the industry, as well as a complete transition of the pharmaceutical activities to the marketplace is not the best solution: The community pharmacy sectors should not be left to market forces alone. As part of the health care system, which is not a standard commodity market, the pharmacy sector should be supported by a sound regulatory framework for community pharmacies, supporting them as they fulfill their key tasks (i.e. providing safe medicines to patients, counseling and advice, involvement in health promotion and prevention). A focus on merely optimizing retail sales should be avoided.

We will look at it in the following text, at the example of the Croatian pharmaceutical market, and the possible models of development of pharmaceutical

services in the perspective of deregulation and liberalization, as well as possible directions of development.

## 2. PHARMACY IN CROATIA

The health system develops along with the development and progress of the community. Due to its complexity, special attention should be paid to achieving appropriate models of system management and financing as well as ultimate customer satisfaction. These concepts are often conflicted because on one hand there is patient pressure for a better, faster and more efficient and modern health service, while, on the other hand, the management structures seek to rationalize ever-growing financial burden all modern systems suffer from. The great progress in medicine over the last couple of decades has also brought demands for greater financial expenditures for health systems.

Pharmacy system in the Republic of Croatia is an integral part of the general health system. Pharmacy system, as a part of the healthcare, is of particular interest to the Republic of Croatia and is performed as a public service at the primary, secondary and tertiary level of health care. Primary health care is performed in pharmacies which are established as pharmacy facilities or private practices. At the secondary and tertiary healthcare level, there are hospital pharmacies. Pharmacy is the most accessible healthcare form at the primary healthcare level, and it is carried out by highly qualified people, i.e. pharmacists with a master's degree.

Changes in social organization in the nineties led to changes within the pharmacy system. The competition was introduced and with it the possibility of privatizing the existing ones, i.e. opening new pharmacies, resulting in different ownership structures within the pharmacy system, which is also one of the main stumbling blocks in defining the pharmacy development strategy.

Croatian pharmacy, traditional and conservative, is slowly changing but the change is disorganized due to the lack of a clear vision and objective.

Therefore, it is necessary to investigate the effects of the liberalization of the pharmacy market in terms of ownership structure as well as the effects of the liberalization on the quality of pharmacy services and the availability of the medication to the (end) user. Furthermore, it is necessary to consider the importance of the pharmacy network especially in relation to the number of

MAs and their ability to process the prescriptions in a quality and expert manner. Particular emphasis needs to be placed on the importance of education and its impact on the quality, comprehensiveness of pharmacy services and their impact on business results.

### 3. THE EFFECT OF DEREGULATION AND LIBERALIZATION ON THE USERS OF THE PHARMACY SERVICES

In order to be able to better respond to the issues the pharmacy system faces in terms of deregulation and liberalization, it is necessary to first examine the existing opinion of the users, who are the main reason of the existence of the system.

The methodology used for quantitative research carried out on the patients was *online* interviewing, i.e., interviewing via e-mail; the link for filling out the questionnaire was sent to e-mail addresses of participants. Patients who were beneficiaries of pharmaceutical services were the key participants within the pharmaceutical system, therefore their opinions are significant for determining the efficiency and the quality of the pharmaceutical system. For processing their answers, that is, processing data gathered through research carried out with them, we utilized multivariate analysis techniques, as well as other techniques that were convenient, such as SPSS and Microsoft Office Excell apps/software.

It is especially so regarding the availability of pharmacy services as well as the quality of services provided.

Therefore, the respondents were asked to express a certain degree of agreement with the statements. Majority of respondents (80%) agrees or strongly agrees with the first statement that "In my place of residence there is an adequate number of pharmacies and all drugs are available". To be more exact, 13% of respondents strongly agree with the statement and 67% agree, which leaves 10% of respondents who neither agree nor disagree and zero respondents who strongly disagree. Furthermore, there is a larger percentage of women who agree with the statement than men, 78.8% of women compared to 54.2% of men. Also, there is a slightly higher share of respondents from Zagreb and Split who agree with the statement in comparison to other respondents who have differ-



ent place of employment – 75% from Zagreb; 71% from Split and 65% from other places of employment.

Regarding the second statement that “The pharmacist spent adequate time to advise me and explain everything I need to know when giving me the prescribed medication and therapy” there is a slightly lower level of agreement, 65%. Thus, only 9% of respondents strongly agree with the statement, while on the other hand many respondents answered neither agree nor disagree – 23%; 11% disagrees, and 1 respondent strongly disagrees. The gender differences in responses to the second statement are not significant. Also, the share of respondents with secondary vocational qualifications (SSS), high-skilled workers (VŠS) and unskilled workers (NK-KV) who agree with the statement is slightly higher (58.5%) than the share of respondents with tertiary education (VSS) or MA degree (54.5%), even though they are not as numerous – 41% compared to 59% of respondents. The results are presented in Table 1.

**Table 1** Opinion on statements

		Total Male	Sex		Age		Place of employment				Education	
			Female	18-40	41 and over	Zagreb	Split	Other	N/A	SSS, VŠS (+ NK-KV)	VSS, mtr. sc.	
There is an adequate number of pharmacies in my place of residence and all medication is available.	Disagree	10.0	14.6	5.8	10.0	10.0	12.5	3.2	10.0	23.1	14.6	6.8
	Neither agree nor disagree	10.0	18.8	1.9	11.4	6.7	0.0	16.1	12.5	0.0	12.2	8.5
	Agree	67.0	54.2	78.8	65.7	70.0	75.0	71.0	65.0	53.8	65.9	67.8
	Strongly agree	13.0	12.5	13.5	12.9	13.3	12.5	9.7	12.5	23.1	7.3	16.9



The pharmacist (mag. pharm.) spent adequate time to advise me and explain everything I need to know when giving me the proscribed medication and therapy.	Strongly disagree	1.0	0.0	1.9	1.4	0.0	0.0	0.0	0.0	7.7	0.0	1.7
	Disagree	11.0	10.4	11.5	14.3	3.3	18.8	12.9	10.0	0.0	7.3	13.6
	Neither agree nor disagree	23.0	25.0	21.2	21.4	26.7	18.8	22.6	27.5	15.4	24.4	22.0
	Agree	56.0	54.2	57.7	54.3	60.0	56.3	48.4	57.5	69.2	58.5	54.2
	Strongly agree	9.0	10.4	7.7	8.6	10.0	6.3	16.1	5.0	7.7	9.8	8.5
Total	Number of respondents (N)	100	48	52	70	30	16	31	40	13	41	59
	Share of Respondents (%)	100.0	48.0	52.0	70.0	30.0	16.0	31.0	40.0	13.0	41.0	59.0

Note: N/A (no answer - not applicable) designates questions that were not answered or answers not related to question, i.e. the respondents misunderstood the question so the answers cannot be used

Source: Mihanović, A., 2019.

The next question respondents needed to answer was related to the time it took for the MA pharmacist to advise them and explain in a quality manner everything related to the medicine and therapy prescribed to them. The largest number of respondents said it took up to 3 minutes, 49%. 29% of the respon-

dents stated it took up to 5 minutes for the pharmacist to explain everything related to the medicine, while 16% said it took pharmacist less than a minute and up to a minute to provide all the necessary information. A significantly higher percentage of women (32.7%) in comparison to men (22.9%) answered it took pharmacist up to five minutes to provide information. 4.2% of men and zero women said it took pharmacist more than 10 minutes to provide the necessary information. Apart from that, a significantly higher percentage of respondents of tertiary and graduate education stated it took pharmacist less than 3 minutes to provide information, while 19% of respondents of secondary education and high-skilled workers stated the same. 2% of the latter group stated it took pharmacist more than 10 minutes and 3% it took him/her up to 10 minutes to provide the necessary information. The results are presented in Table 2.

**Table 2** How much time do you think it takes the pharmacist (mag. pharm.) to advise you and explain in an adequate manner everything related to the medicine and the therapy you is proscribed?

	Total	Sex		Age		Place of employment				Education	
		Female	18 – 40	41 and over	Zagreb	Split	Other	N/A	SSS, VŠS (+ NK-KV)	VSS, mtr. sc	
Up to 1 minute	16.0	18.8	13.5	17.1	13.3	25.0	16.1	12.5	15.4	5.0	11.0
Up to 3 minutes	49.0	47.9	50.0	50.0	46.7	50.0	48.4	47.5	53.8	19.0	30.0
Up to 5 minutes	28.0	22.9	32.7	27.1	30.0	25.0	29.0	27.5	30.8	12.0	16.0
Up to 10 minutes	5.0	6.3	3.8	4.3	6.7	0.0	3.2	10.0	0.0	3.0	2.0
More than 10 minutes	2.0	4.2	0.0	1.4	3.3	0.0	3.2	2.5	0.0	2.0	0.0
Number of respondents (N)	100	48	52	70	30	16	31	40	13	41	59
Share of respondents (%)	100.0	48.0	52.0	70.0	30.0	16.0	31.0	40.0	13.0	41.0	59.0

Source: Mihanović, A., 2019.

#### 4. THE IMPORTANCE OF SERVICE AND THE AVAILABILITY OF MEDICATION AS SEEN BY THE PHARMACISTS

Pharmacists with MA degrees, as the backbone of the pharmacy as the profession, are best acquainted with the existing pharmacy system, i.e. its qualities as well as its shortcomings and the prospects of progress. It is important to emphasize that due to different ownership relations in pharmaceutical institutions there are different views of the future of pharmacy, especially because numerous owners are not of the medical profession. Therefore, the great importance of the future of pharmacy lies within the hands of pharmacists with an MA degree in pharmacy and their attitudes.

The methodology used for quantitative research carried out on pharmacists with a master's degree was *online* interviewing, i.e., interviewing via e-mail; the link for filling out the questionnaire was sent to the e-mail addresses of participants. Along with patients, pharmacists with a master's degree, i.e. pharmacists, are the key participants within the pharmaceutical system and their opinions are of crucial significance for determining efficiency and the quality of the pharmaceutical system. For processing their answers, that is, processing data gathered through research carried out with them, multivariate analysis techniques were used on them too, as well as other techniques that were convenient, SPSS and Microsoft Office Excell apps/software, for example. On the basis of the result analysis, Ph.D. students synthesized the basic techniques and opinions of the pharmacists with master's degrees. The research was carried out with the intent of obtaining a detailed quantitative and partially qualitative insight into the state of the pharmaceutical market in all its aspects.

When asked whether the pharmacy market should be liberalized, majority, i.e. 96.2% answered no, that medicine should only be available in pharmacies.

**Table 3** Do you think pharmacy market should be liberalized?

	Total Male	Sex		Age		Place of employment		
		Female	23 – 45	46 and over	Zagreb	Split	Other	
Availability of medicine solely in pharmacies	96.2	100.0	96.7	97.3	96.4	91.7	100.0	98.3
Availability of medicine in pharmacies and specialized stores	2.9	0.0	3.3	2.7	3.6	8.3	0.0	1.7
Availability of medicine in stores (consumer goods)	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of respondents (N)	105	13	90	73	28	24	18	60
Share of respondents (%)	100.0	12.6	87.4	72.3	27.7	23.5	17.6	58.8

**Source:** Mihanović, A., 2019.

Next, the respondents were required to express the degree of agreement with the statements, expressing it numerically from 1 to 5, 1 being *I strongly disagree* and 5 *I strongly agree*. The majority of respondents agrees or strongly agrees with medicine being accessible to the wider population – 85.7%. Only 5.7% disagree or strongly disagree with the accessibility of the medication. Equally to that, there are only 5.7% of respondents who agree to some extent that the existing health service in pharmacies is adequate and professional, while 81.9% agrees or strongly agrees with that statement. 12.4% of respondents neither agree nor disagree, while there aren't any respondents who strongly disagree. The last statement is "There is an adequate ratio of pharmacists and prescriptions in each unit to be able to provide quality and adequate accessibility of medication". Only 68.2% of respondents agree or strongly agree with that statement, 16.3% neither agree nor disagree, and 15.4% disagree or strongly disagree.

**Table 4** Statements, part 1

		Total Male	Sex		Age		Place of employment		
			Female	23 – 45	46 and over	Zagreb	Split	Other	
Medication is inadequately accessible to a wide population	I strongly disagree	1.9	0.0	2.2	1.4	3.6	4.2	0.0	1.7
	I disagree	3.8	0.0	3.3	4.1	0.0	4.2	0.0	3.3
	I neither agree nor disagree	8.6	7.7	8.9	11.0	3.6	12.5	5.6	8.3
	I agree	52.4	53.8	52.2	47.9	64.3	29.2	66.7	58.3
	I strongly agree	33.3	38.5	33.3	35.6	28.6	50.0	27.8	28.3
The existing health service is professional and of high quality.	I disagree	5.7	0.0	5.6	4.1	7.1	16.7	5.6	0.0
	I neither agree nor disagree	12.4	15.4	12.2	13.7	10.7	8.3	5.6	16.7
	I agree	61.9	61.5	63.3	63.0	60.7	66.7	61.1	61.7
	I strongly agree	20.0	23.1	18.9	19.2	21.4	8.3	27.8	21.7
There is an adequate ratio of pharmacists and prescriptions in each unit to be able to provide quality and adequate accessibility of medication	I strongly disagree	1.9	0.0	2.2	2.8	0.0	8.3	0.0	0.0
	I disagree	13.5	38.5	10.1	12.5	17.9	16.7	16.7	11.9
	I neither agree nor disagree	16.3	7.7	16.9	16.7	10.7	16.7	5.6	16.9
	I agree	44.2	30.8	47.2	44.4	50.0	33.3	55.6	47.5
	I strongly agree	24.0	23.1	23.6	23.6	21.4	25.0	22.2	23.7
Total	Median (M)	3.75	3.38	3.80	3.74	3.75	3.50	3.83	3.83
	Number of respondents (N)	104	13	89	72	28	24	18	59
	Share of respondents (%)	100.0	12.7	87.3	72.0	28.0	23.8	17.8	58.4

**Source:** Mihanović, A., 2019.

The respondents were also required to give their opinion on how many prescriptions a pharmacist can process during his/her shift if all the conditions and regulations are respected. 48.8% of respondents answered between 81 and 120, 40% stated the number is between 50 and 80, while only 2.9% of respondents answered between 161 and 200.

**Table 5** How many prescriptions a pharmacist can process during his/her shift if all the conditions and regulations are respected?

	Total Male	Sex		Age		Place of employment			
		Female	23 – 45	46 and over	Zagreb	Split	Other		
50 – 80	40.0	38.5	41.1	46.6	25.0	50.0	44.4	36.7	
81 – 120	48.6	46.2	47.8	45.2	53.6	41.7	55.6	48.3	
121 – 160	8.6	7.7	8.9	6.8	14.3	8.3	0.0	11.7	
161 – 200	2.9	7.7	2.2	1.4	7.1	0.0	0.0	3.3	
	Number of respondents (N)	105	13	90	73	28	24	18	60
	Share of respondents (%)	100.0	12.6	87.4	72.3	27.7	23.5	17.6	58.8

**Source:** Mihanović, A., 2019.

Next, the respondents were asked to express agreement with certain statements by grading the statements from 1 to 5, where 1 is *I strongly disagree* and 5 *I strongly agree*. It does not surprise that 97.1% of respondents believe that “Investing in the education of pharmacists and quality of the service leads to better business results”. There are not any significant deviations among groups of respondents divided by sociodemographic features when it comes to this statement. The majority of respondents, i.e. 86.7%, disagrees or disagrees strongly with the statement: “The compensation for pharmaceutical services determined by the Croatian Health Insurance Fund is adequate to cover all the necessary costs of pharmacies”. The respondents are divided in opinion when it comes to the third statement in this group: “The amount of compensation for pharmaceutical services should be differentiated according to the place of issue of the medication.” 27.6% agree with the statement, but 31.4% disagree. Also, 8.6% of the respondents strongly agree with this statement, but 10.5% strongly disagree. Furthermore, there is a significant number of respondents who neither agree nor disagree – 21.9%. Still, it is clear that a slightly higher number of respondents disagree with this statement. Finally, the fourth claim states: “The higher number of pharmacies would increase the quality of service”. Majority of respondents believe that not to be the case – 73.4% answered they disagree or strongly disagree. Altogether, only a small percentage of respondents agree with that statement – 14.3%.

**Table 6** Opinion on statements, part 2

		Total Male	Seks		Age		Place of employment		
			Female	23 – 45	46 and over	Zagreb	Split	Other	
Investing in the education of pharmacists and quality of the service leads to better business results.	I strongly disagree	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	I disagree	1.0	0.0	1.1	1.4	0.0	0.0	0.0	1.7
	I neither agree nor disagree	1.0	7.7	0.0	0.0	3.6	0.0	0.0	1.7
	I agree	34.6	46.2	33.7	25.0	60.7	20.8	38.9	39.0
	I strongly agree	62.5	46.2	65.2	73.6	35.7	79.2	61.1	57.6
The compensation for pharmaceutical services determined by the Croatian Health Insurance Fund is adequate to cover all the necessary costs of pharmacies.	I strongly disagree	45.7	53.8	45.6	41.1	64.3	50.0	11.1	55.0
	I disagree	41.0	23.1	43.3	46.6	21.4	37.5	66.7	35.0
	I neither agree nor disagree	11.4	23.1	8.9	9.6	14.3	8.3	22.2	8.3
	I agree	1.9	0.0	2.2	2.7	0.0	4.2	0.0	1.7
The amount of compensation for pharmaceutical services should be differentiated according to the place of issue of the medication (rural areas, urban areas).	I strongly disagree	10.5	7.7	11.1	12.3	7.1	16.7	0.0	11.7
	I disagree	31.4	23.1	32.2	34.2	25.0	25.0	55.6	25.0
	I neither agree nor disagree	21.9	15.4	23.3	20.5	28.6	16.7	27.8	23.3
	I agree	27.6	30.8	26.7	27.4	25.0	29.2	16.7	30.0
	I strongly agree	8.6	23.1	6.7	5.5	14.3	12.5	0.0	10.0
The higher number of pharmacies would increase the quality of service.	I strongly disagree	26.7	38.5	25.6	21.9	39.3	25.0	16.7	30.0
	I disagree	46.7	46.2	45.6	43.8	50.0	37.5	38.9	51.7
	I neither agree nor disagree	12.4	7.7	13.3	15.1	7.1	16.7	11.1	11.7
	I agree	13.3	0.0	15.6	17.8	3.6	20.8	27.8	6.7
	I strongly agree	1.0	7.7	0.0	1.4	0.0	0.0	5.6	0.0
Total	Median (M)	2.15	1.92	2.19	2.33	1.75	2.33	2.67	1.95
	Number of respondents (N)	105	13	90	73	28	24	18	60
	Share of respondents (%)	100.0	12.6	87.4	72.3	27.7	23.5	17.6	58.8

**Source:** Mihanović, A., 2019.

The information from the survey indicates pharmacists believe there is a sufficient ratio of professionals and prescriptions in their facilities to provide professional and quality availability of medication. The higher number of pharmacies would not affect the quality of the service, but investment in education

and quality pharmaceutical services would lead to better business results. On the other hand, pharmacists do not think the compensation for pharmaceutical services determined by the Croatian Health Insurance Fund is adequate to cover all the necessary costs of pharmacies. Finally, almost all pharmacists (mag. pharm.) believe that the pharmacy market should not be liberalized and that medication should only be available in pharmacies.

## 5. CONCLUSION

This paper confirmed that the existing model in pharmacy is, though in significant part corresponds to the needs of society and health care, however, in certain segments, requires certain modifications.

Observing other pharmaceutical systems and pharmacy management, we can point out that not every change which led to liberalization and deregulation has brought the expected positive changes. Croatian pharmacy system, traditional and conservative, did not follow the trends strongly, even though there was a certain pressure. With this time lapse, we can argue that such a decision was the right one. Nowadays, in the neighboring countries, there are some contradictory trends regarding the reestablishment of certain rules and regulations from the time before deregulation and liberalization.

Croatian pharmacy needs to maintain the existing model and its positive features, but it is also apparent from the research that the model needs modifications as well.

First and foremost, pharmacy system needs to be seen as an integral part of the health system, i.e. the quality and the professional work need to be priorities because, as we have emphasized in the previous chapters, the health system as a regulated profession is an integral part of the society, and its importance can only be measured through direct financial effects. It is, therefore, necessary to set a personnel minimum as well as the time period needed by a pharmacist to do his/her work in a professional manner. It is apparent in this study that almost 90 percent of respondents believe it is possible to process from 50 to 120 prescriptions in one shift, i.e. the arithmetic mean of all subjects would be 92 prescriptions per shift. Also, as the survey indicated, most respondents believe that one of the most important criteria when determining the norm should be the time normative per the prescription. If we know that the shift lasts seven



and a half hours, we can easily come to the conclusion that the average time needed by a pharmacist to provide the patient with a quality and professional service is 4.9 minutes per prescription. Turning this calculation into practice we would not only enable professional and regulated work but also equalize the criteria in pharmacies because the current legal solutions make it possible for a single pharmacist to work in a particular pharmacy no matter the number of prescriptions and patients he/she needs to handle within a single shift. This would also enable avoiding malformations currently occurring in practice, where sometimes because of the enormous workload unauthorized persons issue medication and advise patients.

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- Zakon o lijekovima NN 76/13, 90/14



HUMAN  
RESOURCES  
MANAGEMENT



# MOTIVATION AS THE KEY FACTOR OF SUCCESSFUL MANAGERS - REVIEW OF TECHNIQUES

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## **Abstract**

*When it comes to motivation, it is more common to talk about what motivates employees than what motivates management. It is assumed that manager motivation is not required to be specifically re-examined since it is expected to be fully aligned with the organizational goals of the company. Motivation is the main precondition for success and good manager image. The manager will only achieve success if his knowledge, skills, and abilities are transformed into concrete actions that are consistent with the business strategy, thus actively contributing to the creation of value for the enterprise (profits, new guests, better image, more successful organization of work), and this is needed strong motivation.*

*The manager decides, contracts, organizes, distributes, creates teams, manages, delegates, motivates, cares about the advancement of associates, manages financial and other resources (space, equipment, time, people, money) carrying*

*out different assignments, informing about business and encouraging economic and technological development. In all of this, it is expected of him to be effective.*

*The effectiveness of a manager is reflected in his/her success, and in order to be successful, he/she must be highly motivated and possess skills such as leadership skills, emotional intelligence, negotiation skills, that will enable him/her to understand and successfully lead people he works with.*

**Keywords:** manager, motivation, success, employees

JEL Classification: M00, O15

## 1. INTRODUCTION

In the modern and fast-paced life of today, every individual aim for satisfaction in both his private and professional life. As the private and professional lives are intertwined with the lifestyle, it is no longer enough for only one of these two components to fulfill all the needs, but the goal is to achieve the balance of satisfaction in both segments. Nowadays, job satisfaction is rarely closely related only to the salary level which is why many managers are looking for different motivational tools and methods.

The objective of this paper was drawn upon the fact that successful organizations have comprehensive and continuous human resource management. One of the main sources of competitive advantage among modern successful organizations is an appropriate selection and motivation of the employees. The organization that invests in human capital and understands its value is recognized as a good place to work and hence becomes more competitive, productive and efficient.

The paper is divided into two major parts – theoretical and empirical. The theoretical part provides a general overview of motivation, different motivational theories, and possible motivational techniques that managers can use. Empirical part gives an overview of the rewarding system in The Sports Facilities Management Institution led by the City of Zagreb.

## 2. MOTIVATION THEORIES

Baldoni (2004) mentioned famous Eisenhower's statement that motivation is the art of getting people to do what you want them to do because they want to

do it. Langton (2000) further elaborates this statement emphasizing that motivated individual achieves organizational goals by showing direction, persistence, and intensity. Motivation can be defined as “a desire to achieve beyond expectations, being driven by internal rather than external factors, and to be involved in a continuous striving for improvement” (Torrington et. al, 2009: 276). This definition explains why people behave the way they behave, and it puts an emphasis on preferences, aspirations, values, and needs of employees as the driving force of the person performance (Erceg and Šuljug, 2016). Those internal motivators differ between employee and it usually depends on the stage of personal development. According to the George and Jones (2007), there are three main parts of work motivation: (i) direction of person’s behavior in an organization; (ii) person’s level of efforts; and (iii) person’s level of persistence when facing obstacles. Bahtijarević-Šiber (1999) stated four characteristics which are influencing motivation in companies: (i) individual characteristics of employees; (ii) characteristics of organization, (iii) characteristics of the job; and (iv) society.

Theories of motivation have resulted from years of research in different sciences (i.e. economy, sociology, psychology, etc.). Gibson (2012) divides theories of motivation into two main categories: the theory of content needs and process theory. Both categories present significant implications for managers due to their participation in the motivational process. Main characteristics of the process theories of motivation and theory of content needs are summarized in Table 1.

**Table 1.** The managerial perspective of content and process theories of motivation

Theory base	Theory explanation	Theories	Management implementation
Content	Oriented to factors within the person who encourages, directs, maintains, or stop a behavior.	Maslow's Hierarchy of Needs	Managers need to be aware of differences in terms of needs, desires, and goals of each person because each individual is unique in many ways.
		Alderfer - ERG model	
		Herzberg's motivation-hygiene theory and dual-factor theory	
		McClelland - Theory of Needs	
Processes	Describes, explains, and analyzes what leads to stimulation, guidance, maintenance or stopping a behavior.	Vroom's expectation theory	Managers need to understand the motivation process and how each individual makes decisions based on their own preferences, awards, and achievements.
		Adams equity theory	
		Skinner's enhancement theory	
		Locke's goal theory	

**Source:** Gibson, et al, 2012: 128

The contemporary employee motivation techniques have been developed gradually, following numerous motivation theories. They are based on different assumptions and they stress different spheres of human behavior. The originator of the motivation theory development was Abraham Maslow and his well-known Hierarchy of Needs Theory (Marušić, 2006: 318).

Maslow's theory contributed to the development of a range of new theories. In order to provide a better understanding of the contemporary perception of an approach to motivation, the following theories are going to be presented in this paper (Marušić, 2006: 321):

- Maslow's theory of motivation
- Herzberg's Two-Factor theory of motivation
- McGregor's Theory X and Theory Y
- McClelland's Motivation Theory
- J. Stacy Adams's Equity Theory
- a contemporary understanding of motivation strategies.

One of the most frequently cited theories of motivation is the Hierarchy of Needs Theory, developed by psychologist Abraham Maslow. Maslow observed human needs in the form of a hierarchy climbing from the lowest to the highest need and he concluded that when one group of needs is fulfilled, this group of needs stops being the motivator. Maslow's hierarchy of needs differentiates between basic and psychological needs. The basic needs include physiological needs and safety needs, whereas the psychological needs include social needs, esteem, and the need for self-actualization. When the basic human needs have been fulfilled, the person strives to achieve higher-level needs (Dassler, 2015: 356)

According to Maslow, the basic and psychological human needs go from the bottom to the top of the pyramid in a certain order (Dassler, 2015: 365).

- ✦ Physiological needs are basic needs required for sustaining human life itself, such as, for example, food, water, warmth, and shelter. Maslow believed that if these needs are not fulfilled to the point enough to sustain life, other needs will not motivate people.
- ✦ Safety needs are needs for security against physical harm and needs for freedom from the fear of loss of employment, property, food or shelter.
- ✦ The needs for affiliating or belonging consider the fact that people are social beings who have a need to connect with and be accepted by other people.
- ✦ The need for esteem occurs, according to Maslow, when people have satisfied their needs for connecting. They then try to gain respect from other people, but also self-esteem. This kind of need creates satisfactions such as power, reputation, status, and confidence.
- ✦ Maslow considers the need for self-actualization to be the highest need in his hierarchy of needs. This is a desire to achieve what one can become, to maximize one's potential and achieve something.

Frederick Herzberg built on Maslow's theory, but he modified Maslow's theory to a great extent. He believed that the attitude a person has towards their job defines how successful they will be at it. After conducting research, he realized that people who felt bad at work provided different answers than people who felt good at work.



Herzberg concluded that different factors have a different impact on job satisfaction and job dissatisfaction and that the opposite of satisfaction is not dissatisfaction but a lack of satisfaction, while the opposite of dissatisfaction is a lack of satisfaction.

After framing the theory like this, Herzberg broke the work components down into the ones that cause dissatisfaction and the ones that increase the workers' satisfaction and motivate them. He called the factors that cause dissatisfaction hygiene factors and the factors that cause satisfaction, motivators (Dassler, 2015: 370).

Herzberg categorized salary, physical working conditions, security of employment and similar to the hygiene factors, and he categorized factors connected to work itself or its results as the motivators. Therefore, he considered motivators to be promotion, recognition, responsibility and so on.

In short:

- ♦ maintenance factors
  - are not motivators, but their absence results in dissatisfaction
  - are considered to be company policy, administration, working conditions, status, salary and similar
- ♦ motivators
  - cause satisfaction but their absence does not result in dissatisfaction
  - are considering to be a challenging job, achievements, responsibility, advancement, recognition.

It is important to emphasize that Herzberg, in his Two-Factor Theory, set certain hypotheses that imply an immediate connection between satisfaction and success at work – in addition to the factor of satisfaction, he referred to the factors of work motivation and work behavior.

The originator of Theory X and Theory Y is Douglas McGregor. He observed people from two completely opposing points of view. The first one is negative, which he called Theory X, and the second one is positive, named Theory Y. Depending on what the employees are like, the manager should adapt to them, which means adapting the methods used to motivate them (Marušić, 2006: 326).

Theory X observes people as individuals who dislike work and thus avoid it. The managers, in this case, have to constantly supervise the workers and threaten them with punishments. The theory further defines that workers avoid any kind of responsibility and that they like formal instructions. In addition to all this, the workers are, according to Theory X, considered to have no ambition and to place their own security in the first place.

Unlike Theory X, Theory Y looks at workers from a completely different perspective. According to Theory Y, workers find work natural and they consider it to be a game or a kind of rest. Managers should not direct and control workers if the workers are committed to the objectives. Workers like to take on responsibility and they like to come up with innovative solutions on their own.

According to McGregor, the workers from Theory X place Maslow's lower-ranking needs in the first place, while the Theory Y workers find higher-ranking needs more important (Marušić, 2006: 326).

In the 1960s, McClelland set the framework for the motivation theory called McClelland's Acquired Needs Theory, under which he defined three types of basic motivational needs (Certo et al., 2008., 388):

- ✦ the need for power
  - people who feel the need for power give great importance to influence and control
  - they aspire to the positions of leaders, they are good speakers, prone to discussions, open, stubborn and demanding, they enjoy teaching and performing in public
- ✦ the need for affiliation
  - people who feel the need for affiliation are content if they are loved and they do not want to be cut out from the group
  - they enjoy the feeling of intimacy and understanding, they are ready to help and provide consolation
- ✦ the need for achievement
  - they have an intense need for success, but also an intense fear of failure
  - they set difficult goals for themselves and they like to work a lot.

The importance of Adams's Equity Theory lies in the emphasis it puts on the perception of people. If they are treated (un)fairly, this significantly affects their motivation and performance and it can lead to changes in behavior. An

important factor of motivation is everyone's subjective judgment of the fairness of their reward in relation to the other members of the organization. In this context there are:

1. an unfair reward
  - ✦ results in dissatisfaction reduced output or even leaving the organization
2. a fair reward
  - ✦ the same level of output is maintained
3. a more than fair reward
  - ✦ results in harder work and the reward is given in advance

### 3. TECHNIQUES OF MOTIVATION OF SUCCESSFUL MANAGERS

Employee motivation is one of the techniques used in human resource management. The purpose of employee motivation is primarily to reach the objectives of the company but the techniques that are to be applied depend on a manager's decision. Managers usually base their decision on relevant assessment of the motivation method, hence choosing the method that will achieve the best effect – a satisfied employee (Varga, 2011).

The problems in motivating employees usually occur because of the different personal characteristics of each employee. In order for a higher level of motivation to be achieved, each employee needs a separate and custom approach

Therefore, a manager cannot use the same motivation technique for all employees, which means a manager needs to be able to use and apply different techniques. Managers are advised to apply the following motivation techniques (Omazić et al., 2011):

- ✦ material compensations,
- ✦ non-material motivators.

Material or financial compensation is composed of different forms of motivation, all aimed at ensuring and improving the employees' material position and providing financial compensation for their work. This is mostly related to money received by the employee, but it can also refer to indirect material gains that contribute to the rise in the employees' material standard and which are

not included in the salary nor given in any monetary form (bonuses, covered relocation expenses, legal services and similar). Considering that not all employees have the same preferences, a flexible compensation program is usually used, which enables the employees to select a type of compensation which suits them the most, thus raising the awareness of being taken care of and in turn achieving that they are loyal to the organization (Omazić et al. 2011).

Organizations often have an elaborate system of non-material incentives that fulfills various needs of employees. Factors such as development and recognition, appreciation, status, and others have been increasingly important for many people. The non-material motivators are job designing, participating in decision-making, objective-orientated management, flexible working hours, acknowledgment, training and career development and many others. Together with the material motivators, these strategies make a complete motivation system of an organization (Bahtijarević-Šiber, 1999).

Companies which use the precise combination of non-financial and financial rewards are able to motivate employees and strengthen their commitment to the company. Thompson (2002) stated that the total reward system describes the strategy of rewarding that brings components such as learning and development together with the aspect of the working environment. Micander (2010) concluded that purpose of reaching and having total reward is in maximizing the positive impact which a range of rewards can have on the motivation of employees, their job engagement and commitment to the organization. The components of the total reward can be described as in the following Table 2.

**Table 2** The total reward system components

Transactional rewards	Base pay	Total remuneration	Total reward
	Contingent pay		
	Employee benefits		
Relational rewards	Learning and development	Non-Financial/Intrinsic rewards	
	The work experience		

Source: adapted from Armstrong and Brown, 2006: 22

Armstrong and Brown (2006) stated that if there is a wish to achieve internal consistency, then the total reward strategies should be horizontally integrated with human resource activities and vertically integrated with business strategies.

## 4. THE LINK BETWEEN MOTIVATION AND SUCCESSFUL HUMAN RESOURCE MANAGEMENT

Managers are any organization's most important asset and resource. At the same time, since large investments and a lot of time are needed to build a good managerial team, they are also considered to be one of the scarcest resources. During the process of discovering and developing management potential, one should consider candidates' personal, professional, and business qualities such as taking initiative, communication skills, creativity, efficiency, knowledge of management methods, reliability, dedication to the job and the company and so on. Important factors for personality assessment are the ability to lead people and ability to develop positive traits, delegating tasks, communication skills, familiarity with the job, determining planning and organizing skills, assessing co-workers' personal qualities and so on. Numerous techniques are used to determine management potential, such as psychological tests, questionnaires, resumes, colleagues' appraisals, interviews, references and so on. An important presumption for identifying managers' potentials and for selecting managers is determining the scope of a manager's motivation and elaborating the instruments that would serve to measure and identify it. Certain attitudes have been found to contribute to the choice of a managerial career, and these are (Varga, 2011):

- ✦ positive attitudes towards authority and the people that hold the positions of authority
- ✦ need for competition
- ✦ need for proving oneself and for affirmation
- ✦ need for showing the power
- ✦ the need for a prominent position and behavior
- ✦ the need for responsibility and the feeling of responsibility.

A successful manager must have certain competencies and be highly motivated to be able to lead subordinate employees and an organization. Managers' success depends primarily on the extent of their knowledge, their skills, and abilities, which need to be continuously built upon and in line with the trends, both in theory and in practice, and especially within the field of their expertise. Managers' success is visible in their ability to transform their knowledge and

skills into concrete actions with the aim of implementing the organizational strategies and creating values for the company (Sambol, 2009: 40).

It is the task of a manager to lead business operations and to achieve organizational objectives. As one of the aspects of leadership is motivating employees, a manager should, in addition to general and professional knowledge, have certain competencies such as a developed perceptive skill, skills of expressing oneself, analytical problem tackling skills and timely decision-making skills as well as assessment skills. A successful manager knows that his or her knowledge and skills should be constantly upgraded, developed, and innovated. The total presuppositions for a manager's business success include three basic groups of factors that are mutually dependent and related to the working environment. These presuppositions are total working ability, motivation, and emotional intelligence. And as Samobol (2009: 41) stated: "Management is an art".

However, everyone creates their own perception and definition of success and happiness or work satisfaction often form a part of that definition. A successfully performed assignment, or more widely a successful business, means that an individual's or organization's predefined objectives have been met. The individual's success is commonly manifested in the form of advancement, that is, moving or transferring from a previous job position to a better job position which ranks higher in the hierarchy and includes performing more complex tasks. A job well done can be rewarded in the form of public acknowledgment, higher salary, but other forms of rewards can also be used, depending on the interests and motivation factors of the individual who is to be rewarded; for example, paid professional training or specialization, bonuses and similar.

The definition of success is a quick promotion from one position to another, always for the better. Organizations have a tremendous ability to determine the success of their members (Collins, 2002: 190-191).

An individual's success should be publicly acknowledged and, in this way, serve as a motivator to that individual, but also to others in the organization. Companies that can recognize and reward effort, responsibility, creativity, and outstanding commitment invest in individuals by encouraging such qualities and traits through awards. Also, the effect is positive for other employees or for attracting new and talented, staff.

## 5. EMPLOYEE MOTIVATION AND THE REWARDING SYSTEM BY THE MANAGEMENT - THE EXAMPLE OF THE SPORTS FACILITIES MANAGEMENT INSTITUTION

The Sports Facilities Management Institution performs the activities of managing the sports facilities in the City of Zagreb. It was established at the end of 2013 on the basis of a previous institution called Sports Facilities Management, which had been a branch of Zagrebački Holding. The business activities of the institution are the following:

- sports facilities management and maintenance,
- sports training,
- sports recreation.

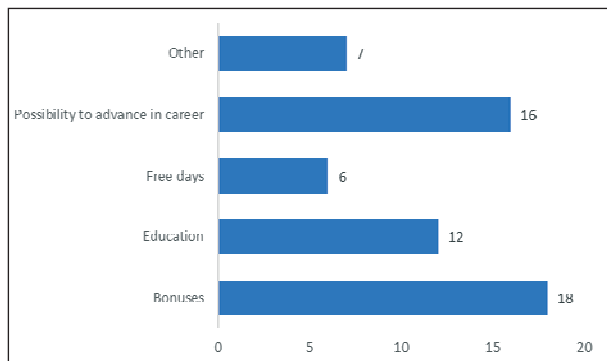
The Institution manages twenty-two economic units that comprise about thirty facilities, most of them having been built for the 1987 Universiade and have since been operational in maximum capacity. Although the sports facilities in Zagreb are faced with virtually no competition, the management is aware of its social responsibility and its development is accordingly directed towards the future. Although there is no competition on the local level, the Institution aims to step out of the local framework and to position itself on the European market. One of the Institution's strategic objectives is to increase its competitiveness in the European market by renovating the sports facilities in order to attract important sports events to Zagreb. The Institution's main strategic objective is to promulgate the sports recreational services among the citizens of Zagreb in such a way that the prices and services remain competitive for all the facilities lessees. This means investing in the staff in order to keep in the Institution the best swimming, skiing and coaches of other sports held in the sports halls of the Institution.

### 5.1. RESEARCH METHODOLOGY AND DISCUSSION

In order to review the utilization of motivational techniques and hence, give recommendation for how to retain and attract quality employees a short questionnaire was created. Questionnaire covered employees from every departments of the company. Altogether 30 employees stated their opinion on what motivate and what demotivate them in their current job position. The

results of this research has showed that almost 30% of employees do not feel motivated. The main demotivation is bad interpersonal relationship, but it was closely followed by injustice at the workplace, an impossibility for advancement in career and unclear working objectives. A working environment was a first component in the motivational side as well, followed by salary, teamwork and working hours. However, when asked about what would motivate them to work even harder the money was more important issue than good working environment (Figure 1). As can be seen in the table the possibility to advance in a career is a strong personal motivator, which, in employees' opinion, is hard to achieve in their organization.

**Figure 1.** What will motivate workers



Source: authors, 2019

Almost all employees agree that organization would be even more efficient and successful if there is a formal motivational program with transparent information and equal opportunities for every employees. However, not all employees believe that such motivational program would succeed primarily because it is a public organization that does not have tradition in validating personal achievements (it does not reward excellence, nor it punishes mediocracy and inefficiency.) Still, employees are aware that in order to be competitive in the European market organization must find a way to acknowledge the importance of human capital and find methods that will motivate employees to be more efficient, productive and successful, at mutual benefits.



## 5.2. MOTIVATION PROGRAMS PROPOSALS

The company currently does not have any formal program for motivation, which, according to respondents, has an impact of overall employee performance. Therefore, set of recommendations are created which are considered to positively affect personal and organizational effectiveness.

- Lifelong learning

Since the expansion and development of a project depend on workers' knowledge, skills and abilities, development of competences are achieved by placing the focus on lifelong learning. Education programs can be implemented at or outside the place of work, through collaboration with education institutions, international bodies, by enrolling in post-graduate studies, participating in research projects, seminars, conferences, workshops, courses and working groups in bodies whose activities are closely related to the Institution's activity, all with the aim of upgrading knowledge, exchanging experiences, recognizing best practices and following sports trends in the world and in the EU. The workers and their competencies, talents, skills, and dedication to work are the most important business factors. Therefore, the institution should constantly be investing in professional development and advancement of such workers.

- Institution Day

The Institution Day can be introduced as a yearly one-day trip with specific sports activities intended to give the employees a chance to get to know each other better, to relax, socialize, and often some good business ideas emerge too. This should be an informal event aimed at team building, that is, improving efficiency by strengthening the relationship among the workers and building a team spirit.

- Open Day

The idea is to organize a day when all the activities of the Institution would be promoted through a series of sports activities, but in a fun and informal way, including also the employees from various sectors whose job is not normally related to working with the clients. Different activities on the markets can be presented on this day, as well as the Institution's objectives for the upcoming period, which can be followed by a panel discussion related to a certain current topic and participants' suggestions.

- Giving employees, who are parents, a priority when choosing when to take the annual leave

The annual leave plan is sent by electronic mail to the administrators who then forward it to the workers within a department. The workers propose the dates that they prefer, and they usually arrange the replacements among themselves, and then the administrator checks if all the positions are covered by replacements. It is a common practice for the administrators to announce at department meetings that the employees who have children are given priority when selecting the dates for the annual leave. This, however, is not stipulated by internal procedures, but usually, when two employees select the same period for annual leave, priority is given to the employee with children.

- ♦ Access to information regarding work tasks

All business processes, procedures, and work instructions are available on the internal internet pages or shared maps of the Institution departments, but responsibilities and duties required for each task should be stated together with a description of the processes, and that would enable easier induction of new employees.

- ♦ Informal socializing inside the Institution

Informal events during the official break included in the working hours in the facilities should be encouraged. The employees could celebrate birthdays, weddings, childbirths, graduate or post-graduate graduations and other occasions, and they could invite a certain number of their colleagues to such a gathering, what would strengthen the working staff environment and human relationships.

- ♦ Possibility to leave work early

In addition to flexible working hours, which means coming to work in the period between 7.00 a.m. and 8.30 a.m. and leaving work between 3.30 p.m. and 5.30 p.m., the employees should have the possibility to leave work early or to run personal errands during working hours, with the condition of fulfilling the legal norm for working hours by the end of the month.

- ♦ Family policies

Introducing a series of so-called family policies including various measures and programs at the workers' disposal for the purpose of increasing the birth rate and promoting pro-family policy, meaning measures aimed at balancing the family and business life. Apart from benefits related to flexible working hours that all the workers can use, parents would also be supported and encouraged

with the option of being able to work part-time, while the internal rules could stipulate awarding financial support to new parents after their child is born.

All these propositions would contribute to an improved working environment and a higher quality of work.

## 6. CONCLUSION

The aim of this paper was to demonstrate that the employees are the most important factor for productivity and achieving competitiveness in the contemporary business environment. The attempt was to emphasize the importance for managers to understand that continuous education, training, and employee motivation are one of the most important forms of management and human resources development as well as turning the human capital into the company's most valuable capital. It is important to encourage and reward the employees' creative potential because this will have a positive impact on business results. The motivation system is the sum of motivation factors, incentives and motivation strategies that are consciously and comprehensively implemented into the working and organizational situation in order to motivate people.

The paper referred to the most famous motivation theories, as well as to the factors that have a positive impact on employee motivation used by organizations in the form of material and non-material rewards.

When the employees are satisfied and their expectations are met (the possibility of promotion, further education, appropriate working conditions and so on), they will work at their full capacity what will have a positive impact on their performance. The example of the incentives that could be introduced for the employees of the Sports Facilities Management Institution and the investments into the workers show that such measures would result in employees who are more satisfied with their job because their employers care about them, and who perform their tasks more easily and more efficiently, also spreading the positive reputation of the organization they work for.

Findings however give an example of a motivational process within one public organisation which is not enough for general conclusion. However, given recommendation can serve as a good base for exploring a motivational level in other public companies.

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## EMPLOYERS' VIEWS ON PARTNERSHIPS IN HIGHER EDUCATION

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### **Abstract**

*In an age when the creation, dissemination and application of knowledge are at the heart of a value-added economy and society, the relationship between higher education (HE) and businesses as a prerequisite for sustainable wealth creation has become a popular research topic. This paper is a part of a more comprehensive online Graduate employability survey, which employed open and closed questions, as well as 7-point Linkert scales for answers. In total 132 Croatian employers from large, medium and small companies of different types participated in the survey. Only 7% of employers reckon that during HE enough attention is placed on the application of acquired knowledge, and a vast majority believe that students upon graduation, in general, lack soft skills. The results show that employers regard HE partnerships with businesses as the*

*most important factor for increasing employability of students. Apart from the cooperation of departments at the University for the exchange of experience, employers consider teacher training in the use of innovative teaching methods as very important. These results provide useful information for taking action to improve graduate employability in Croatia. To maximize the benefits of partnerships, cooperative education, a cross representation on the boards of business and universities, as well as liaison panels are suggested. The role of university career centres, which work systematically with employers and serve as a catalyst for employer engagement, must not be underestimated. The research is not exempt from limitations as it includes a rather small number of companies in Croatia. It is suggested that further studies should be conducted to include a wider range of businesses. It would also be beneficial to research the perceptions of the university teaching staff regarding these partnerships.*

**Keywords:** Graduate employability, higher education, business, curriculum changes

JEL classification: I21, I23

## 1. INTRODUCTION

Although university-business cooperation (UBC) in Europe has a great potential for regional development, innovation and employability. It is still a fragmented and indistinct field of research, and the understanding of it remains inadequate. The results of the largest European university-business cooperation show that UBC can be a highly positive activity for all parties involved, and that businesses are starting to realize the benefits of working with higher education institutions (HEI) as a source of future-oriented innovation, as well as talent development that can build a competitive advantage (Davey et al., 2018a). Despite the fact that UBC has become a popular research topic, the understanding of UBC remains inadequate, and its practical and scientific development remains a major challenge for managers, policy makers and researchers (Galán-Muros, 2016).

HE and businesses are sources of brainpower, experience, innovation and ideas (Brown et al., 2002). Their cooperation can be seen as strategic and addressing some of the major social as well as economic issues facing the economy. Higher education is critical for developing more knowledgeable, wealthy and open societies. Furthermore, HEIs in Europe are seen as a source of talent,

entrepreneurship and lead power in regional development. Therefore, HE has to understand and respond to the concerns of the world, it needs to be engaged and embedded in those societies, it has to be relevant. At the same time, HE has to be the key agent for change, influencing, and not just responding to events and immediate pressures. In conclusion, the primary purpose of HE should be to prepare graduates for the world of work by enhancing students' knowledge, skills, attributes and abilities while simultaneously empowering them to be critical, reflective lifelong learners (Harvey, 2000).

It has been found earlier (Griesel, 2003; Lowden et al., 2011) that employers look for flexible, adaptable and intellectually talented individuals with a sound knowledge and skills appropriate to the demands of the 21<sup>st</sup>-century world. If students, teachers and employers want to achieve that, they should work towards a common goal – integrating theory and practice for the purpose of raising the employability prospects of graduates. Employers, being the end-users of HE outputs, should take part in providing resources for the development of new courses, curriculum co-delivery, as well as in giving feedback and monitoring HE processes. Apart from that, establishing and maintaining cooperation with employers is the key factor in providing authentic learning experience for students, which promotes graduate employability (Ferns, 2012). Furthermore, mutually beneficial relationships between businesses and higher education institutions (HEI) are fundamental to an inclusive student experience with desirable outcomes for all stakeholders. Some programs of study (e.g. medicine, nursing, teacher training etc.) are closely linked to learning in practice settings that are directly related to future employment. In other studies, employability is increasingly built into programs through work placements, internships and other work based-learning opportunities, employer-linked projects, guest speakers and visits, or work-shadowing. Nevertheless, opportunities for UBC are far more ample, as for the purpose of increasing graduate employability, HEIs and businesses can cooperate in other fields such as research, academic entrepreneurship and commercialization of R&D results. They can cooperate in recruiting and employing graduates, too. However, academics are often suspicious of closer links with businesses because they fear that enhanced employability links will infringe academic autonomy, undermine critique and result in training rather than education (Bates, 1999). At the same time, a lot of businesses do not engage in UBC despite significant efforts by the European Com-



mission and national governments, due to a lack of awareness of mutual benefits of such cooperation.

This paper aims to capture employers' views on UBC, focusing on increasing graduate employability, and the role of partnerships between Higher Education Institutions and businesses, in particular in preparing graduates for the changing needs of work, and proposes the following hypotheses:

H1: Employers value HE partnerships with businesses important for graduate employability.

H2: Employers estimate that during HE students are provided with enough opportunities to apply acquired knowledge.

H3: Employers believe that soft skills are sufficiently developed during HE.

It is organized as follows: After the presentation of the relevant literature on UBC in Europe and Croatia, the methods used in the research are presented, followed by the main findings and the discussion of the results. The paper finishes with a discussion of the implications, limitations and areas of further research.

## 2. LITERATURE REVIEW

Although there has always been some form of relationship between HE and businesses, this topic has become particularly popular among researchers recently, sharpened by a renewed sense of accountability and relevance on the part of HE and by the pervasive view that HE does not produce the right kind of graduates to meet the changing demands of workplace (Brennan et al., 1996). On the other hand, traditional role of HE is being challenged, and due to mass high education, graduate status has become the principal signifier of cultural capital with universities producing, not simply reproducing or reflecting, social hierarchies (Scott, 1997).

### 2.1. THE IMPORTANCE OF UBC

UBC is understood as an interaction between HEIs and businesses for mutual benefit (Davey et al., 2011) which incorporates a broad set of potential cooperation activities. It is considered that UBC does not only satisfy the need



for funding and innovation, but can have a critical effect on regional economy as it helps tackle very relevant organizational and social problems in European countries. According to the largest international study into cooperation between HEIs and businesses yet compiled (Davey et al., 2018a), UBCs are advancing in Europe and regional governments are increasing their support. UBC has been a strong policy priority if the European Commission, referenced consistently in Commission communications and supported through numerous initiatives for a decade. UBC is considered a driver and a connector that links different policy areas: innovation, higher education, enterprise, entrepreneurship, social development, globalization and economic recovery.

Galán-Muros (2016) identified a number of organizational and social factors for UBC. UBC, considered an engine towards knowledge-based society, can address the problem of decreasing funding of universities, low levels of innovation in businesses and the need for skilled employees, as well as unemployment issues, lack of competitiveness and increased competition.

There are many diverse forms of UBC. They range from cooperation in education, such as dual education programs, curriculum co-design and co-delivery, internships, placements and lifelong learning programs (executive education, industry training and professional courses, professional upgrading and staff retraining); cooperation in research, joint R&D and knowledge transfer, consulting and mobility of professionals; joint valorisation efforts, such as commercialization of R&D results, academic and student entrepreneurship, to collaboration in management which includes cross-representation at management boards, liaison panels, shared resources, endowments, sponsorship and scholarships, as well as cooperation in employing HE graduates. In Europe (Davey et al., 2018a), cooperation in research (particularly cooperation in R&D) is the most developed activity, followed by education (particularly student mobility), while valorisation and management activities are far less common. This research also found that once an individual or an organization cooperate in one activity, they are more likely to cooperate in others.

Both businesses and HEIs can secure real benefits from UBC. Collaboration with business sector is one of the pathways for universities to engage with society and thus fulfil their “third mission”. In addition, HEIs, faced with lower amounts of direct public funding, can diversify their funding sources and increase their funding base, either by attracting business funding (Wood, 2011),

applying for HEI research (Lee, 2011), offering lifelong learning programs or applying for programs targeting exclusively collaboration projects with businesses (European Commission, 2011). Also, by developing strategic relationships with businesses they may ensure a wider economic and social relevance and innovativeness of their courses and apply their research in practice (Debackere & Veugelers, 2005), thus making HEIs more attractive for potential talented students and researchers. On the other hand, businesses can benefit from UBC through improving innovation and competitiveness (Tresserras et al., 2005), as they (SMEs in particular) witness the lack of financial and human resources to undertake innovation in a systematic way. Through UBC, they get access to new knowledge, technology, methods, processes and talent (Saboori, B. et al., 2014). Subsequently, new job creation, social and economic growth, increased standard of living are gains from UBC for the society as a whole.

Various barriers to cooperation between business and HEIs exist. According to the recent EU study of UBC (Davey et al., 2018a) academics, HEI managers and businesses agree that lack of funding and resources is the main barrier to cooperation. In addition, academics accentuate bureaucracy and lack of time as obstacles. Interestingly, the results of the above-mentioned study show that the removal of barriers does not necessarily trigger UBC. It has been found that if sufficient drivers for cooperation exist, stakeholders will find ways to cooperate. The drivers include motivators, which trigger the activity and are often related to expected outcome(s), and facilitators which enable and ease the process. The Final report on the state of UBC in Europe identifies different motivators for different stakeholders in UBC. Academics cooperate primarily to benefit their research, HEI managers have diverse reasons for wanting their institutions to engage, including funding, graduate employability and the use of research in practice, and businesses are motivated by innovation, potential access to talent and competitive advantage they can develop from UBC. All stakeholders are inspired for UBC by mutual trust, commitment, common interest and goals. The report concludes that in Europe people and relationship drive UBC, and therefore a shift in thinking about UBC policies is required from a focus on barriers to drivers, and from facilitating transactions to establishing and nurturing relationships. In order to improve relationships, governments, HEIs and businesses can provide funding to develop such relationships, expand opportunities for professional mobility, create opportunities for academics and business people to develop trust and UBC expertise through small funding opportunities and existing relationships. New mechanisms for advancing contacts and relationships

include: communities and networks, networking events, university-business forums on regional and national level, as well as matchmaking to establish a collaboration culture and experience set for UBC.

For both HEIs and businesses, UBC is a discretionary activity, and commonly reported problems such as unclear objectives or lack of commitment are not surprising. Therefore, appropriate mechanisms need to be provided to encourage and support cooperation. These mechanisms should aim to help reduce the largest barriers (bureaucracy), emphasize facilitators, such as common goals, and provide incentives that motivate HEIs and businesses to cooperate. Supporting mechanisms are interventions designed to support the development of cooperation between HEIs and businesses. These mechanisms can be in policy, strategic, structural or operational.

National governments play an important role in facilitating and encouraging UBC, and their support is necessary to ensure the initial success of UBC. For example, national funding for HEIs is still mostly based on student numbers, yet HEI managers identified funding as a major barrier and the driver for cooperation (Davey et al., 2018a). In addition, involvement of different ministries (education, economy, innovation, entrepreneurship, employment) in different aspects of UBC could result in misaligned and even conflicting policies. Although many HEIs include UBC in their mission and vision, incentives for academics are the least developed UBC mechanism.

Opportunities for facilitating UBC are numerous. In order to broaden the understanding of UBC and widen its development, European Commission, national and regional governments, HEIs and businesses can finance project consortiums, provide funding for long term cooperation initiatives, create new opportunities for cooperation within and cross-faculty, create more “small packaged” opportunities for collaboration. i.e. student consulting programs, joint papers, master thesis supervision, provide support to the creation and /or modernization of new/redesigned curricula, promote the benefits of UBC, develop improved employment and recruitment pathways from HEIs to businesses, promote entrepreneurship education and facilitate regional entrepreneurship ecosystem (Davey et al., 2018a).

The report on the state of UBC in Europe realizes that businesses that undertake UBC tend to initiate collaboration and cooperate primarily in research. They cooperate with their academic partners in more than one way which indi-

cates that it is a relationship, rather than a one-off transaction. The results show that as the business gets older, they are more likely to cooperate in education, and as they get larger, they are more likely to increase cooperation in more long-term cooperation areas such as education and management. The more years of experience they have with UBC, the more cooperation activities they undertake. The biggest motivator for cooperation is to support business's innovation efforts, particularly with a long-term perspective, which is supported by external funding. The business collaborator perceives cultural differences to be the largest barriers to UBC, particularly differing motivations, and lack of business experience in HEIs, as well as differing time horizons. They are highly likely to recommend to their business partners and colleagues to engage with HEIs in R&D more so than in education and training, however, 99% of cooperating businesses say they want to continue, if not increase their UBC in the future.

## 2.2. State of UBC in Croatia

European countries and regions have different UBC policies and initiatives (Geuna & Nesta, 2006) and there exist substantial differences in the level of development and the scope of UBC activities.

The national study of the UBC state in Croatia (Davey et al., 2018b) found that although UBC is vital to creating a knowledge society, it is at an early stage of development in Croatia and that the creation and development of supporting mechanisms is critical for UBC. The results show that, similar to EU results, UBC ecosystem is complex and that integrated personal relationships drive the cooperation. Perceptions of high benefits and incentives are motivators for UBC in Croatia. Businesses that engage in UBC tend to be small (with less than 50 employees), privately-owned companies (72%). The majority of Croatian businesses (69%) cooperate with 1- 4 HEIs, mainly from Croatia (96%). These results are aligned with the EU results. Businesses engage mainly in mobility of students (4.3), joint R&D (4.0) and industry support (4.0), with student and academic entrepreneurship being the least developed collaborative activity (2.2 and 2.4 respectively). On average, 40% of businesses in Croatia do not engage in these collaborative activities at all, in particular state-owned companies. Those that do engage, perceive themselves supportive towards UBC. They believe that businesses have a lot to offer to HEIs in developing and delivering education and training, and have the capability to absorb the knowledge and technology

coming from universities. Furthermore, they believe that it is business's responsibility to collaborate with HEIs in education, and they support this commitment with resources, a responsible executive and allocation of work time. On the other hand, businesses do not believe they have sufficient contacts and relationships with HEIs, or that they are informed about what HEIs expect from such collaboration.

Individual academics and businesses in Croatia initiate UBC more often (always or usually: 74% and 54% respectively) than other stakeholders (alumni, students, HEI management, internal and external intermediaries) do. Government is perceived as the most passive initiator of UBC in Croatia. Until recently, there were few platforms and initiatives to promote UBC, which has significantly inhibited UBC in Croatia.

Croatian and European perspectives align with respect to barriers hindering UBC, however, Croatian businesses perceive the barriers somewhat stronger. The top 5 barriers in Croatia relate to resources, lack of communication and administrative issues, with the most emphasized ones being: lack of people with business knowledge at universities, lack of government funding for UBC and the lack of awareness at universities about the opportunities from UBC. Bureaucracy also emerged as one of the strongest factors inhibiting UBC in Croatia, which is not surprising as most HEIs in Croatia are state owned. In an earlier research (Biondić, I. & Novaković, N., 2016) 57.3% of businesses stated the lack of experience in UBC as the main reason for not cooperating. Only 7.3% affirmed that there was no need for such cooperation. Businesses in that research also named inertia and sluggishness of Croatian HEI, as well as their lack of understanding of corporate needs as major barriers to cooperation and only 8% communicated that employees are not motivated for the cooperation. On the national level, they identified the lack of national strategies and legislation as critical barriers and suggested an online platform for cooperation.

While some relationship facilitators bear considerable importance for UBC in Croatia, a number of resources related factors also emerged as facilitators. The top five facilitators, i.e. factors that enable or ease cooperation, are the existence of: shared goal, funding, mutual trust, prior relation with the partner from HEI and access to university R&D facilities. When compared to the EU data, it is evident that on average, European businesses adopt a stronger perspective in respect to drivers of UBC than Croatian businesses.

Croatian and European businesses have different views on motivators driving them towards UBC. While European businesses are driven by innovation related reasons, Croatian businesses are highly motivated for UBC because they want to impact the society in a positive way, gain competitive advantage from improving the skills of their current employees through training, from access to new discoveries in the early stages, and from customized solutions for their business. Croatian businesses do not perceive access to HEI's facilities as important, possibly due to the fact that not many HEIs in Croatia have state-of-the-art R&D facilities that would be of interest for businesses.

Both Croatian and European businesses perceive that students are the main UBC beneficiaries. In addition, Croatian businesses observe that academics and HEIs have more positive outcomes/benefits from UBC than businesses do. Croatian businesses that engage in UBC seem to be satisfied with the cooperation and are willing to recommend this cooperation in both education and training (Net Promotor Scale metric score of 31%) as well as R&D (NPS 20%). Higher scores for education and training are not surprising as these UBC activities clearly have a longer tradition in Croatia.

The degree in which UBC takes place is influenced by a set of elements present in the context, such as human resources, strong innovation/R&D profile, strength of the business sector and regional economy in general, and interestingly, Croatian businesses active in UBC recognize this context less positively than their European counterparts.

### 3. METHOD

This paper is a part of a more comprehensive online Graduate Employability Survey, which employed open and closed questions, as well as 7-point Likert scales for answers. In total 132 responses were received from employers from large, medium and small companies in Croatia and of different types of business entities. The instrument, therefore, provides useful information that can be used for taking action to improve graduate employability in Croatia. Statistical methods involved in carrying out a study included planning, designing, collecting data, analysing using PASW statistical tool, primarily related to univariate and bivariate descriptive statistical analysis, interpretation and reporting of the research findings. A detailed sample structure of employers per company size,

region, type of business entity, and per market where income is generated is shown in Table 1.

**Table 1.** Sample structure of employers

<b>Company Size</b>	<b>%</b>
<10	33.8%
10-50	36.9%
50-250	12.3%
>250	16.9%
Total	100.0%
<b>Region</b>	<b>%</b>
Eastern Croatia	5.4%
Central Croatia	2.3%
North Coast	39.2%
South Coast	53.1%
Total	100,0%
<b>Type of business entity</b>	<b>%</b>
Ltd.	81.4%
Craft	4.2%
Joint-stock	14.4%
Total	100.0%
<b>Where the company generates its income</b>	<b>%</b>
Only domestic market	48.8%
Only abroad	3.9%
Combination	47.3%
Total	100.0%

**Source:** Authors' own calculations

The respondents are almost equally distributed in terms of the sex: 48.5% are male and 51.5% are female, where 25% of them are younger than 34, 61% are between 35 and 54 years old, and 14% are older than 55.

## 4. RESULTS AND DISCUSSION

In our sample, only 7% of employers reckon that during HE enough attention is paid to the application of acquired knowledge, and as many as 93% believe that students upon graduation, in general, lack soft skills. Thus, our data do not support H3 that employers believe soft skills are sufficiently developed during HE, or H2 that HE students are provided enough opportunity to apply acquired knowledge. The results clearly signal that HEI need to consider significant curriculum changes, and a major modification of teaching and as-



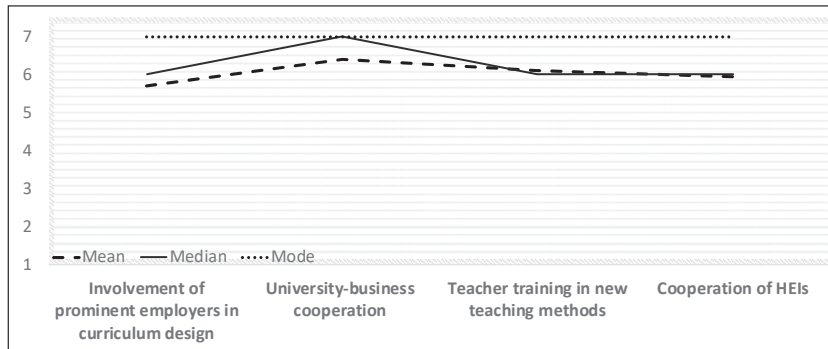
assessment methods at the HEI. The data suggest that HE equips graduates only moderately well for the demands of the modern workplace. The need for skilled and knowledgeable graduates necessitates UBC, which is additionally needed to improve the understanding of what HE can best deliver. This was additionally highlighted when employers were asked to identify factors that contribute to increasing students' employability.

High unemployment rates, particularly youth unemployment remain an issue not only in Croatia, but in EU, too (Eurostat, 2016). Perhaps UBC's greatest contribution to graduate employability is in developing improved competences, which has been detected earlier by Gibb & Hannon (2006) and Razvan and Dainora (2009). These competences, adapted to market needs, in particular entrepreneurial thinking (Herrmann et al., 2008), can consequently lead to better job prospects for graduates (Dutrénit & Arza, 2010; Bozeman & Boardman, 2013). The untapped potential of UBC in developing these competences has to be acknowledged and unlocked. These results are broadly in line with the trends initiated by the European Commission asking for joint (HEI-students'-businesses') responsibility for the development of talent and competences. Apart from increasing employability of graduates, UBC can additionally contribute to upskilling existing employees through training and lifelong learning programs offered by HEIs.

Our data reveal that employers are very homogeneous in understanding the importance of UBC, as 96% of them find UBC important. Moreover, employers in this survey regard it as the most important factor for increasing the employability of students (Mean = 4.81). This confirms the Hypothesis 1. These results tie well with the previous report on the state of UBC in Croatia (Davey et al., 2018b) that employers believe it is their responsibility to collaborate with HEIs and that over a third of EU businesses commit to UBC as part of their strategy (Davey et al., 2018a). Additionally, when assessing the importance of the four variables for increasing graduate employability, not one was evaluated as unimportant (Graph 2). Descriptive analysis was backed up with central measures: Mean ranged from 5,7 to 6,4; Median ranged from 6 to 7, and most frequent answer (Mode) for all statements was extreme grade 7 (Graph 1).



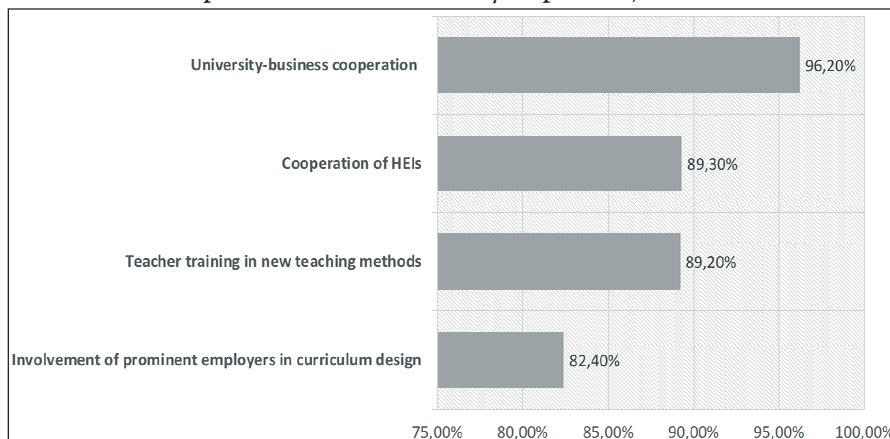
**Graph 1.** Statement importance central measures (scale 1 to 7, 1 not important at all, 7 extremely important), TOP 3 boxes



**Source:** Authors' own calculations

Employers consider cooperation of HEIs for the exchange of experience (4.54), and teacher training in the use of innovative teaching methods (4.65) as very important for increasing graduate employability. This is in accordance with debates in the European Commission encouraging inter-sectoral and interdisciplinary approaches to teaching and learning for knowledge society. This is also in line with previous research (Lowden et al., 2011) which concluded that close and systematic links between HEI and employers were likely to be present where institutions had a focus on teacher training. Furthermore, as much as 82.4 % of employers see participation of prominent, successful business people in the design of courses as important.

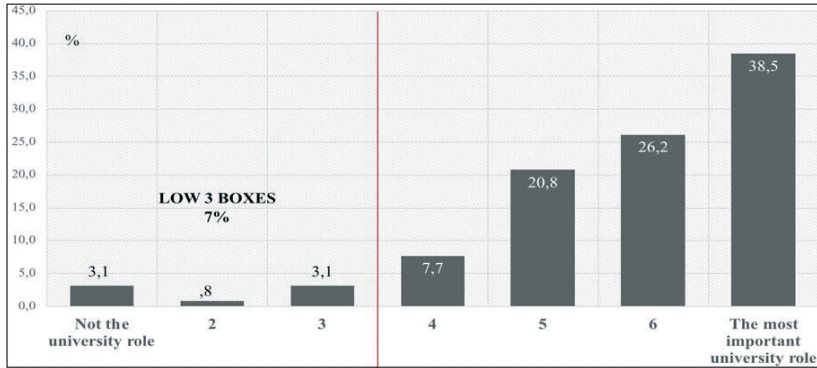
**Graph 2.** Statement importance for employability of graduates (scale 1 to 7, 1 not important at all, 7 extremely important), TOP 3 boxes



**Source:** Authors' own calculations

The same homogeneity can be detected when observing attitude towards HEI's role in employability of graduates (Graph 3).

**Graph 3.** HEI role in educating employable graduates

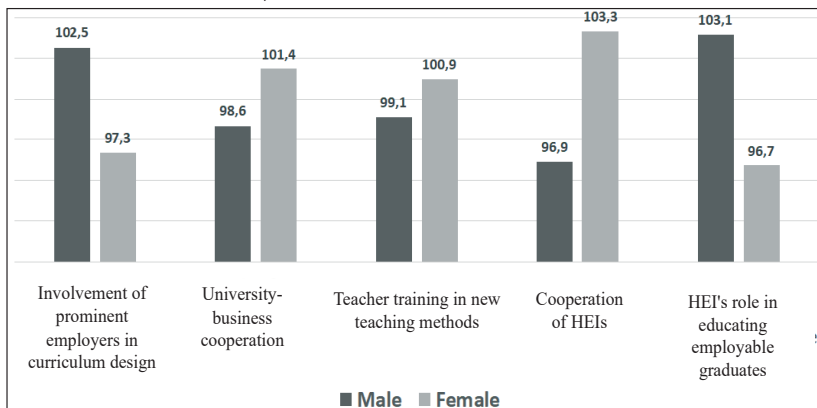


**Source:** Authors' own calculations

Only 7% of the employers claim that HEI do not have an important role in the employability of graduates (Mean 5.75; Median 6 and Mode again 7), and 64.7% believe that increasing employability of graduates is a very important or the most important role of HEI.

Due to the above-mentioned homogeneous attitudes, differences in answers were not expected when per company profile variables or respondents' gender and age were tested. This was confirmed by ANOVA testing in which no statistical difference was detected. Although not statically significant, indicative difference can be detected between female and male employers (Graph 4).

**Graph 4.** Attitude differences per gender (Affinity Index, average grade per item = 100)



**Source:** Authors' own calculations

Women valued UBC and HEI cooperation slightly more important than men did, but evaluated the involvement of prominent employers in curriculum design and the role of HEIs in creating employable graduates somewhat less important than male employers did.

Active, systematic partnerships of HE and businesses in Croatia are rare. Yet, employers, at least the ones who responded to our survey, seem to be very interested in working in such partnerships. For example, 83.2% express their wish to participate in curriculum design, and 87% would accept students for internships. Employers, obviously, agree that placements and internships as opportunities for experiential learning, students' mastering employment skills, knowledge and awareness of employer culture are valuable for their own business as well as students, and thus for enhancing the employability of graduates. Interestingly, no significant differences in answers have been observed regarding the size of company, the type of business entity or where the company generates its income (on the Croatian market or abroad).

## 5. IMPLICATIONS AND CONTRIBUTIONS

Obviously, partnerships of HE and businesses, which can have diverse forms, and which are one of things that differentiates good HEIs from the extraordinary ones, have a huge potential. There are many obstacles to employer involvement in teaching and assessment at HEIs in Croatia. Therefore, this paper suggests Cooperative education (Fleming, J., & Hickey, C., 2013) as a model of work integrated learning, where all stakeholders recognize each party's needs. The aim of such an approach is to integrate theory and practice and develop capabilities to enhance employability through partnerships between students, HEIs and employers, in which stakeholders understand the meaning, expectations, outcomes, associated responsibilities and level of commitment, and actively and consciously participate, cooperate and collaborate. To accomplish that, clearer communication strategies and ongoing and active management are required. It must also be noted that governments play an important role in facilitating and encouraging such cooperation and should offer support as is appropriate to ensure success. Furthermore, efforts should be made to evaluate students' participation in UBC as a part of their academic assessment. This could be achieved through dual education programs, which represent an emerging hybrid form of higher education, which includes the opportunity to com-

plete a degree program at a HEI while simultaneously receiving a certification of practical training or work experience in a company (Kagermann, 2016) In such programs, students spend extended periods of time in both an academic and business sector (Euler, 2013).

To maximize the benefits of partnerships, a cross representation on the boards of business and universities and some kind of liaison panels as well as seeking other opportunities to engage with businesses in curriculum development and delivery are also suggested. The role of university career centres, which work systematically with employers and serve as catalyst for employer engagement, must not be underestimated. Businesses, on the other hand, need to look for opportunities to meet relevant contacts within academia in order to better understand motivations of academics and HEIs for UBC and seek to partner on projects or provide finance for UBC.

The research is not exempt from limitations as it includes a rather small number of companies in Croatia. It is clear that UBC will remain a prevailing research topic, and it is suggested that further studies should be conducted to include a wider range of businesses. It is also advised to research the perceptions of the university teaching staff regarding these partnerships.

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# THE IMPACT OF MATRIX ORGANISATION ON EMPLOYEE TURNOVER

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## **Abstract**

*Employee turnover rate is a fundamental value and reflection of organizational management, and it is a clear indication of the number of employees leaving the organization for a variety of reasons. For the outside world, it provides a homogeneous insight into the issues surrounding the organizational structure. Entering the core of organizational structure sharpens a view on the causes of the problem so, the reasons why employees leave the organization are more evident. The result of strengthening the individual's position in society through peculiar global activities that empower and emphasize individualism, encourage organizations to increase responsibility in employee management and therefore avoid high costs of employee turnover. In order to study this issue, this paper aim is to investigate whether there is an indirect or immediate impact of the matrix organizational structure on the human resources in the*



organization, i.e. to detect factors within the matrix organizational structure that cause employee turnover. Literature review helped in establishing brighter inspection into difficulties of matrix organization such as double responsibility, resource constraint, possible complications in the communication channel, and the leading role problems that can affect employee turnover. The matrix organizational structure produces several reasons for the undesirable, dysfunctional voluntary turnover, which is primarily and mostly caused by the increased pressure and stress within the organization, and time constraints as well as the lack of resources. The main limitation of this study is a worrisome lack of scientific papers in the field of influence of the matrix organisation on the employee turnover, even though the fact that a large number of organizations work within the matrix structure and face numerous and unexplored problems.

**Keywords:** employee turnover, matrix organization

JEL Classification: J21, L22

## 1. INTRODUCTION

Organizations around the world invest enormous financial resources in education, development, and retention of their employees. It is clear that managers have a task to minimize employee turnover because the costs of finding, the time needed for adaptation, and the process of creating new employees values are often too high for the organizations. Although there is no standard framework describing the reasons why employees are leaving certain organizations, there is a wide range of factors that can be used to interpret employee turnover. According to Stovel and Bontis (2002), with the emergence of globalization that strengthens and expands competition, organizations need to develop real products and provide services based on employee strategies. They represent the critical resource of an organization creating an inexhaustible structure of knowledge, skills, and abilities and make them the most important competitive advantage. This paper studies the assumption that specific characteristics of a matrix organizational structure, such as double responsibility, resource constraint, possible complications in the communication channel, and the role of leadership may affect the degree of employee turnover.



## 2. MATRIX ORGANISATION

As an alternative to traditional organizational structures, the matrix structure gained popularity in the late 1970s and early 1980s and was implemented in a wide range of industries such as aerospace, banking, chemical, telecommunications, computer, electronics, and petroleum. Combining the benefits of functional and product-oriented organizational structure, the matrix organization at the same time provides complex companies with flexibility in directing their focus to broad production and specific organizational goals (Sy & Cote; 2004, 452). The need for modern international organisations for a broader customer and client and the presence of their services in many different countries or continents creates a large amount of data, demands, tasks, and disturbances that stand in the way of unharmed activity of the organization. Therefore, accepting a matrix organisational structure is an effective solution to the growing needs of significant capitalist organizations. "The matrix organizational structure, as well as the project organization, represents a new adaptive model of organisational structuring. It is characterized by the existence of classical departments in which specialists work, who occasionally join projects run by other departments or divisions. Most commonly, matrix organizations are a combination of production and functional organisational structure, but it is possible to combine organizational structures based on the type of customer and geographic location " (Pfeifer; 2012; 13). The matrix structure is also often a combination of functional and project structure where project teams are incorporated into existing functional departments.

According to Verzuh (2007), the matrix organizational structure has emerged as a solution to the growing complexity of the organizational environment, and as a consequence of this threat there is a need for a balance between the main drivers of organizational development and at the same time the process of more efficient use of skills and talents of employees in order to succeed environment rhythm. The matrix structure characteristics meet the above mentioned organizational and market requirements through a dual control, control, and management system, which reflects through a vertical and horizontal hierarchy. In other words, a high number of employees in the matrix organization correspond to two superiors simultaneously. Within such a system, employees have increased the flexibility of mobility within the organization where they are most needed, that is, where their skills can ultimately contribute to the achievement of organizational tasks and goals. The matrix organizational structure is

designed for companies that have different products selling to different markets (Hindle; 2012, 130). In such organisations, responsibility for products is left from the bottom in one dimension, and responsibility for the markets in the other. Such a way of scheduling leaves most managers a dual line of responsibility, meaning that they are at the same time responsible to the director of the production division and director of all markets of a particular organization. Davis and Lawrence (1978, 43) characterise a matrix organization as far more than a matrix structure. It needs to be strengthened and supported by matrix systems such as double control and assessment system, leaders need to act with decision-makers efficiently, and in the end, the matrix organization must cultivate the culture of negotiation, communication, and acceptance of open conflicts and equilibrium of power. Furthermore, in most matrix organizations there is a dual command responsibility system that assigns to functional departments (marketing, engineering, etc.) and manufacturing and marketing departments. Each matrix organization has three unique and critical roles: a top manager who maintains a balance within a dual chain of command, a manager of functional suits who have subordinates and manager who is required to execute orders by two different matrix directors above him. Of course, each of these roles has clear and specific tasks, as well as particular requirements that managers, depending on the position, must meet. The matrix organisational structure is the usual choice for strategic goals, but it strongly affects individuals and teams working within the structure because the information and decision-making process is significantly different in comparison to traditional structures (Malloy; 2012). A large percentage of organizations trying to implement the matrix organizational structure have been downplayed.

The matrix organization requires “producer” leaders, individuals capable of delegating and who have a high tolerance for insecurity (Burton et al.; 2015, 43). Top management is not able to direct the entire organization independently, so they have to rely heavily on functional, project and divisional managers in the structure, and in their detailed, coordinated adjustment to their requirements in order for the organization to profit. However, top management is expected to prioritize, collaborate in diversity within the organization, and overall control over the company, though the decision-making process should be assigned to them always. The capability and quality of top management lie in their ability to evaluate employees who are sufficiently responsible, educated and experienced

to be able to decide for the benefit of the entire organization, placing them in high positions to some extent ensures a quality leadership of the organization.

Creating cohesion, synergy, organizational culture and feelings of affiliation with employees is key to building a stable, credible and respected organization. Therefore, according to Krell (2011), the distinctive feature of the matrix organization is the convergence of employees, while the synthesis of the organizational unit contributes to the accelerated growth and culture. The matrix structure empowers the organisation and enables it to create more views of the situation while at the same time achieving balance in the entire operational and functional part of the company. Researches have shown that possible matrix structure applications in individual parts of an organization, without necessarily implementing the whole structure across the organisation, allow better data analysis, thus ensuring more efficient execution of organizational tasks. Consequently, more and more organisations are involved in the matrix structure when coordinating complex projects where they are timely and effectively performing, necessary resources and knowledge of a variety of different employees from different areas of the organization, such as finance, marketing, sales, accounting, and procurement. With a proper combination of these, a considerable amount of organizational intellectual capital accumulates, and along with this process, strengthens organisational relationships. Krell (2011) states that Human Resources employees have the crucial role in the initial development of a matrix organizational structure, with the task of properly evaluating the skills and knowledge of all employees so they are responsible for controlling, implementation and analysis of the success of changing the existing organizational structure into a matrix.

### 3. EMPLOYEE TURNOVER

According to Polsky (1999, 571), the rate of employee turnover shows the number of employees who leave the organization for a variety of reasons. The abandonment of an organisation is defined as the termination of the work in the organisation and may be the result of an employee initiative, self-indulgent abandonment of an organisation (e.g. termination of employment contract or retirement) or may be the result of an employer's initiative - involuntary turnover (dismissal due technological surpluses, etc.). For Abassi et al. (2000) turnover represents the rotation of employees within the labor market, between

organizations, businesses, and states. Price (1997) defined the notion of turnover as the ratio between employee cords leaving the organization during the observed period and the average number of employees in the organization in that same period. Also, some authors claim that the cause of employee turnover is often a combination of multiple dependent and independent factors that obstruct employee work over a long period which may also be a frequent problem for the organization if the turnover analysis is not done correctly, thoroughly and responsibly. Previous research by Raikes and Vernier (2004) shows that the organizational process of attracting and retaining talented individuals in the organisation is a critical strategy in which the organisation achieves high financial results and lowers costs. The trace that employee turnover leaves to the organization has its direct and indirect costs, ranging between 50% and 150% of the annual salary of employees (Mercer; 2004). Also, additional costs are generated and the crisis is deepened due to the increased volume of tasks and work that such events cause for the human resources of a particular organization. Increasing the volume of work by researching, analysing, and solving employees' turnover problems, along with the minimum time available to human resources staff, address current issues and boost the growth of existing employees.

Griffeth and Hom (2001, 5) divide employee turnover into a voluntary and involuntary turnover. In other words, the turnover differs in whether the employee has decided to leave the job voluntarily or was it the employer's decision. Furthermore, turnover can be functional (loss of under-average employees), and the dysfunctional, (loss of above-average employees). Finally, dysfunctional turnover is divided into the one that can be avoided and one that cannot be prevented. This suggests that the organization should focus on avoidable dysfunctional turnover that can be prevented in order to ensure the retention of quality employees.

Since managers make a significant interaction with a large number of employees, they are, if adequately educated, aware of how to create a productive and prosperous atmosphere. Moreover, such policy will increase employee satisfaction, which will result in a lower turnover rate so, there is a strong and apparent need for competent and quality people in managerial positions. Therefore, it would be wise to invest and examine the quality of future managers before they are in management positions, and although such an approach creates an additional cost, this cost is undoubtedly lower than the one that can be generated by a high turnover rate that indirectly is result of poor leadership (Loquercio; 2005, 72). Investing in education and training, especially for managers,

is indeed a priority of organizations and human resources agencies who want, not only to provide better conditions to their employees but also to increase self-confidence and improve the operational capabilities of their managers. The result of such investments according to CIPD (2005) reflects on the organization's success by creating channels through which employees may express their dissatisfaction, such as consultancy bodies, regular human resource meetings, surveys, etc. The authors also emphasize the benefits of such approach by which dissatisfied employees provides a chance to solve the problem before they leave the organization because when there is no chance to talk, the termination or leaving the organization is the only logical sequence.

The first step in the process of determining the optimal turnover rate is acceptance of the fact that the optimal turnover rate is not the lowest possible, but the one that reproduces the highest long-term productivity and organizational progress (Hansen; 2005). In order to do so, the organization has the task of determining the specific profiles of employees, their skills and organizational positions that are of crucial importance to the company. Also, through a continuous building of organizational involvement, teamwork and cohesion among employees and identifying employees with the goals, vision, and mission of the jointly-created organization, drastically reduces undesirable turnover and creates organizational pride in employees (Loquercio; 2006). The causes of undesirable turnover are found in various spheres of organizational life and environment, in certain situations it is impossible to accurately estimate the reason for leaving, but according to Firth et al. (2004) experience suggests that the continuity of repetition of specific stressors, coupled with a lack of stressful commitment to stressors and generally job dissatisfaction, will cause stress on an employee to overcome a particular act. Although the decision to leave the organization represents the single individual will, the impact of the negative organizational climate cannot be denied. Nevertheless, most authors emphasize the importance of creating an organizational climate that is suitable for the growth and development of an internal control loop in an individual, characterized by taking responsibility and controlling for one's actions, thereby contributing to increased satisfaction, independence and power that is distributed to employees. Social processes affect individual attitudes and behaviors, so the person's social embeddedness is critical and axiomatic (Krackhardt, Porter; 1986, 54).

According to Deloitte study (2004), the responsibility for building trust, openness, and care for employees lies in the organization. That means that the or-

ganization has the task of developing the skills of its employees, not only through formal training but by specific training with the help of colleagues, by learning on workplace where mistakes must be seen as a necessary obstacle to success. In this study, it is also mentioned that not all employees can have the same characteristics and abilities and that a proper evaluation of employees' potential abilities must precede each organizational training. It is emphasized the importance of internal organizational mobility, whereby employees will find where their contribution to the organization is the biggest so turnover would be only internal. Finally, the use of internal and external help to build rich bonds is suggested through relaxation programmes and social gatherings where employees can engage in an open conversation, strengthen and empower community feelings, and create informal organizational relationships that enhance the organization's information flow and efficiency. Employee involvement, the organisational capacity to attract, retain and optimize the value of its employees depends on the quality of job design, how employee time is spent, and the commitment and support of managers motivating employees to remain in the organization (Meaghan; 2002). Breuer (2000) advocates providing a more realistic view of future job opportunities for job candidates, and increased care and employee control in the first months after employment. Corporate culture, hiring, and promotions and training practices influence non-management employee retention and at the same time, management retention, as well (Moncarz et al., 2009; 437). On the other hand, organizational mission, goals, and direction, and employee recognition, rewards and compensation were found to reduce non-management employee turnover positively, but not management employee turnover (Moncarz et al., 2009; 437).

#### 4. TURNOVER IN MATRIX ORGANISATION

The matrix organizational structure produces several reasons for the undesirable turnover which, according to Chapman (1998, 242), is primarily and mostly caused by increased pressure and stress within the organization, and according to Arvidsson (2009, 105), time constraints and lack of resources. Firstly, Maylor (2010) states that the dual responsibility of superiors or the existence of two superiors creates ambiguity, distorted priorities and causes a state of increased stress and pressure on execution. Employees in such a position achieve lower efficiency and become more pessimistic about the future, resulting in a new job search within the organization if it is possible to reach



an agreement with their superiors otherwise the quest is expanding outside the organization. Poor communication and lack of information cause ambiguity in employee roles, unreasonable expectations of superior and constant pressure on employees, coupled with lack of consensus in the delegation of responsibility and organizational tasks, increase dissatisfaction and rate of employee turnover. The matrix structure exhibits a specific characteristic (dual lines of authority, responsibility, and accountability that violate the traditional 'one-boss' principle of management) so it requires strong horizontal integration through communication and coordination between departments (Chennai; 2006, 1). Krackhardt and Porter (1986, 54) found that turnover does not occur randomly throughout a workgroup and it concentrates in patterns that can be delineated by role similarities in a communication network. One study on export sales managers' intentions to quit in matrix organizations revealed the favorable impact of formalization and the unfavorable impact of centralisation upon both role ambiguity and role conflict (Katsikea et al.; 2015, 367). This study shows that both formalization and centralization relate positively to the export sales management behaviour control system and that role stressors deleteriously affect export sales managers' job satisfaction, which in turn affects negatively intentions to quit. The role stressors of role ambiguity and role conflict deleteriously affect job satisfaction so when managers suffer an array of demands, each at variance with another, their job satisfaction declines and their propensity to leave is a likely consequence of this chain of effects.

A thorough case study in one company analyzed the impact of organizational change, structure, and leadership on employee turnover accompanying the process of structural change into a matrix organization. Their structure evolved from an autonomous business unit led by one general manager to a matrix organizational corporate structure and this change in structure was detrimental and time-consuming, and although it led to an initial drifting, the annual turnover increased from 15,63% to 23,58% in one year (Appelbaum et al.; 2008, 29). Gillet et al. (2013) mentioned the importance of understanding the mechanisms through which higher turnover intentions and lower worker satisfaction take place, eventually leading to appropriate interventions. They found that turnover intentions are negatively related to perceived organisational support and work autonomous motivation, and positively related to work controlled motivation. In matrix structure, little autonomy is left to blue-collar employees in the decision-making process which is one of the common reasons for dissatisfaction

that leads to intention to quit. There is a significant positive association between autocratic leadership style and employee turnover intentions and employees under democratic leadership style are less likely to involve in turnover intentions (Puni et al.; 2016, 1). Poor autonomy levels are often correlated with lower work and organisational engagement. Work engagement mediates the impacts of supervisor support and self-efficacy on quitting intentions so when there is sufficient supportive supervision, employees repay the organization by being loyal (Ibrahim et al.; 2019, 12).

Furthermore, the process of creating project teams, in essence, consists of selecting people with the specific skills that are needed to make a project or a task. On that occasion, there is the encounter of different and distinct personalities that connect, especially in large organizations, for the first time. Due to the diversity of characters within the project team, some conflicts can seriously escalate and are usually influenced by time constraints and lack of resources. Line managers in the matrix organizational structure retreat and relocate employees through projects, depending on their need to fill vacancies (Hendry; 1975, 37). There is a double result: on the one hand there is inefficient resource allocation in the organization, and on the other hand, undesirable turnover within the organization increase ambiguity and with such an irresponsible approach, employees are brought into a state of extreme stress and separation on many different sides. Therefore, the incentive for management responsibility during timely planning and assessment of employee skills, needs, and ambitions in the design process of the project team, is significant to emphasize. Also, close human resource cooperation is a prerequisite for the growth of employee motivation, quality and efficiency and, consequently, the reduction of turnover rate. Creating a balance between employee welfare and care and a healthy and profitable organization is a challenge that management must approach uncompromisingly responsibly. In matrix project teams the use of electronic knowledge repositories and succession planning reduce the negative effect of turnover on the project performance but job enlargement does not have a significant mitigating effect (Pee et al.; 2014, 702). The main findings in one study dealing with project management turnover showed that turnover occurs predominantly during the execution phase of the project life cycle, with the main causes being related to career and personal development and dissatisfaction with the organizational culture and project management role disrupting and negatively affecting the performance of the project team and the whole project (Parker & Skitmore; 2005, 205).



Kryvenda (2012) carried out research about employees' turnover within the organization and confirmed that the stronger problem is internal turnovers than external. In the research, she also identified many errors and disturbances occurring in the matrix organizational structure, hence loss of project knowledge where time or organizational culture effect voluntary internal turnover. In such processes the loss of valuable time to execute the project and the growth of stress among employees occurs because the same employees are not engaged on a project from the beginning till the end, but during the lifecycle of a particular project, a larger number of employees are rotated by working in some parts of it, while a small number of employees stay all the time. Kryvenda (2012) pointed out that it takes some time to build a team and establish communication, and the costs associated with the education and adaptation time of new employees to a particular project are extremely volatile and often exceed high levels. There are also positive influences of internal turnover on employees who want to work on new, exciting and powerful projects and look at the project as a rare business opportunity for career development. According to Morrell et al. (2004, 169), employees are aware of possible career development and usually benefit personal development and expect full support from employers. The matrix organization provides for such employees various opportunities for progress and knowledge growth through work on different projects that are of paramount importance to the organisation. Such opportunities enhance the organization's identity and reduce the possibility of undesirable external turnover, and generally noticeably create an ambitious and attractive organizational environment.

Lau and Albright (2011, 20) propose that organizations should continuously analyze individual employees' turnover intentions and real turnover in order to determine what benefits and disadvantages are. Also, the authors argue that the occasional employee turnover shifts their staff to positive organizational growth and enables them to hire new talents and expand the organization's ability. Moreover, occasional turnover may encourage management to improve staff development programs. Hence, employee turnover can be viewed as a tool to increase organizational productivity and morale if more efficient and more ambitious employees replace the average. Feeley and Barnett (1997; 385) recommend that organisations should strive to add links to those nodes on the periphery of the organization so these added links or social support should be centralized individuals who are committed to staying at the organization.

## 5. CONCLUSION

This paper highlights the possible implications and consequences that arise as secondary results of the process of implementing the matrix organizational structure and its influence on the rate of employee turnover in the organization. It points out the disadvantages of the matrix organization, and its structure reinforces the lack of clarity in responsibility and expectations. The effect created by such a structure encourages employees to continually send inquiries to their superiors about the direction and tasks they are to perform, and what exactly their role in the organisation is. Therefore, matrix structure managers must convey organizational strategy constantly, mission and goal to subordinates, and to explain them their role in detail in order to avoid misunderstandings. A high level of coordination, accountability, and commitment of managers about employees and in managing organizational tasks will bring the benefits of a matrix organization and reduce the effects of potential information deficit, stress and increased turnover levels in the organization. Hourly employees' retention can be predicted by self-fulfillment and working conditions, even over monetary rewards (Milman & Rici, 2004; 23). Optimizing employee results by creating standard procedures for performing specific tasks, providing the right working conditions, creating climate responsiveness, and selecting quality employees reduces turnover in the organization.

Recommendation for the empirical research includes tracking and measuring the reasons why people stay and why they leave, with emphasis on staying reasons and organizational commitment. It would be interesting to find the triggers of turnover intentions in matrix organizations especially in the critical moment of a structure implementation. Another suggestion is the introduction of the outbound interviews or questionnaires that would be carefully crafted to identify actual leavers and their turnover causes.

When there are right labor market conditions that should, in normal circumstances, contribute to organizational stability, in such situations, they cause a higher and more frequent rate of employee turnover due to increased opportunities for finding new employment and achieving a better working condition. Consequently, retention of best employees is more difficult when the labor market is more competitive so creating a competitive internal organizational climate is the only way to gain loyalty.

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INFORMATION  
TECHNOLOGY  
MANAGEMENT –  
GEOGRAPHIC  
INFORMATION SYSTEM (GIS)





# THE POSSIBILITIES OF SPATIAL OVERVIEW OF THE RESULTS FOR IMPLEMENTED PROJECTS WITHIN THE CROSS-BORDER PROGRAM BY USING GIS TECHNOLOGY

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## **Abstract**

*The implementation of projects funded by the European Union has opened up many possibilities for the development of existing potentials on a local, regional, and national level, as well as on those naturally developed areas – cross-border areas. The development of local and regional areas with regard to the overall national economy demands a different approach and should be addressed with proper, more tailor-made actions. Therefore, a clearer understanding of possible allocations of all types of resources has become one of the key issues in this matter. Although the implementation of projects affects the resources of an area and can, in theory, contribute to the reduction of social and economic inequalities and balance the development of regions, it is necessary to assess the justification of the investments, the relevance of the implemented projects and their scope in*



*each individual border area involved, so that all of its characteristics could be apprehended and observed in the context of the achieved results and possible missed opportunities.*

*The aim of this paper is to contribute to the discussion on Geographic Information Systems (GIS) and their contribution to decision making on NUTS III level in the cross-border area, as well as the possibilities they could create in the resources management of an area in the period of sustainability of project results created in the seven years of cross border cooperation Hungary-Croatia 2007-2013 programme as an example.*

**Keywords:** GIS, Spatial Data, Management, Cross-Border Cooperation, Regional Development, European Union

JEL Classification: M15, R58

## 1. INTRODUCTION

Since its founding days, the European Union has put a great emphasis on regional politics, promoting the idea of exploiting the comparative advantages of space that forms a natural geographical unit. „Regional policy is one of the major pillars of the entire EU’s public policy, focused on the redistribution of resources of the member states with a view to boosting economic growth and sustainable development of the lagging areas“ (Đulabić, 2011, p. 1043).

The financial aspect of allocating funds confirms that the development process, with an emphasis on the border regions in the European Union, enjoys an increasingly privileged status and plays an important role in the development of the region, given that “approximately a third of the EU’s total budget is invested in regional policy in order to achieve greater economic and social cohesion of the Union more equitable development of member states and their regional units (Tišma et al., 2012, p.120). The justification is found in the fact that such spaces often have similar or nearly identical opportunities and threats, linking them to the same spatial features that often provide similar opportunities to the population of the region as well as the fact that the border regions occupy almost a third of the EU space (Ravlić, 2019, p.6).

Due to the existing divergence in development among the regions of the Republic of Croatia, one of the possible ways of coming closer to the desired state are certainly the cross-border cooperation programmes in which, given the form and geographical position, all counties of the Republic of Croatia had

the opportunity to participate along with member and non-member states. In the document *Strategic Framework for Development of Republic of Croatia 2006-2013*.<sup>1</sup> it was defined that a special emphasis is put on cross-border cooperation as one of the instruments of regional development, which encourages not only investment in infrastructure but also activities of improving investment conditions, entrepreneurship development, education, tourism development, and environmental conservation. The latter is certainly consistent with the goal of the regional development policy, which is to “contribute to the socio-economic development of the Republic of Croatia, in accordance with the principles of sustainable development, by creating conditions that will enable all parts of the country to strengthen competitiveness and realize their own development potentials” (Bilas et al., 2011, p.296).

By implementing projects, networking, knowledge transfer, education, skills development and learning based on examples of best case practices, there is a chance to develop human and other resources of bordering counties, but it is necessary to determine which direct and indirect effects, over a long period of time, are ultimately achieved. Precisely to that purpose it is necessary to initiate the process of quantification and clear delimitation of the level of impact and performance achieved by each of the cross-border programmes, as well as their share in the overall development, taking into account the particularities of each area of cross-border cooperation and the views of the organisations implementing activities during and after the formal completion of the project, which would be the period of monitoring the sustainability of its results.

Because we live in a rapidly changing world, our future is contingent on what we do today and the nature of our intervention. We need the future to not simply happen to us but rather be one that we shape and define today. We need greater knowledge of our environment and our relationship with it as well as awareness of how to protect its valuable resources through the conservation of nature (Abukhater, 2011). To this purpose, it is possible to use geographic information systems since GIS „enables spatial analysis, managing large datasets, and the display of information in a map/graphical form<sup>2</sup>. GIS technology is widely applied in resources management and allocation, environmental modeling, information system, emergency response, business and

<sup>1</sup> [https://razvoj.gov.hr/UserDocsImages//arhiva/Publikacije//Strateski\\_okvir\\_za\\_razvoj\\_2006\\_2013.pdf](https://razvoj.gov.hr/UserDocsImages//arhiva/Publikacije//Strateski_okvir_za_razvoj_2006_2013.pdf) [access January 22, 2019]

<sup>2</sup> <https://researchguides.library.wisc.edu/GIS> [access February 11, 2019]

marking facilities management, network system analysis, visualization” (Fei et al., 2001, 2).

## 2. POSSIBILITIES OPENED BY THE CROSS-BORDER COOPERATION PROGRAMME

European integration and the disappearance of national political borders have unleashed an enormous potential for direct co-operation between states, regions, and municipalities belonging to different countries (Kiefer, 2014, p.70). Given that today „there are virtually no local or regional authorities in border areas that are not somehow involved in cross-border co-operation (CBC) initiatives“ (Perkmann, 2003, p.153), it is of utmost importance not be excluded from the processes that take place at all levels of the European Union, of which we are full members, meaning we can use all available resources to achieve the desired results both locally, regionally and nationally.

Through its financing measures, the cohesion policy serves to overcome the social and economic differences in the Union, the integration of underdeveloped markets and economies into the regular flows of developed European countries and the capacity building of less developed members to participate equally in the European market<sup>3</sup>. This is a significant impetus for the cooperation between regions in the cross-border area and regional development, opening up opportunities for the cooperation between regions and usage of available EU funds. In addition, it is possible to develop one’s own operational programmes and strategic development documents without the intermediation of central governments, which, in certain situations, can result in a more efficient and meaningful use of financial resources as the needs are detected and the programmes are being implemented precisely „*at the source*“ of the problem.

Additionally, effects, such as creating and strengthening networking of individuals and organizations in local and regional areas, enhancing trust in the community, or increasing the level of education (formal, informal, informal) of other members of the immediate or extended family, will surely depend on micro-location and smaller communities in the observed area.

<sup>3</sup> <http://www.raza.hr/Poduzetnicki-pojmovnik/Instrumenti-kohezijske-politike> [access February 18, 2019]

Different attributes of a region's space and the specificity of human capital are often conditioned by culture, customs, historical inheritance, short-term, medium-term or long-term periods in which impacts can be realized.

Every town, city, and community has unique local conditions that either help or hinder its economic development. These conditions will form the basis for designing and implementing a local economic development strategy (Swinburn, 2006, p.3). The issues faced by each local, cross-border area is subject to the specifics of each region, and a part of the problem lies in solving such challenges with a tailor-made approach. Long-term efforts and comprehensive observation of a given territory are needed, taking into account all of its specific features so that it's possible to create specially tailored measures that will result in a maximizing effect in that area.

To build a strong local economy, good practice tells us that each community should undertake a collaborative, strategically planned process to understand, and then act upon, its own strengths, weaknesses, opportunities, and threats. This process should enable local areas to become more attractive to businesses, workers and supporting institutions (Swinburn, 2006, p.3).

When speaking of project implementation, it should be noted that there is a component of the implementation or the component of the sustainability of the project results which occurs after the implementation of all activities during which organizations and institutions are continuing with a part of the activities. The use of these resources and their multiplier effect over time in the domain of increasing human resources or capital for economic growth purposes is rarely addressed. The effects that the mentioned funds created in terms of new value are seldom discussed, thus causing an increase in the quality of life in a local community for all its stakeholders. „It has long been recognized that the benefits of investing in human capital are not restricted to the direct recipient but spills over to others in society“ (Wilson & Briscoe, 2004, p.47).

Although some of the effects are visible immediately after the initial implementation of project activities, some still take time to develop their full potential. However, their importance is shown from the initial steps of the project, its applications, and it requires a very clear description of the long-term social, economic and environmental impact that the project will have. Having in mind the size of projects, the number of partners, the coverage of the space and the funds allocated, it is clear that it will leave an impact on the local communities

where the activities will be carried out, but the quality itself and the long-term effect it should and will cause remains unclear and undetected.

Some of the research results conducted in the post-communist, transition countries, now members of the European Union, discouragingly talk about investment by EU funds in the development of human capital in the local/regional area and its insufficient significance in order to clearly confirm the need for investing in local human capital which should be the bearer of local development. (Jurajda, 2004, p.19).

Recent conditions that rule the market in the form of rapid obsolescence of the skills and workers capabilities, the failure to meet the market needs in a given time and space may, in addition to the multiplicity resulting in growth, potentially result in negative consequences, such as unemployment and the loss of human potential, followed by a series of other difficulties, which will ultimately increase the divergence between the regions, hence, „Knowledge is the most strategic resource and learning the most important process“ (Lundvall, 2002, p.26), which can be supported by projects funded by the European Union, such as Cross-border cooperations.

### 3. CROSS-BORDER COOPERATION PROGRAMME HUNGARY-CROATIA

Despite the wide-ranging scientific interest in the problems of (state) borders, the Croatian-Hungarian border area has not attracted special attention in the literature during the last 20 years (Čelan, 2016, p.43). The boundary, colloquially often identified mainly with Drava river (and the lower part of Mura), as a typical natural (physical-geographical) and language border, is one of the oldest European borders along its major parts (Čelan, 2016, p.45).

Cross-border cooperation started in 2002 when local participants along the border launched the creation of the Hungarian-Croatian pilot fund for small projects under the Hungarian State Program PHARE, launched in 2003. The main objective of the program called INTERREG PHARE was to support non-profit cross-border co-operation and prepare potential candidates for future funding opportunities from the INTERREG Program<sup>4</sup>.

<sup>4</sup> [http://europski-fondovi.eu/sites/default/files/dokumenti/Hrvatska\\_Ma%C4%91arska.pdf](http://europski-fondovi.eu/sites/default/files/dokumenti/Hrvatska_Ma%C4%91arska.pdf) [access January 14, 2019]

The post-war situation in the Republic of Croatia, the loss of human capital and the inability to catch up with the market over a long period of time, further complicated the already complex situation. Although, during the observed period of implementation of this cross-border cooperation, when a/the crisis reached its peak in Europe and the world, Hungary was in a somewhat favorable position vis-à-vis the Republic of Croatia since they already initiated processes of solving identified problems by withdrawing funds from the EU funds over the past years. Nevertheless, the influence of the “iron curtain” on its human potential and on other resources that certainly left a great mark on it should not be forgotten because of its great impact and possible influence on future generations and on local communities in general.

### **3.1. CROSS-BORDER COOPERATION PROGRAMME HUNGARY-CROATIA 2007-2013**

The observed IPA Cross-border Program Hungary-Croatia 2007-2013, with more than 52.000.000.00 € allocated funds for seven years of the program, which has been the focus of this study, funded projects in the area of sustainable environment and tourism, development of economic cooperation and common human capacities, which are recognized as areas of exceptional local-specific importance of the cross-border area. During the implementation of the seven-year project, interventions were carried out on a spatially defined area, the Acceptable Area and the Area of the Associated Regions of the Program, geographically located along the southwestern and southern borders of the Hungary and the North and North-Eastern borders of the Republic of Croatia.

Given that there are no clear indicators at the level of the whole program that would give answers about the quality of the long-term effect of the invested funds, but only at the level of an individual project, the most important source of data and their achievement are the partners on both sides of the border, responsible for the implementation of the project activities. The implemented research encompassed both the lead beneficiary and the project partners since they are responsible for maintaining results after project implementation. The research included several project components, in this case the value of investment in revitalization of infrastructure in the cross-border area, tourism and investment in human potential, which will give an insight into the actual impact of the allocated funds on the basis of immediate target group members in terms

of the direct effect of the project, as well as human capital in local communities and its other important factors.

## 4. RESEARCH

The research was carried out during the sustainability period of the project in order to determine the impact on the development of human potential in the observed area in the period when it should be multiplied and even achieve additional effects at all levels. From April to May 2018, a survey was conducted involving respondents taking part in 102 projects from both participating countries, out of a total of 170 projects. Thus, out of a total of 581 institutions participating in the implementation of the projects, 102 completed surveys represent 358 institutions that implemented projects on both sides of the border.

The research was carried out on the Acceptable Area and the Area of the Associated Regions, which includes the Croatian Međimurje, Koprivnica-Križevci, Virovitica-Podravina and Osijek-Baranja county and the associated counties –Varaždin County, Bjelovar-Bilogora County, Požega-Slavonia and Vukovar-Srijem County. The areas that participated in the research on the Hungarian side are the Zala County, which is part of the Western Danubia region, as well as Somogy and Baranya counties, which are part of the South Transdanubia region. Survey respondents are organizations, institutions in the status of the lead partner, a partner in the project or affiliated partner within all 3 Calls.

Geographic information systems have been used as a source of geographic information, i.e. spatial depiction of invested financial resources within IPA Cross-border Co-operation between Hungary and Croatia in the seven-year period, in order to demonstrate dispersion or focus in that area as „GIS is a philosophy of information management and integration of spatial display and data analysis.“ (Jurišić et al., 2016, p.3). „GIS technology is widely applied in resources management and allocation, environmental modeling, urban planning and management, land information system, emergency response, business and marking facilities management, network system analysis and visualization“ (Jenkins, 1990, p.8), so its wide usage could also benefit other sectors such as planning and decision making on all levels. Furthermore, GIS will determine the degree of impact on a certain space and the investment of cross-border co-operation resources that can serve as a decision-making basis to improve the economic aspect of the business, especially if the user has limited resources



or has a large number of options available. Managing the resources of a given space and utilizing EU funds gives the user a realistic opportunity to detect bottlenecks at a particular location, use the resources in the most economical way and make better decisions in the situation when resources are scarce.

“Thorough planning within available resources resource management gives the user a realistic possibility for faster and better production, as well as a greater income than it would be possible in the situation of having immense resources available, which would not be used economically” (Jurišić et al., 2018, p.2). Also, a very important segment of GIS is the possibility to further understand the impact of invested resources in some space. Although there are many factors of influence that can be detected in some area, it is still necessary to locate exactly those that per unit of impact result in the greatest effect, both in the short and long term.

## 5. RESULTS AND DISCUSSION

As a result, several maps were chosen in order to show the possibilities offered by the geographic information systems. Only three maps out of the entire scope of research and results are selected to show the impact of the funds invested in different areas of intervention. Both sides of the eligible area of the Programme can be characterized as rural areas with the only large urban centers in the region, “Pecs (162 498 inhabitants) and Osijek (114 616 inhabitants). Other urban centers, including Kaposvár (67 662), Zalaegerszeg (60 061), Nagykanizsa (51 694), Komló (27 387) on the Hungarian side and Koprivnica (25 776), Čakovec (15 885), Virovitica 15 683), Varaždin (49 075) and Bjelovar (41 869) on the Croatian side have more local significance”<sup>5</sup>.

The data shown below is selected because of the importance of the information itself that is presented in different statistical data, which is only relevant when placed in the context of the space, i.e. treated area, in this case, the invested funds with regard to the local communities.

The first section shows the differences among the amounts of funds that were invested in a certain area of the Cross-Border Cooperation programme when it comes to the education component of the project. The second part

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<sup>5</sup> <https://narodne-novine.nn.hr/clanci/medunarodni/dodatni/415584.pdf> [access January 10, 2019]



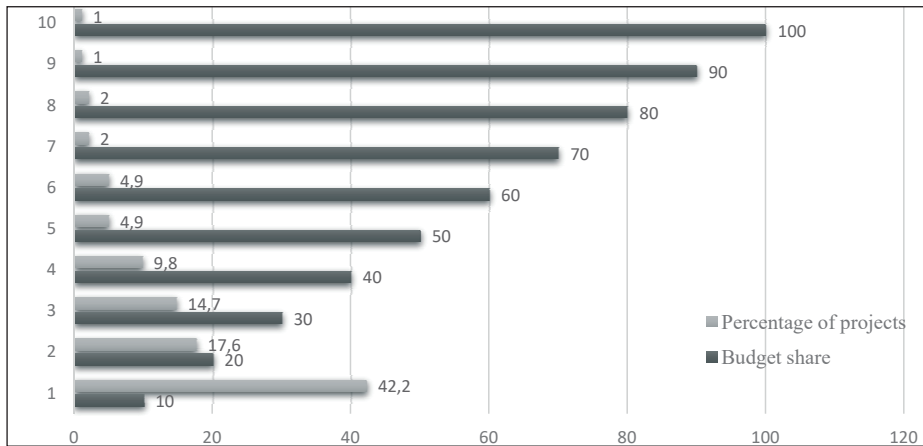
highlights the dependence on project implementation (the financial/human capacity of implementing institutions) in the cross-border area of IPA CBC HU - HR funds. The third part shows the impact of IPA CBC HU-HR projects on the local community network and the border area of implementation.

Maps show the transition from simpler forms of GIS display to something more complex, with the purpose of showing opportunities in decision-making at all levels and those decision-makers who do not have the necessary training for the GIS, because the representations shown here include only one to two variables, although it is possible to see a lot more complex shape.

### **5.1. THE DISTRIBUTION OF FUNDS INVESTED IN DIFFERENT TYPES OF EDUCATION IN THE IPA CBC HU-HR 2007-2013 CROSS-BORDER AREA**

By analyzing the answers received for the 102 projects implemented, it is evident (Figure 1) that 42% of the projects for the implementation of educational activities spent 10% of the total project budget. Given the nature of the implemented projects, it is possible to conclude that the amount of up to 10% is largely chosen by all infrastructure projects where only a small part of the budget went to the educational component because it was a considerable allocation of funds for each of them. 20% of the budget for the implementation of these activities was spent in the case of 17.6% of projects, and 14.7% of implemented projects spent 30% of the budget on some form of education. For a small but relevant number of 9.8% of projects, 40% of the budget was spent on educational activities. Out of the total number of projects, 4.9% of projects spent 50% of their budget on educational activities, and the same percentage of projects, 4.9%, spent 60% of the project budget in the educational component. Only 2% of projects spent as much as 70% of funds in education and the same percentage of projects invested 80% of the budget in education. 90% and 100% of its budget have invested 1% of the implemented projects, but it does not say almost anything about the distribution of the funds invested in the observed area of cross-border cooperation.

**Figure 1:** The share of the total budget of the project planned for education

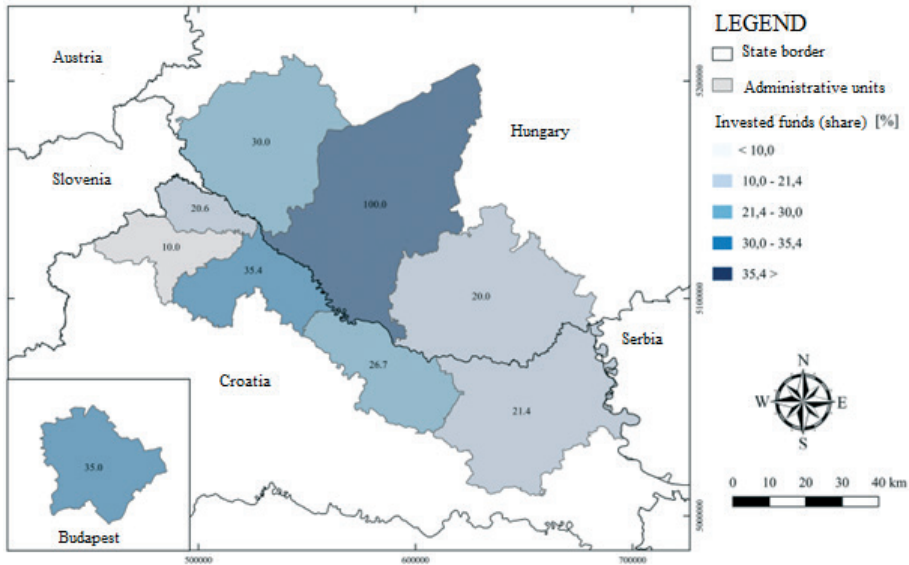


**Source:** Field research from April to May 2018

With regard to the distribution of funds invested in different types of education in the cross-border area of the IPA CBC HU-HR, it can clearly be concluded where a larger number of projects with a significant educational component was implemented, and that additionally also highlights other results which may have been obtained in this area in a shorter or longer period after the implementation of the planned activities. Such data can be used as a basis for future interventions or can be seen as the strength of already accomplished effects. For example, has the higher percentage of funds allocated to education increased the employability of the population, income, additional education or some other indicators in a certain area or has it completely omitted the effect which clearly indicates the necessity of additional adjustment of interventions?

This type of display (Figure 2) can also be combined on one map with all of the aforementioned parameters and the effects caused by the interventions made during that time could be observed, serving as a basis for more informed decisions for future activities at all levels.

**Figure 2:** The share of project budget intended for educational activities by counties



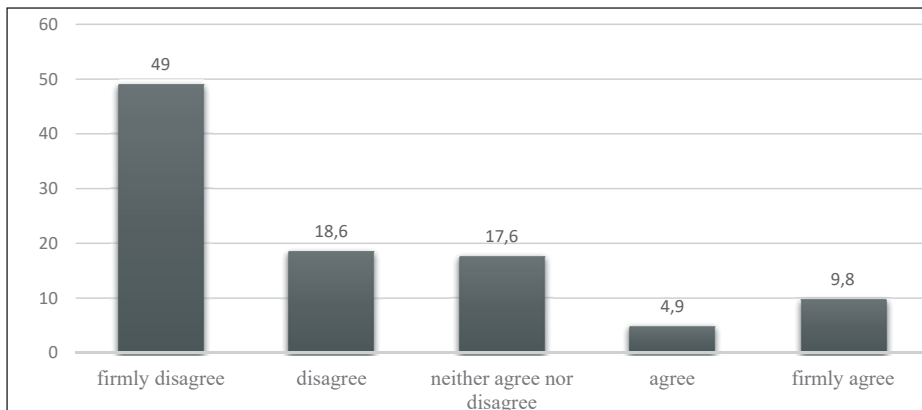
**Source:** Field research from April to May 2018

## 5.2. PROJECT IMPLEMENTATION DEPENDENCE (FINANCIAL/HUMAN CAPACITY OF INSTITUTIONS) ON IPA CBC HU-HR 2007-2013.

For the claim – “The project of this size (financial/human capacities) would certainly be carried out regardless of the received EU funds”, the answer clearly shows that the implementer has a definite attitude on the dependence of financing the applied activities. However, it is necessary to repeat that this is actually the case of initial funding, as each partner in the period of sustainability of the project results has to invest their own funds in that extent in which they carry out the sustainability of the results. As much as 49% of respondents (Figure 3) shared the opinion that they would not carry out planned activities without the EU funds. If we add up the 18.6% of respondents who do not agree with the statement, it is clear from the analysis of the survey results that more than a half of the projects would not have been conducted in the area on both sides of the border. Out of the total percentage of respondents, 17.6%, do not have a strong stand on the dependence of project implementation and the allocation of initial financial resources. Only a small percentage (4,9%) of respondents disagree and would carry out the project without the initial financial assistance allocated to the cross-border area from the IPA pre-

accession assistance program. Almost 10%, or more precisely 9.8% of respondents believe that the projects planned by their cross-border partnerships would also be carried out without financial assistance from the EU funds.

**Figure 3:** Project implementation dependence on allocated IPA CBC HU-HR 2007-2013 funds



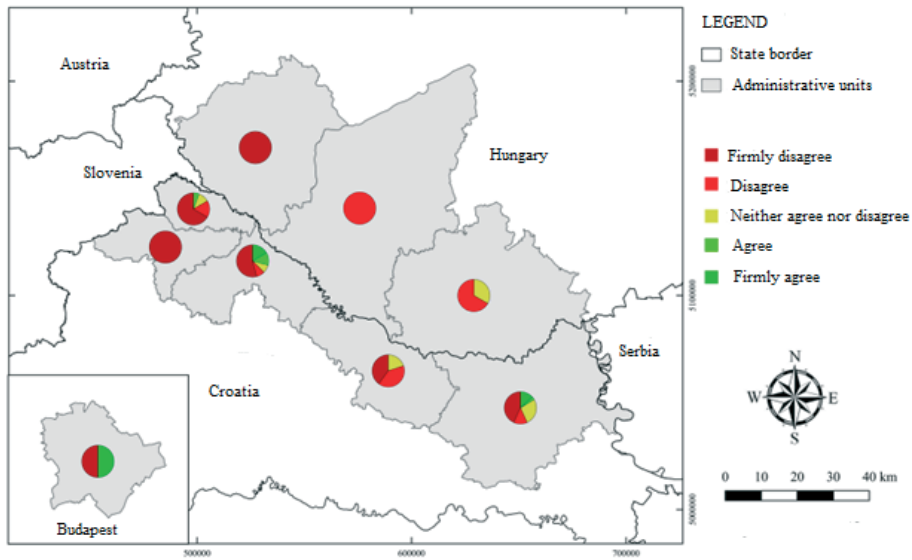
**Source:** Field research from April to May 2018

A clearer picture is certainly gained by a spatial representation of the results obtained, where we can see (Figure 4) the differences between the regions when it comes to the dependence of the implementing institution capacity on EU funded projects. Of the total number of implemented projects, those conducted by users in the counties of Somogy and Zala from the Hungarian side and the Varaždin County on the Croatian side show the greatest disagreement with the claim, i.e. the dependence on EU funds. According to the chart below, in all counties disagreement exceeds 50%, which is confirmed by a high percentage of the dependence of implementing project activities on the implementation of projects funded by the EU. Only 4,9% and 9,8% of the respondents, who would certainly carry out the planned activities of the projects, are located in Osijek-Baranja, Međimurje and Koprivnica-Križevci County.

The data presented is just the beginning of the ability to display geoinformation tools that are able, by stacking multiple layers and associated attributes, to display data in the observed space that can serve decision-makers at all levels. Planning and implementing the intervention itself in the area will allow a clearer understanding of the “wider and broader picture” of an area and all its special features. Considering the number of inhabitants living in border areas

and the number of financial resources that are intended for cross-border cooperation, but also the need to manage some local resources, the importance of understanding spatial data is even more notable.

**Figure 4:** Dependence of project implementation on allocated IPA CBC HU-HR 2007-2013 funds by counties



**Source:** Field research from April to May 2018

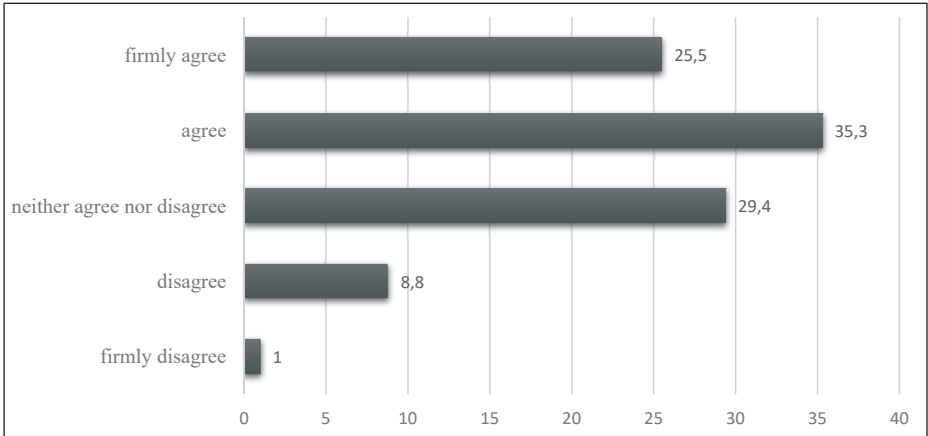
### 5.3. THE IMPACT CREATED BY IPA CBC HU-HR IMPLEMENTED PROJECTS ON LOCAL COMMUNITY NETWORKING AND CROSS-BORDER AREA

More than half of the respondents, or 60.8%, believe that the implementation of the project activities encouraged other organizations to carry out activities in terms of actions, initiatives, projects, regardless of cross-border cooperation in these local communities. Out of that, 25.5% firmly agreed with the statement and 35.3% agreed. Less than a third, namely, 29.4% could not agree nor disagree with the statement, while less than 10% of respondents disagreed. Only 8.8% selected the answer to disagree, while merely 1% expressed their strong disagreement with the statement. The latter is a very important indicator since in this way the results of the projects are actually coming out “from their original framework” of cross-border cooperation partnership and multiply in

the local community and among its stakeholders. When this kind of effect occurs, for which there is no “compulsion” but it occurs from the needs perceived by the stakeholder for the local area or institution they work for, then we can state that the multiplicative effect started to take place in local communities along the border, in this case by the initially invested funds during the implementation of IPA CBC HU-HR funds.

This type of multiplier effect is not identical in terms of form, meaning or content with the concept of sustainability of project results, which primarily means the continuation of activities or a part of them after the initial project financing, in this case, made by the EU funds. The multiplication effect carries much more weight since it is not obligatory and all its creations are additional assets for the community. Due to that, answers to this question given by organizations that have been implementing projects in the area, those who know the opportunities in their local community, who carry out activities with target groups members and also cooperate with other organizations, stakeholders of that local space, have served as a positive example for new actions, activities, initiatives and projects implemented and thus created a multiplicative effect as an unforeseen result of invested funds.

**Figure 5:** The impact created by implemented projects on the creation of new projects in local communities



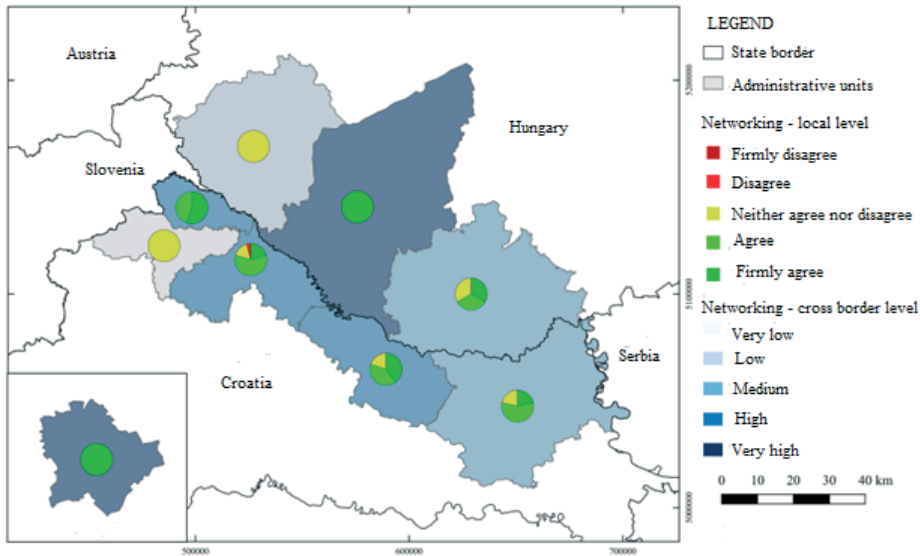
**Source:** Field research from April to May 2018

The map (Figure 6) more clearly demonstrates the attitude of organizations regarding implemented projects and the increase in the level of local networking

when it comes to people and organizations in the border area by counties. With this type of presenting collected data, multiple answers shown within one map can give us much information which might not be visible at first. While a great number of institutions entirely agree that the implemented projects have a positive impact on networking among people and organizations at that local level and that they have increased the networking of people and organizations in the border area. In the counties on the Croatian side, there is a unified opinion on the high importance of implemented projects and increased networking in all counties, except in the case of Varaždin County. This data could also be linked with multiple layers of data from each county and could serve for a better understanding of conditions in each county since they clearly do not have the same stand on this issue regardless of the country they come from.

When programming cross-border co-operation and other EU programs, given the fact that the program has a seven-year implementation period, a great opportunity lies in GIS tools in order to better understand the starting point but also the results or their absence lies in the spatial view of the given data. A large number of space attributes could be presented and thus influence better decisions for a certain area. Apart from that, the achieved progress that can also be monitored this way should have a central role in planning on all levels, but also the subsequent analysis of the results obtained should play an important role for any future step for any local areas where interventions should take place.

**Figure 6:** Impact of IPA CBC HU-HR implemented projects on the local community and cross-border areas



Source: Field research from April to May 2018

## 6. CONCLUSION

Encouraging different processes at local levels, such as networking and cooperation in areas sharing the same opportunities and having the opportunity to exploit common resources in a sustainable manner, stands at the top of the priorities since it has the potential to stimulate the various processes necessary for progress, both locally and across border, on which it could have an indirect effect. Cooperation driven by investment funds, such as those funded by the European Union, would enable multi-level cooperation but it is needed to activate various resources in that direction. Consequently, in that manner, it is possible to expect the creation of the foundation for the future development of each individual in the communities of the observed (cross-border) areas. On the other hand, a much desired regional development will happen in correlation to that without any direct involvement of the central government and their planning, but to the natural needs of the area that share the same or similar opportunities, threats, and/or resources.

Certainly, it is necessary to repeat once again that the implementation of projects is open to everyone in the European Union since that is regarded as



taxpayers' money. We should not ignore the fact that a significant amount of annual participation each country, including the Republic of Croatia, is investing to have access to funds and therefore it is necessary to plan interventions based on information from the field that will be dealt with by appropriate methods and services for better decisions at all levels. Although access to financial resources is made available to everyone, the effects of the funds will depend on resources, such as institutions that will prepare projects, those who will participate in them, decision-makers who will multiply the results achieved by additional financial means, but also the attitude of all involved stakeholders, from those in small local communities to those in a high-ranking position.

When talking about decisions made at a community or regional level, GIS tools can offer a wide range of solutions that will allow simpler detection of the causes but also the consequences of some factors, in this case, funds invested in a cross-border area. Detecting processes that are simultaneously triggered by investing resources of this kind in some area can enable all stakeholders (and, more importantly, decision makers) to have a clearer understanding of its effects. Understanding the impact of the created centers of power in some area, the scarcity of resources or its repeated investment in a space that does not generate additional value should be further researched in order to find an approach that will yield desired results. Such synergies will create the basis for further steps in the desirable direction of these very delicate processes that need to occur at a personal level (perception of personal influence and continuous motivation for the same), institution level (understanding of the impact on the local level and the role of the development initiator) and ultimately the local community as a whole.

It is worrying that there is no research in the area of development conditioned by the EU's investment of resources and the correlation with the results of growth at the regional, local and even personal level, which could contribute to the discourse on the difficulties we are detecting for decades in the Republic of Croatia. By using tools, such as GIS, it will be possible to understand the impacts on the local space irrespective of where they come from and to find efficient and effective ways of using local resources to detect whether some regions are lagging behind due to their capacities that are not being used in an appropriate way or because of the circumstances and impacts that are not fully within their competence. This could allow the possibility to more clearly determine

which future direction to take and could result in much-desired growth and sustainable development on all levels.

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# IMPROVING DIRECT ONLINE SALES IN THE HOTEL INDUSTRY: EXPANDED PARADIGM VARIABLES OF GOOGLE ALGORITHMS FOR RANGING

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## **Abstract**

*The purpose of this paper is to explain and distinguish the process of guest traveling and the guest's booking process to subprocesses, and in that context deepen and broaden the understanding of Google's Ranking Factors, whose quality determines the position of the SERP (Search Engine Result Pages). Each hotel as a business system strives to direct as many online users as possible to convert through an online reservation form on a direct online channel or web site compared to OTAs.*

*The aim of the work is to identify, classify and define all the factors influencing the final decision on the online booking of the hotel. In this respect, this paper*

seeks to point out the fact that besides RF, which are an integral part of Google's Search Engine Optimization (SEO) analytics, the final decision on booking is also influenced by the factors that Google algorithms work indirectly and are defined through expanded paradigm Google algorithm.

**Methodology** - The research will be conducted in 3 phases. In the first phase, all relevant literature and research will be studied and analyzed. In the second phase, all current RF and software reference sources and their software updates for depth analysis (Google, MOZ, SEMrush) are investigated to determine their current relevance and optimization capabilities more accurately. In the third phase of the research, the relationship between the individual phase of the online booking process and the travelling cycle phase will be put in place to determine the factors that directly or indirectly affect the generation of the SERP result.

**Limitations** at this stage show the lack of space for conducting empirical research in terms of conducting factor analysis on concrete examples and analyzes because such an approach would have significantly exceeded the scope of this paper.

**Practical implications** - On the basis of research of factors, industry practitioners can learn about up-to-date factors that affect direct online sales and optimize them in business practice.

**The scientific contribution** of the work is reflected in determining influencing factors for direct online booking in the hotel industry and the introduction of RF matrix for a positive impact on sales improvement through direct online sales channels based on the expanded paradigm of Google's ranking algorithm variables.

**Keywords:** Google algorithm Ranking Factors (RF), SERP (Search Engine Result Pages ), online booking, travel/booking process, SEO

JEL Classification: M15, Z39

## 1. INTRODUCTION

The ultimate meaning of business is revenue or profit. The profits are influenced by many direct and indirect factors. Hotel industry as a business branch is very complex. Also, the whole process from sales planning to sales realization consists of a very large number of sub processes and variables that are affected by sales processes and sub processes (distribution of capacity to sales channels, planning and dynamics / rate parity, quality of accommodation facilities and

accommodation units, competition analysis, ... etc.). Business processes in the tourism and hotel industry are very intensely sensitive and conditioned by the development of information communication technology (Khan, 2018). Many authors have written about the use of ICT in sales, whereby the most relevant is the research on the evaluation of web sites (Law, R. 2019), about online booking factors that directly affect the booking decision (N. K. Liu James, 2014), about the factor analysis that indirectly affects on-line booking in hotel industry (example: Dogan, 2019). With regard to the development of ICT, business policy changes according to the way technology are applied in business. In the context of business activity, the role of ICT in the hotel business is multidimensional and complex. ICT can have a positive impact on business in a number of ways (accelerating the workflow, reducing the number of people in processes, cost reduction, better control, direct sales, etc.). In this paper **special attention is devoted to the role and functioning of ICT in the segment of online booking process** (Park, S. 2018). When it comes to sales in the hotel industry, special attention is paid to **online sales channels and user decisions on their use** (Datta, B.2018). In order for ICT integration in the business sales segment to be justified ICT must have a positive impact on revenue/profit so that:

1. Should “bring” as many web/internet users on the hotel web site as possible,
2. Using a simple and understandable user interface (UI) on the hotel’s web site (Bilgihan, 2015) (and on the reservation form in particular) to provide the best user experience (UX) (Tomlin, 2018), so that the visitor-to-conversion ratio was as positive as it could be,
3. In house ICT needs to be implemented by providing the hotel guest with all the information about products and services offered within the hotel (planned and according to the pre-determined microtime-ing) with easy buying and consuming them in real time (touch screens, ipads, laptops, TVs, smartphone apps, ...) (Beldona, S 2018).

In accordance with the title, this paper aims to point to the role and importance of promoting direct online sales in the hotel industry by introducing an extended paradigm of factors affecting online booking through direct online channels where the paradigm is a set of basic rules or assumptions that are taken as facts in order to better understand reality and its phenomena. In the science, the notion of paradigm is often used to describe different concepts whereas The Oxford English Dictionary defines a paradigm as “a typical example or pattern of

something; a pattern or model” (The Oxford English Dictionary online). Similarly, Thomas Khun defines the scientific paradigm as universally acknowledged scientific accomplishments in his book, “The structure of Scientific Revolutions (1962)”, which, for a while, provides model problems and solutions for a community of practitioners (Kuhn, 1996). Every hotel as a business system has the intent to make as many conversions as possible via direct online channel sales. In order to do so, the web site and the online booking form must be developed, optimized and maintained to the highest standards. For this reason, analyzes of numerous dynamic and stochastic factors that affect different times in different processes in travel and booking cycles must be continually performed.

In this context, furthermore **the process of traveling** and **the process of online booking** from different aspects will be divided into subprocess and through an expanded paradigm of perception of search through the search engine will define the factors that determine them, and then explore the ICT adaptability to which they can best affect.

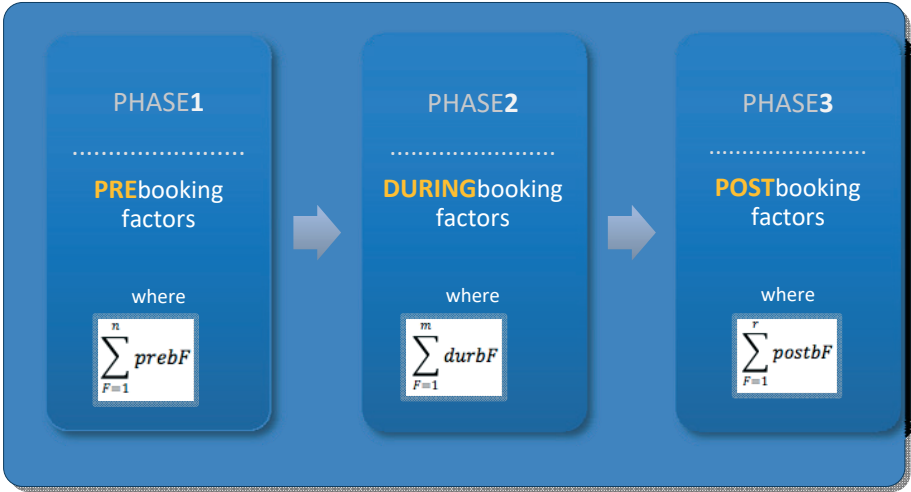
## 2. THE FACTOR COMPLEMENTARITY OF ONLINE BOOKING AND TRAVELING CYCLE PROCESSES

As explained in the introduction, the business processes in hotel industry are very highly influenced by the development of information communication technology. As information communication technology is being developed, new business opportunities are being opened up and the way new business possibility evolves. In this context, business policies have become very dynamic and stochastic processes. With regard to the development of ICT and business processes that connect supply and demand, they are taking place in a new context and new circumstances. In order to better understand the online booking process and the factors affecting it, it is necessary to understand the phases of the travel cycle as well as the factors that determine them, apart from observing the time aspect of the online booking process. When talking about the process of online booking, it should be emphasized that at any moment it is not determined by the same factors or the same factors do not always work with the same intensity (A. Emir et al., 2016). Taking all the above into consideration, this work will identify variables, their intensity of action on the online booking process, and propose the use of technology for their improvement. Also, to increase sales through direct online sales channels it is also necessary to continuously

monitor and optimize direct booking and cooperation with online travel agents (Fei Ye et al., 2017).

In order to better and more accurately determine the factors affecting the online booking process, we can observe it from time to time in three main phases as shown in the following Figure 1.

**Figure 1.** Online Booking Process Phase online and Online Booking Factors (OBFs) which determine them in terms of time aspect



Source: Authors

From the previous scheme, a general expression/formula can be derived that expresses the total value of the Online Booking Factor in relation to the time aspect relative to the traveling.

**Equation 1.** Summarizing the Online Booking Factors with regard to the time aspect

$$OBF = \sum_{F=1}^n prebF + \sum_{F=1}^m durbF + \sum_{F=1}^r postbF \quad (1)$$

where

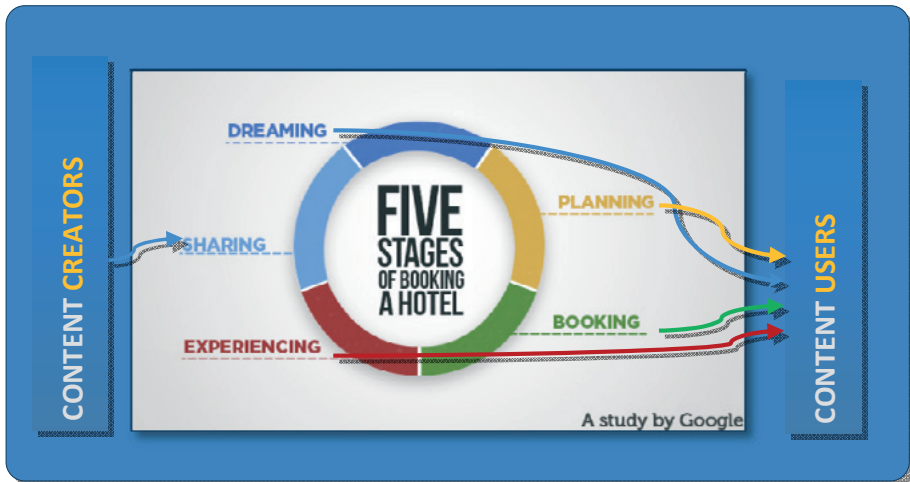


prebF	=	Factors affecting the booking process <b>prior to the booking process</b> (on Users that are at this stage sharing all the information and experience shared by all previous users who have shared information generating new content through, for example, reviews, and this information acts in a way of thinking about users who are still indecisive. This information could, for example, be divided into subgroups: staff, facilities, cleanliness, comfort, value for money, location...)
durbF	=	Factors affecting the booking process <b>during the booking process</b> (UI elements, UX elements, ease of reservation form / confidence in data sharing security ...).
postbF	=	Factors affecting the process of booking, as a result of a successful completion of the process of previous users booking, and the experienced and "shared" travel experience.

Source: Authors

After reviewing the phase of the online booking process, for complete insight into the factors affecting the online booking process, the stages of the travel cycle are shown below (according to the Google study, the travel cycle of the guest consists of the 5 main phases shown in Figure 2).

Figure 2. The five stages of travel (Content Users & Creators)



Source: John Maclang: Business Development, Hotel Online Marketing: The five Stage of Travel: <http://johnmaclang.com/the-five-stages-of-travel/> - / - 09.03.2019. – with the elaboration of the author

Each phase in the travel cycle (Figure 2) is determined by a large number of direct or indirectly influencing factors that need not at all times have the same ponder value (determining the value of each individual factor would go

beyond the scope of this article, and these issues should be the subject of separate research).

Before analyzing the specifics of the phases in the travel cycle and the factors that determine them, several important facts should be highlighted:

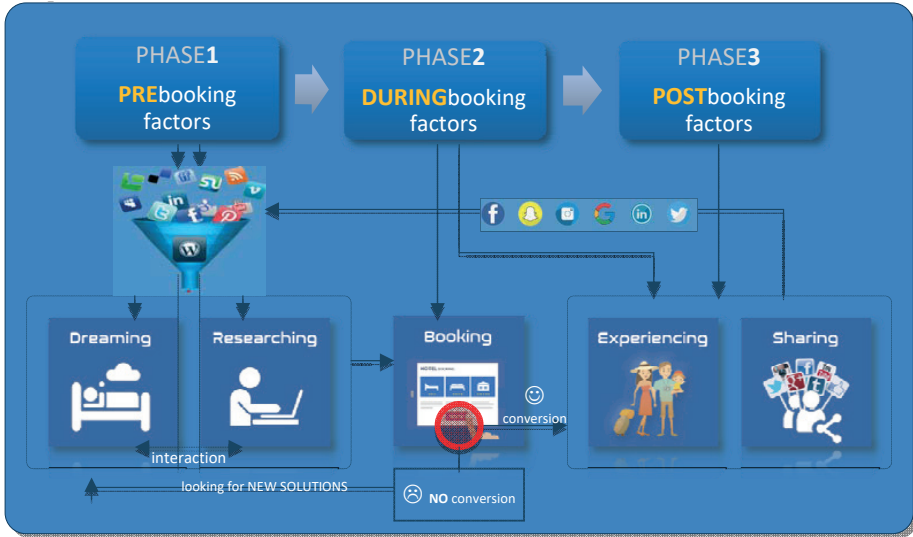
- The travel cycle begins with the dreaming phase,
- At every moment in the world, millions of people as **online content users** are found in one of the first 4 stages of the travel cycle (Dreaming, Planning, Booking, and Experiencing). In these phases they behave mainly as users of previously created and shared online content,
- At every moment in the world millions of people are in the sharing phase of the travel cycle. After traveling, User passes from the phase of experience to the sharing phase and moves from the status of user online content to the status **creator of online content / information creators**,
- Google machine learning is a highly complex algorithm that is constantly taught both by content users and content creators (**monitors keywords, semantic algorithms systematizes search activity, collects and analyzes content**, concludes and suggests that each subsequent user experience is of better quality and quantity).

The following schematic representation presents **simultaneous observation of factor interdependence with respect to:**

- a) **The time aspect of observing the online booking process and**
- b) Phases in the guest's travel cycle,

which indirectly (through factors influencing them) affect the decision about online booking. Reservation form/system must ensure that users are simply automatically passed through the process of online booking and that the user finally clicks on the booking button (CONVERSION!).

**Figure 3.** Interaction of factors affecting online booking process and travel cycle process



Source: Authors

### 3. TRAVEL CYCLE PROCESS PHASES

In the continuation of this paper, the specifics of the individual phases of the travel cycle are mentioned, and the most dominant factors are determined.

#### 3.1 . DREAMING

A large number of decisions in life begin with the phase of dreaming. So does the travel cycle. At this stage, one imagines imaginable and unreachable “wishes”. Each travel cycle starts with the DREAMING phase. At this stage, the minds of travelers are determined by the present circumstances and experience from objective reality and from the on-line world. Objective reality factors should be influenced by long-term placement policies of offline and online information on already well-known market demand and potentially interesting markets (based on conclusions and understanding of the context of various Google data sources (Google Analytics, Google Adds, Google Keyword Planner, Google Trends, Google Correlate, etc.). Factors affecting the dreaming phase, resulting from online sources (web pages, social media releases, YouTube video clips, online reviews, etc.) should work with the greatest impact and qual-

ity of information placement (respecting the rank of Google algorithm in the sense of respecting the quality standards of the page ranking factor on the most dominant online factors of interest of a business entity (Google+, Facebook, YouTube, LinkedIn, web ...).

The following expression can describe the Dreaming Factor phase,

**Equation 2.**  $drF$  – Dreaming phase Factors

$$drF = \sum_{F=1}^n of fdrF + \sum_{F=1}^m ondrF \quad (2)$$

where

$drF$	=	Dreaming phase factors
$of fdrF$	=	Dreaming factors from the offline world (influential factors from objective reality)
$ondrF$	=	Dreaming factors from the online world (influential factors from the online digital world)

**Source:** Authors

### 3.2. RESEARCHING/PLANNING

After the dreaming phase, the user goes into action and begins to explore. According to Google’s statistics, the user / potential guest will visit more than 20 different sites to find the appropriate hotel. The question is how to be as good as possible on Google, how to attract a user to a web site, and keep the user on our site? Good SEO (Search Engine Optimization) ensures a better website ranking.

SEO is a technique which optimizes the web site and makes it come up at the top in the search result of search engines like Google, Yahoo, Yandex, Bing, ... SEO must bring more organic traffic to a specific web site. On-site SEO is the practice of optimizing individual web pages/sites in order to rank higher and earn more relevant traffic in search engines. On-site refers to both the content and HTML source code of a site/page that can be optimized (keywords, URL, title, headings H1, H2, meta description, content, images, mobile friendliness, links speed, ...). Off-site SEO refers to links and other external signals. Off-site SEO” refers to actions taken outside of the website to impact rankings within search engine results pages (SERPs). Optimizing for off Page Ranking factors

involves improving search engine and user perception of a site's popularity, relevance, trustworthiness and authority (1. Search Engine submission – Google, Bing, Yahoo, Alexa, Altavista, 2. Directory Submission, 3. Social Bookmarking - free sites - Digg, Mix, del.icio.us, folks, Reddit, Scoop.it, 4. Forum posting, 5. Blogging, 6. Links (Inter Linking, Link Baiting, Cross-Linking).

The following expression can describe the Factor Planning / Researching Phases:

**Equation 3.**  $drF$  – Researching phase Factors

$$rF = \sum_{F=1}^n ronsF + \sum_{F=1}^m roffsF \tag{3}$$

where

$rF$	=	Researching phase factors (SEO factors)
$ronsF$	=	On-site factors
$roffsF$	=	Off – site factors

**Source:** Authors

**3.3. BOOKING**

A successful hotel must be found on most of the popular online travel agency portals. This ensures free advertising on the travel agency sites where most tourists start their planning stage. Consider using solutions such as The Channel Manager and Booking Engine. Also, every hotel as a business entity should strive to bring as many users as possible on their own web site (no OTA fees are paid). One must constantly analyze activity on the reservation form and track the number of visits to the number of conversions. The number of conversions most often depends on the general factors that make the first impression, namely the simplicity, functionality, and attractiveness of the reservation form, and the UX & UI factors. UX should be (Morville, 2004) 1. Useful, 2. Usable, 3. Findable, 4. Credible, 5. Desirable, 6. Accessible, 7. Valuable, and UI should be 1. Clear, 2. Concise, 3. Familiar, 4. Responsive, 5. Consistent, 6. Attractive, 7. Efficient, 8. Forgiving.

The following expression can describe the Booking Phase Factor:

#### Equation 4. drF – Booking phase Factors

$$b^F = \sum_{F=1}^3 bfi^F + \sum_{F=1}^7 bUXF + \sum_{F=1}^8 bUIF \quad (4)$$

where

b <sup>F</sup>	=	Booking Phase Factors
bfi <sup>F</sup>	=	Booking First Impression - Factors that create an impression
bUXF	=	Booking User experience factors
bUIF	=	Booking User interface factors

Source: Authors

### 3.4. EXPERIENCING

A successful hotel must provide the guests with the ultimate experience of staying at the hotel. The guests experience in the hotel can be viewed from different points and it depends on a lot of facts (e.g. staff, facilities, cleanliness, comfort, value for money, food, wifi, parking, ..). Disadvantages and mistakes are possible, but in-house ICT solutions should enable their debugging in shortest possible time (example: app for real-time interaction with hotel management via tablets, tvs, smartphones, touch screens). The hotel as a business entity enables instant problem solving, thus showing guests the utmost care of them. Although maybe not all was great in the hotel so treated guests will leave positive comments after leaving the hotel.

The following expression can describe the Experience Phase Factor:

#### Equation 5. drF – Experience phase Factors

e <sup>F</sup>	=	Experiencing Phase Factors - the totality of all factors (products and services in the hotel that the customer consumes) that affect the quality of the experience/pleasure of the guest staying at the hotel
ce <sup>F</sup>	=	Creating Experience Factors - Factors affecting the creation of experiences / experiences during the stay at the hotel (products and services at the hotel and OTAs rating areas)
edd <sup>F</sup>	=	Experience Disadvantages Debugging Factors

where

eF	=	Experiencing Phase Factors - the totality of all factors (products and services in the hotel that the customer consumes) that affect the quality of the experience/pleasure of the guest staying at the hotel
ceF	=	Creating Experience Factors - Factors affecting the creation of experiences / experiences during the stay at the hotel (products and services at the hotel and OTAs rating areas)
eddf	=	Experience Disadvantages Debugging Factors

**Source:** Authors

### 2.5. SHARING

Most people choose their travel options based on recommendations from family and friends or based on the recommendations and reviews of other people. At the end of the trip the guests share their experiences. Their reviews affect other potential travelers / guests who go through the same phases of the travel / booking cycle. If hotel management is convinced of the quality of its services, it should find a way to kindly invite guests to write reviews and encourage them to communicate with the hotel via social media.

**Sharing phase factors** can be described by the following expression:

$$\text{Equation 6. } sF = \sum_{F=1}^n swqF + \sum_{F=1}^m sppsaf + \sum_{F=1}^r seddF \quad (6)$$

where

sF	=	Sharing Phase Factors - the totality of all factors encouraging the submission of positive comments.
swqF	=	Staff Work Quality -. The quality of hotel staff works in every department (maids, waiters, receptionists ...) that creates a positive customer experience - especially for the categories being rated.
sppsaf	=	Pre-planned Staff activities to get good reviews.
seddF	=	Experience Disadvantages Debugging Factors (real-time communication with hotel management, apps...)

**Source:** Authors

At the end of the process, a sematic formula can be implemented that encompasses all factors that directly and indirectly affect the position of hotel websites as a business system within SERP.

**Equation 7.** drF – EP GPRA (Expanded Paradigm of Google’s PageRank Algorithm variables)

$$EP\ GPRA = drF + rF + bF + eF + sF \quad (7)$$

where

drF	=	Dreaming phase Factors
rF	=	Researching phase Factors
bF	=	Booking phase Factors
eF	=	Experience phase Factors
sF	=	Sharing phase Factors

Source: Authors

#### 4. EXTENDED PERCEPTION MATRIX OF GOOGLE ALGORITHM

When an online user searches for online content of interest (e.g. a hotel that will meet his / her needs), the search engine enumerates keywords, phrases, and expressions of interest. The Google algorithm based on a large number of factors (with ponder value) returns the user’s result in the form of SERP. Each hotel wants to sell more of its services through a direct sales channel. Because of this, it is important for every hotel to always be positioned better within SERP (first page). Just looking at the search process from the moment of entering the term in the search engine, and to the process of obtaining results, it can be stated that those hotels will have a better SERP position that have done better SEM and SEO (On-Site + Off-Site). However, the point of this article is to point out those factors (events, circumstances, knowledge, experiences ... etc. that are conscious or unconscious in the human brain) that need to be taken into consideration, **which determine:**

1. Keywords, phrases that online content users enter in search engines
2. The way in which the reservation system/hotel form is experienced and used by guests,
3. The guest experience from which reviews are written.



In that sense, Table 1 shows the scheme of factors that determine the decision about booking through an expanded understanding of Google’s algorithm. The table represents the matrix of factor action with respect to:

1. Time aspect compared to booking process
2. Affiliation to a particular stage in the travel cycle

The table shows the factors with regard to the process that they belong to within the travel / booking process cycle. Likewise, factors are grouped with regard to the time component of the online booking process. Given relevance, Factors are assigned (High, Medium, Low), and note that ponder value-allocation may be a complex study. Column Action wants to point to activities, tools or suggestions that can best optimize a particular factor.

**Table 1.** Extended paradigm factor of Google Algorithm to improve direct online booking in hotel business

EXTENDED PARADIGM OF GOOGLE ALGORITHM FACTORS											
SPECIFIC FACTORS WITHIN THE SCOPE OF THE PASSAGE / PROCESS IN BOOKING CYCLE – TRAVELING DREAMING ⇄ RESEARCHING ⇄ BOOKING ⇄ EXPERIENCING ⇄ SHARING			ROLE & IMPORTANCE OF FACTORS ACCORDING TO PHASES OF THE ONLINE BOOKING PROCESS								
drF - DREAMINGPHASE factors			PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE		
Label	Factor Description		Aff	P	Act	Aff	P	Act	Aff	P	Act
offdr1	offline - jumbo billboards (emitively interesting markets) (sensitizing the public with keywords used in online activities)		+	M	IA	-	-	-	+	L	IA
offdr2	offline - TV (emitively interesting markets) (sensitizing the public with keywords used in online activities)		+	M	IA	-	-	-	+	L	IA
drF - DREAMINGPHASE factors			PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE		
Label	Factor Description		Aff	P	Act	Aff	P	Act	Aff	P	Act
offdr3	offline - newspapers, (emitively interesting markets) (sensitizing the public with keywords used in online activities)		+	M	IA	-	-	-	+	L	IA
ondr1	on line: we site content		+	H	SEO				+	M	SEO

EXTENDED PARADIGM OF GOOGLE ALGORITHM FACTORS												
SPECIFIC FACTORS WITHIN THE SCOPE OF THE PASSAGE / PROCESS IN BOOKING CYCLE – TRAVELING DREAMING ➔ RESEARCHING ➔ BOOKING ➔ EXPERIENCING ➔ SHARING				ROLE & IMPORTANCE OF FACTORS ACCORDING TO PHASES OF THE ONLINE BOOKING PROCESS								
ondr2 <sub>1-15</sub>	on line: TOP 15 Most popular Social Networking Sites (1.FB, 2.YouTube, 3.Instagram, 4.Qzone, 5.Weibo, 6.Twiter, 7.Reddit, 8.Pinterest, 9.Ask.fm, 10.Tumbir, 11.Flickr, 12.Google+, 13.Linkedln, 14.VK, 15.Odnoklassniki			+	H	SEO	-	-	-	+	M	SEO
rF - RESEARCHINGPHASE factors				PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE		
Label	Factor description			Aff	P	Act	Aff	P	Act	Aff	P	Act
r1 <sub>1-200</sub>	SEO factors			+	H	SEO	-	-	-	+	M	SEO
rons1 <sub>1-n</sub>	On-Site SEO (google algorithm factors)			+	H	On SeO	-	-	-	+	M	SEO
roffs1 <sub>1-m</sub>	Off-Site SEO (google algorithm factors)			+	H	Off SEO	-	-	-	+	M	SEO
bF - BOOKINGPHASE factors				PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE		
Label	Factor description			Aff	P	Act	Aff	P	Act	Aff	P	Act
bfi <sub>1-3</sub>	First Impression on the reservation system			+	M	ISQ	+	L	ISQ	-	-	-
bfi1	First Impression on the reservation system –simplicity			+	M	ISQ	+	M	ISQ	-	-	-
bfi2	First Impression on the reservation system - functionality			+	M	ISQ	+	H	ISQ	-	-	-
bfi3	First Impression on the reservation system –attractiveness			+	M	ISQ	+	L	ISQ	-	-	-
bUX <sub>1-7</sub>	User experience Factors (UX should be. 1.Useful, 2.Usable, 3. Findable, 4.Credible, 5.Desirable, 6. Accessible, 7.Valuable )			-	-	-	+	H	ISQ	-	-	-
bUI <sub>1-8</sub>	User Interface Factors (UI should be. 1.Clear, 2. Concise, 3.Familiar, 4.Responsive, 5.Consistent, 6. Attractive, 7.Efficient, 8.Forgiving.			-	-	-	+	H	ISQ	-	-	-
eF - EXPERIENCINGPHASE factors				PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE		

EXTENDED PARADIGM OF GOOGLE ALGORITHM FACTORS											
SPECIFIC FACTORS WITHIN THE SCOPE OF THE PASSAGE / PROCESS IN BOOKING CYCLE – TRAVELING DREAMING ➔ RESEARCHING ➔ BOOKING ➔ EXPERIENCING ➔ SHARING		ROLE & IMPORTANCE OF FACTORS ACCORDING TO PHASES OF THE ONLINE BOOKING PROCESS									
Label	Factor description	Aff	P	Act	Aff	P	Act	Aff	P	Act	
ceF <sub>1-n</sub>	Quality of services evaluated through Online Travel Agencies (1.staff, 2. Facilities, 3.Cleanliness, 4.Comfort, 5.Vale for money, 6.food, 7.wifi,...)	-	-	-	+	H	ISQ	+	H	ISQ	
eF - EXPERIENCINGPHASE factors		PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE			
Label	Factor description	Aff	P	Act	Aff	P	Act	Aff	P	Act	
edd1	In House ICT solution for mistakes/ errors debugging (RTC – Real Time communication – In House Reviews)	-	-	-	+	H	ISQ	+	H	ISQ	
sF - SHARINGPHASE factors		PREBOOKING PHASE			DURING BOOKING PHASE			POSTBOOKING PHASE			
Label	Factor description	Aff	P	Act	Aff	P	Act	Aff	P	Act	
sedd1 <sub>1-n</sub>	RTC – Real Time communication – In House Reviews (1.staff, 2. Facilities, 3.Cleanliness, 4.Comfort, 5.Value for money, 6.food, 7.wifi,...)	-	-	-	-	-	-	+	H	ISQ	
sedd2	POST communication with guests (after their stay in the hotel)	-	-	-	-	-	-	+	H	ISQ	

**Legend:**

Aff – Affiliation (+, -)

P – Ponder value / factor priority ( HIGHprioriti, MEDIUM priority, LOWpriority)

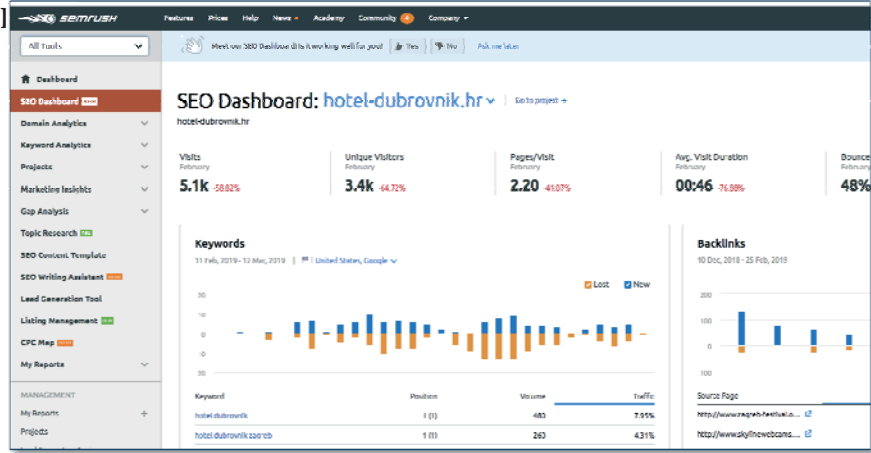
Act - Recommended Action Tools / Action Techniques for Factor Optimization - (InHouse ICT – InH ICT, OutSourcing, SEO, Improving ServiceQuality - ISQ, ImproveActivity - IA) -

**Source:** Authors

In the further work, the emphasis is on the analysis of ICT tools that determine these processes and factors and on the use of ICT for the purpose of their optimization to the highest level.

## 5. GOOGLE ALGORITHM, ANALYTICS AND OPTIMIZATION OF INFLUENCE FACTORS AT BOOKING PROCESS

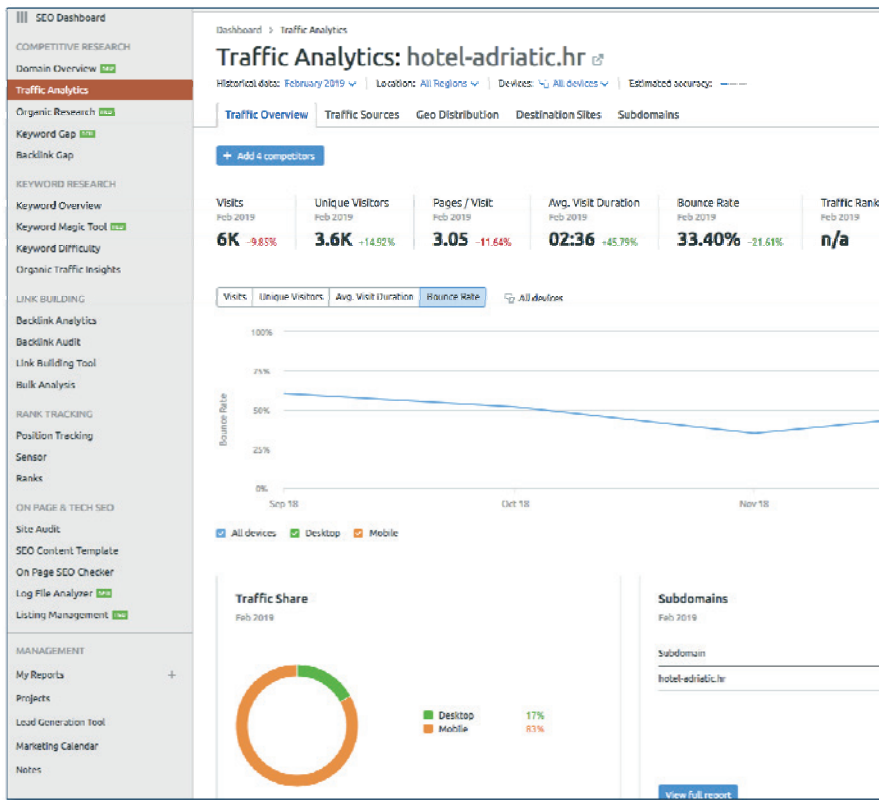
Based on research and determining individual phases of online booking processes and individual observation of individual phases in the travel cycle factors are defined that directly or indirectly affect the Google algorithm and factors that determine the decision about online booking. Table 1 shows the Factors of the Extended Paradigm of Google's Algorithm with regard to the affiliation of the phase in the travel cycle and given the time context with respect to the booking process. Factors have been analyzed and systematized with regard to the affiliation of processes in the travel cycle. Also, factors are attributed to attributes with regard to the estimated ponder value and their advancement through ICT. A detailed description of the individual (different types of software solutions for implementing Technical, On-Page, Off-Page, and Competitor Analysis of more than 200 factor Google algorithms such as Ahrefs, ScreamingFog, SEMrush, Google Search Console, Majestic, MozDeepCrawl, MOZ, GTMetrix, Advanced Web Ranking, LinkResearch Tool, Google Analytics ...) tools to analyze factor considerably and their options in terms of performing depth analysis of particular parameters would go beyond the scope of this paper. As with the work provided (factor determinations), below are examples of analysis and analysis reports on specific examples of hotels implemented with SEMrush analytics (Guru License Features). The following figure shows the main SEMrush SEO Dashboard on the example of web site analytics of the Dubrovnik Zagreb Hotel.



Source: Authors

If, for some analytical parameters, they want to undertake deeper analysis e.g. Traffic Analytics and analyze it Visits, Unique Visitors, Pages / Visit, Avg. Visit Duration, Bounce Rate, Traffic Rank, it is possible to select and conduct a thorough Traffic Analysis within the SEO Dashboard menu within Competitive Research. See the Traffic Analytics section in the following picture on the example of Hotel Adriatic in Opatija.

**Figure 5.** Hotel Adriatic Opatija Zagreb: SEMrush SEO Dashboard Screenshot: Traffic Analytics



Source: Authors

Each of the Reports can be further analyzed and optimized and compared.

In addition to factors that analytically identify and analyze program solutions such as SEMrush for factors that are not directly part of the Google algorithm (but indirectly determine the user’s search results within the SERP), it is necessary to think through and develop analytical ICT (independent of analytical SEO tools) to permanently provide better position within the SERP. By planned and targeted influences and optimization of factors that are not part of the Google algorithm analytics it will, in the long run, contribute to directing users to direct sales channels. Such a statement is certainly a challenge and opens up space for new scientific research.

Why is Google important? Google algorithms are a complex system used to retrieve data from its search index and instantly deliver the best possible results for a query. The search engine uses a combination of algorithms and numerous ranking signals to deliver webpages ranked by relevance on its SERPs - search engine results pages. Web designers and site owners use search engine optimization (SEO) methods to make their sites and pages appear at or near the top of a SERP. Google uses over 200 ranking factors in their algorithm. Some are more important, and some are less important. It should also be mentioned; Google algorithm is changing more than 500 times a year. SERP, or results in Google searches, most often appear as a link between different web pages one below the other. These are so-called "Organic" results that are most common. However, besides them, there are other forms of Google search. These are: Google AdWords - Paid Ads, Rich snippets, Various visual extras for existing results, Universal results (integration of additional media such as video clips, images, and folders into search results), Knowledge Graph (Graphic Views) some concept shown in the box on the right side of the search results.

However, organic results in the form of "ordinary" links to different web pages are the most important. E.g. there are now software add-ons that will easily prevent the display of all kinds of ads, including those mentioned in AdWords, in your browser. As a result, investment in SEO is becoming more and more important because the websites of hotels found first in organic search results bring their owners a lot more sales and earnings. The opposite is true: those who are not in Google searches usually fail to sell online because they simply do not have visitors. It's like having a super hotel with a super offer but nobody has heard about it and simply no online visitors or online customers. You should keep in mind that "SERP never sleeps." In a nutshell, Google provides recommendations and provides useful information for website design and optimization, while at the same time rewarding (better ranking within the scope of the search results - SERP) the degree of compliance with these recommendations since this way Google is more systematized and more valuable.

At this moment SEO comes for business systems to the point. Thus, SERP is a list that Google generates based on the Ranking Factor Quality (> 200). The quality ranking factor of hotels as business systems can be affected by RF optimization. This is the process called Search Engine Optimization - SEO and Make It On-Site SEO Activities and Off-site SEO Activities. On-site SEO (also known as on-page SEO) is the practice of optimizing elements on a web-

site (as opposed to links elsewhere on the Internet and other external signals collectively known as “off-site SEO”) in order to improve search engine ranking and visibility. This can involve optimizing both the content and HTML source code of pages on a site (MOZ, 2019.)

## 6. CONCLUSION

One of the main goals of every market-oriented business entity, in this context a hotel, is profit. In order to achieve the budget, the Information and Communication Technology (ICT) is being applied increasingly and intensively. ICT increasingly determines the processes of booking or online booking at the hotel. The intent of any hotel is to improve direct online booking in relation to the booking through Third Party Websites. As the process of booking is part of the process of guest traveling, these two processes have been brought into the relationship. A moment of decision about booking is influenced by many factors. Part of the factors are an integral part of the official RF List of the Google algorithm while part of the factors are not listed in the factor list that the Google algorithm processes as the “reference values” for ranking within the SERP but they directly or indirectly with a higher or lower intensity also determine the position in the SERP framework, and the final decision to book (conversion!). In this context, through the matrix of the expanded Google Algorithm paradigm matrix, the factors that influence the decision on direct online booking are also detected in this paper. The expanded perception of the Google algorithm allows profound research, analysis, comparison, and simultaneous influences of a much larger number of factors at a much higher level. Such an approach will lead to more exact and accurate data and conclusions whose implementation should have positive implications both on the number of conversions within direct channel sales and on hotel profits. Further elaboration of all the factors of the expanded paradigm of Google algorithm, software analysis, research, optimization, and their implications for other business processes are the foundation of the latest scientific research in this problem area.

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# WEBSITE USABILITY EVALUATION MODEL: ECONOMICS FACULTIES IN THE REPUBLIC OF CROATIA

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## **Abstract**

*Demand for information and online materials on the websites of economics faculties in Croatia is now surging. While printed faculty guides and other material are still used, students are increasingly using faculty websites as the main source of detailed course and programme information. This paper presents an observational study of website usability among students at five faculties of economics in Croatia. The study includes search performance, navigation interface design, finding information about administrative departments, phone numbers, working hours of the registrar's office and library, teacher office hours and other teacher's information, teaching materials, courses and programme information, course documents, online conversations with faculty staff, faculty guides and other material regarding faculty procedures and policies. The goal of this observational study is not statistical significance, but rather identifying the strengths and weaknesses of websites of the five Faculties of Economics in*

*disseminating information to their students. The usability evaluation model of this observational study could be used to improve navigation and searching design, accessibility, understandability, content quality and accuracy.*

**Keywords:** *Faculties of Economics, Website usability model, Evaluation model, Usability evaluation model, Analysis*

JEL Classification: L23, M15

## 1. INTRODUCTION

Owing to the World Wide Web, business organizations around the world, including those in the Republic of Croatia, can continuously disseminate information about their activities, services, products, etc. Thus, having a website ensures an organization a permanent presence in the virtual environment and facilitates the worldwide dissemination of information. The websites of the faculties of economics in the Republic of Croatia are no exception in this regard. As a rule, they provide various stakeholders with all the relevant information about a particular faculty, which is why they have become the preferred source of information. In this context, the faculties' websites also have a promotional role, as they generally shape users' impressions about a particular institution. Hence, faculties should be aware of the importance of the quality of the information provided on their websites, and although many of them are, a question arises as to whether their approach to evaluating website content is systematic and objective. In order to address this issue, it is necessary to develop a methodology for comparing approaches used by different faculties to providing information on their websites. In order to develop a good quality methodology, an analysis was performed of the usability of the websites of economics faculties in Croatia. The analysis was an important step in this research as it gave an insight into whether the faculties' websites fulfill their main purpose, which is to provide information to their stakeholders, first and foremost the students. The results of this research can help develop a systematic methodology for comparing and evaluating the websites of economics faculties and suggest improvements to their ergonomics, information accessibility, and speed performance.

The websites of the faculties of economics in Croatia are a primary source of information for current students about the degree levels, study programmes, courses, and teachers. Moreover, they provide future students with information about enrolment schedule and requirements, faculty' activities, exam procedures

and regulations, as well as the knowledge and titles acquired upon completion of individual study programmes. They also provide information on course requirements; materials and reading for individual courses; facilitate communication with the teachers, and post-exam schedules. The scope and quality of the information provided on the websites of economics faculties are key factors to consider when assessing their quality, which is why they are the focus of this research.

## 2. RESEARCH METHODOLOGY

The premise that today's virtual space created by a web service is a primary source of information infers that the efficiency of a system depends on the quality of its presence in an online environment. Given that the faculties of economics are business organizations that mainly interact with the younger population, who use the web environment as a primary source of information, it may be concluded that the quality of the information provided by the faculties' websites is positively correlated with the efficiency of the faculties' activities. However, in order to evaluate the quality of individual websites, it is necessary to establish standards that, on the one hand, consider the information provided and, and thus, the promotional potential of the website, and on the other, rank the quality of information provided by one faculty compared to other faculties. This research aims to develop a standardized measurement model. To achieve this, it was necessary to explore the scope of information covered, and thus the information potential of the faculties of economics in Croatia. Hence, the main aim of this research was to analyze the websites of the following five faculties:

1. Faculty of Economics in Osijek - <http://www.efos.unios.hr/>
2. Faculty of Economics in Zagreb - <http://www.efzg.unizg.hr/>
3. Faculty of Economics in Rijeka - <https://www.efri.uniri.hr/>
4. Faculty of Economics in Split - <https://www.efst.unist.hr/>
5. Faculty of Economics in Pula - <https://fet.unipu.hr/>

To achieve this goal, the primary research involved analyzing the usability of the economics faculties' websites through two survey questionnaires. The first asked the respondents to indicate their satisfaction using a 1-5 Likert scale (Likert, 1932), while the second comprised questions that asked for a descriptive answer. In addition to the survey and statistical analysis of the data collected, the following methods were used in this research: deduction, abstraction,

classification, causal inference, analysis and synthesis, analogy, the experimental method, and descriptive modeling. The results of the research presented in this paper are part of a larger research project carried out by the authors which focus on the quality of the information provided to the stakeholders by the faculties of economics, in particular, the Faculty of Economics in Osijek.

### 3. WEBSITE USABILITY

The term usability was first used by Bevan in 1991 to describe the various approaches to the ease of use of a product (Bevan, Kirakowski, & Maissel, 1991). For Shackel (2009) the term “usability” means “a technology’s capability to be used easily and effectively by the specified range of users, given specified training and user support, to fulfill the specified range of tasks, within the specified range of environmental scenarios” (Shackel, 2009). According to Zaphiris and Ellis (2001), web usability means “anyone using any kind of web browsing technology must be able to visit any site and get a complete understanding of the information, as well as have the full and complete ability to interact with the site if that is necessary” (Zaphiris & Ellis, 2001). In Preece et al. (1994) usability is defined as “a measure of the ease with which a system can be learned and used, its safety, effectiveness and efficiency and the attitude of its users towards it” (Preece et al., 1994). According to Nielsen (2012) “Usability is a quality attribute that assesses how easy user interfaces are to use” (Nielsen, 2012). Nielsen (2012) asserts that usability is defined by five quality components (Nielsen, 2012):

1. Learnability: How easy is it for users to accomplish basic tasks the first time they encounter the design?
2. Efficiency: Once users have learned the design, how quickly can they perform tasks?
3. Memorability: When users return to the design after a period of not using it, how easily can they re-establish proficiency?
4. Errors: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
5. Satisfaction: How pleasant is it to use the design?

ISO 9241-11 defines the term usability as “the effectiveness, efficiency, and satisfaction with which specified users can achieve specified goals in particular environments” (Dillon, 2001). Most scholars and researchers have accepted this definition of the term utility (Rahman & Ahmed, 2013).

#### 4. WEBSITE USABILITY IN THE CONTEXT OF HIGHER EDUCATION INSTITUTIONS

A number of scientific articles have been written about web usability analysis and the application of different methods and techniques for web usability evaluation (Amed, 2008). However, web service usability studies in the context of higher education institutions are relatively scarce. Ahmet Mentés and Turan (2012) investigated the usability level of Namık Kemal University (NKU) website using the WAMMI (Website Analysis and Measurement Inventory). This tool uses six factors to evaluate website usability (WAMMI):

1. Attractiveness
2. Controllability
3. Efficiency
4. Helpfulness
5. Learnability
6. Global Usability Score (GUS)

The results of their study have revealed that five of the six factors can positively and significantly affect the website usability perceptions of NKU members (Ahmet Mentés & Turan, 2012). Aziz, Wan Mohd Isa, and Nordin (2010) analyzed website ergonomics according to Web Content Accessibility Guidelines 1.0 (W3C, 1999) and website usability by higher education institutions in Malaysia. The study identified some weaknesses and suggested methods for improving usability and accessibility for end users. Lautenbach, Schegget, Schoute, and Witteman (1999) carried out an analysis of the usability of Utrecht University's website using two criteria: the user's satisfaction with the ease of finding the information they were looking for and website navigation. Lautenbach et al. (1999) surveyed 240 students at Utrecht University. Mustafa and Al-Zoua'bi (2009) analyzed the usability of the websites of Jordanian universities by dividing the questionnaire into five sections (Mustafa & Al-Zoua'bi, 2009):

1. Content, Organization and Readability
2. Navigation and Links
3. User Interface Design
4. Performance & Effectiveness
5. Educational Information

Although the results of this survey were mainly positive, some weaknesses were identified in the website design and speed (Mustafa & Al-Zoua'bi, 2009).

Hasan (2012) also analyzed the usability of the websites of nine Jordanian universities. 237 students were asked to rate website usability in terms of the following five factors (Hasan, 2012):

1. Navigation
2. Architecture/Organisation
3. Ease of use and communication
4. Design
5. Content

The results revealed that students were satisfied with the content and ease of use, while the website design was negatively rated (Hasan, 2012). Al-Ananbeh, Abuata, Al-Kabi, and Alsmadi (2012) investigated website usability at Arab universities using automated site evaluation tools: HTML Toolbox, PageRank Checker and SEO PageRank. Caglar and Mentés (2012) investigated the usability of the website of the European University of Lefke (EUL) using a WAMMI questionnaire. 293 students from various faculties of the University were surveyed. The survey results revealed that students were dissatisfied with the website (Caglar & Mentés, 2012).

The mentioned studies explored the usability of websites of universities and higher education institutions in general, without focusing on economics and business faculties. Therefore, the purpose of this research was to identify, among other things, the common criteria for economics faculties and the characteristics they should have, in order to draw up guidelines for developing a web usability evaluation model that can be applied at all faculties of economics and business in Croatia.

## 5. PRIMARY RESEARCH RESULTS

### 5.1. RESEARCH METHODS: THE EXPERIMENTAL METHOD AND STUDENT SURVEY

The aim of the primary research was to assess the usability of the websites of economics faculties in Croatia. The results of the research should provide supporting evidence of the importance of the functionality of the websites of Croatian higher education institutions. In other words, an analysis was carried out of the websites of higher education institutions, in particular, the faculties



of economics, in order to determine if they are successful in performing their role as primary information providers for the students.

An experimental method was used to establish website ergonomics and informativeness. The respondents were instructed to give descriptive answers to the questions.

Theoretical insights into website functionality, usability and usefulness were gained through an anonymous survey. A convenience sample made up of a large number of students was used.

## 5.2. RESEARCH QUESTIONS

The research is based on the premise that all research questions are positively correlated with website usability. These are the research questions:

1. What are the differences among the websites of individual faculties of economics in Croatia?
2. Are the websites of the faculties of economics in Croatia ergonomic and informative, and how many clicks and how much time does it take to find the necessary information?
3. What do students think of the quality, informativeness, and ergonomics of the websites of the faculties of economics in Croatia?
4. Is there room for improvement of the ergonomics, informativeness, and speed of the websites of the faculties of economics in Croatia?

The research questions were answered based on the results of the experimental method and the survey questionnaire. The results obtained were used for developing a website usability evaluation model and proposing possible improvements in terms of website functionality, ergonomics, informativeness, and speed.

## 5.3. ANALYSIS OF RESULTS AND DISCUSSION

As the aim of this research was not to establish the statistical significance using a large number of respondents, but rather to identify the strengths and weaknesses of the websites of the faculties of economics in Croatia by means of an experimental method, neither statistical nor regression analysis was used. Table 1 shows the average ratings given by students for each question and each

website of the five faculties of economics in Croatia. A five-point Likert scale was used, where 1 means that the information cannot be found; that it is difficult to find it; and that it takes a long time to find it, while 5 means that the necessary information is available; that it is found quickly; and that finding it was easy.

**Table 1:** Results of the experimental method

Question	Faculty of Economics in Osijek	Faculty of Economics in Zagreb	Faculty of Economics in Rijeka	Faculty of Economics in Split	Faculty of Economics in Pula
1	5	4.7	4.8	5	4.9
2	4.9	3.3	5	5	3.3
3	4.8	3.3	2.5	4.2	3.9
4	4.6	1.9	2.6	2.1	2.4
5	5	2.7	1.2	3.2	2.1
6	4.5	3.1	3	3	3.5
7	5	4.6	3.1	4.9	5
8	4.4	1.2	1	1	1
9	4.6	4.2	3.2	3.7	2.2
10	4.1	1.4	1	1	4.4
11	4.8	1.3	1.4	1	1

The following paragraphs contain instructions given to students and questions asked, as well as their descriptive answers about the websites of the five faculties of economics in Croatia:

**Q1:** Find the mission and vision of the faculty on its website. Is this information available? If so, rate and describe the difficulty of finding it.

The mission and vision are available on all five websites and the students had no difficulty finding this information through the main navigation menu. The link to the subpage containing the mission and vision of the faculty is found in a logical place.

**Q2:** Find the statute, regulations, decisions and standard operating procedures of the faculty on its website. Is this information available? If so, rate and describe the difficulty of finding it.

Statutes, regulations, decisions and standard operating procedures are available on all websites, except on the website of the Faculty of Economics in Pula, where the respondents could not find the statute. Finding the link to these doc-

uments on the websites of the Faculty of Economics in Zagreb and the Faculty of Economics in Pula took more time and clicks.

**Q3:** Find the degree levels and study programme descriptions that comply with the Bologna degree structure. Is this information available on the website? If so, describe the difficulty of finding it.

The degree levels and study programme descriptions are available on all five websites. However, finding this information on the websites of the Faculty of Economics in Zagreb, the Faculty of Economics in Rijeka, and the Faculty of Economics in Pula was more difficult and time-consuming. Some of the students found it through additional menus, while some were unable to find it.

**Q4:** Find the regulations on studying under the Bologna Process on the faculty website. Is this information available? If so, describe the difficulty of finding it.

Although one would expect to find the document containing regulations on studying under regulations, this was not the case for all websites. Students experienced some difficulty finding this document on the website of the Faculty of Economics in Zagreb as it took several clicks to get to it, while on the website of the Faculty of Economics in Pula, it was found under the Students - Documents menu.

**Q5:** Find the learning outcomes of the study programmes delivered by the faculty. Is this information available on the faculty's website? If so, describe the difficulty of finding it.

It took only one click to find the learning outcomes on the website of the Faculty of Economics in Osijek – they were under the menu Teaching - Learning outcomes. The process of finding this information on the websites of other faculties was time-consuming and it took multiple clicks to get to it.

**Q6:** Find brochures for all undergraduate, graduate, specialist and doctoral study programmes. Is this information available on the faculty's website? If so, describe the difficulty of finding it.

It was difficult to find brochures for some degree levels as they had to be accessed through different sub-links on individual study programme web pages.

For some study programmes, they were not available. They can be found using the website search engine, but finding them on the search results list was time-consuming.

**Q7:** Find library working hours, location, manager, and contact details on the faculty website. Is this information available? If so, describe the difficulty of finding it.

Library working hours, location, manager and contact details are available on all five websites. The information is easily accessible on most websites. The only exceptions were the Faculty of Economics in Zagreb and the Faculty of Economics in Rijeka, where it took multiple clicks in the menu to access the information needed.

**Q8:** Is there an option to register for library membership online using an electronic ID (AAI@EduHr account)? Is this option indicated on the website? If so, describe the difficulty of finding it.

At the Faculty of Economics in Osijek, registration for library membership is done by filling in an online form, but a Google form is used, not an official system with AAI@EduHr accounts. The online registration option is not available on other websites. However, students enrolled in the Faculty of Economics in Rijeka can borrow books using a student card or an ID without having to register for membership online or in person.

**Q9:** Find working hours, location, registrar's name and contact details for the registrar's office on the website of the faculty. Is this information available? If so, describe the difficulty of finding it.

Information about the working hours, location, registrar's name, and contact details for the registrar's office is available on all five websites. It was easy to find it on the website of the Faculty of Economics in Osijek. It took multiple clicks in the menu to access this information on the website of the Faculty of Economics in Zagreb. On the website of the Faculty of Economics in Rijeka, information about the registrar's office and registrar's name is located on two different subpages and therefore it took longer to find it. On the website of the Faculty of Economics in Pula, the horizontal menu is in the header. You need to click on the arrow next to the option "Students", and then select the link "Common services". The link "Office for student affairs and study programmes" leads to the page with information about office working hours, contact details, location and

registrar's name for all faculties of the university. Finding the necessary information was difficult here because the website was being redesigned and visitors redirected to the new university website.

**Q10:** Find working hours, location, manager and contact details of bookstore and course material services. Is this information available on the website? If so, describe the difficulty of finding it.

The information about the bookstore and course material services was available and it was easy to find it on the websites of the Faculty of Economics in Osijek and the Faculty of Economics in Pula. On other websites, finding this information was complicated; the information was incomplete, or it could be not found at all.

**Q11:** Find out how you can open AAI@EduHr and CARNET accounts as a student on the faculty's website. Is this information available? If so, describe the difficulty of finding it.

Information about opening AAI@EduHr and CARNET accounts is available on the website of the Faculty of Economics in Osijek. It is easily accessible and found under a logical category. The information is not available on other faculties' websites; the process of finding it was complicated, or it could not be found at all.

A second survey was carried out to gain an insight into the availability of information about a course, course materials, and teachers. An Informatics course was chosen for this purpose. Finding information about this course on the websites of the Faculty of Economics in Osijek, Faculty of Economics in Pula and the Faculty of Economics in Rijeka was easy and simple. In contrast, the process was complicated and time-consuming in the case of the Faculty of Economics in Split and the Faculty of Economics in Zagreb. Information about the course, such as news, course description, syllabus, requirements, and learning outcomes, is publicly available on the websites of the Faculty of Economics in Osijek and the Faculty of Economics in Zagreb. On the websites of the Faculty of Economics in Pula, the Faculty of Economics in Rijeka, and the Faculty of Economics in Split, not all course information was publicly available. The Faculty of Economics in Osijek is the only one that provides full public access to the course and practicum materials on its website. Other faculties allow public access to some of the materials.

Finding teacher details on the website of the Faculty of Economics in Osijek was quick and simple. Multiple clicks were needed to access the web page with teacher information on the websites of other faculties. Office numbers, telephone numbers, e-mail addresses, and office hours are provided on the website of the Faculty of Economics in Osijek, the Faculty of Economics in Rijeka, and the Faculty of Economics in Pula. In contrast, the Faculty of Economics in Zagreb and the Faculty of Economics in Split do not provide complete information about their teachers on their websites.

The survey results show that the websites of the five faculties of economics in Croatia differ considerably in their design features, visual elements, and the architecture of the navigation menu. The latter has a major impact on the ergonomics and informativeness, as well as the number of clicks and the amount of time needed to find the desired content. Students reported that on the website of the Faculty of Economics in Osijek they often managed to access the information they needed with one click only because the main navigation menu automatically opens submenus. The website menu architecture of the Faculty of Economics in Zagreb was extremely complicated. Students reported that after opening the menu, they had to click on the expansion arrow, select an option and only after selecting an option they got to the content they needed. The students were very satisfied with the informativeness of the website of the Faculty of Economics in Osijek as it is the only one that provides public access to all course requirements and reading material. They find that the informativeness of other websites is lower. The results of the survey, which provided a valuable insight into the strengths and weaknesses of the websites of the faculties of economics in Croatia, suggest that there is room for improvement of website ergonomics, informativeness, and speed, which would enhance their overall quality.

## **6. MODEL FOR IMPROVING THE USABILITY OF THE WEBSITES OF ECONOMICS FACULTIES IN CROATIA**

A model for improving the usability of the faculties of economics' websites in Croatia cannot rely solely on automated tools for tracking web metrics such as Web Metrics of the National Institute of Standards and Technology that uses six different computer tools for automated website usability analysis (Scholtz, Laskowski, & Downey, 1998). These and similar tools can determine the per-

formance and quality of specific website features. However, they cannot determine the importance of functionality, while the model proposed by the authors can. Table 2 shows the proposed mode.

Table 2: Model for improving the usability of websites of the faculties of economics in Croatia

Performance factors	Performance and quality				
	1	2	3	4	5
Ergonomics					
Informativeness					
Menu architecture					
Speed					

The functionality of the websites of the faculties of economics in Croatia is measured by the speed of retrieval, convenience and ease of access to the content students need. In view of the above, the presented model for monitoring the performance and quality of websites implies the need for experimental testing of website ergonomics, informativeness, menu architecture, and speed. These factors are evaluated on a scale of 1-5. Average grades are used for the evaluation of individual websites.

## 7. CONCLUSION

The websites of the faculties of economics in Croatia are the main source of information on degree levels and study programmes available, as well as courses, teachers, etc. Therefore, in order to determine their functionality, it is vital to carry out a website usability analysis. An experimental method was used to assess their ergonomics and informativeness, while the theoretical insights into their function, usability, and usefulness were gained through a survey of students.

Through analysis and synthesis of the collected data, it was established that there are major differences between individual faculties of economics in terms of their website design features, visual elements, and menu architecture. Students were very satisfied with the high level of quality and informativeness of the website of the Faculty of Economics in Osijek, as the process of finding the content they were looking for was straightforward and quick. In addition, the website of this Faculty is the only one which allows full public access to infor-

mation about course requirements and reading material. Data synthesis identified the possible avenues for improvement of the ergonomics, informativeness, and speed of the websites of the faculties of economics in Croatia.

Finally, a model was proposed for improving the usability of the websites of economics faculties in Croatia, which measures website functionality based on its ergonomics, informativeness, menu architecture, and speed. In addition to answering the research questions posed herein and proposing an experimental model for measuring the quality of Croatian economics faculties' websites, this research has identified new research questions that warrant investigation. Future research should aim at developing an objective system for measuring the quality and performance of the websites of higher education institutions in Croatia.

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# CREATING BUSINESS DATABASE FOR BUSINESS PROCESS INTEGRATION IN SMALL AND MEDIUM ENTERPRISE

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## **Abstract**

*Both business data and databases are becoming increasingly important for enterprises of all sizes and with different business activities. Hence, the purpose of this paper is to analyze and to synthesize specifics about the creation process of the business database, with the help of which the authors have successfully integrated various and numerous business processes in the researched enterprise. Regarding the methodology, for the purpose of this paper, the authors have conducted the research using both qualitative approach (e.g. interviews with researched enterprise's employees) and quantitative approach (e.g. grades by both of the authors for fulfilment of expectations from business database after its creation), to make it multifaceted and comprehensive in its own right. Scope of this paper is essentially broad, yet it gradually narrows from the brief general view of data within business databases of Small and Medium Enterprises (abbr. SMEs) to the extensive detailed overview of data within the specific business database, which has been created for the researched medium-sized enterprise. On the topic of main findings, they were summarised in the paper, depending on the level that they are associated with. Those levels are the level of expectations from the business database before its creation, the level of business database*

creation and the level of fulfillment of expectations from the business database after its creation. Inherent research limitation was in the fact that this research was primarily conducted on a single medium sized-enterprise, yet these research findings on multiple levels, have justified this approach as being objective, appropriate and holistic. As to suggestions for further research, those actually revolve around the need to move this business database, from simulation phase, into utilization phase i.e. into day-to-day use and, ideally, real-time data entry, what would surely raise additional research questions. Finally, practical implications of this paper and the herein created business database can be summarised as follows: it is expected that the enterprise can derive benefits; from properly integrated internal data, from created (business database-supported) integrated application and from structured electronic versions of its valuable business data. However, to derive considerable benefits, the enterprise would have to put this business database into day-to-day use with, ideally, real-time data entry

**Keywords:** business database, data, DBMS, business process integration, SME

JEL Classification: M15, M19

## 1. INTRODUCTION

Successful Small and Medium Enterprises (abbr. SMEs) are vital to most economies. For example, in the recent years, within European Union, SMEs provided 66% of the total employment in private sector, 85% of new jobs were created by them and they also stand for around 99% of all EU-based businesses (European Commission, 2014). Today's SMEs, in spite of their current size and, essentially, regardless of their business activities or location, create an increasing amount of various data on daily basis, either intentionally (e.g. with data entries in database tables) and/or unintentionally (e.g. with providing data for official electronic documents). Besides, some kinds of data that were previously considered irrelevant (e.g. specific items on customer's purchase order) and/or difficult to gather (e.g. customer's purchases from the same enterprise, in its stores at different locations) as well as other previously unattractive data, in the recent years, have become the valuable business assets (e.g. insights and competitive advantage), even for SMEs. What is more, transfer of certain datum i.e. a single piece of data, (e.g. store manager's approval of discount to an employee in the sales department who must match or

undercut competitor's price to retain a customer), that previously lasted for hours or days, nowadays, even in smaller SMEs, should last for seconds or minutes.

In short, if, even SMEs, want to take the advantage of data that is available to them from their business operations, they should, at least, be able to store and to manage them properly. In order to achieve that, SMEs should consider some specialized computer-based solution(s), since computers have become an integral part or even the smallest offices. Yet, empirically, SMEs are still inclined to (less frequently) utilize software such as word processors and/or spreadsheets (much more frequently) to store relevant and/or sensitive business data. While both, word processors and spreadsheets, continuously improve, despite being 40+ years old software sub-types (Reed, M., 2009) (Bricklin, D., 2001), their functionalities, especially those related to advanced data-related operations, still lag behind databases, that have emerged cca 15-20 years earlier than them (Foote, K., D., 2017). There are numerous examples of other business-related software types and sub-types, that are utilized by SMEs, yet, their main disadvantage(s), in the context of this paper, can be identified as unorganized and/or unrelated and/or non-integrated data.

Related to all issues mentioned above, were exact reasons for writing this paper that can be summarised as: the authors (1<sup>st</sup> author as the supervising professor) and (2<sup>nd</sup> author as the supervised student), motivated by these and other data-related issues, have decided to methodically and systematically create the functional business database, for the presented (carefully chosen and consent-to-research) SME, in order to simulate concrete business data(bases)-related functionalities.

After all, this paper's objectives are closely related to the researched enterprise and can be outlined as follows:

- to present key issues related to researched enterprise's data and applications
- to portray how to form realistic expectations from the business database
- to show how to recognize the potential limitations of the business database
- to display the process of creating the business database for researched enterprise
- to show how and on what basis to grade the level of fulfillment of expectations from the business database.

## 2. MAIN CHARACTERISTICS OF THE RESEARCHED ENTERPRISE

The enterprise that was presented, chosen for and researched in this paper is named Međimurje graditeljstvo Ltd., the private construction enterprise. Main business activities of this enterprise are building construction, other constructions, civil engineering, and other related activities. Related to these specific activities, they own, ISO 9001:2015 i.e. Quality Management Systems, certificate, issued by SGS Certification Company (Međimurje graditeljstvo Ltd., 2017).

In addition, this enterprise was registered at Commercial court in Varaždin, Croatia i.e. founded on 05.06.2000 i.e. nearly 19 years ago. However, this enterprise's address is Zagrebačka 42a in Čakovec, Croatia, cca 15 kilometers north from Varaždin.

As of its size, this enterprise can definitely be categorized among SMEs, as shown in Table 1. More specifically, since it meets 2 (Number of employees and Turnover) out of 3 EU criteria, based on data from 2017, it was categorized as a medium enterprise, as defined by EU and, respectively, by Republic of Croatia (European Commission, 2014).

**Table 1:** Categorisation of Međimurje graditeljstvo Ltd. among SMEs, as defined by EU

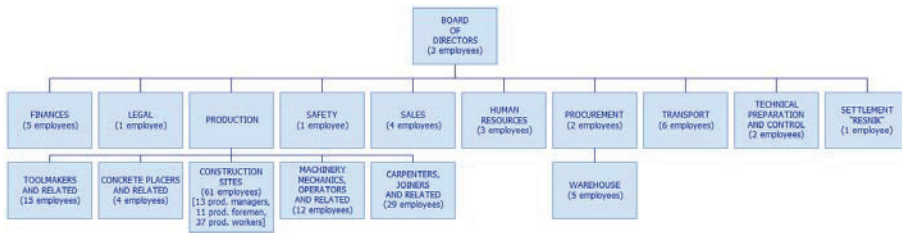
	1st criterion	and	2nd criterion	or	3rd criterion
Company category	Number of employees	and	Turnover	or	Balance sheet total
Micro	< 10	and	<= € 2 m	or	<= € 2 m
Small	< 50	and	<= € 10 m	or	<= € 10 m
Međimurje graditeljstvo Ltd.	154	and	~ € 11,28 m	or	~ € 5,81 m
Medium	< 250	and	<= € 50 m	or	<= € 43 m

**Source:** created by the authors, based on data by the European Union and Međimurje graditeljstvo Ltd.

Therefore, on 16.04.2019, this enterprise had a total of 154 full-time employees, in various and numerous departments, as shown in Figure 1. However, the most notable departments for the purpose of this paper were: Board of Directors, Finances and Procurement (that allowed the authors to use enterprise's data and that provided the authors with the most valuable data). Also, of great impor-

tance was the individual department related to enterprise's construction sites i.e. Production (that provided the ample amount of data, yet because of diverse and plentiful data related to this department, it was identified as common point for all enterprise's operations and activities).

**Figure 1:** Organisation chart of the researched enterprise



**Source:** Translated and adjusted by the authors based on the original by Medimurje graditeljstvo Ltd.

As of currently installed (software) applications, recently this enterprise possessed various specialized applications, including those related to accounting, taxes, employees, warehouse, costs, construction, planning, and works. However, by conducting a series of interviews with enterprise employees, the authors have detected the following key issues related to the enterprise's current situation regarding data and applications:

- + data that enterprise possessed were not integrated
- + accordingly, applications that enterprise possessed were not integrated
- + enterprise lacked structured electronic versions of its valuable business data

Hence, these were identified as issues, which consequently motivated the authors to create the business database, for the researched medium-sized SME.

### 3. EXPECTATIONS FROM AND PERCEIVED LIMITATIONS OF BUSINESS DATABASE BEFORE ITS CREATION

Proper detection of key issues has substantially helped the authors, prior to business database's creation, to intentionally set immediate, clear and attainable goals, of the entire process. To make them even more transparent and enter-

prise-oriented, the authors have reduced the number, shortened the length and redefined the structure, of those goals into a total of 14 realistic expectations from this business database, as follows:

- ♦ Tracking of direct material usage and costs
- ♦ Reduction of direct material costs
- ♦ Integration of the value creation activities in the business process
- ♦ Acceleration of the business process and its operations
- ♦ Reduction of idle time
- ♦ Improvement of business process transparency
- ♦ Increase in accuracy of determining the length of business operations
- ♦ Increase in productivity
- ♦ Increase in data and information availability
- ♦ Increase in data and information transparency
- ♦ Improvement of operative decision-making
- ♦ Increase in employee satisfaction regarding data availability
- ♦ Increase in employee efficiency regarding data availability
- ♦ Increase in employee efficiency vis-à-vis data presentation

However, at this period in time, the authors have also become keenly aware of the inherent and the possible database-creation-related limitations that may be revealed during this research. To begin with, they were not able to foresee, i.e. to anticipate; firstly, the availability of enterprise's general data; and secondly, the current availability of additional specialized data that will, eventually, be needed in the process of creation of this database. Thirdly, even with, expectedly, limited amounts of data the authors have decided to fulfill all 14 expectations in the largest measure currently possible. In addition, fourthly, the authors have been conscious that there were cca 6, short, months available to fully complete this business database and the accompanying master thesis of the 2<sup>nd</sup> author. For that reason, fifthly, the authors have become well aware that the pertinent level of knowledge, needed during the creation of this database, definitely must be that of the 2<sup>nd</sup> author i.e. the supervised student, which was to be continuously directed, deepened and broadened by knowledge, experience, and guidelines of the 1<sup>st</sup> author i.e. the supervising professor.

Finally, with such direct, pragmatic somewhat uncertain, yet broad and bright outlook on the expectations and limitations, it was possible to properly begin with the process of this business database creation. Details of this process were elaborated in the subsequent part of this paper.

## 4. PROCESS OF BUSINESS DATABASE CREATION

In the beginning, before the creation of this business database, it was necessary to choose the appropriate DBMS (DataBase Management System). However, database creation does require prior knowledge (Alexander, M. & Kusleika, R., 2016, p. 3). Moreover, given that, this business database was to be created as an integrative part of student's (2<sup>nd</sup> author's) master thesis, the student was strongly advised, by his supervisor (1<sup>st</sup> author), to create it by taking into account specific criteria. Thus, 5 criteria were established as follows: (1) primarily, student (author of master thesis) had to have a good experience of chosen DBMS, (2) chosen DBMS had to be either free (freeware and/or open source) or completely freely available (via special software licenses for students and professors) to student and to professors in the master thesis defence committee, (3) DBMS of choice must have had built-in all needed data types, objects and other functionalities (without commercial add-ons that student must, eventually, buy), (4) chosen DBMS must have had functional GUI (Graphical User Interface) for all its respective objects, (5) lastly, but hugely important, DBMS of choice, must have had the considerable flexibility to support easy-to-create exchange, communication and handling, of detailed data, between the business model of the chosen enterprise and, accordingly, the data model of the created database, and vice versa.

Regarding the fulfillment of criterion (1), the student already had a good experience of Microsoft Access DBMS, due to the knowledge that he gained at the graduate study course entitled Applications of Databases at the Faculty of Business and Economics at University of Rijeka, Croatia, Europe.

Appropriately, because the aforementioned DBMS amply fulfills criteria (2) to (5), student's supervisor had advised and encouraged him, to utilise it in the process of database creation within his master thesis, since it was essential to growing this database into its most applicable and most valuable part, as explained in subsequent paragraphs.

Regarding fulfillment of criterion (2), the database for the enterprise was created successfully and timely, in Microsoft Access 2016, more specifically in its edition that is freely available to professors and students at University of Rijeka.

Concerning criterion (3), it can be marked as fulfilled, since a substantial number of features was incorporated in this particular database. These features can be described and analyzed from, both, the perspective of particular DBMS objects and perspective of built-in DBMS functionalities, as it was done in two fol-



lowing paragraphs. Besides, all elaborated DBMS objects have GUI, both in their design (object creation) view and/or datasheet (data preview) view, what completely fulfills criterion (4).

From the perspective of particular DBMS objects, a total of: 11 tables, 18 queries (11 selected, 2 crosstabs, 1 make table, 1 update, 1 append, 2 delete), 9 forms (5 main, 4 sub), 3 reports, 44 macros (1 standalone, 43 button-associated) and 4 (4 button-associated) modules. In that sense, tables were created as normalized; queries, forms, and reports were created based on the most relevant data; macros and modules were created to individually automatically perform a specific action.

Moreover, from the perspective of built-in DBMS functionalities, a large number of them were utilized in this database, yet the most relevant ones among them were:

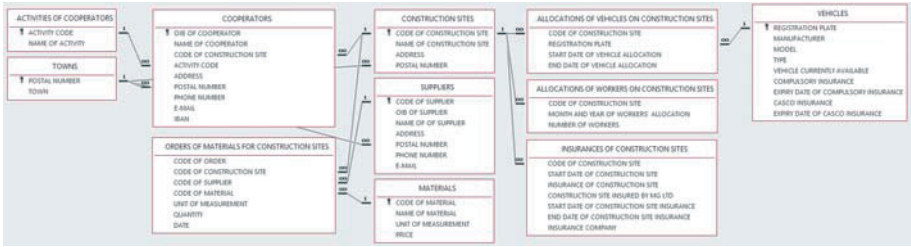
- ✦ table creation by using most of the data types to increase data variety and quality
- ✦ creation and preview of relationships between tables in Relationships window
- ✦ both filtering and mining of data, by various criteria, in select and crosstab queries
- ✦ parameter queries (in select queries) as user-friendly query-related functionality
- ✦ crosstab queries for alternative views and to calculate numerical totals of relevant data
- ✦ action (make a table, update, append, delete) queries to perform various actions on data
- ✦ forms (with and without subforms) to create advanced user-friendly data layouts
- ✦ reports to create a variety of customizable print-ready data layouts
- ✦ macros to automatically open the main menu form and to automate various buttons on forms
- ✦ modules for various calculations within forms and their fields.

As of criterion (5), its proper fulfillment can primarily be observed and proved within DBMS, by Relationships window of the created database, as shown in Figure 2.

Additionally, in Relationships window within DBMS of choice, one can precisely observe all created tables, fields, relationships and types of relationships. That

makes the data model much more flexible in terms of potential additions, alterations, deletions. Plus, it represents (in comparison to DBMSs sans GUI and Relationships window) the worthy visual addition to the overall data model that should, as early as possible, be properly aligned with the business model, in order to facilitate accurate and quality data exchange, communication, and handling, between them.

**Figure 2:** Relationship window of the created database



**Source:** created by the authors

Summarily, after this elaboration, by taking into account this database as a whole, the establishment of these 5 criteria in the early stage of its development, was logically necessary. This necessity has arisen from the need for direct, regular and two-way communication with the chosen enterprise, what has proven to be valuable asset to constant alignments and adjustments within various database objects as required by continuous back and forth, completely human-mediated, fairly close interaction, between database’s data model and enterprise’s business model. Lastly, everything previously mentioned was done with the particular and special purpose of amassing, structuring and processing data, to integrate processes within the chosen enterprise.

## 5. GRADES FOR FULFILMENT OF EXPECTATIONS FROM BUSINESS DATABASE AFTER ITS CREATION AND RECOMMENDATIONS FOR IMPROVEMENTS

In Table 2, 14 previously mentioned expectations were (briefly) numbered and listed. Also, they were graded numerically (from 1 i.e. the lowest grade to 5 i.e. the highest grade), whereas the displayed grade is the average of 1<sup>st</sup> author’s grade and 2<sup>nd</sup> author’s grade. In general, the authors were consent in terms of grades, while grade 3,5 indicates that individual grades were 3 and 4, while grade 4,5 indicates that

individual grades were 4 and 5. In addition, all expectations were elaborated within comments, while some of them also include a recommendation for improvement. Finally, in order to avoid table rows that split across pages, the authors have evenly distributed 14 expectations from Table 2 over subsequent pages.

**Table 2:** Expectations from the created database

<b>Number:</b>	<b>1</b>	
Expectation:	Tracking of direct material usage and costs	
Grade:	4	
Comment:	Consumption of material is tracked, and it can be filtered and/or mined by various criteria and it is made easier to search it by various criteria. With timely data entry on material consumptions, they are ideally available in real time.	
Recommendation:	More automated data entry for new orders.	
<b>Number:</b>	<b>2</b>	
Expectation:	Reduction of direct material costs	
Grade:	2	
Comment:	The reasonably solid functional basis for reduction of direct material costs are the ability to track individual costs and for individual construction sites. That way, it can be expected that direct material costs can be indirectly decreased: 1) based on exact tracking of already ordered material and 2) based on easier-to-reduce surpluses related to orders of material, both with consequent minimization of probability of running out of stock of individual material.	
<b>Number:</b>	<b>3</b>	
Expectation:	Integration of the value creation activities in the business process	
Grade:	4	
Comment:	Business processes are integrated around value creation process at construction sites: suppliers (of materials), materials, cooperators, vehicles, workers and insurances, have one point i.e. construction sites, in common.	
Recommendation:	Introduction of the capability to plan an individual schedule for workers, instead of collective schedule for construction sites, to know which, where and how much, the individual worker works.	
<b>Number:</b>	<b>4</b>	
Expectation:	Acceleration of the business process and its operations	
Grade:	3,5	
Comment:	By integration of separate individual enterprise's records into a single unified database, data are, ideally, continuously available in real time. That consequently leads to faster and more informed decision making by management and by employees in individual departments, dependent on their level of involvement in induction of, accordingly accelerated, specific business operations, with construction sites as a common point for all enterprise's operations and activities.	
<b>Number:</b>	<b>5</b>	
Expectation:	Reduction of idle time	

Grade:	4	
Comment:	Integration of separate individual enterprise's records enables faster decision making for operative decisions about conduction of business operations e.g. about the need to renew insurance, to contact cooperators and/or suppliers, to direct materials and/or workers and/or vehicles towards construction sites, and similar, which consequently leads to reduction of idle time.	
<b>Number:</b>	<b>6</b>	
Expectation:	Improvement of business process transparency	
Grade:	5	
Comment:	All users have access to all data in real time and they can be updated timely. Such improved transparency enables a higher degree of users' participation in i.e. improvement of operative decision making.	
<b>Number:</b>	<b>7</b>	
Expectation:	Increase in accuracy of determining the length of business operations	
Grade:	4,5	
Comment:	Time accuracy of recording individual business operations and/or events (by years, months, days) was increased e.g. start and end date of vehicle allocation, number of workers at construction sites in a specific month.	
Recommendation:	The apparent increase of time accuracy of recording individual business operations and/or events (by everything aforementioned + by hours + by minutes).	
<b>Number:</b>	<b>8</b>	
Expectation:	Increase in productivity	
Grade:	3	
Comment:	Currently, labor productivity is tracked in a somewhat limited fashion via collective schedule (of workers) for construction sites, while capital productivity is tracked implicitly via orders of materials for individual construction site without data who, individually, are planning to consume it.	
Recommendation:	List of individual workers would enable more detailed tracking of and increase in labor productivity (e.g. via hours of labor) and capital productivity (e.g. via individual material consumption).	
<b>Number:</b>	<b>9</b>	
Expectation:	Increase in data and information availability	
Grade:	4	
Comment:	Increased availability of data is important for management and for its strategic decision making on the allocation of resources, but also for data users/workers in various departments, especially in the Production department and Procurement department.	
<b>Number:</b>	<b>10</b>	
Expectation:	Increase in data and information transparency	
Grade:	4,5	
Comment:	Data that describe the enterprise's value creation process are completely enveloped by this database and they are transparently available to all users. Currently, differentiation by permissions is, intentionally, avoided, so that it may potentially lead to the improvement of communication flow between enterprise's departments that are involved in the value creation process at the central location of value creation i.e. construction sites.	
<b>Number:</b>	<b>11</b>	
Expectation:	Improvement of operative decision-making	

Grade:	4	
Comment:	Improved operative decisions to order materials, to allocate vehicles and/or workers on construction sites, that are related to insurance, by taking into consideration data centralization, can be made much more quickly and correctly, in view of evident integration of enterprise's information flow by means of this database.	
<b>Number:</b>	<b>12</b>	
Expectation:	Increase in employee satisfaction regarding data availability	
Grade:	4,5	
Comment:	Employees can be more satisfied, due to availability of all data via a single interface that is easy use, yet it has capabilities to filter and/or mine numerous and various data by many different criteria.	
<b>Number:</b>	<b>13</b>	
Expectation:	Increase in employee efficiency regarding data availability	
Grade:	4	
Comment:	Employee efficiency is increased due to the timely availability of all data regarding core activities of value creation processes, relatively easy filtering and/or mining of these data and consequent quicker and data-based decision making.	
<b>Number:</b>	<b>14</b>	
Expectation:	Increase in employee efficiency vis-à-vis data presentation	
Grade:	4,5	
Comment:	By created a main menu, data presentation is optimized according to employees' needs and certain specifics of doing business within the enterprise. Mentioned main menu and routine work in the database were simplified to the maximum. In contrast, overall data presentation was carefully and studiously created, to reduce the possibility of employee error to the minimum. To further increase employee efficiency, this database also enables easier data filtering and/or mining by many different criteria.	

**Source:** Created by the authors

Noteworthy is the fact, that all grades of expectations within Table 2 were given, by considering 5 objective limitations that were elaborated in the 4<sup>th</sup> part of this paper. Even though all therein anticipated and listed limitations, have had more or less apparent effects on the creation of this business database, all things considered, the authors regard enclosed grades, comments and recommendations as maximally bias-less and reliable.

## 6. CONCLUSION

In today's modern, globalized as well as economically interconnected world, and increasingly digitalized economies, even SMEs have the necessity to properly store, efficiently organize, functionally relate and closely integrate their data. What

is more, successful SMEs have proven to be a vital asset to most economies worldwide? Yet, one of the characteristics that differentiate successful SMEs from non-successful ones is the awareness of advantages, those business-informatics-related solutions can provide them.

Besides, data (-related capabilities, -associated operations and -specialized features), that are featured on virtually all software lists related to e.g. big data and data mining, are becoming increasingly interesting, even to SMEs, primarily because there are numerous functionalities that only business databases can provide.

One of such, business-data-aware, SMEs, is the Međimurje graditeljstvo Ltd., carefully chosen and consent-to-research, Croatian medium-sized enterprise, that authors have researched for the purpose of this paper. In relation to that, during research, the authors have found that this enterprise does actively work with business data and that it possesses various specialized applications for that purpose. However, the authors have managed to identify some major disadvantages of the current situation within this enterprise in terms of data and applications. These disadvantages can be summarised in this manner: non-integrated data, non-integrated applications and lack of structured electronic versions of enterprise's valuable business data.

So, aforementioned disadvantages have motivated the authors to consider the creation of a business database that will, in the given situation i.e. 2<sup>nd</sup> author's work on master thesis and 1<sup>st</sup> author's supervision of it, attempt to overcome those advantages, to the greatest possible extent. For that reason, the authors have prepared 14 expectations along with 5 limitations before business database's creation. In accordance with them, the database created by the 2<sup>nd</sup> author was to be fully aligned with 5 DBMS-related selection criteria that were established by the 1<sup>st</sup> author. Plus, many DBMS functionalities had to be consequently utilized in this database. All of this was done in the preparation for grading of the authors' business database according to its fulfillment of expectations after its creation. Whereas, grades, comments, and recommendations for improvements (related to authors' business database) have, as a whole, indicated that (despite some room for improvements, which were primarily related to limitations that were anticipated by the authors) the created business database has properly fulfilled 14 expectations that were formed before its creation.

Finally, when everything is taken into account, all objectives that were outlined in the Introduction were totally achieved. That will definitely serve authors as

the incentive for future research into similar, related and new SME-centered topics. In the final line, a brave new world of big data is out there, thus SMEs, especially small and micro ones, throughout the world, (will) need every possible help to unlock its great potentials.

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# EMERGING FOCUS ON FAKE NEWS ISSUES IN SCIENTIFIC RESEARCH: A PRELIMINARY META-ANALYSIS APPROACH

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## Abstract

*The Internet medium has dramatically changed the possibilities of information access globally; digitally savvy internet users worldwide continuously rely on arguably one of the biggest inventions for information dissemination in modern history. Moreover, one of the biggest issues of internet information space of the 21<sup>st</sup> century is actually the information overload as the internet medium keeps growing in information volume at a fascinating blistering pace. Every minute several millions of search queries occur on search engines, several million videos watched on popular video sharing networks, few hundred million emails sent and almost a million US dollars spent online - all in 60 seconds of every hour, all day, every day. However, there are more than a few growing concerns and challenges of the internet medium and one of the most alarming ones is popularly acclaimed as fake news (phenomenon). The term is often defined as the intentional presentation of false or misleading claims in order to manipulate the audience's cognitive processes. It has undoubtedly fanned the flames of scientific curiosity and academic responsibility in many different fields of study worldwide but also raised many concerns of public figures and organizations alike. The paper is based on a topic meta-analysis approach in order to describe the historical academic interest development and current status of scientific studies of the fake news phenomenon in the context of internet misinformation activities. Meta-analysis is based on 393 articles in Clarivate Analytics database (Web of Science) utilizing its categorization and filtering functionality. An overview of academic research is provided with a focus on the scientific field, time scope and country of origin.*



*Keywords:* internet information space, fake news, misinformation, meta-analysis

JEL Classification: D83, L82

## 1. INTRODUCTION

One of the biggest issues of internet information space of the 21<sup>st</sup> century is information overload as the internet medium keeps growing in its information volume at a fascinating blistering pace. Every minute several millions of search queries occur on popular search engines, several million videos watched on video sharing networks, few hundred million emails sent and almost a million US dollars spent online (Desjardins, 2019). All of these activities (and many more) occur in 60 seconds of every hour, all day, every day.

Public media misinformation and deception issues are unfortunately not new occurrences in the modern age of social-economic environment, yet the public and academic attention towards these topics have grown exponentially in recent times. It has undoubtedly fanned the flames of scientific curiosity and academic responsibility in many different fields of study worldwide. One of most cited triggers for the stirring up the interest around the fake news issue is most likely the American presidential election in 2016 (Farkas & Schou, 2018; Vargo et al., 2017) inducing large amounts of news reports and related commentary. Furthermore, some authors have gone even further in describing the media environment as a post-truth or post-factual era (Corner, 2017; Mihailidis & Viotty, 2017; Rochlin, 2017; Speed & Mannion, 2017) with a truly fascinating indication of its proportions: the Oxford Dictionary selected the term “post-truth” as the 2016 international word of the year (Berghel, 2017).

So far, fake news stories have misinformed, misled and even engaged tens of millions of individuals around the world. Namely, only the top 50 fake news stories on Facebook in 2018 generated about 22 million shares, reactions and comments in total (Silverman & Pham, 2018; Alexander, 2018; Berghel, 2017). Social media platforms, in general, have been taken a major role in disseminating fake news, alternate facts and pseudoscience (McClain, 2017; Shu, 2017). Due to the extent and implications of the trend, fake news has been labeled as “powerful and sinister force” in the online media environment while some authors even refer to the issue as fake news crisis (Nelson & Taneja, 2018) of larger proportions.

While many individuals can recognize fake news and ignore the deceptive articles they encounter, many cases of fake news consumption lead to significant consequences. Scholars have examined many ways in which fake news articles have affected individuals: from confusing and misleading readers (Tandoc et al., 2018;), influencing opinions (Uberti, 2017; Michell et al, 2016), potentially affecting political elections (Farkas & Schou, 2018; Allcott & Gentzkow, 2017), to endangering the safety of people (Speed & Mannion, 2017; Lopez, 2016) and many others. All the mentioned challenges of internet information space have contributed to an online media environment where sensational headlines are significantly easier to find than they are to verify (Nelson & Taneja, 2018).

Lewandowsky et al. (2017) argued that fake news phenomenon is a result of larger political, economic, and societal trends: “a decline in social capital, growing economic inequality, increased polarization, declining trust in science, and an increasingly fractionated media landscape”.

Fake news phenomenon is clearly a widely discussed topic, primarily as an issue of information literacy (Rochlin, 2017) or perhaps more aligned version with the paper topic - information illiteracy. Mihailidis & Viotty (2017) concluded that developing information (and media) literacy is the response mechanism to enable the empowerment of critical media consumers in the “era of distrust”.

## 2. FAKE NEWS PHENOMENON

Even though the term fake news has been made dramatically popular in the last decade, it is not a new phenomenon (Allcott & Gentzkow, 2017; Vargo et al., 2017) but in fact closely related to a long history of hoaxes, mass manipulation, algorithmic biases and propaganda (Cooke, 2017), among others.

Up until 2012, both academics and professionals usually described fake news as a term that referred to news satire or news parody, content created for comedic purposes and mainly for entertainment (Berkowitz & Schwartz, 2016). In fact, news parody as a tool for political, cultural and social satire has a very strong tradition in many countries such as USA, Canada, Australia (Baym & Jones, 2012; Harrington, 2012) and others. Many authors explored the popularity of fake news or mock news programs such as *The Daily Show*, *The Colbert Report* and several others (Amarasingam, 2014; Baym & Jones, 2012; Brewer & Marquardt, 2007; Baym, 2005). Moreover, several studies ex-

explored the relationship between satirical news parody and perception of various topics. Brewer et al. (2013) suggested that exposure to satirical news coverage can affect knowledge, opinion and even political trust. Viewers exposed to news coverage about the issues highlighted in satire programming may experience stronger effects on opinion.

More recently, the term has been related to false or misleading information fabricated to appear like a fact-based story (Nelson & Taneja, 2018). Furthermore, the term fake news is often defined as intentional presentation of false or misleading claims (Tandoc et al., 2018) with financial or ideological objectives, a deliberately “fraudulent media product” (Corner, 2017) or articles that are “intentionally and verifiably false” (Allcott & Gentzkow, 2017). The misinformation is created by design in order to manipulate the target audience’s cognitive processes (Gelfert, 2018). Lazer et al. (2018) conclude that fake news overlaps with other “information disorders”, namely misinformation (false or misleading information) and disinformation (false information spread to deceive people). In contrast, Rochlin (2017) argues that fake news no longer stands for “factless or slanderous” information piece, but a claim to attack an individuals’ pre-existing beliefs. However, in combination with online analytical capabilities, behavioral tracking and segmentation opportunities of social media platforms it clearly forms a powerful tool for audience-specific manipulation (Gelfert, 2018)

Within the realm of scientific literature on the fake news phenomenon, the large majority of research is focused on two issues: how and why is fabricated content created, disseminated and potentially legitimized (Farkas & Schou, 2018).

Some studies suggest that not only the media environment within internet information space is changing but the various segments of media consumers and internet users in general. Marchi (2013) examined the news related attitudes and behavior of teenagers and found evidence of specific ways the information is being accessed, new attitudes about the concept of being informed and, interestingly enough, a preference for opinionated rather than objective news articles. However, the author also pointed out that the latter is related to teenagers’ preference of authentic renderings of news articles and not to their lack of understanding of objective journalism significance.

The fake news phenomenon is directly linked with the control of (online) information space and as such considered as a potential threat to democratic societies. Many scholars focus on the political significance of information fabri-

cation and intentional misinformation where fake news approach is utilized by various political individuals and organizations as means of “discrediting, attacking and delegitimizing political opponents” (Farkas & Schou, 2018).

Tandoc et al. (2018) examined 34 academic articles related to fake news published between 2003 and 2017 and suggested categorization of fake news into six types: news satire, news parody, fabrication, manipulation, advertising, and propaganda. The typology is based on 2 dimensions: levels of facticity and deception. In addition, authors suggest that not all of the identified fake news types are equally malicious and some types even might not be considered fake news based on more recent term perception. In another research paper, Tandoc et al. (2017) proposed a conceptual framework to understand how individuals confirm the authenticity of the information found on social media platforms. The study based on a sample of 2501 Singaporeans suggested that social media users rely on their own judgment of the source and the message and also turn to external resources when necessary. Lefevre et al. (2012) conducted an internet-based experiment on effects of intentionally created fake television news items as stimuli and concluded that these exemplars had a significant impact on viewers even though preexisting attitudes have a substantial influence. Somewhat similar conclusions were drawn in another large-scale online experiment with embedded fake television news items regarding political issues in Belgium (Walgrave, 2009).

A study by Vargo et al. (2017) showed that content generated from specific fake news sites is growing in size while possessing the power to boost the topic popularity in the online information space. In addition, Bakir and McStay (2017) linked the tern’s fake news and economy of emotions while emphasizing the use of personal and emotionally targeted articles along with the unlocked potential of highly-segmented digital advertising.

However, Nelson and Taneja (2018) found that the online fake news target audience comprises a small and disloyal segment of heavy internet users while the majority continue to utilize the most well-known news sources. It should also be mentioned that even the most popular and established news sources have been (most likely) unintentionally reporting on and sharing fake news articles (Alexander, 2018) or fabricated photographs (Carlson, 2009). In addition, various social networks play an enormous role in generating traffic to fake news sites and sharing fake news articles in general.

A number of authors examined methods and models for detecting deceptive information and locating fake news. Haigh et al. (2018) studied online tools for fact-checking which are used for locating fabricated information and exposing the truth. The study focused on an online tool called StopFake which evaluates news articles for signs of falsified evidence, such as manipulated, misrepresented or misleading imagery and/or quotes. The authors demonstrated its use and documented the work practices as well as analyzed its analytical possibilities. Khaldarova and Pantti (2016) examined a similar topic and also focused on Ukrainian fake news crisis and related use of StopFake tool.

Conroy et al. (2016) examined the potential of a hybrid approach that combines linguistic cue approaches with machine learning, enabled with network-based behavioral data in order to create a “fake news detector”.

Several interesting research efforts focused dominantly on image analysis within internet information space. Jin et al. (2017) examined the key role of image content in the news verification on microblogs. Interestingly enough, the authors found that fake and real news articles have different image distribution patterns and therefore have proposed several visual and statistical features to characterize the patterns visually and statistically in order to detect fake news.

### 3. META-ANALYSIS OF SELECTED TERM RELATED SCIENTIFIC PAPERS

The paper is based on a topic meta-analysis approach in order to describe the historical academic interest development and current status of scientific studies of the fake news phenomenon in the context of internet misinformation activities. Clarivate Analytics database was chosen as the main source of scientific papers due to its popularity and rank as well as the fact that it's highly respected among scholars worldwide. Li et al. (2018) argued that it is the “world's leading scientific citation search and analytical information platform”.

Meta-analysis is based on 393 articles in Web of Science Core Collection database utilizing its categorization and filtering functionality. Data was collected from the database during March 2019. A database query returns a total of 682 results (articles, proceeding papers, editorial materials, book reviews, and others) but the analysis was primarily based on 393 scientific articles while other document types were omitted from the analysis. An overview of the selected

scientific articles is provided with a focus on the scientific field, time scope and country of origin.

**Table 1.** Distribution of articles in Web of Science categories

WEB OF SCIENCE CATEGORIES	RECORDS	% OF 393
Communication	101	25,70%
Information Science Library Science	37	9,42%
Education Educational Research	24	6,11%
Political Science	20	5,09%
Computer Science Information Systems	18	4,58%
Humanities Multidisciplinary	16	4,07%
Law	15	3,82%
Social Sciences Interdisciplinary	15	3,82%
Sociology	14	3,56%
Folklore	13	3,31%
Multidisciplinary Sciences	11	2,80%
Psychology Experimental	11	2,80%
Computer Science Software Engineering	10	2,55%
Philosophy	10	2,55%
Psychology Multidisciplinary	8	2,04%
Engineering Electrical Electronic	7	1,78%
International Relations	7	1,78%
Religion	7	1,78%
Computer Science Interdisciplinary Applications	6	1,53%
History	6	1,53%
Language Linguistics	6	1,53%
Social Issues	6	1,53%
Business	5	1,27%
Computer Science Artificial Intelligence	5	1,27%
Literature	5	1,27%

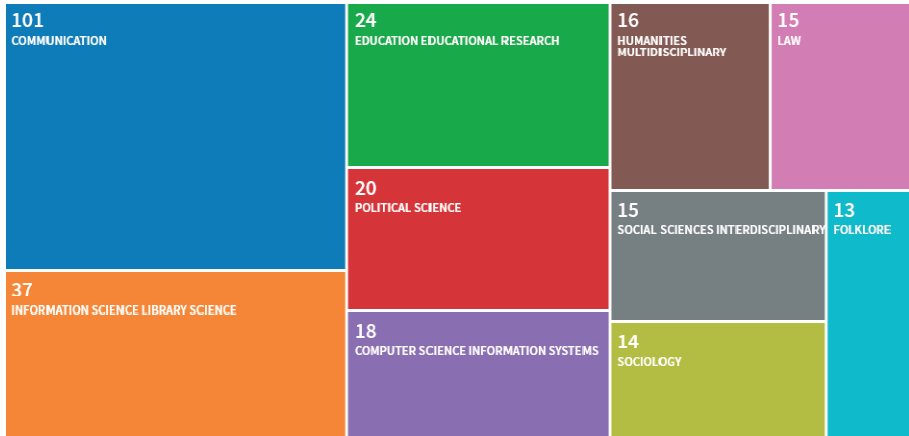
(69 Web of Science Categories value(s) outside display options.)

**Source:** Authors' analysis based on Clarivate Analytics database

Based on the Web of Science database categorization, the articles were published in 94 different scientific categories. However, the vast majority of almost 70% of the articles fit into 10 major categories: Communication (25,70%), Information Science Library Science (9,42%), Education Educational Research (6,11%), Political Science (5,09%), Computer Science Information Systems (4,58%), Humanities Multidisciplinary (4,07%), Law (3,82%), Social Sciences Interdisciplinary (3,82%), Sociology (3,56%), and Folklore (3,31%). Detailed

category distribution is provided below (Table 1) as well as tree-map visualization of the 10 most represented categories (Figure 1).

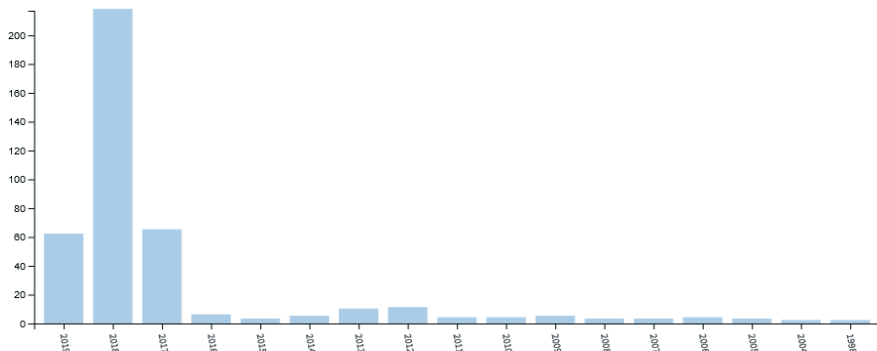
**Figure 1.** Tree map visualization of 10 most represented categories



**Source:** Authors' analysis based on Clarivate Analytics database

Another important indication of the growing scientific interest in the topic of fake news phenomenon is the article publication year. Web of Science Core Collection database provides publication information since 1998. Even though there are several articles published earlier, more than 88% was published in the last 5 years (2015-2019) with a fascination share of over 55% being published in 2018 (Figure 2).

**Figure 2.** Distribution of articles based on publication year

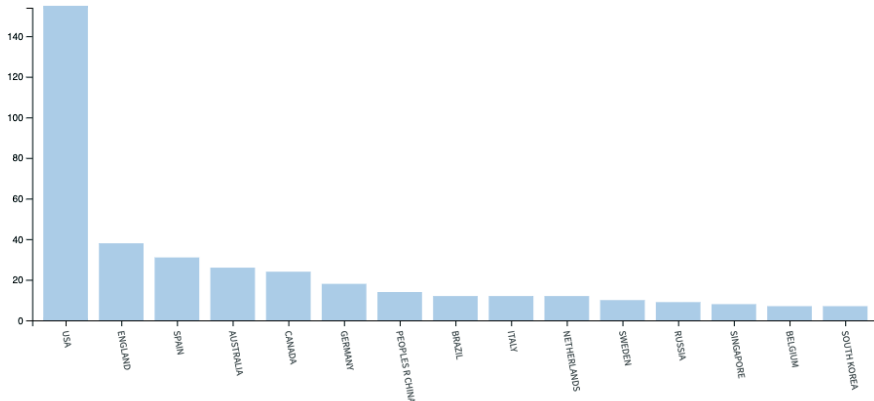


**Source:** Authors' analysis based on Clarivate Analytics database

It is also very important to consider that: a) the data was collected for only the first quarter of 2019, and b) the process of publishing a scientific article in Web of Science Core Collection is extremely time-consuming and may influence the discrepancy between the time the article is written and the publication time.

According to the collected data, the topic of fake news phenomenon has been recognized globally as the selected 393 articles have been published in (or from) 57 countries/regions around the world. However, English speaking countries clearly dominate with the top 5 countries (accounting for over 68%) being: USA (39,19%), England (9,42%), Spain (7,63%), Australia (6,36%), and Canada (5,85%). Top countries/regions are presented in more detail below (Figure 3).

**Figure 3.** Distribution of articles based on country/region



**Source:** Authors' analysis based on Clarivate Analytics database

## 4. CONCLUSION

The paper is based on a topic meta-analysis approach in order to describe the historical academic interest development and current status of scientific studies of the fake news phenomenon in the context of internet misinformation activities. Meta-analysis is based on 393 articles in Clarivate Analytics database (Web of Science) utilizing its categorization and filtering functionality. An overview of academic research is provided with a focus on the scientific field, time scope and country of origin. Based on the Web of Science database categorization, the articles were published in 94 different scientific categories. However, the vast



majority is categorized in Communication, Information Science Library Science, Education Educational Research, Political Science and Computer Science Information Systems. More than 88% of articles were published in the last 5 years (2015-2019) with a fascinating share of over 55% being published in 2018. The topic of fake news phenomenon has been recognized scientifically on a global scale as the selected 393 articles have been published in 57 countries/regions around the world. However, English speaking countries clearly dominate.

This paper suffers from a number of limitations due to its scope and meta-analytical approach. Future research efforts may build on the arguments presented in this paper and examine selected scientific papers in more detail. Furthermore, additional studies may focus on methods and models of distinguishing real news from fabricated fake news stories as well as examining their main motivation. Scholars may also explore the role of the target audience in perceiving fake news and sharing it online and what in fact makes a fabricated story more or less successful. These unexplored areas and related questions “beg” for further research as would Vargo et al. (2017) put it.

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MICROECONOMICS,  
MACROECONOMICS  
AND MONETARY  
ECONOMIC



# DEMOGRAPHIC STRUCTURE OF UNEMPLOYED PERSONS IN SLAVONIA

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## **Abstract**

*Recently, in media is often told about the migration of unemployed persons from the territory of Slavonia to the Western European countries due to their inability to find a work place. Unemployment is the leading problem in today's economy. In addition to the negative economic effects, unemployment also has detrimental sociological and psychological effects. The general rate of activity in one area is also determined by the use of demographic determinants. The goal of this paper is focused on the demographic structure analysis of unemployed persons from the five Slavonian counties: Virovitica-Podravina, Brod-Posavina, Požega-Slavonia, Osijek-Baranja, and Vukovar-Srijem County. In this paper are presented general information's on unemployment in these counties. The demographic structure of the unemployed is presented in this paper in accordance with the following characteristics of the examinees: gender, age, level of education and occupation. Practical work application can be referred to the adoption of targeted measures and employment policies in accordance with the demographic structure of the unemployed in order to stop migration from Slavonia. Proposals for the further research can be a demographic analysis of unemployed persons in the Republic of Croatia that will be preceded also in other counties, and the analysis for the purpose of compliance of the employment measures set with the demographic structure of the unemployed individuals.*

**Keywords:** unemployment, demographic structure, migration, Slavonia

JEL Classification: E24, J64

## 1. INTRODUCTION

The problem of high unemployment is recently the urgent macroeconomic problem. In the course of the last two decades, Croatian society has gone through in depth structural transformations, which were ultimately reflected on the economic and the social sphere. Today, the Croatian economy is characterized by an extremely low level of inclusion of population in the labour market, whereby Croatia is ranked third among the EU countries with a high unemployment rate of individuals younger than 26 years of age (45% in 2016). Because of such negative economic trends, recent years have been marked by the increased emigration of young, labour-intensive and productive population. In addition, we should also take into account many other factors that characterize the high emigration flows from the Republic of Croatia, including social, educational, and political and many other reasons. Although at first glance it may seem that such very high emigration flows as a short-term consequence can have a reduction in the unemployment rate, however, long-term migration flows cause drastic labour market disturbances as well as complete destabilization of the system that was caused by the excessive losses.

In the Republic of Croatia, in 2018 was noted the significant drop in unemployment in a total of 21,5% when compared to the previous year, what indicates a stabilization of unemployment, which according to the ILO methodology during the last quarter of 2018 accounted for 8,5% (Croatian Chamber of Economy, 2018). Although overall unemployment rate does not point towards the “alarming” situation in the Republic of Croatia, disproportion of individual regions (which today dominates) and expansive emigration flows of the population have opened the question of further survival and sustainability. Available data suggest that during the last five years, more than 200 000 people have left the Republic of Croatia; with nearly one quarter of the Croat population living in the east of the country proceed by the lowest official employment rate.

The area which will be described in detail and include in this paper is the eastern part of Croatia - Slavonia, which administratively encompasses five Slavic counties: Vukovar-Srijem, Osijek-Baranja, Požega-Slavonia, Brod-Posavina, and Virovitica- Podravina. For the purpose of this paper were used data of the Central Bureau of Statistics and the Croatian Employment Service. Data on population are taken from the 2011 Population Census. Data were analysed on registered unemployed persons that were reported to the Croatian Employ-

ment Service with regard to demographic characteristics such as gender, age, level of education and occupation. Numerous issues related to regional differences, emigration, and the problem of unemployment in the labour market have been insufficiently explored.

## 2. CROATIAN LABOUR MARKET

Long-term unemployment leaves a number of consequences: social, family, psychological, economic and health. It also has an implication for the individual career development. Long-term unemployment is considered (according to American standards) if individuals are unemployed for 27 consecutive weeks and longer (Kimberly, 2017, 11). Employers today seek for the employees with two key features: job expertise and for them to retain and improve such expertise during employment. The long-term unemployed person most often cannot fulfil this other request. They cannot achieve continuity when acquiring new knowledge and skills (Weddle, 2017, 18).

The disparity of the education system and the market needs is a structural problem of the Croatian economy, which has additionally contributed to unfavourable processes in the natural population movement during the last decade. The former analysis that was conducted by the Croatian Employment Service on the Croatian labour market is characterized as a market with an obvious contingency of disproportions between labour market needs and labour supply, which will be more pronounced in the coming years. The division of labour will have a profound social effect that imposes an increased demand for more complex knowledge and more intensive and longer education (Inglehart, 1997; Samuelson, Nordhaus, 2001). Deep effects of globalization that reach the peak, specialized knowledge and experience rank at the “must have” scale of the highly developed economies, therefore, such needs become more and more complex, which means that the older population is considered inadequately qualified to deal with the deep structural problems (Obadić, 2003, 3).

There is no doubt that the multiannual incompatibility of the educational system and the labour market is characterized by direct negative effects, which experienced its peak during the deep economic crisis when the level of economic activity was lowered at a record low level of 12,6 % (Croatian Chamber of Economy, 2017, 8). Besides, with a high unemployment rate and low rates of economic activity of the population, at the same time a problem exist pertained



to long-term unemployment and also a high structural mismatch between job supply and job demand exists. Such negative trends have also contributed to the development of the so-called informal economy, which results in relatively large differences between the administrative and survey recordings on the labour market (Obadić, 2011, 108). The available data suggest that the largest quotient of measurements was attained in the last quarter of 2013 when among the EU28 countries in front of Croatia was only Spain and Greece, where the lowest employment rate was recorded at 52%. Under the influence of a sharp decrease in the number of unemployed and stagnant number of employed persons; during 2016 the average annual unemployment rate was reduced by 2,2 percentage points, i.e. from 17,0% in 2015 to 14,8% in 2016. Positive economic trends continued for the third consecutive year and are reflected in a significant reduction in the number of unemployed persons and a slight increase in the employment rate. "The annual average of registered number of employees in 2017 amounted to 1,405,498 persons with the on-year increase of 15,079 persons (or 1,1%), with the increased number of employees in the sector of legal entities by 1,4%, which makes 84,9% of the total registered employed persons, while the number of employees in the sector of crafts and free professions decreased by 0,7% and in sector of the "individual" farmers by 1,6%" (Croatian Employment Service, 2017, 11).

In accordance with the different methodology of measuring employment and unemployment conditions with regard to the Labour Force Survey and administrative sources, significant differences are noticed in the absolute number of employed persons (that 220 thousand persons more were registered in the survey when compared to administrative sources), and thus smaller deviations in the average number of unemployed (11,000). Comparative analysis of the collected data has shown a higher employment growth (2,2% versus 1,1%), but also a lower fall in unemployment (14,6% versus 19,8%), in accordance to the survey data. Table 1 shows different movements of economic activity and unemployment in the Republic of Croatia collected using two different methods of data measurement.

**Table 1.** Different indicators of unemployment with regard to the measurement methodology

DESCRIPTION	REGISTERED DATA			SURVEY DATA		
	2014	2015	2016	2014	2015	2016
Active population	1 670 336	1 676 908	1 632 279	1 893 000	1 891 000	1 830 000
Employed	1 342 149	1 391 002	1 390 419	1 566 000	1 585 000	1 590 000
Unemployed	328 187	285 906	241 860	327 000	306 000	240 000
%	19.6	17.0	14.8	17.3	16.2	13.1

**Source:** Authors work by Croatian Employment Service, 2017, 11 -13. Available at: [http://staro.hzz.hr/UserDocsImages/HZZ\\_Godisnjak\\_2017.pdf](http://staro.hzz.hr/UserDocsImages/HZZ_Godisnjak_2017.pdf)

The presented statistical data are undoubtedly necessary to properly define and rank the initiatives and policies of employment, but also to monitor and realize the effectiveness of certain labour market programs (Goldfarb, 1993, 24). However, despite the importance of the presented data, their analysis suggests a somewhat confusing picture of the actual situation and the movement of unemployment on the market. Therefore, the real question is about data, but also which have been attempted to explain by many authors - which data are relevant and actual in relation to the collected and registered data (Kerovec, 1998, 301). Before a few years, the Republic of Croatia has joined the most developed countries that publish data on unemployment based on two sources, namely on the two measurement methods: the administrative source and the data collected and based on the workforce survey (Chernyshev, 1994). Very often the data obtained from two different sources do not produce the same results. The difference between these two ways of measuring data is very important. Although each of these methods is implemented according to the predefined regulations, registered unemployment as a measure is subject to legal changes and is not internationally recognized and comparable. However, the unemployment rate (ARS) is recognized as a measure and it's conducted by the Central Bureau of Statistics (CBS) in accordance with the recommendations of the International Labour Organization. It is about the measurement of unemployment which is accepted as an international standard (Mrnjavac, 1996).

Generally, highly-developed economies are most dominant in their administrative data versus survey data, i.e., the administrative unemployment is always higher than the one gathered by the survey. By contrast, the transition countries have a much higher unemployment rate on the basis of data collected by the Survey Methodology (ARS), as it's the case in the Republic of Croatia.

Although the data obtained by the ARS methodology fully complies with the international standards, very often analyzes that were carried out on this topic also include administrative data. So the problem is not just inertia of the user, but the frequency of implementation and data collection. Today, the market increasingly demands more promptly monitoring of movement of unemployment and employment, which according to the survey methodology is almost impossible to do, because it is carried out two to three times a year. Also, such a measurement method most often includes all working-age population in the defined age group, including students and retirees, housewives and pupils, regardless of whether they were registered in the Croatian Employment Service register. It is worth adding that the survey method is the basic instrument for obtaining accurate and relevant data that can “cover” almost the entire population, regardless of their economic activity, sector, age, gender structure, employment or unemployment status.

In the Republic of Croatia, unemployment is largely the result of structural changes in the economy, liquidation, and bankruptcy of companies, dismissals of employees and privatization in the industry sector. The industrial sector in the Republic of Croatia during the economic crisis and the early transition process was the most affected, and it has recorded a significant drop in production, which eventually led to an increase in unemployment during the course of the economic crisis. According to the Croatian Employment Service data, which in accordance to the Act on Employment Mediation and Unemployment Rights (OG16/17) empowered since 2002, maintains its duty to collect data and proceed with the analysis of unemployed persons in economy activity: in recent years it has been noticed significant improvement and growth rate of employment. According to the National Classification of Economic Activities (NKDD), the decrease in unemployment was recorded during fourteen areas of activity, with the largest percentage in the manufacturing industry, 17,1%.

When compared to 2016, the number of employees has increased in the administrative and service sector (3,8%), construction building (3,0%), arts, entertainment and recreation (2,4%) and transport and storage (2,0%), as it is shown in Table 2. In accordance to the sector of activity (agricultural, non-agricultural and service sector), the structure of employed persons in 2017 shows that 69,6% of employed persons were employed in the service sector, 26,8% in non-agricultural and 3,6% in the agriculture sector (Croatian Employment Service, 2018, 2017).

**Table 2.** Employment in the area of NKD activity

DESCRIPTION	ACCORDING TO NKD		LEGAL PERSONS		FREE PROFESSIONS	
	2016	2017	2016	2017	2016	2017
Agricultural activities	50 281	50 189	21 701	21 951	8 690	8 660
Non-agricultural activities	370 680	377 381	321 810	328 817	48 870	48 564
Service activities	969 013	977 554	8 334 931	84 2919	135 520	134 635
TOTAL	1 390 4 19 1	1 405 498	1 177 004	1 193 687	1 935 249	192 233

**Source:** Authors work by Croatian Employment Service, 2018, 14 and Croatian Employment Service, 2017, 16.

Over the last few years, the economic situation in Croatia has indicated the uneven distribution of economic resources and incomes within the country, which, as a consequence, causes uneven distribution and development of individual regions. The overall unemployment rate for Croatia has been significantly declining over the last few years, but the problem that is still high is the underdevelopment of some regions where unemployment is at a very high level. The research and analysis that has been continuously carried out by the EU have shown that in the Republic of Croatia is present a long-term drastic growth of unemployment in certain regions that from the period of the '90s of the last century has not been significantly reduced. Huber (2007) notes in his research that long-term regional differences are more significant in regions that are geographically closer to more developed markets i.e. that are bordering with EU member states. Average lower unemployment rates also have regions that have been less industrialized, as it's the case with the transition economies, because there has been a sharp decline in industries activities and, consequently, a sharp decline in employment.

In all counties, the unemployment rate has fallen in the course of the last two years, and in Krapina-Zagorje, Karlovac, Varaždin and Zadar counties during the last three years. As a result, the decline in rates in all observed counties was affected by the higher fall in the number of unemployed individuals (which is partly related to demographic and migration trends). The largest share of the total number of persons employed is in the counties with the highest concentration of population, in the close vicinity of urban centres and the largest cities. Despite this, the insights into employment rates in the Croatian counties confirm the leading developmental position of the three continental counties: Međimurje, Krapina-Zagorje and Bjelovar-Bilogora counties, which suggest the conclusion that resource allocation is optimized in relation to social struc-

ture. Available data suggest that the average number of unemployed persons during 2017 has decreased in almost all of the counties, but the counties that lag behind well below the average are Slavonia and Baranja counties. So, “it’s about a dynamic process, it’s not the condition that can result in personal exclusion at the personal level” (Šućur, 2001, 17) of the entire region. The most significant decrease in the percentage of the number of unemployed was recorded in Krapina-Zagorje (28,6%), Varaždin (28,3%), Koprivnica-Križevci (27,6%) and Zagreb County (27,5%). In accordance with the gender structure, there is a noticeable increase in employed women in the Brod-Posavina, Osijek-Baranja, Vukovar-Srijem, Primorje-Gorski Kotar and Split-Dalmatia counties (58,5% to 60,9%). The lowest proportion of women in the total number of unemployed were in Šibenik-Knin, Bjelovar-Bilogora, Varaždin County and Lika-Senj County (52,2% to 52,5%) (Croatian Employment Service, 2017, 2018).

Over the past few years, more than 200 000 people have left the Republic of Croatia, among which prevail the younger and the most productive populations. A special problem poses youth unemployment.

Youth unemployment affects both the individual and the community. It carries with it negative economic (poverty, lack of income, reduced purchasing power), social (mental state of the individual, negative attitudes, alcohol consumption) and political implications (bad demographic image, brain drain) that are manifested throughout the society (Bilić, Jukić, 2014, 493). Independent of the state in question, youth policy, and youth employment policy must be a political priority of all at the level of European and national consensus (Bedeniković, 2017, 1). In addition, given the large and not developed dimension between the individual regions at the present time, less developed regions suffer significant loss of the necessary working population. The county with the relatively largest positive migration balance is the Zagreb County, followed by the Zadar and Istria counties. The initial assumption of the motives of relocating and migration to another county would be to the counties with relatively more dynamic labour markets and a relatively higher demand for workers, i.e. that they have a lower unemployment rate. The largest relative negative internal migration balance was recorded in Vukovar-Srijem and in Brod-Posavina counties, followed by Virovitica-Podravina and Požega-Slavonia counties as shown in Table 3. In the aforementioned counties, the high unemployment rates were recorded.

**Table 3.** Emigration balance in Slavonia

COUNTY	YEAR				
	2013	2014	2015	2016	2017
Virovitica - Podravina County	236	443	804	941	1 322
Brod – Posavina County	695	914	1 571	2 208	3 271
Požega – Slavonia County	239	404	1 028	1 238	1 564
Osijek - Baranja County	983	1 505	2 212	3 634	5 094
Vukovar - Srijem County	1 019	1 594	1 967	2 763	5 091
TOTAL	3 172	4 950	7 582	10 784	16 342
TOTAL RH	15 262	20 858	29 651	36 436	47 352

**Source:** Authors work by Central Bureau of Statistics (2018).

In the Republic of Croatia, disparities among regional unemployment rates are present, but their causes and mechanisms that could affect their growth or reduction have not been sufficiently explored. Large and persistent regional differences can lead to recurrent subvention of the regions that lag behind during long-term (Huber, 2007). To reduce unemployment, it is not enough to increase demand in certain industries, but it is necessary that this increase will be higher than the increase in the number of bids, i.e. the number of unemployed individuals.

### 3. UNEMPLOYED PERSONS BY SLAVONIA COUNTIES IN ACCORDANCE TO DEMOGRAPHIC FORMS

In December 2018 a total of 43,245 unemployed persons were registered in Slavonia. From Table 4 is visible the number of unemployed by counties in Slavonia.

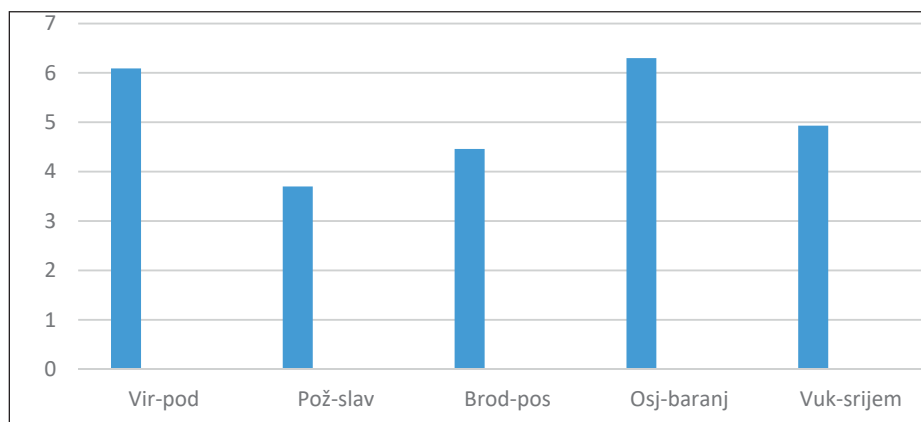
**Table 4.** Registered unemployed persons by the Slavonian counties in 2018

County	Total population	Registered unemployment in 2018	% of unemployed persons in the total population of the county
Virovitica-Podravina	84 836	5 171	6.09
Požega-Slavonia	78 034	2 893	3.7
Brod-Posavina	158 575	7 077	4.46
Osijek-Baranja	305 032	19 238	6.3
Vukovar-Srijem	179 521	8 866	4.93

**Source:** Authors work by the Central Bureau of Statistics, Population Census 2011; Croatian Employment Service, 2018

The largest number of registered unemployed persons were recorded in Osijek-Baranja and Virovitica-Podravina County, and the smallest number of registered unemployed persons in the total number of inhabitants is in Požega-Slavonia County.

**Figure 1.** Percentage of registered unemployed persons in the total population by counties in 2018



**Source:** Authors work, according to Table 4.

From Table 5 is visible the number of registered unemployed persons per Slavonian counties in accordance with gender.

**Table 5.** Registered unemployed persons per Slavonian counties in accordance with gender in 2018

County	Registered unemployment in 2018	Female gender	Male gender	% Women
Virovitica-Podravina	5 171	2 989	2 181	57.8
Požega-Slavonia	2 893	1 713	1 179	59.2
Brod-Posavina	7 077	4 255	2 822	60.1
Osijek-Baranja	19 238	11 495	7 743	59.7
Vukovar-Srijem	8 866	5 219	3 647	58.8

**Source:** Authors work by the Croatian Employment Service, 2018

In all analyzed counties, women account for more than half of registered unemployed persons. The greatest number of unemployed women is in Brod-Posavina, Osijek-Baranja and Požega-Slavonia counties. In the Republic of Croatia, in the year 2018, 56,3% of the total number of registered unemployed individuals were women (of 146 912 registered unemployed persons, 82 735



were women). Therefore, the data obtained by the counties are levelled with the Republic average. From Table 6 it's visible the number of registered unemployed persons in Slavonian counties by age.

**Table 6.** Registered unemployed persons in Slavonian counties by 2018

County	Registered unemployment in 2018	15-19	20-29	30-39	40-49	50-59	60 and over
Virovitica-Podravina	5 171	273	1 110	957	1 023	1 431	378
Požega-Slavonia	2 893	172	756	576	566	650	173
Brod-Posavina	7 077	411	1 573	1 266	1 483	1 824	519
Osijek-Baranja	19 238	934	4 316	3 685	3 671	4 960	1 672
Vukovar-Srijem	8 866	484	2 140	1 774	1 909	2 093	465

**Source:** Authors work by the Croatian Employment Service, 2018

In Virovitica-Podravina, Brod-Posavina and Osijek-Baranja County, the largest number of unemployed are from the age group 50-59 and that; 27,7% in Virovitica-Podravina, 25,8% in Brod-Posavina, and 25,8% in Osijek-Baranja County. In Požega-Slavonia and Vukovar-Srijem counties, the largest number of unemployed belong to the age group 20-29 years, i.e. in Požega-Slavonia 26,1%, and in Vukovar-Srijem 24,2%. From Table 7 is visible the number of registered unemployed persons by Slavonian counties in accordance to the level of education.

**Table 7.** Registered unemployed persons by Slavonian counties in accordance to the level of education in 2018

County	No school	With elementary school	With high school	With the first degree of college, vocational study, high school	With a college degree, academy, master's degree, doctorate
Virovitica-Podravina	362	1 476	2 947	216	170
Požega-Slavonia	228	579	1 744	184	158
Brod-Posavina	823	1 572	4 051	340	291
Osijek-Baranja	1 720	4 246	11 122	796	1 354
Vukovar-Srijem	242	2 300	5 437	455	433

**Source:** Authors work by the Croatian Employment Service, 2018

In all Slavonian counties, the highest number of registered unemployed persons has completed high school, therefore, in Virovitica-Podravina County they accounted for 56,9% from the total number of unemployed, in Požega-Slavonia 60,3%, in Brod-Posavina County 57,3%, Osijek-Baranja, 57,8% and in Vukovar-Srijem 61,3%. In all these counties, except for the Osijek-Baranja



County, the lowest number of registered unemployed persons is highly educated with a completed university, academy, master or doctorate degree; in Virovitica-Podravina 3,3%, in Požega-Slavonia 5,5%, in Brod-Posavina 4,1%, and in Vukovar-Srijem 4,9% of the total number of registered unemployed persons. In the Osijek-Baranja County, 7% of registered unemployed persons have completed a university, academy, master's degree or doctorate study. From Table 8 is visible the number of registered unemployed persons per Slavonian counties is in accordance to their occupation.

**Table 8.** Registered, unemployed persons by Slavonian counties by profession in 2018

County	Military	Legislators, Officials, directors	Scientists Engineers Experts	Technicians Expert associates	Officials	Service and commercial jobs	Farmers foresters hunters fishermen	Craft jobs	Machine operators, industrial producers	Simple occupations
ViroviticaPodravina	1	0	260	560	483	896	66	573	216	2 098
Požega-Slavonia	0	1	248	491	276	427	61	355	124	891
Brod-Posavina	0	0	430	813	556	1 297	35	1009	258	2 629
Osijek-Baranja	1	5	1 670	2 220	2 137	3 342	146	1836	834	6 923
Vukovar-Srijem	1	1	643	1 154	873	1 774	124	1064	438	2 709

**Source:** Authors work by the Croatian Employment Service, 2018

In all analyzed counties, the highest number of registered unemployed persons comes from the domain of simple occupations, i.e. the occupations which requires the lowest level of education. In Virovitica-Podravina County, registered unemployed persons from simple occupations were 40,6%, in Požega-Slavonia 30,8%, in Brod-Posavina 37,1%, in Osijek-Baranja 36% and in Vukovar-Srijem 30,6 %. Common to all counties is the smallest percentage of registered unemployed persons in agricultural professions, forestry, hunting and fishery due to natural resources and traditions in agricultural production (except for military occupations, legislators, officials and directors who do not count as registered unemployed persons). A large percentage of registered unemployed persons come from commercial and service professions; in Virovitica-Podravina County 17,3%, in Požega-Slavonia 14,7%, Brod-Posavina 18,3%, Osijek-Baranja 17,4%, and in Vukovar-Srijem 20%.

## 4. CONCLUSION

Unemployment is one of the major problems facing the Croatian economy and society. Apart from having economic consequences, unemployment can have consequences for the health and the life of an individual. In the course of the previous years, indicators of unemployment are in decline and the reasons for that may be the emigration of the population, differences in unemployment between regions and registered unemployment, and all the unemployed do not have to be registered by the Croatian Employment Service. In recent years, media often refer to emigration from Slavonia as a result of unemployment in the area.

For the purposes of this paper, the demographic structure of the unemployed was analyzed in five Slavonian counties. The largest number of registered unemployed persons in relation to the total population of the county exists in Osijek-Baranja County. Women in all Slavonian counties make up for more than half of registered unemployed, and the largest number of unemployed women is in Brod-Posavina and Osijek-Baranja counties. The largest number of unemployed persons belongs to the age group of 50-59 and to the age group of 20-29 years of life, i.e. the mature age person before their retirement age and the young people at the beginning of their working life. In all Slavonian counties, the largest number of registered unemployed persons has completed secondary education, and the least registered unemployed are highly educated with a graduate degree, academy, master's degree or finished doctorate study (with the exception of Osijek-Baranja County).

The employment policy for the Slavonia area should be aligned with the demographic structure of the unemployed, so special incentives should be given for the employment of women, the elderly individuals and to proceed with the re-training and further, additional education of the unemployed with simple occupations.

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# MEASURING THE MACROECONOMIC PERFORMANCE OF THE CROATIAN ECONOMY: AN EMPIRICAL EFFICIENCY ANALYSIS APPROACH

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## **Abstract**

*The unbalanced economic growth of Croatia over the years points to the need for an analysis of certain aspects of its economic performance. Among other things, it would be interesting to focus on the relationship between key macroeconomic indicators and foreign direct investment (FDI) as a growth-enhancing component, which is the subject of this paper. The analysis is conducted empirically, using the nonparametric method of data envelopment analysis (DEA). Since this is a single-country study, a time-series of Croatia's performance data is reported and the performing system of each sub-period (i.e., year) represents a different decision-making unit (DMU). Based on FDI, exports, unemployment rate and gross domestic product (GDP) and covering the period from 2003 to 2016, the analysis results in an efficiency index for each year, also identifying and quantifying inefficiency sources together with improvement directions. The obtained relative efficiency results confirmed two hypotheses: first, that there are significant differences in Croatia's macroeconomic efficiency across the years, and second, that FDI is the most prominent inefficiency source among the selected indicators. A potential limitation of this research is a general guideline of DEA*

*that the number of variables should be less than one-third of the number of DMUs (in this case, years). Since data on some of the selected indicators are not available for a longer period, the set of variables could be broadened by using data at the quarterly level. This could also make the conclusions to be drawn in this study more accurate, which is left for future research. The results should serve the economic policymakers in the efforts to improve decisions affecting the macroeconomic performance of the country.*

**Keywords:** macroeconomic performance, foreign direct investment, (in)efficiency, Croatia, data envelopment analysis

JEL Classification: E00, E01,

## 1. INTRODUCTION

Numerous empirical studies have demonstrated the complexity of economic growth as a macroeconomic phenomenon. Consequently, so far it has not been fully explained which determinants contribute to the growth, to what extent and in what way. Different theories point to different determinants as key ones for economic growth – from natural resources and labor, through capital and technology, to human potentials. Growth theories assign an important role also to research and development, innovations, political and governmental factors, equipment investment, international trade and export capacity, foreign direct investment etc. Therefore, governments should pursue economic policies that foster open markets of goods and service, protection of private property rights, promotion of liberal capital market, reasonable government spending, incentives for entrepreneurial activity, the efficiency of tax systems, incentives for investment in human capital through active labor market policies, as well as macroeconomic stability. Do these policies affect the macroeconomic performance of a country sufficiently and what direction needs to be taken for their further improvement? It is obvious that measuring and comparing the (in)efficiency of macroeconomic performance, which involves the selection of relevant indicators and appropriate methodology, will be of crucial importance for answering the posed question.

GDP is the single most important measure of the health of the macroeconomy and the most widely reported statistic in every developed economy (Mankiw, 2014). In dynamic analyses, it is generally recommended to use real GDP to exclude the impact of inflation on its changes and thus to provide a more reliable

assessment of relative macroeconomic performance. However, theoretical and empirical research and discussions of a large number of economists have shown that to create a deeper and more comprehensive view of macroeconomic performance trends, it is not enough to observe only the gross domestic product, but it is necessary to put it in relation to a number of other indicators.<sup>1</sup> Deciding which indicators – economic, social and/or demographic – need to be considered in the analysis together with GDP, depends on the subject of research to be conducted. The subject of this particular study is to scrutinize certain aspects of Croatia's macroeconomic performance, with the focus on the relationship between key macroeconomic indicators and FDI. The aim is to present the results of the analysis of the selected indicators' influence on the relative efficiency of Croatia. The analysis is carried out using the nonparametric method of data envelopment analysis as an alternative to the approaches used so far in related domestic studies. Concerning the goal of this paper, two hypotheses emerge and will be examined. The first hypothesis presumes that there are significant differences in Croatia's macroeconomic performance across the years. The second hypothesis points to FDI as the most prominent inefficiency source among the selected indicators.

The paper is organized as follows. After the introduction, the second section provides a brief overview of up-to-date research on relative macroeconomic efficiency of Croatia using DEA. A description of the selected indicators and the methodology used to create a methodological framework for the analysis is provided in the third section, while the fourth section presents the model application in an empirical analysis and relative efficiency evaluation. The research results and their possible implications for economic policymakers are summarized in the last section of the paper.

## **2. CROATIA IN EMPIRICAL LITERATURE ON THE MACROECONOMIC EFFICIENCY BASED ON DEA**

As it relates to an assessment of how well a country is doing in reaching improvement in the real standard of living of the population, the macroeconomic

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<sup>1</sup> In support of this reasoning, there are some cases in which the exclusive use of GDP can result in misleading estimates. Thus, for example, the high GDP levels over a given period do not have to be the result of the country's objective economic power, but primarily of the significant public sector investment in infrastructure.

performance of countries has been the subject of numerous studies. However, regardless of the aspect under consideration, the empirical approach is of utmost importance. A survey of literature related to the macroeconomic efficiency of Croatia and based on the use of different DEA-inspired approaches is summarized in Table 1.

**Table 1.** Summarized overview of the empirical literature on the macroeconomic efficiency of Croatia using DEA

Author(s) and year	Sample	Period	Variables
Deliktas and Balcilar (2005)	25 transition countries	1991-2000	<ul style="list-style-type: none"> <li>• Labour</li> <li>• Capital</li> <li>• Real GDP</li> </ul>
Škuflić et al. (2013)	28 European countries	2000 2004 2008	<ul style="list-style-type: none"> <li>• Productivity</li> <li>• Exports (% in GDP)</li> <li>• Gross wages (% in GDP)</li> <li>• Personal consumption (% in GDP)</li> <li>• GDP per capita</li> </ul>
Pavone and Pianura (2014)	39 European countries	2006-2010	<ul style="list-style-type: none"> <li>• Employment</li> <li>• Capital stock</li> <li>• Energy use</li> <li>• GDP</li> <li>• CO<sub>2</sub> emission</li> </ul>
Mavroeidis and Tarnawska (2015)	25 EU member states	/	<ul style="list-style-type: none"> <li>• Number of ISO Technical Committees in which a National Standardization body participates (per billion of GDP)</li> <li>• Number of total accredited bodies (per billion of GDP)</li> <li>• Total number of Calibration and Measurement Capabilities (per billion of GDP)</li> <li>• GDP per unit of net capital stock</li> <li>• Sales of new-to-market and new-to-firm innovations (% of turnover)</li> <li>• Exports of goods and services (% of GDP)</li> </ul>
Nežinský (2015)	25 EU member states	2012	<ul style="list-style-type: none"> <li>• Capital stock</li> <li>• Labour force</li> <li>• Active population</li> <li>• GDP</li> </ul>
Pavone and Pianura (2015)	60 upper-middle and high income economies	2008-2011	<ul style="list-style-type: none"> <li>• GDP growth rate</li> <li>• GDP per capita</li> <li>• Fiscal surplus/deficit (% of GDP)</li> <li>• Current account balance (% of GDP)</li> <li>• Human development index</li> <li>• Unemployment rate</li> <li>• Inflation/deflation rate</li> <li>• The rate of total carbon dioxide emissions from the consumption of energy on energy use</li> </ul>



Villa and Lozano (2016)	28 EU member states	2006-2013	<ul style="list-style-type: none"> <li>• GDP growth rate</li> <li>• Total employment rate</li> <li>• Tax revenue (% of GDP)</li> <li>• Gross debt (% of GDP)</li> </ul>
Önder and Boz (2017)	36 Union for the Mediterranean countries	2006-2016	<ul style="list-style-type: none"> <li>• GDP growth rate</li> <li>• Total investment (% of GDP)</li> <li>• Gross national savings (% of GDP)</li> <li>• Inflation rate</li> <li>• The growth rate of volume of imports of goods and services</li> <li>• The growth rate of volume of exports of goods and services</li> <li>• Unemployment rate</li> <li>• General government revenue (% of GDP)</li> <li>• General government expenditures (% of GDP)</li> <li>• General government gross debt (% of GDP)</li> <li>• Current account balance (% of GDP)</li> </ul>
Šegota et al. (2017)	26 EU member states	2015	<ul style="list-style-type: none"> <li>• GDP per capita</li> <li>• Research and development investments (% of GDP)</li> <li>• External government debt (% of GDP)</li> <li>• Unemployment rate</li> <li>• Net salary of employees</li> <li>• High technology products (% of total exports)</li> <li>• Export (% of GDP)</li> </ul>

**Source:** Authors' survey.

All the above-mentioned papers use DEA approaches to measure and analyze macroeconomic efficiency of the countries, including Croatia, based on their mutual comparison. Except for Škuflić et al. (2013), none of the studies in Table 1 employs window analysis – the dynamic extension of the basic DEA models that allows a country's performance to be assessed not only in relation to other countries within the same sub-period but also with regard to other countries' outcomes, including own, from another sub-period. For that reason, if one aims to shift the focus on a single country and to further understand its macroeconomic trends, it would be valuable to observe its time-series macroeconomic performance data in a way that each sub-period is considered a different entity. This approach has already been utilized by numerous authors, many of them on the case of Croatia<sup>2</sup> but none of them using DEA method, which at this moment makes this study unique. The comparative advantage of this approach over the more traditional ones is that the analysis results in an ef-

<sup>2</sup> Dritsaki and Stiakakis (2014) investigate the relationship between FDI, exports and economic growth in Croatia using annual time-series data for the period 1994-2012. Due to these facts, this paper seems remarkably similar to ours. However, although analysing partially overlapping periods and employing similar indicators, these two studies differ in a number of aspects, including their aims and methods used, which has consequently led to a different kind of results and findings.



efficiency index for each sub-period, simultaneously identifying and quantifying inefficiency sources together with improvement directions.

### 3. MACROECONOMIC EFFICIENCY ASSESSMENT OF CROATIA – INDICATORS, DATA AND METHODOLOGY

A different selection of input and output variables results in different efficiency scores that are further influenced by model selection. Therefore, the selection of indicators and the design of the model suitable for application in the analysis of a particular process, in particular, the assumptions of its orientation and returns-to-scale, are among the most significant and most sensitive steps in building an appropriate DEA model for assessing the comparative or relative efficiency of the country. Attention should also be paid to what data are collected and available.

#### 3.1. INDICATORS

The uneven macroeconomic performance of Croatia is present over the years. As an omnipresent reminder of the necessity of maintaining macroeconomic stability, it imposes an obligation to investigate the macroeconomic trends in terms of relative efficiency. This phenomenon should be addressed, among others, by proper selection of indicators.

After considering a wide range of relevant indicators and ranking them according to their relevance, four of them were selected for this study. Besides FDI, these are exports, unemployment rate<sup>3</sup> and GDP. The reasons behind their selection are briefly the following. The role of FDI as a compound collection of capital stocks, know-how, and technology is a growth-enhancing component in Central and Eastern Europe countries (Popescu, 2014). The importance of exports for economic growth was seen to be constantly reconfirmed and various studies, including Dritsaki and Stiakakis (2014), point exports as the catalyst for the economic growth of Croatia. The role of employment in economic development has long been recognized and increasing employment (i.e., reducing

<sup>3</sup> Since Croatia is the only country in this analysis, the drawbacks due to which registered unemployment rate is not utilized in international comparisons are here irrelevant, which makes the use of this rate justified for this study.

unemployment that has manifold adverse effects on both individuals and the economy as a whole) constantly remains one of the key priorities in achieving sustainable growth and development (Borozan et al., 2008). The importance of GDP as the most widely used single indicator in macroeconomic efficiency evaluation is already explained in the Introduction.

It should be noted that the degree of the government's influence on each of the selected indicators varies, which should be considered when drawing up guidelines based on results obtained by the empirical analysis. In addition, to make the analysis more reliable and the results' interpretation easier, some preliminary adjustments of selected indicators are needed. Since the purpose of this study is to make dynamic comparisons, the effect of the price increases is eliminated by taking FDI, exports, and GDP at constant prices of 2010. Thus adjusted four indicators will be integrated into a unique performance measure.

To build a model suitable for analyzing the dynamic relationship between GDP as a standard measure of national economic performance and other selected indicators, only GDP is considered output, while the other three indicators are considered as inputs.

### 3.2. DATA COLLECTION

The nature of the selected indicators enables comparison on an annual basis. The data on them, as well as the auxiliary variables<sup>4</sup> necessary for their calculation, were collected from the official web pages of the Croatian Bureau of Statistics, the Croatian Employment Service and the Croatian National Bank, and then adjusted in accordance with the above requirements. The unavailability of data on some of the indicators for the period before 2003 and after 2016 determined the time frame of the research which, for the purpose of time series analysis, includes the data for the period 2003-2016. Table 2 presents the summary statistics for the adjusted data of each variable employed in the analysis.

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<sup>4</sup> This is the consumer price index as a variable to which the government cannot directly influence.

**Table 2.** Data summary statistics, 2003-2016

Variable	Mean	Median	SD	Min.	Max.	CV (%)	
Inputs	FDI in mil EUR	1,841.28	1,698.13	1,082.71	183.83	3,787.54	58.80
	Exports in mil EUR	9,012.54	8,965.43	1,226.27	6,724.49	11,484.05	13.61
	Unemployment rate	17.19	17.60	2.08	13.20	20.20	12.08
Output	GDP in mil EUR	44,012.69	43,673.34	2,842.53	39,085.71	49,886.26	6.46

**Note:** SD = standard deviation; CV = coefficient of variation;

**Source:** Authors' calculations based on data from the Croatian Bureau of Statistics, the Croatian Employment Service and the Croatian National Bank.

Since in this study FDI and exports are specified as inputs but, in practice, preferred to have larger amounts, in the model calculation their reciprocals are taken. This at the same time preserves the relationship between inputs and output and enables the assessment of the performance regarding the government's capability to maximize all selected variables. Consequently, recalculation of the obtained results and an additional caution in their interpretation should be exercised.

### 3.3. METHODOLOGICAL FRAMEWORK

DEA is a non-parametric performance measurement technique commonly employed to estimate the relative efficiency of a group of entities/decision-making units (DMUs) that are homogenous in the sense of using the same set of inputs and produce the same set of outputs. The empirical data on the selected inputs and outputs of the observed entities are incorporated into a linear program that represents the DEA model and provides a single relative performance efficiency index. Based on this data, an efficient frontier is formed by the best performing units that are therefore classified as efficient (i.e., benchmarks). At the same time, this empirically generated 'best practice' frontier envelops the input and output data of all the other DMUs that are consequently considered inefficient. The efficient ones are assigned an efficiency measure of 1 (or 100%), while the inefficient ones are scored between 0 and 1 depending on their distance from the frontier. This inefficiency is the result of using excessive inputs at a given output level and/or producing poor output at a given input level and can be removed by reaching a model-calculated efficient projection point on the efficient frontier. Since empirically constructed, this frontier appears as an objectively attainable goal for each inefficient DMU and, at the same time, serves as the basis for recognizing and quantifying its inefficiency sources and

their amounts, improvement directions and reference DMUs for most direct comparison.

Due to its robust properties, DEA has been applied across the spectrum of both profit and non-profit domains, and at both micro and macro-economic levels. The concept of the method is based on the seminal work of M. J. Farrell (1957). Since its initial introduction by Charnes, Cooper, and Rhodes in 1978 up to the year 2016 approximately 10,300 DEA-related articles of theoretical and practical interest have been published (Emrouznejad and Yang, 2018), a great deal of which in ISI Web of Science database (Liu et al., 2016). A considerable number of DEA models has been developed, primarily differing in the returns-to-scale assumption (constant or variable) and orientation (to input minimization or to output maximization) and consequently in the type of efficiency being calculated. Besides, there are numerous advanced models, built upon the basic ones, that are mutually distinguished by various extensions. Therefore, this approach has been internationally and academically recognized and proven as a decision support tool.

The determining factor in choosing this method over traditional benchmarking techniques was its ability of dynamic efficiency measurement, with inputs and outputs scaled in different and often incompatible units of measurement, and with no need for predetermining variable weights nor for explicit specification of the functional form connecting inputs and outputs. Moreover, the weights are assigned by the model itself, in a manner that maximizes the efficiency rating for each assessed entity, thus eliminating the subjectivity in the evaluation of each weight's significance.

However, it would be unfair to omit to mention that, despite the advantages, the DEA also has several shortcomings regarding empirical applications. One of the major is a commonly suggested rule of thumb, according to which the number of DMUs should be at least three times the number of indicators (for a more detailed discussion see Sarkis, 2007). The reason for this request is an attempt to assure that the basic productivity models are more discriminatory thus achieving greater reliability of the efficiency results. Also, unlike general application of multi-criteria approaches to ex-ante problems where data are not available at the moment, especially if referring to a discussion of future technologies that do not yet exist, DEA provides an ex-post analysis of the past from which to learn (Adler et al., 2002).

The first step an analyst should perform after selecting indicators is to determine the type of returns to scale in accordance with which the production frontier is estimated. In this respect, two basic models most widely used in DEA applications are CCR (Charnes, Cooper and Rhodes, 1978) and BCC (Banker, Charnes and Cooper, 1984), named after the initials of their authors. The first model assumes that the production function shows constant returns to scale, while the second model, with the assumption of variable returns to scale, is one of its numerous theoretical extensions. A preliminary investigation of the process to be analyzed and the testing of its properties can result in the indication of returns-to-scale type. Despite that, the production frontier characteristics, as in the case of this research, are sometimes hard to identify with certainty. In such cases, it is not justifiable to rely on a single model. One of the possible solutions is to run models under both constant and variable returns-to-scale assumptions, compare their results and, based on the significance of their differences and using expert knowledge of the problem, find the most appropriate type of assumption for the analysis. The preliminary phase of the here presented study showed the similarity among the results derived from the mentioned models (Table 3). It can, therefore, be assumed that the return effect with respect to the range of activities does not play a significant role in this case, which makes the CCR model more relevant to describe the examined process and is the reason for choosing that model for further analysis. This is additionally supported by the fact that 11 out of 14 years are characterized by constant returns to scale.

**Table 3.** Summary statistics for the input-oriented CCR and BCC models

Results <sup>5</sup> of the pre-analysis	CCR model	BCC model
Number of efficient years	2	2
Number of inefficient years	12	12
Average efficiency score	0.8032	0.8610
Standard deviation	0.1322	0.1011
Minimum efficiency score	0.5416	0.6912
Number (%) of years with below average efficiency	8 (57%)	7 (50%)

**Source:** Authors' work based on DEA-Solver-Pro calculations.

<sup>5</sup> In differently oriented models with the same returns-to-scale assumption, the number of efficient entities is unchanged. At the same time, the efficiency scores can differ significantly, but only in the case of the BCC model. Also, due to different production frontiers' characteristics, BCC efficiency scores are never lower than CCR estimates.

The next problem the analyst has to cope with is the choice of model orientation. Namely, depending on whether management is predominantly focused on input reduction or output augmentation, DEA models are oriented toward inputs or outputs. Different model orientations result in different projection directions onto efficient frontier and consequently in different projection points for each inefficient DMU. The distances from these points to the correspondent inefficient DMU evidently differ, which is why the efficient frontiers in differently oriented models unequally attainable. As GDP is the only variable taken as output among the four chosen indicators, the input orientation was selected as more adequate since it offers an assessment of the extent to which inputs should be improved, without reducing the actual output amounts, to make the DMU relatively efficient. The following brief description of the model is based on Cooper et al. (2006, pp. 87-89). Accordingly, it is the relative efficiency assessment of  $n$  DMUs ( $DMU_j, j=1,2,\dots,n$ ), each of which uses  $m$  inputs to generate  $s$  outputs. The input-oriented CCR model evaluates the efficiency of  $DO_o$  by solving the following linear program:

$$\begin{aligned} & \min_{\theta, \lambda} \theta \\ \text{subject to} & \quad \theta x_o - X\lambda \geq 0 & (1) \\ & \quad Y\lambda \geq y_o & (2) \\ & \quad \lambda \geq 0 & (3) \end{aligned}$$

where  $X = (x_j) \in \mathbb{R}^{m \times n}$  denotes the matrix of inputs and  $Y = (y_j) \in \mathbb{R}^{s \times n}$  denotes the matrix of outputs,  $\lambda \in \mathbb{R}^n$ . Therefore, the conditions (1), (2) and (3) consist of  $m$ ,  $s$  and  $n$  constraints, respectively. In the case that is analysed here,  $n$  is 14,  $m$  is 3 and  $s$  is 1. Vector  $\lambda$  indicates the proportions in which efficient entities contribute to the projection of inefficient  $DO_o$  on efficient frontier. The optimal objective value  $\theta$  represents the efficiency score for  $DO_o$  and, in the case of its inefficiency, also the input reduction rate ( $0 \leq \theta^* \leq 1$ ).

This first phase minimizes  $\theta$ , and the first two constraints of the corresponding linear program show that  $(X\lambda, Y\lambda)$  outperforms  $(\theta^*x_o, y_o)$  when  $\theta^* < 1$ . In this context, the input surpluses and the output shortfalls (i.e., slack  $DO_o$  values) are calculated by the formulas:

$$s^- = \theta x_o - X\lambda, \quad s^+ = Y\lambda - y_o,$$

where  $s^- \in \mathbb{R}^m$ ,  $s^- \geq 0$  and  $s^+ \in \mathbb{R}^s$ ,  $s^+ \geq 0$  for any feasible solution  $(\theta, \lambda)$ .

In the second phase, possible remaining input surpluses and output shortfalls will be detected by maximizing their sum while keeping  $\theta = \theta^*$ .

Definition 1 (CCR-efficiency):

If an optimal solution  $(\theta^*, \lambda^*, s^{-*}, s^{+*})$  of the CCR model (obtained in this two-phase solution procedure) satisfies  $\theta^* = 1$  and has no slack ( $s^{-*} = 0, s^{+*} = 0$ ), then the  $DO_o$  is called CCR-efficient, otherwise it is CC,R-inefficient.

The provided information can be used as a basis for goal setting for the DMU being evaluated as inefficient. A first step in identifying its targets is to compare it with the efficient DMUs that constitute its reference set.

Definition 2 (Reference Set):

For a CCR-inefficient  $DO_o$ , its reference set is defined based on an optimal solution  $\lambda^*$  by

$$E_o = \{j \mid \lambda_j^* > 0\} \quad (j \in \{1, 2, \dots, n\}).$$

Any of the eventually multiple optimal solutions is expressed as:

$$\begin{aligned} \theta^* x_o &= \sum_{j \in E_o} x_j \lambda_j^* + s^{-*}, \\ y_o &= \sum_{j \in E_o} y_j \lambda_j^* - s^{+*}. \end{aligned}$$

These relationships suggest that the efficiency of  $(x_o, y_o)$  for  $DO_o$  can be improved if the input values are reduced radially by the ratio  $\theta^*$  and the input surpluses recorded in  $s^{-*}$  are then removed, and if the output values are augmented by the output shortfalls recorded in  $s^{+*}$ . The described improvement can be represented by the following formula (i.e., CCR-projection):

$$\begin{aligned} \hat{x}_o &= \theta^* x_o - s^{-*}, \\ \hat{y}_o &= y_o + s^{+*}. \end{aligned}$$

This type of studies usually includes more than one entity and/or involve more than one sub-period. It is therefore common to calculate average efficiencies – either by the entity in a particular sub-period or by the sub-period for a particular entity. But, apart from the usual calculation of mean value, in which all observed units are equally represented, there are weighted means where weighting can be made according to different criteria. Among them is the progressive time-weighted means – PTWM (Kumar and Vincent, 2011) as the method for computing a sort of weighted average of a non-empty set of numbers that assigns more weight to recent data points and makes it more responsive to the

new information. For the period 1 to  $T$ , a set of relative efficiency values, say  $e_t$ ,  $t = 1, \dots, T$  is considered. The progressive time-weighted mean is defined as

$$PTWM = \sum_{t=1}^T w_t e_t$$

where  $w_t = 2t/(T^2 + T)$ ,  $t = 1, \dots, T$  are associated non-negative normalized weights.

In the case that is analyzed here, the period spans from 1 (2003) to 14 (2016).

#### 4. APPLICATION OF THE MODEL IN AN EMPIRICAL ASSESSMENT OF THE MACROECONOMIC EFFICIENCY OF CROATIA

The relative macroeconomic efficiency of Croatia, presented below, was obtained by authors' calculations using DEA-Solver-Pro software, based on the input-oriented model with constant returns-to-scale assumption. The efficiency scores, rankings, total proposed input, and output improvements and referential years (i.e., reference sets) are shown in Table 4 for each of the observed years. This spectrum of results enables a meaningful analysis of Croatia's efficiency based on the comparisons of its macroeconomic performance over the entire period under consideration.

**Table 4.** Relative macroeconomic efficiency results of Croatia, 2003-2016

Year	Efficiency score	Rank	Total input and output improvements (%)				Referential year(s)
			Inputs			Output	
			FDI	Exp.	Un. rate	GDP	
2003	0.5416	14	138.32	84.64	-45.84	0.00	2008, 2016
2004	0.6396	13	162.88	56.35	-36.04	0.00	2008, 2016
2005	0.7116	12	52.72	40.53	-28.84	0.00	2008, 2016
2006	0.8619	5	16.02	16.02	-24.67	0.00	2008, 2016
2007	0.9569	3	4.50	4.50	-13.85	0.00	2008, 2016
2008	1	1	0.00	0.00	0.00	0.00	/
2009	0.8083	6	82.45	38.75	-19.17	0.00	2008
2010	0.7975	8	99.44	25.39	-20.25	0.00	2008, 2016
2011	0.7831	9	96.58	27.70	-21.69	0.00	2008, 2016
2012	0.7356	10	65.29	35.94	-26.44	0.00	2008, 2016
2013	0.7203	11	154.65	38.83	-31.64	0.00	2016
2014	0.8010	7	24.84	24.84	-37.62	0.00	2008, 2016

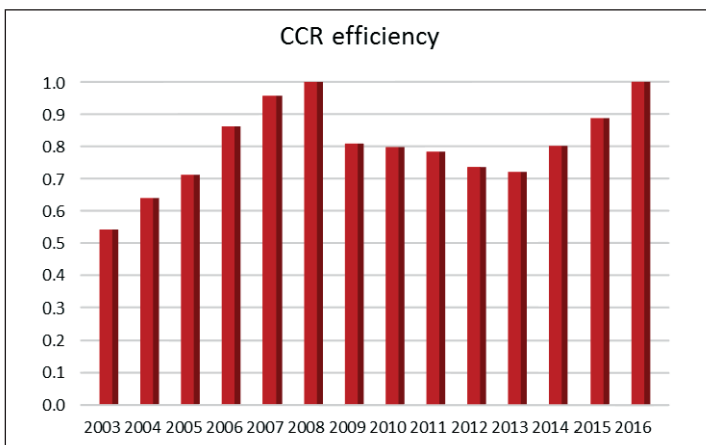


2015	0.8872	4	865.25	12.71	-18.71	0.00	2016
2016	1	1	0.00	0.00	0.00	0.00	/
Mean	0.8032		125.92	29.02	-23.17	0.00	
Median	0.7993		73.87	26.54	-23.18	0.00	
SD	0.1322		220.17	23.15	13.03	0.00	
Min.	0.5416		0.00	0.00	-45.84	0.00	
Max.	1		865.25	84.64	0.00	0.00	
CV (%)	16.46		174.84	79.77	-56.22	/	
PTWM	0.8352		160.49	22.66	-20.68	0.00	

**Source:** Authors' work based on DEA-Solver-Pro calculations.

Croatia was relatively efficient in the years 2008 and 2016. The lowest efficiency score (0.5416) was recorded in the initial year of the analysis. By observing the efficiency trend shown in Figure 1, three sub-periods can be recognized. The first sub-period was 2003-2008, with steady and continuous efficiency increase. After a sudden decrease in 2009, most likely due to the beginning of the Great Recession in Croatia, relative efficiency continued to decline slowly by the end of the second sub-period in 2013. Similar to the first one, the third sub-period (2014-2016) was characterized by sustained efficiency growth. Compared to a year earlier, the highest efficiency improvement was achieved in 2006 (+0.1503), while the most significant efficiency decrease was recorded in 2009 (-0.1917). The overall average efficiency of approximately 0.8 indicates that Croatia was on average 20% inefficient.

**Figure 1.** Relative macroeconomic efficiency trend, 2003-2016

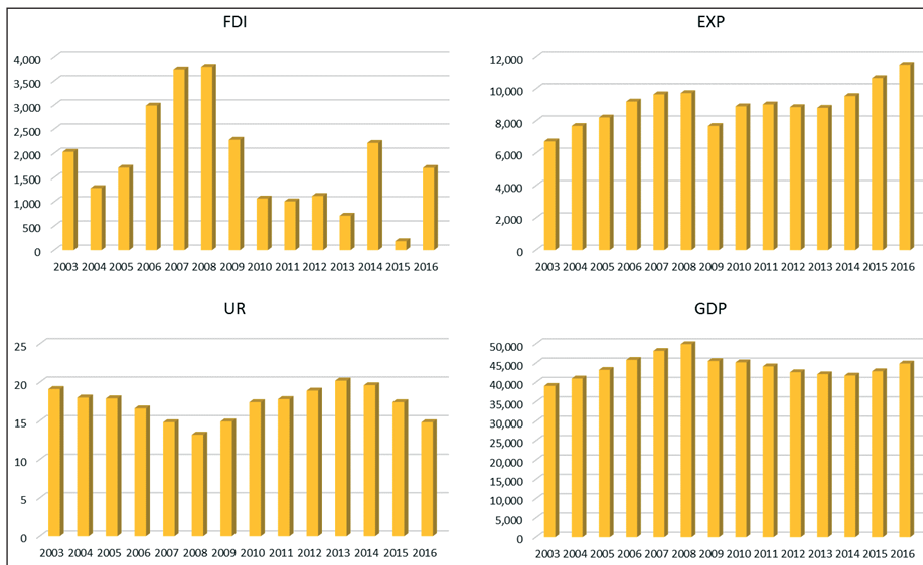


**Source:** Authors' work based on DEA-Solver-Pro calculations.

None of the results were classified as an outlier since all were within two standard deviations of the mean value. At the same time, 5 out of 14 scores did not fall within one standard deviation of the mean value, indicating that between-scores variability was not insignificant. This fact, together with the considerable difference between the highest and lowest achieved scores (0.4584), proves our first hypothesis that there are significant differences in Croatia's macroeconomic efficiency across the years.

Observing the selected input and output variable movements (Figure 2), it can be noted that exports and GDP have trends very similar to the efficiency trend, while FDI is characterized by significantly larger fluctuations. The rates of unemployment, expectedly, move in the opposite direction. These claims are mutually supportive, also revealing the causes of such efficiency trend. As a further confirmation of these conclusions, Table 5 shows coefficients of correlation between efficiency scores and performance indicators.

**Figure 2.** Input and output variable trends, 2003-2016



**Source:** Authors' work based on data from the Croatian Bureau of Statistics, the Croatian Employment Service and the Croatian National Bank.

**Table 5.** Correlation matrix between efficiency scores and performance indicators

	Efficiency	FDI	Exp.	Un. rate	GDP
Efficiency	1	0.43	0.85	-0.77	0.84
FDI	0.43	1	0.01	-0.64	0.65
Exp.	0.85	0.01	1	-0.38	0.45
Un. rate	-0.77	-0.64	-0.38	1	-0.86
GDP	0.84	0.65	0.45	-0.86	1

**Source:** Authors' calculations based on data from the Croatian Bureau of Statistics, the Croatian Employment Service, the Croatian National Bank, and the DEA-Solver-Pro calculations.

Input surpluses and output shortfalls, i.e. differences between initial and projected values, are calculated in each variable, considering the above-mentioned adjustment of the actual data. These differences were then averaged over the whole sample and presented in Table 4 as percentages of the corresponding initial values, thus representing the necessary improvements that can be achieved by using the previously explained two-phase procedure<sup>6</sup>. In 2009, for example, the most pronounced is the shortfall of 82.45% of FDI, 19.17%<sup>7</sup> of which can be ascribed to radial inefficiency and removed in the first phase, while the remaining 63.28% is a result of mixed inefficiency that is being removed in the second phase. In the same year, the shortfall of exports is 38.75%, which corresponds to 19.17% of radial and 19.58% of mix inefficiency. In the case of the unemployment rate, all technical inefficiency is radial, and slacks do not occur.

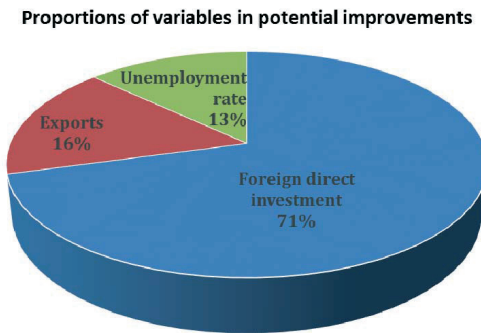
It is understandable that behind significant average required changes in input and output quantities stand major required improvements of Croatia's efficiency in particular years, as a result of an imbalance in its macroeconomic performance of the analyzed period. As can be seen from Table 4, all three inputs contribute to inefficiency, to a greater or lesser extent, in every single year, demonstrating the relevance of their selection for this research. GDP, as the only

<sup>6</sup> Since the model always tends to require input reductions, particular attention should be given to FDI and exports. Namely, as explained earlier, for these two inputs reciprocal values are taken, so the required reduction of, for example, 20% actually means the required increase of 25%. Specifically, the reduction of the reciprocal value of  $\frac{1}{X}$  to  $0,8 \cdot \frac{1}{X}$  is equivalent to increasing the value of  $X$  to  $\frac{1}{0,8 \cdot \frac{1}{X}} = 1,25 \cdot X$  to .

<sup>7</sup>  $19.17 = (1 - 0.8083) \cdot 100$ , where 0.8083 is the efficiency achieved in the year 2009.

output variable, is not a source of inefficiency, which should be attributed to the selection of model orientation. With an average requested increase of 29.02%, exports are not the most prominent inefficiency source in either one of the observed years. On the other side, the unemployment rate, although relatively the least influential source of inefficiency with an average required a decrease of 23.17%, affects efficiency the most in 3 out of 12 inefficient years (2006, 2007 and 2014). Overall, the FDI has by far the greatest average impact on efficiency and its average increase demanded in order to attain efficiency is 125.92%. Such a result is largely caused by a sudden drop in FDI levels in 2015<sup>8</sup>. These findings support our second hypothesis that FDI is the most prominent inefficiency source among the selected indicators. Given the relative contribution of each indicator to inefficiency presented in Figure 3, FDI and unemployment rate apparently have the highest (71%) and lowest (13%) shares, respectively.

**Figure 3.** Input and output contribution to inefficiency



**Source:** Authors' work based on DEA-Solver-Pro calculations.

The efficiency scores of inefficient DMUs allow their direct ranking according to efficiency scores, while efficient DMUs cannot be ranked immediately because of the maximum efficiency score achieved. Since the reference set of an inefficient DMU is composed of efficient ones, one among many approaches proposed by researchers for ranking an efficient DMU is to sum the frequencies of its appearance in individual reference sets. As a consequence, the higher the

<sup>8</sup> The biggest share amongst activities in FDI inflows in this year was caused by the acquisition of Tvrnica Duhana Rovinj by the British American Tobacco. However, this positive contribution was more than reversed by the effect of the write off of a part of the principal of CHF loans due to their conversion to euro.

frequency, the more robust the DMU is. In our case, Croatia's performance in the year that has been declared efficient occurs as a reference to performances in inefficient years. As can be seen from Table 4, both efficient years are referential to the great majority of inefficient years. The only exceptions are the years 2009, 2013 and 2015. The year 2008 serves thus as a reference in 10, and the year 2016 in 11 cases, resulting in fairly equal success.

## 5. CONCLUDING REMARKS

The relative macroeconomic efficiency of Croatia is empirically assessed based on the comparison of key macroeconomic indicators, using the input-oriented data envelopment analysis model with the assumption of constant returns to scale. The analysis covered 14-years period (2003-2016), thus enabling monitoring of Croatia's efficiency dynamics.

The empirical results suggest several important findings. Firstly, the efficiency scores averaged across all 14 years of data collection witness serious fluctuations in Croatia's macroeconomic efficiency, thus indicating the empirical foundation of accepting our first hypothesis. As a result, the year 2003 is ranked as the worst, while the years 2008 and 2016 are ranked as the best. Secondly, based on the magnitude of inefficiency in each year, the average inefficiency for the whole period under consideration is calculated, suggesting that there is a definite possibility of increasing efficiency levels. The average overall inefficiency could thus be reduced by nearly 20%. Thirdly, as a general conclusion, the main inefficiency source is FDI, which empirically confirms our second hypothesis. At the same time, the unemployment rate is most commonly the least significant source of inefficiency.

The conclusions of this study, based on the empirical cross-year comparison, should be of interest to analysts and should assist policymakers in recognizing the strengths and weaknesses of Croatian macroeconomic environment and its impact on further growth and development, and thus in shaping a targeted macroeconomic policy. They offer an insight into relative efficiency levels and trends and result in guidelines for creating new or re-examining existing macroeconomic conditions in the Republic of Croatia.

To make this insight more comprehensive, the study should be conducted using data at the quarterly level and should include more indicators that would

reflect some other important aspects of macroeconomic performance. Thus, for example, foreign debt and/or gross salaries could be incorporated as variables with which the robustness of the results obtained here could be additionally checked. The analysis based on the indicators employed herein may also be performed using output-orientation. It would be interesting to compare the results and conclusions thus obtained with those based on input-orientation, including different types of efficiency (technical, pure technical and scale). Similar research can also be carried out on a sample that would involve more countries, in which case a time-series cross-country analysis should be conducted. All these possibilities are left open for future research.

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# HOW TO ESTIMATE TECHNICAL EFFICIENCY?

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## **Abstract**

*Measurement of efficiency (production, cost or profit efficiency) has become a very popular field in applied economics in recent decades. The aim of this paper is to explain the measurement of technical efficiency from a theoretical point of view. Technical efficiency relates actual output to the maximum possible and is defined as the ratio of the actual output to the maximum potential output. The potential output for given inputs and technology is the maximum possible output that defines the frontier. We can say that the firm due to technical inefficiency produces under the defined frontier. In this paper, we give a theoretical approach on how to estimate the frontier function so that efficiency can be estimated. The frontier is often viewed as stochastic, so we use stochastic frontier analysis (SFA) to estimate efficiency. We relate these developments to Harvey Leibenstein's original 1966 insight into his x-efficiency.*

**Keywords:** *technical efficiency, stochastic frontier analysis, the production function*

JEL Classification: D24, L23

# 1. INTRODUCTION

The study of the production, cost, and profit functions have a long history and practical applications based on these models are very broad. Studying all three functions would be too complex for a single paper, even a thorough study of just one of the previously mentioned functions and its influence on the business activities of a company would be too complex. Therefore, this paper is based on the study of the production function and its role in determining the technical efficiency of a company.

The production function shows the relationship between inputs (resources) and outputs (products and/or services), i.e. it describes the physical relationship between the input as an independent variable and the output as the dependent variable. It defines the maximum amount of outputs that a company can produce for every set quantity of inputs. In economic theory, the function is most commonly analyzed as production with one variable factor and production with two variable factors. Therefore, the production function is a purely technical relationship that connects the input investments with the output quantities. It describes the laws of proportion or the transformation of inputs into finished or semi-finished products (outputs) in each individual time period. The production function represents the technology in the company or in the entire economy, and it includes all technically efficient production methods.

In practice, it is almost impossible to produce the output quantity defined by the production function of a company. This paper presents a basic theoretical overview of the method for the calculation of technical efficiency by applying the appropriate econometric model, popularly called the *stochastic frontier analysis*. The terminology of this model says that we will be engaged in measuring the frontier resulting from the traditional econometric premise about the presence of a random statistical error. The frontier we will be measuring is consistent with neoclassical microeconomic theory, i.e. with the neoclassical production theory, and it represents the maximum potential quantity of outputs, as explained previously.

In order to understand the paper better, the basic premises of the production function must be analyzed from the theoretical aspect first, after which we will begin with the explanation of the econometric model for the purpose of measuring technical inefficiency. The theoretical prerequisites mentioned at the start of this paper are crucial for understanding the model that is analyzed

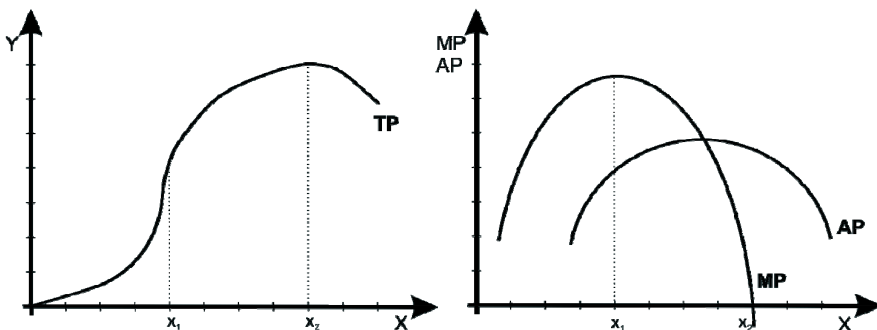
in the second part of the paper. This is important for the researchers, so they would know which calculation model is suitable for which situation, i.e. which model should be applied in which situation.

## 2. FUNDAMENTS OF THE PRODUCTION FUNCTION

### 2.1. PRODUCTION FUNCTION WITH ONE VARIABLE FACTOR

The production function discussed here is a short term function, because it explains the relationship between outputs and a single variable input, and treats all the other inputs as fixed. Under these conditions, the relationship between the inputs and outputs is variable. At lower levels of resource usability, the outputs are growing at an increasing rate (progressive function), while at higher levels of resource usability, the outputs are growing at a decreasing rate (degressive function), after which the production function begins to drop (see Figure 1). The reason why the total production begins to reduce even though we are adding new resources must be found in the Law of Diminishing Returns. Under those conditions, the marginal product is dropping and its direction is explained by the technological law (Law of Diminishing Returns), which states that with each additional increase of a resource a point will be reached after which any additional outputs will begin reducing (after the quantity of  $x_2$  resources in Figure 1), under the condition that the quantity of other inputs remains unchanged.

**Figure 1.** Total, average and marginal product



The total product (TP) curve in Figure 1 shows the level of production with various quantities of input X. The average product (AP) and the marginal product can be calculated from the total product (TP) curve. The marginal product is equal to the slope of the tangent to the total product curve for the provided quantity of the input X:

$$\frac{\partial y}{\partial x} \geq 0 \quad (1)$$

Therefore, the direction of the marginal product tells us about the slope of the total product (TP) curve. When the marginal product (MP) is growing, the total product (TP) is growing at an increasing rate, and vice versa. After the marginal product (MP) becomes negative, the total product (TP) will begin to decrease, even though the company is using the additional quantity of the input X.

So, in the short term (one input is variable, the other inputs are fixed), every company will face the production function shown in Figure 1, which defines its maximum potential input that can be reached for the provided level of resources. A company that operates on the production function curve is considered technically efficient because it produces the maximum possible amount of output with a set amount of input (Pindyck & Rubinfeld, 2005). Therefore, if a company produces any amount of outputs below the TP curve it means that it is technically inefficient because the resource X has not been utilized at maximum efficiency. Under normal conditions, i.e. in practice, it is almost impossible for a company to operate at the level of technical efficiency due to the uncertainty on the market.

## 2.2. PRODUCTION FUNCTION WITH TWO VARIABLE FACTORS

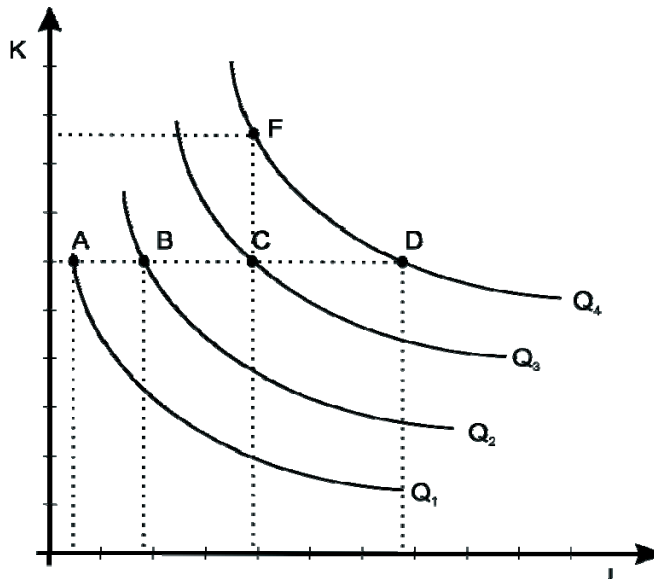
The relationship between inputs and outputs is determined by the production function. If we simplify reality, we can assume that there are only two inputs: labor (L) and capital (K), and their interaction creates a certain amount of output (Q). Therefore, the output (Q) is a dependent variable, while the inputs are the independent variable. The production function defined this way can be written in the following manner:

$$Q = f(K, L) \quad (2)$$

This equation defines equal, or maximum levels of production that can be produced from the various combinations of the two variable inputs. Such a production function is defined by curves called isoquants. They show the maxi-

imum, i.e. technically efficient level of production for each combination of labor and capital (two different variable resources). Therefore, the isoquant is a curve that connects all the possible input combinations for which the level of production is equal, accordingly, they are also called equal quantity curves.

Figure 2. The Map of isoquants



Production isoquants connect the various combinations of inputs required to achieve a certain level of production, while the isoquant map describes the production function of a company. The production level grows as we move from the isoquant  $Q_1$  toward the isoquant  $Q_4$  (see Figure 2). We must consider that in order to have a higher level of production, we must employ a higher quantity of input if the quantity of the other input remains unchanged. This is visible from Figure 2 when going from point A to point B and then to point C, and further to point D. In this situation, the input K remains unchanged, but if we want to increase production we must employ a higher quantity of the input L. The reason for this condition is that the isoquant represents the maximum output that can be provided by these two variable resources. The isoquants show the flexibility of companies in making production decisions because the same amount of production can be achieved with different combinations of two variable resources available to the company. Considering this fact, more flexible

companies may choose input combinations that minimize production costs and maximize company profits.

Company flexibility, or the option to simply exchange one input for another input at the set level of production, can be measured with the marginal rate of technical substitution (MRTS). This marginal value shows a hypothetical situation, e.g. if the quantity of an input reduces (e.g. capital) what is the required amount for which the use of the other input (e.g. labor) must increase in order to maintain the same level of production. Considering the above description, the marginal rate of technical substitution can be calculated in the following manner:

$$MRST = - \Delta K / \Delta L \quad (3)$$

Considering that the isoquants are convex and that they have a negative slope, then the MRTS is dropping, which tells us that the productivity of input is limited. The production process requires a balanced combination of the two variable inputs. Now we must explain how the additional production generated by adding the labor input is equal to the increase of production per unit of the added labor input ( $MP_L$ ) multiplied with the additional labor units. Vice versa is also true for the other input. Reduction in the production level caused by the reduction in the capital input is equal to the loss of production per unit of capital reduction ( $MP_K$ ) multiplied with the number of subtracted capital units. Considering that we are moving along the same isoquant in this example (reduction of the production level caused by capital and the increase in the production level caused by labor) the level of production remains unchanged, or it equals zero. Consequently, we can write the following:

$$(MP_L)(\Delta L) + (MP_K)(\Delta K) = 0 \quad (4)$$
$$\frac{MP_L}{MP_K} = - \frac{\Delta K}{\Delta L} = MRST$$

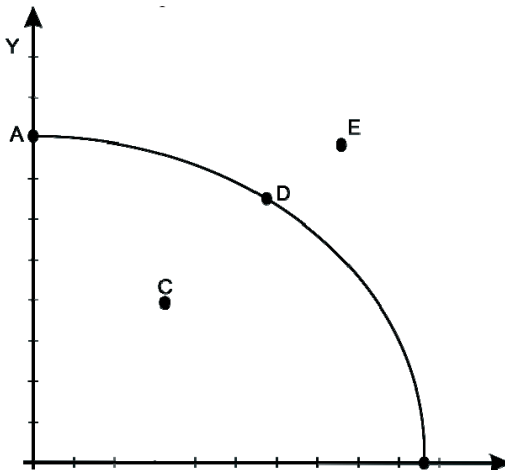
The concept of x-efficiency indicates the ability of companies to allocate resources efficiently, i.e. to use the appropriate combination of resources that will result in the maximum output with the set level of production technology, while maintaining costs as low as possible. The company that wants to achieve these conditions (almost impossible in practice) should strive to even out the marginal rate of technical substitution (MRTS) and the ratio of the resource prices:

$$MRST = \frac{P_L}{P_K} \quad (5)$$

### 2.3. THE CURVE OF INCREASING OPPORTUNITY COSTS

The scarcity of resources that a company or an economy is facing can best be described using a curve of production possibilities. It represents the frontier between the possible and the impossible production, i.e. it defines the maximum combination of two goods that a company can produce with the resources at their disposal, with the achieved level of technology. The company that faces the production of two goods X and Y (like in Figure 3) its maximum production quantities are defined by the shown curve, i.e. by the points located on the curve (like points A, B, D). Accordingly, the company cannot produce the combinations of the two goods above the curve (e.g. point E) with the set technology, while the combinations of the two goods below the curve (e.g. point C) can be produced, but these resources are obviously not used to their maximum efficiency, which means that the company is technically inefficient.

**Figure 3.** Production possibilities curve



The production possibilities curve is decreasing (it has a negative slope) and it is concave relative to the origin point. Its form is defined by the variable efficiency of the resources as they move from the production of one good to the production of another good (Karić, 2006). Due to the different abilities of the

resources for the production of a certain combination of two goods, the relationship between the goods is variable (the slope changes as we move along the curve).

If we assume that the company is technically efficient, i.e. when it is operating on the curve of production possibilities, it must stop with the production of one of the goods (e.g. good X) if it wants to increase the production of the good Y. This is the result of resource scarcity and for this reason, the company must choose the quantity of each of the goods it wants to produce. Considering that the company is abandoning a certain quantity of one of the goods to produce the other good, it abandons the next best alternative available to it, we call that opportunity costs. As we move along the production possibilities curve, the company is abandoning an increasing quantity of one of the goods in order to produce an additional unit of the other good, i.e. the opportunity costs are increasing. For that reason, the production possibilities curve is also called the increasing opportunity costs curve.

#### 2.4. THE COBB-DOUGLAS PRODUCTION FUNCTION

The Cobb-Douglas production<sup>1</sup> function is one of the most commonly used functions in empirical research. This production function is applied along two variable inputs, the labor input (L) and the capital input (K). This is also its main advantage because real production functions are primarily dependant on two inputs. Its general form is:

$$Q = AK^{\alpha}L^{\beta} \quad (6)$$

where Q – quantity of output, A,  $\alpha$ , and  $\beta$  are the parameters that must be calculated, K is the quantity of the capital input, while L is the quantity of the labor input. In order for the function from equation 6 to be in linear form, its logarithm must be taken, which results in the following expression:

$$\ln Q = \ln A + \alpha \ln K + \beta \ln L \quad (7)$$

The coefficients  $\alpha$  and  $\beta$  represent production elasticity in relation to capital and labor, and their sum measures yield to the range. Therefore, if  $\alpha + \beta = 1$  the company is facing constant yields to the production range, if  $\alpha + \beta < 1$  the

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<sup>1</sup> Designed by Charles W. Cobb and Paul H. Douglas in their paper "A Theory of Production"



company has reducing yields to the range, while if  $\alpha + \beta > 1$  the company is facing increasing yields to the range.

This production function can be widely applied in empirical research. It can be evaluated from the information for a specific time period, whether for one company, for several companies, or for an entire branch of production (panel information). It can also be evaluated from the information for one point in time for one company, for several companies, or for an entire branch of production (cross-sectional information).

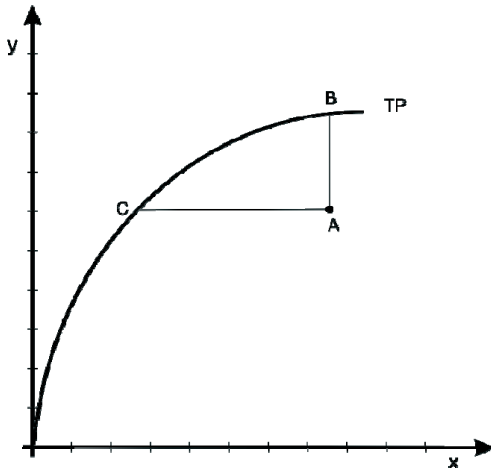
### 3. MEASURING TECHNICAL EFFICIENCY

#### 3.1. VARIOUS APPROACHES TO MEASURING

Production is technically inefficient if it is possible to produce larger quantities of outputs from the existing inputs (output-oriented measure) or if the observed level of outputs can be produced with a lower quantity of inputs (input-oriented measure).

Figure 4 shows technical inefficiency in point A, while the TP curve shows the production function, i.e. the maximum possible production for the set inputs. There are two ways to make sure that point A shows technical inefficiency. The first way is the output-oriented (OO) technical inefficiency. For the set quantity of the input  $x$  (defined by point A) a higher quantity of outputs can be produced. The length AB shows the loss of outputs due to technical inefficiency, it is the basis for measuring the OO technical inefficiency. If we use the first example, we can reach the conclusion that defines the second approach to measuring technical inefficiency in a similar way. If we look at point A again, we can conclude that an equal amount of inputs can be produced with a lower amount of outputs. Therefore, if we want to operate on the frontier that defines the total product curve, we can do that by employing a lower amount of inputs, without changing the amount of outputs in relation to point A. In this case, the length  $AC$  represents the quantity of inputs that can be reduced without reducing the quantity of outputs. Considering that this approach is related to reducing inputs, this approach to measuring technical inefficiency is called input-oriented (IO) technical inefficiency.

**Figure 4.** Technical Inefficiency: Input-output and Output-Output oriented measures



Calculating technical inefficiency is closely related to the production technology used in the production process. Input-output measurements may not be suitable for one technology, while they are suitable for other technology. For empirical analyses in which different companies are compared to each other, it is important to consider the appropriate production technology. For example, a farmer in the Republic of Croatia and a farmer in the Netherlands do not have the same production technology available. If we took their information and attempted to calculate a common production function which could then be used to measure technical efficiency, the results would be difficult or even impossible to compare. Therefore, when measuring technical efficiency, we can only consider the companies or individuals that use the same or similar production technology.

### 3.2. ESTIMATION METHODS FOR OUTPUT-ORIENTED TECHNICAL EFFICIENCY

Output-Oriented technical efficiency is the most common method of measuring the production possibility frontier, i.e. the frontier that defines technical efficiency. It can be measured by applying the stochastic production frontier model, which is in the following form for OO technical efficiency:

$$\ln y_i = \ln y_i^* - u_i \quad u_i \geq 0 \quad (8)$$

$$\ln y_i^* = f(x_i; \beta) + v_i \quad (9)$$

where  $i$  is the number of observations (e.g. a company),  $y_i$  is the observed quantity of outputs,  $y_i^*$  is the maximum amount of outputs,  $x_i$  is the input variable,  $\beta$  is the coefficient that defines the variable,  $x_i$ ,  $v_i$  is the standard error, and  $u_i$  is the production inefficiency of the company. The equation 9 defines the stochastic production frontier function. The set  $x$  that defines the frontier, or the maximum possible outputs, is stochastic just because of the variable  $v_i$ . Accordingly,  $u_i \geq 0$  for the observed output  $y_i$  is located below the production frontier  $y_i^*$ . Figure 5 shows that point  $z_i$  is located below the frontier defined by the production function  $y_i^*$ . Therefore, the difference between  $y_i^*$  and  $y_i$  is the value of the technical inefficiency of the company, or the amount for which the company could increase its output, but it has not, due to certain objective or subjective reasons.

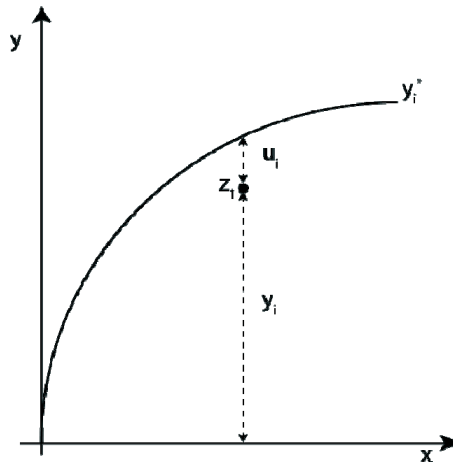
The previous model is appropriate to write in the following form:

$$\ln y_i = f(x_i; \beta) + \epsilon_i \quad (10)$$

$$\epsilon_i = v_i - u_i \quad (11)$$

where  $\epsilon_i$  is the stochastic variable that represents the non-systemic effects on the dependent variable.

**Figure 5.** Production Frontier Model



The variable  $u_i$  from equation 8 is the difference between the maximum and the actual output ( $u_i = \ln y_i^* - \ln y_i$ ), therefore,  $u_i \times 100\%$  is the percentage value of the amount for which actual output can be increased, while maintaining the

set input, in order for the company to reach the maximum level of production defined by the production function. The previous statement can also be explained in the following manner: The expression represents the percentage of output that the company has not achieved due to technical inefficiency. The calculated value for  $u_i$  represents output-oriented technical efficiency. Its value equals zero if the company is completely technically efficient.

According to equation 8, the expression:

$$\exp(-u_i) = \frac{y_i}{y_i^*} \quad (12)$$

represents the ratio between the actual output and the maximum possible output defined by the production function of the company. The ratio is equated to the technical efficiency of company  $i$ , i.e. it is called the company technical efficiency ratio. Its value is in the range of 0 to 1, where 1 is a company that is fully technically efficient. The value  $\exp(-u_i) \times 100\%$  is the percentage of the maximum possible output produced by the company  $i$  (e.g. if  $\exp(-u_i) \times 100\% = 75\%$ ; then the company is producing only 75% of the maximum possible output).

The previous paragraph indicates that  $u_i$  represents the measure of technical inefficiency, while  $\exp(-u_i)$  is the measure of the technical efficiency of a company.

### 3.3. ESTIMATION METHODS FOR INPUT-ORIENTED TECHNICAL EFFICIENCY

Measuring technical efficiency by applying Input-Oriented (IO) technical efficiency is similar to measuring the Output-Oriented (OO) technical efficiency. In the application of the OO measurements, we were interested in the vertical difference (see Figure 5) between the maximum output and the actual output (see title 3.1 and Figure 4). So, now we are interested in whether the company is using excessive inputs, i.e. is it possible for them to produce an equal amount of outputs with the same amount of inputs. The measuring approach is very similar and it is based on OO measuring, so it is not necessary to repeat the explanation about the basis of the model, we will instead explain the difference and the similarities between these two approaches in short.

The OO approach is defined in the following manner:

$$y = f(x)e^{-u} \quad (13)$$

The IO approach is defined:

$$y = f(xe^{-\eta}) \quad (14)$$

Furthermore, the Cobb-Douglas formulation of the IO model can be defined in the following manner:

$$\ln y = \beta_0 + \sum \beta_j \ln x_j - \left( \sum \beta_j \right) \eta \quad (15)$$

which is actually the same as the OO approach to measuring technical efficiency if we consider the expression:

$$u = \eta \sum \beta_j \quad (16)$$

In order to calculate technical efficiency using the IO approach, it is not necessary to calculate  $\eta$ . The approach can be based on calculating the OO model, in which we determine the values of  $u$  and  $\beta$ , then it is very simple to calculate  $\eta$  from equation 16.

## 4. CONCLUSION

In order for a company to operate according to its production function that defines its maximum “potential” outputs, it must utilize all of its resources with maximum efficiency. It is almost impossible for a company to produce the number of outputs defined by the production curve (frontier) due to a series of objective (e.g. employee sick leave) and subjective (e.g. interpersonal relationships) difficulties that arise in the course of company operation. That is why the evaluation of technical inefficiency stands out as an excellent tool for the management of a company in recognizing the general condition of production, which directly affects the expenses and revenue of the company.

Measuring technical efficiency is based on two approaches. The first approach, and maybe the most represented one, is the Output-Oriented technical efficiency. It measures the vertical deviation of actual outputs from the frontier defined by the production function. It represents the loss of outputs that could be produced with a set amount of inputs. The other approach to measuring is the Input-Oriented technical efficiency, which on the other hand measures the horizontal deviation of actual outputs from the maximum outputs defined by the production function. It represents the excess resources used for the set

produced a quantity of outputs. A researcher may decide on one of the two approaches, depending on their intended goals. However, it bears pointing out, as we already emphasized in this paper, that the best course of action is to first measure using the OO method, and then use that to measure technical efficiency with the IO method.

Stochastic frontier analysis (SFA) can be applied to any problem in which the observed output is different than the potential output, regardless of whether it is higher or lower than the potential output. In that context, the potential maximum outputs for the set technology and the quantity of inputs is the maximum quantity of outputs that define the frontier, and the actual outputs below that frontier are considered as technical inefficiency. Following this example, we could talk about cost efficiency or profit efficiency in the same context.

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# NEW EXTERNAL TRADE EXCHANGE RATE OF THE REPUBLIC OF SERBIA IN SUSTAINABLE DEVELOPMENT FUNCTION

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## Abstract

*Conducted including investigation confirmed that the main condition for the successful future of sustainable development, above all, internationalization of business cooperation between the countries in the constant creative integration of the region. The need for the innovative working environment and a new model of business management within Serbia requires creative and functional business cooperation to be carried out between the region. New reform processes should enable the country to constantly lie about a more structural development phase and thereby avoid the pitfalls of the development processes that are practiced by foreign investors building investment drives instead of the complete plant within the geopolitical restructuring. With the economic policy-makers and actors' transitional legs, macro management is required functional changes in economic and institutional re of infrastructure that will be a real cornerstone of the transformation of the existing consumer society in the high cumulative economy. After successful structural reforms, Serbia has huge comparative advantages for successful sustainable development. Given the number of potential natural resources, tradition different production structure and proximity to key segments of the relevant markets, it is realistic to expect when output and exports. Therefore, the new flows of foreign trade in the function of sustainable development must be established by an intensive increase in exports with a significant reduction in imports.*

**Keywords:** *Functional business cooperation, Export of higher processing phases, The function of higher production of new values, Sustainable development.*

JEL Classification: F31, Q01

## 1. INTRODUCTION

Considering the natural potential of numerous resources, the diverse production structure and the proximity of the key segments of the European and global market, it is realistic to expect a further increase of production, revenue, and exports. By observing gross added value, the number of employees and exports the agro-industrial sector is a key segment of the Serbian economy. Serbia has very favorable natural conditions (land and climate) for a diverse agricultural production (both plants and cattle), experienced producers, top experts and scientists and worldwide recognizes selections of plant products.

Successful development of the business cooperation requires the definition of realistic operational ideas which are of interest to the overall socio-economic development. One of the approaches to this matter could be within the processing industry, which must include the implementation of future opportunities in the business sphere and with recognition of the capacity of potential resources of the regions. It is, therefore, necessary for the development of the regions that all available resources are put into operation of sustainable innovative development of the agro-processing sector. Cooperation must be based on the available production and human capital in the interaction with the social capital. Available creative capital is there of great importance because it defines the level of skills to overcome new challenges and provide entrepreneurial culture and the ability to resolve existing problems in an innovative way. Given this conception, policymakers should define development priorities for each region, which should ensure successful and creative cooperation. Development must become visible, with export potentials with the creation of numerous new business alliances and networks.

## 2. CREATIVE BUSINESS COOPERATION WITHIN THE FOREIGN TRADE

Creating conditions for sustainable spatial and economic development within new economic reforms make advocates of the neo-liberal concept plan national development on the proclaimed development strategy based on direct foreign investment, changing business conditions to the strategic orientation of large capital. Based upon the data from the republican statistical office, with given the state of the economy and foreign trade, the main task of the reform



strategy should be: 1) solving the issue of higher labor and capital employment in accordance with the defined development that is in line with the available resources and capacities, 2) modernization and the construction of production and business infrastructure and creation of an educational basis for the needs of the industrial development process 4.o. The state, with its measures and instruments, should resist the sole satisfaction of the interests of foreign capital and focus on the development of productive activities and by doing so, it contributes to the development of the economy and society as well, with the adequate coordination of public and private activities. In order to intensify future foreign trade, the production concept must be based on systemic integration of the paradigm: learning and cooperation, which is defined as mass and informal communication between individuals, economic and non-economic entities within a general and open market competition.

During the implementation of structural reforms in 2018, the total foreign trade of Serbia amounted (Republic Statistical Office, 2019):

- ✦ 22.476,8 million USD – which is 23.0% increase compared to the same period of the previous year;
- ✦ 18.560,0 million EUR – which is 9.9% increase compared to the same period of the previous year.

The total value of exported goods was 9,725.1 mill. USD, which is an increase of 20.4% compared to the same period of the previous year, while goods worth 12,751.7 million USD were imported, which is 25.0% more than in the same period of the previous year. The export of goods, expressed in Euros, amounted to 8,033.0 million, an increase of 7.6% compared to the same period of the previous year. Imports of goods amounted to 10,527.0 million, an increase of 11.7% compared to the same period last year. Deficit is 3.026,5 USD million, which is an increase of 42.7% compared to the same period of the previous year. Expressed in Euros, the deficit is 2,494.0 million, an increase of 27.2% compared to the same period of the previous year. Import coverage by export is 76.3% and it is lower than coverage in the same period of the previous year when it was 79.2%.

Observing the regions, the largest share of Serbian export was from the Vojvodina region (33.7%); followed by the Belgrade (26.6%), then Šumadija and Western Serbia (23.8%), the South and East Serbia (15.8%), and about 0.1% of the export was territorially unclassified.

The largest part of the Serbian import had the Belgrade region (46.0%); followed by Vojvodina (28.5%), Šumadija and Western Serbia (15.8%), South and East Serbia (9.2%), and about 0.5% of imports were unclassified. There is no data available for the Region of Kosovo and Metohija.

Regional share of export and import is determined by the location of the owner of the goods at the moment of the customs declaration acceptance. This means that the owners of goods, defined by the customs law, may be producers, users, exporters or importers of goods. This fact should be noted when interpreting data by regions. For example, imports of oil and gas are mainly in the Region of Vojvodina and the Belgrade region, but these regions are providing energy for the entire territory of Serbia. 58.0% (\$ 5,635.8 million) are the most represented products in the structure of exports by product purpose (prevalence principle), followed by consumer goods, 31.3% (3,046.4) and equipment, 10, 7% (1,042.4). Non-classified goods by purpose are 0.0% (USD 0.5 million). In the structure of imports, according to the purpose of the product, the most represented products are reproduction goods, 57.3% (\$ 7,303.6 million), followed by consumer goods, 18.7% (2382.7) and equipment, 12.6% (1612.2). Non-classified goods by purpose are 11.4% (USD 1,453.2 million). Foreign trade was the largest with the countries that Serbia has signed free trade agreements. The Member States of the European Union had 64.7% of the total exchange.

**Table 1.** Main foreign trade partners

Export	million USD	million EUR	Import	million USD	million EUR
Italy	1344.1	1109.4	Germany	1736.1	1434.4
Germany	1187.3	980.5	Italy	1259.4	1039.7
Bosnia and Hercegovina	762.3	629.6	China	1026.0	846.3
Russian Federation	546.6	451.3	Russian Federation	983.9	810.8
Romania	512.0	424.2	Hungary	654.3	539.9

**Source:** <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

Other important partners are CEFTA countries, where we have a surplus of 1,122.8 million of dollars, resulting mostly from the exports of agricultural products (cereals and their products, various types of beverages), iron and steel, road vehicles, oil and petroleum products. Export of Serbia was 1,635.7 and

import was 512.9 million of dollars for the observed period. Import coverage by exports is 318.9%. Expressed in Euros, exports amounted to 1351.5 and imports 424.0 mils. Euro (the surplus is EUR 927.5 million, while the coverage of import by exports is 318.8%).

By observing each country individually, the largest trade surplus derives from the countries within the environment: Bosnia and Herzegovina (products mostly exported are gas oils and maize where coke and semi-coke coal, iron, and steel wires are imported), Montenegro (medicine, ore, and concentrates are exported products, while mostly imported are aluminum, raw and electric energy) and Macedonia (export of hot-rolled bands in coils and electricity, and medicines for retail and rolled plastic products are imported). Among other countries, there is a surplus with Romania, Bulgaria, Italy, Slovakia, Croatia, Sweden, Great Britain, and Slovenia. The biggest deficit occurs in a trade with China (due to imports of cell phones and laptops) and Germany. There are also deficits with: the Russian Federation (due to imports of energy, primarily oil and gas), Turkey, Hungary, Poland (import of parts for motor vehicles), Iraq, Belgium, Ukraine (imports of iron ore and concentrates), Korea, France, USA, etc.

**Table 2.** The most important foreign trade

Export	million USD	million USD	Import	million USD	million USD
Electrical machines and appliances	1033.5	853.6	Road vehicles	967.2	798.2
Road vehicles	795.0	656.5	Oil and petroleum products	815.4	674.7
Iron and steel	579.4	478.4	Electrical machines and appliances	766.7	632.9
Painted metals	457.2	377.5	Industrial machines for general use	510.2	421.1
Rubber products	457.0	376.8	Medical and pharmaceutical products	432.9	357.5

**Source:** <http://webrzs.stat.gov.rs> and <http://www.pks.rs/>

Goods worth \$ 1,739.9 million were exported, an increase of 14.0% compared to the previous year. Imports amounted to \$ 2,196.5 million, an increase of 16.6% over the previous year. Expressed in euros, goods worth EUR 1,491.2 million were exported, an increase of 9.3% from the previous year. Imports amounted to EUR 1,881.2 million, an increase of 11.7% from the previous year. Calculated in dollars, the seasonally adjusted index for 2018 / May 2018 shows a drop in export by 0.4% and an increase in imports by 4.9%. Calculated in eu-

ros, the seasonally adjusted index in 2018 shows an increase in exports by 1.0% and an increase in imports by 4.5%.

According to the Nomenclature of Foreign Trade Statistics: at the list of the top 5 most exported products, the first place is taken by conductors sets for airplanes, vehicles and ships (\$ 100 million), second place belongs to the hot-rolled products (iron and non-alloy steel) in coils (51 million dollars), in third place are cars, spark ignition, over 1000, but below 1500 cm<sup>3</sup> with 44 million dollars, followed by the export of new tires for cars was \$ 40 million and at the last place is refined copper with value of 31 million dollars. The list of the top 5 imported products shows that crude oil (\$ 122 million) is our top imported product. At the second place are parts and accessories for motor vehicles (\$ 72 million). In the third place are medicines for retail (\$ 56 million), followed by natural gas import (37 million dollars). The last place is the import of other electric conductors, for a voltage <1000V valued 28 million dollars.

The total foreign trade of Serbia for the previous year was:

- USD 18,465.1 million - an increase of 9.6% compared to the same period of the previous year;
- EUR 17,067.9 million - an increase of 13.2% compared to the same period of the previous year.

Creating conditions for a sustainable and balanced economic development during constant economic reforms is not an easy task and there is no unique recipe with safe instruments and enforcement mechanisms determined by the professional ethics of the creators and executors themselves.

The new production-organizational structure with established relevant sectors becomes an innovative-creative environment for new investments within the needs of geo-economic determinations of consumer societies. They require changes in business, technical, technological and human resources within economically sustainable development, where work is motivated by the need for a new concept of national economic policy in order to respond to internal and external challenges, such as:

1. The need to change the structure and design of the entire production program in the context of innovative changes;
2. The necessity of increasing the functionality and competitiveness of the entire economy and society;

3. Ensuring stable income and business environment for all entrepreneurs, businessmen, and civil population;
4. Realization of social, economic and ecological goals of sustainable development;
5. Ability to respond to all challenges within geo-economics and geopolitical flows.

### 3. COMMODITY EXCHANGE IN THE REGION

The commodity exchange in the regional economy (the municipalities of Ada, Bačka Topola, Mali Idoš, Kanjiža, Senta and Subotica) was realized through integral economic space which has enormous development potential for entire Serbia. Nowadays, Serbia has enormous development potential of an innovative digital process.

During 2018, the region achieved the total foreign trade of USD 878.0 million, which is an increase of 24.6% compared to the same period of the previous year and represents 3.9% of the Serbian trade. In the observed period of the current year, the region realized exports worth \$ 438.6 million, which is an increase of 23.2% compared to the same period of the previous year and has a share of 4.5% in the total export of the Republic of Serbia.

Imports of the Region in the observed period amounted 439.4 million dollars, which is an increase of 26.1% compared to the same period of the previous year and has a share in the total import of the Republic of Serbia of 3.4%. The trade deficit amounted USD 0.8 million, while the coverage of imports by region's exports in the observed period of the current year was 99.8%. The data for the Region for the observed period is better than the coverage of imports by the exports of the Republic of Serbia, which was 75.9%, which points to the exceptional development of the economy with great innovative intentions.

#### 3.1. COMMODITY EXCHANGE BETWEEN REGION AND COUNTRIES

The total export of the Region is steadily increasing. It was USD 438.6 million for 2018 and included 81 countries. These are top 5 countries (in million USD) table 3.

**Table 3.** Top 5 countries

Country	Million USD
Germany	87,1
Hungary	77,5
Austria	44,3
Italy	30,1
Bosnia and Herzegovina	28,7

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

These five countries with exports of \$ 267.7 million make up 61.0% of the total exports of the Region, while in the countries of the European Union Regional exports was USD 346.2 million, or 78.9% of total exports, indicating the development of business cooperation with the intensification of higher processing phases showing a significant increase in the newly created value.

The total import of the Region in the observed period of the current year was 439.4 million dollars and it was realized through purchase with 87 countries. The order of the top five countries is (in million USD). (Table 4)

**Table 4.** Top 5 countries – import

Country	Million USD
Germany	106,6
Hungary	54,8
Austria	46,4
China	38,3
Italy	35,4

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

Altogether, these five countries with imports value of 281.5 million dollars were 64.1% of the total imports of the Region, while from the countries of the European Union Region had imports worth of \$ 348.9 million, or 79.4% of total imports. However, it should be noted that the total commodity exchange of the Region amounted to \$ 878.0 million and it was realized with 103 countries.

**Table 5.** Top five countries in million USD

Country	Million USD
Germany	193,7
Hungary	132,3
Austria	90,7
Italy	65,5
France	40,4

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

The table shows the positive effects of these five countries with the value of the trade exchange of 522.6 million dollars, which was 59.5% of the total commodity exchange of the Region, while the countries of the European Union had total commodity exchange with the Region in the amount of 695.1 million USD, which makes 79.2% of the commodity exchange of the Region.

It should be noted that commodity exchange with the EU, CEFTA and major markets such as Germany and the Russian Federation is also interesting. Below is a tabular presentation of the commodity exchange between the Region and the EU, CEFTA and two strategically important markets. (Table 6)

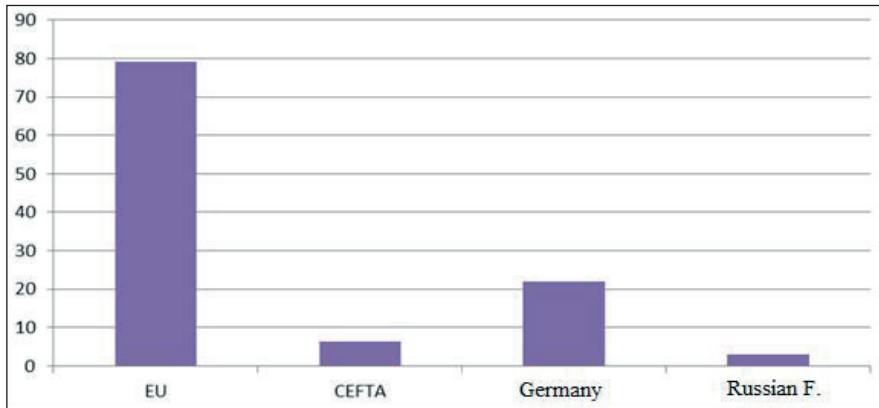
**Table 6.** Exchange with EU and CEFTA

	EXPORT	%	IMPORT	%	TOTAL	%	D/S	E/I (%)
EU	346,2	78,9	348,9	79,4	695,1	79,2	-2,7	99,2
CEFTA	51,0	11,6	4,3	1,0	55,3	6,3	46,7	1.186,0
Germany	87,1	19,9	106,6	24,3	193,7	22,1	-19,5	81,7
Russian F.	16,1	3,7	10,9	2,5	27,0	3,1	5,2	147,7

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

From the data presented in the table, we can see that the region achieved most of the exchange total of 79.2% with the EU member states, where export is covered by import with 99.2%. Commodity exchange with the EU is for 26.6% higher than last year. The exchange of the Region with the largest markets is shown in the following chart:

**Figure 1.** The exchange between companies from the region and big markets (given in %)



Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

There is a tendency for the region to export much more to the CEFTA countries than it imported from them, which is why the import export coverage was 1,186.0%. Compared to the same period of last year trade with CEFTA countries has increased by 4.1%. A negative balance of trade with Germany was recorded, as the coverage of import by export was 81.7%. Compared to the January-June 2017 period, foreign trade grew by 32.4%. Regarding the exchange with the Russian Federation, the coverage of import by export was 147.7%, and the exchange decrease was 2.4%, compared to January-June of 2017. The largest export of the Region was into Germany, valued USD 87.1 million, or 19.9% of total exports, however, it should be noted that the region was also mostly imported from Germany - the value of imports was 106.6 million dollars, representing 24.3% of total imports.

The trend of the largest foreign trade with Germany continued, followed by an exchange with Hungary, Austria, and Italy. The volume of goods exchange from these four countries is \$ 481.8 million and represents 54.9% of the total commodity Region`s exchange. Below is presented an overview of foreign trade with the countries of the Customs Union (Russian Federation, Belarus, and Kazakhstan). (Table 7)



**Table 7.** Exchange with Russian Federation, Belarus and Kazakhstan

	EXPORT	%	IMPORT	%	TOTAL	%	D/S	E/I (%)
Russian Federeation	16,1	3,7	10,9	2,5	27,0	3,1	5,2	147,7
Belarus	1,0	0,2	0,4	0,1	1,4	0,2	0,6	250,0
Kazakhstan	0,6	0,1	0,9	0,2	1,5	0,2	-0,3	66,7
TOTAL	17,7	4,0	12,2	2,8	29,9	3,4	5,5	145,1

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

The exchange with the Russian Federation shows that the coverage of imports by exports is 147.7% and the trade deficit decreased by 2.4% compared to 2017, indicating that the trend of positive foreign trade has continued. Thus, the trade with Belarus was 1.4 million USD, with the coverage of imports by the export of 250.0%, while the deficit with Kazakhstan amounted to about 0.3 million dollars.

Exports to the countries of the Customs Union amounted to \$ 17.7 million, which represents 4.0% of the total export of the Region. Imports from these countries amounted to \$ 12.2 million, and within the total imports of the Region has a share of 2.4%. The total foreign trade amounted to USD 29.9 million or 3.4% of the total exchange of the Region. Import coverage by export is 145.1%.

The following table shows the commodity exchange with the countries of the NAFTA agreement. The region achieved a positive balance of foreign trade with those countries. (Table 8)

**Table 8.** Exchange with NAFTA countries

	EXPORT	%	IMPORT	%	TOTAL	%	D/S	E/I (%)
USA	5,3	1,2	7,2	1,6	12,5	1,4	-1,9	<b>73,6</b>
Canda	0,0	0,0	0,1	0,0	0,1	0,0	-0,1	<b>0,0</b>
Mexico	2,7	0,6	1,8	0,4	4,5	0,5	0,9	<b>150,0</b>
TOTAL	8,0	1,8	9,1	2,1	17,1	1,9	-1,1	<b>87,9</b>

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

Exports to the USA has a share of 1.2% of the total region's exports, while imports are 1.6% of the total imports of the Region. Foreign trade, in the ob-

served period, with the USA, amounts to 12.5 million dollars and represents 1.4% of the total exchange of our region.

As far as cooperation with EFTA countries is concerned, it is getting intensified and as such is presented in the following table 9.

**Table 9.** Exchange with EFTA

	EXPORT	%	IMPORT	%	TOTAL	%	D/S	E/I (%)
Switzerland	1,8	0,4	3,9	0,9	5,7	0,6	-2,1	<b>46,2</b>
Norway	0,0	0,0	0,0	0,0	0,0	0,0	0,0	<b>0</b>
Liechtenstein	0,0	0,0	0,0	0,0	0,0	0,0	0,0	<b>0</b>
Island	0,0	0,0	0,0	0,0	0,0	0,0	0,0	<b>0</b>
TOTAL	1,8	0,4	3,9	0,9	5,7	0,6	-2,1	<b>46,2</b>

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

It is evident that in the commodity exchange with the countries of the EFTA agreement, our region has higher imports than exports. Import coverage by export is around 46.2%.

**Table 10.** Exchange with MEDA countries

	EXPORT	%	IMPORT	%	TOTAL	%	D/S	E/I (%)
Israel	0,8	0,2	10,8	2,5	11,6	1,3	-10,0	<b>7,4</b>
Turkey	2,1	0,5	1,1	0,3	3,2	0,4	1,0	<b>190,9</b>
Jordan	0,0	0,0	0,0	0,0	0,0	0,0	0,0	<b>0,0</b>
Morocco	0,1	0,0	0,1	0,0	0,2	0,0	0,0	<b>100,0</b>
Egypt	0,0	0,0	0,0	0,0	0,0	0,0	0,0	<b>0</b>
Lebanon	0,2	0,0	0,0	0,0	0,2	0,0	0,2	<b>0,0</b>
Tunisia	0,0	0,0	0,0	0,0	0,0	0,0	0,0	<b>0,0</b>
TOTAL	3,2	0,7	12,0	2,7	15,2	1,7	-8,8	<b>26,7</b>

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

Regarding the cooperation of the Region with other countries, it is necessary to mention the cooperation with the members of the Association of Mediterranean Countries - MEDA (table 10). Export to these countries was \$ 3.2 million

(0.7% of the total region's export), while import from these countries valued \$ 12.0 million providing intensive innovative business cooperation.

The most important products on the commodity market are the first five export products (in million USD). (Table 11)

**Table 11.** Top five export commodity products

Products	Million USD
Ignition wire sets, other vehicle sets	53,3
Parts and accessories for motor vehicles (8701-8705), other	36,6
Pipes and hoses, rigid, of other plastics	31,9
Other glass products, other	13,3
Parts for machines (8501 and 8502), other	13,1

**Source:** <http://webzrs.stat.gov.rs> i <http://www.pks.rs/>

The value of exports of these five groups of products amounts to USD 148.2 million and has a share of 33.8% in the total export of the Region.

According to the customs tariff group, table 12 shows top five import products (in millions of USD).

**Table 12.** Top five import products

Products	Million USD
Unclassified goods by CT-goods in the free zone	63,6
Unclassified goods by CT-goods in storage	32,3
Cars, diesel, from 1500-2500cm <sup>3</sup> , used	25,6
Plastic isolation parts	11,4
Ignition wire sets, other vehicle sets	8,9

**Source:** <http://webzrs.stat.gov.rs> i <http://www.pks.rs/>

Imports of these five groups of products amounted to \$ 141.8 million with a share of 32.3% in total imports of the region. Table 13 shows the amounts of different municipalities in 2018. (Table 13)

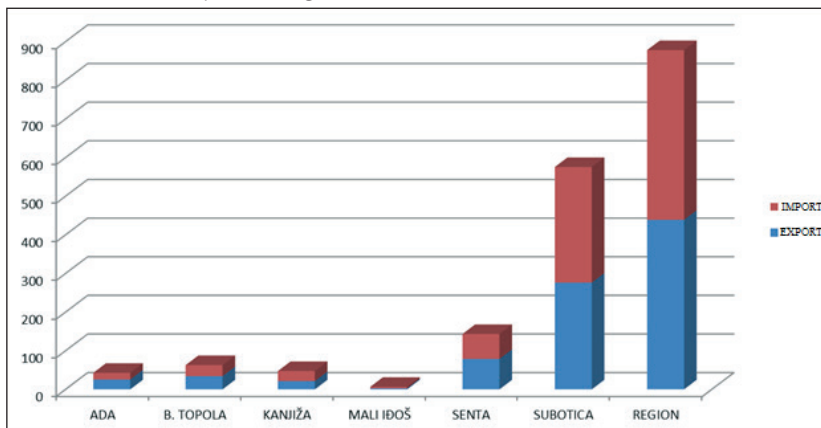
**Table 13.** Export import amount by municipalities in 2018

Municipality/city	Export	Import	Total	Surplus/Deficit	Export/Import
Ada	25,4	17,4	42,8	8,0	146,0
B. Topola	34,2	28,6	62,8	5,6	119,6
Kanjiža	21,4	26,0	47,4	-4,6	82,3
Mali Idoš	2,7	3,7	6,4	-1,0	73,0
Senta	78,7	64,5	143,2	14,2	122,0
Subotica	276,2	299,2	575,4	-23,0	92,3
Region	438,6	439,4	878,0	-0,8	99,8

Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

The total commodity exchange for each municipality in the region is shown in Figure 2.

**Figure 2.** Commodity exchange for municipalities



Source: <http://webrzs.stat.gov.rs> i <http://www.pks.rs/>

The table shows that imports are covered by exports to 99.8%. In the region, foreign trade deficit amounted to \$ 0.8 million. It should be noted that the stock exchange is constantly changing its structure in favor of products of higher processing phases with much more embedded new value. A higher level of newly created value enables higher profits, and therefore a higher gross domestic product and a higher standard of living, which is the goal of any macroeconomic policy in the context of ever-increasing employment.

## 4. CONCLUSION

However, the reality is completely different. The economic sector faces several structural problems, a lack of qualified labor, corruption and several internal and external disadvantages caused by geopolitical factors.

There are problems that are becoming more and more complex for public regulation and macroeconomic policy. Sustainable development strategies always have operational and functional meanings, but today they often create retrograde effects, especially in less developed countries such as Serbia. This leads to the creation of an irregular market in all segments with a large number of imports of cheap goods with an inadequate production structure. The fact that increased production activity with positive effects of foreign trade creates various opportunities for business cooperation when geo-economics interests become more visible, economic goals become more and more functional. Future sustainable development in the region requires the export of products with a higher percentage of newly created value and greater functionality, which must be achieved by future reforms. The development content of reforms must be based on the creation of funds in the coming period for financing development from own accumulation, not through lending and taking loans from banks, the IMF and the World Bank. Own accumulation should be ensured by a steady increase in production and exports with a higher share of newly created value with a continuous reduction in the foreign trade deficit.

An increase in exports always requires the harmonization of the production structure with international standards and standards that must ensure coordinated and sustainable development in the future based on the systemic integration of paradigm and co-operation, defined as mass and informal communication between individuals and economic and non-commercial entities that support a wider division of labor into within a general market game. The effects of reforms are visible in the intensification of competitive business and technical cooperation in the constitution of geo-economics flows on the new geopolitical scene within modern and innovative business trends.

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# AN ASSESSMENT OF RESERVE ADEQUACY IN THE REPUBLIC OF CROATIA

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## **Abstract**

*In 2017, international reserves of the Republic of Croatia amounted to approximately 19 billion US dollars, which was about 32% of Croatia's gross domestic product. The two main reasons for holding international reserves are maintaining foreign currency liquidity and an exchange rate level or volatility management. Maintaining foreign currency liquidity means to achieve availability and liquidity of international reserves for the potential balance of payments needs. In the case of financial crises, a country with adequate reserve holdings will suffer smaller gross domestic product decline. Likewise, the Republic of Croatia uses international reserves to maintain a managed floating exchange rate regime, that is, for intervening in the foreign exchange market in order to reduce exchange rate fluctuations.*

*The goal of this paper is to assess international reserve adequacy of the Republic of Croatia in the period from 2013 to 2017. In the paper, for an assessment of reserve adequacy, both traditional and combination metrics are used. With respect to combination metrics, among several approaches, the following two are applied: the one proposed by the International Monetary Fund [IMF] (2011a, 2011b, 2013a, 2013b, 2015) and the other suggested by Mwase (2012).*

*The research results indicate that the level of international reserves of the Republic of Croatia is adequate only in 2017 according to the metric proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015). However, according to the metric suggested by Mwase (2012), the level of international reserves is inadequate over the whole observed period.*

**Keywords:** reserves, reserve adequacy, traditional metric, combination metric, foreign currency liquidity;

JEL Classification: F31, O24

## 1. INTRODUCTION

A series of financial crises at the end of the 90s and the global financial crisis 2007-2008 highlighted the importance of international reserves. In the event of a crisis, the countries with higher reserve holdings were less vulnerable to capital outflows and more able to protect the stability of the financial system (Wijnholds and Kapteyn, 2001; IMF 2013a). In other words, the countries that had a higher level of reserves suffered smaller gross domestic product decline in relation to the countries that had a lower level of reserves. The majority of countries hold reserves for two main reasons. The first reason is maintaining foreign currency liquidity. Contrary to the concept of international liquidity that is related only to nonresidents, the concept of foreign currency liquidity is related to both residents and nonresidents. The second reason is maintaining a certain level of exchange rate or managing exchange rate fluctuations.

Certainly, the question could be raised on what indicators can show how high the international reserves should be. The three main indicators or traditional metrics are the ratios of international reserves to imports of goods and services, the ratio of international reserves to short term external debt and the international reserves to broad money. However, traditional metrics have advantages and disadvantages. In fact, these metrics “certainly have relevance and the attraction of simplicity, but are by their nature arbitrary, focus only on a particular aspect of vulnerability and give disparate results” (IMF, 2011, p. 4). In order to avoid the disadvantages of traditional metrics, in the last 15 years, combination metrics have been developed. Combination or composite metrics are the indicators calculated mainly as a weighted average of selected traditional metrics, sometimes in conjunction with other macroeconomic variables such as exports or the country risk index. The various types of combination metrics are proposed, for example, in Wijnholds and Kapteyn (2001), Mwase (2012), the IMF (2011a, 2011b, 2013a, 2013b, 2015) and Makarenko and Gordieieva (2015).

The goal of this paper is to assess international reserve adequacy of the Republic of Croatia in the period from 2013 to 2017. An assessment is done using



both the aforementioned traditional and two combination metrics. The first combination metric is based on the methodology proposed by the IMF (2011a, 2011b; 2013a, 2013b, 2015), and the second one is suggested by Mwase (2012).

The structure of the paper is as follows. After the introduction, in the second section, there is a definition of the concept of international reserves. The reasons for holding international reserves are explained in the third section. The selected traditional and combination metrics are described in the fourth section. In the fifth section, an assessment of reserve adequacy in the Republic of Croatia is conducted. Finally, the sixth section concludes the paper.

## 2. THE CONCEPT OF INTERNATIONAL RESERVES

The concept of international reserves of a country that is a member of the International Monetary Fund is defined in the Balance of Payments and International Investment Position Manual (IMF, 2009). According to the Manual, international reserves are:

Those external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs, for intervention in exchange markets to affect the currency exchange rate, and for other related purposes (such as maintaining confidence in the currency and the economy, and serving as a basis for foreign borrowing) (IMF, 2009, p.111).

The terms “readily available to” and “controlled by” are crucial to the concept of international reserves. Assets that do not fulfill these criteria cannot be considered international reserves (IMF, 2013, p. 3). Furthermore, from the definition, it is apparent that international reserves represent a gross concept in the sense that they exclude external liabilities of the monetary authorities (IMF, 2013, p. 3). It is important to point out that international reserves must be foreign currency assets, assets that actually exist (potential assets are excluded) and claims of the monetary authorities (other than gold bullion) on nonresidents<sup>1</sup> (IMF, 2009, p.111).

<sup>1</sup> In the Balance of Payments and International Investment Position Manual, the concept of residency is based on the center of economic interest and not on nationality or legal criteria. (IMF, 2009, p. 50-80, IMF, 2013, p. 3).

Likewise, in the Manual, it is determined what types of assets can be counted in international reserves (IMF, 2009, p. 112). These are as follows: 1) monetary gold; 2) reserve position in the International Monetary Fund; 3) Special Drawing Rights holdings; 4) currency and deposits; 5) securities; 6) financial derivatives; 7) other claims (e.g. loans to non-resident non-deposit-taking corporations).

### 3. THE REASONS FOR HOLDING INTERNATIONAL RESERVES

The monetary authorities hold international reserves for various reasons. The main reasons could include:

1. foreign currency liquidity
2. mitigating exchange rate volatility
3. exchange rate level management
4. currency boards
5. savings for future generations
6. savings against macroeconomic shocks.

Still, the most often reasons are foreign currency liquidity and exchange rate level or volatility management (IMF, 2011, p. 9). According to the International Monetary Fund, (IMF, 2013, p. 5), foreign currency liquidity encompasses foreign currency resources and foreign currency drains. Foreign currency resources include reserve assets in other foreign currency assets, and foreign currency drains include predetermined net drains and contingent net drains. Predetermined net drains are known or scheduled inflows and outflows while contingent net drains are potential inflows and outflows. Furthermore, as opposed to the concept of international reserves, the concept of foreign currency liquidity is related not only to (IMF, 2013, p. 4)

1. the monetary authorities but also to the central government,
2. claims on nonresidents but also to obligations to nonresidents and claims on and obligations to residents,
3. claims based on the balance-sheet framework but also to off-balance-sheet activities of the authorities.

Mitigating exchange rate volatility and exchange rate level management is achieved by interventions on the foreign exchange market. In other words, the monetary authorities that do not have freely floating exchange rate regime use

international reserves to smoothen the exchange rate fluctuations and to maintain the exchange rate at a certain level. However, even in the circumstances of a freely floating exchange rate regime, the monetary authorities may use international reserves to mitigate the exchange rate volatility.

Countries with currency board arrangements must cover the entire monetary base by international reserves. Hence, the currency board arrangement is a clear reason for holding international reserves.

Likewise, some countries use international reserves as savings for future generations in order to ensure intergenerational equity. For example, those could be countries that are exporters of nonrenewable resources (IMF, 2011, p. 5) Savings can also be used against macroeconomic shocks in the future such as income or commodity price shocks.

Like the majority of other monetary authorities in the world, the monetary authorities in the Republic of Croatia hold the international reserves mainly for two reasons. The first reason is maintaining foreign currency liquidity, and the second one, given that the Republic of Croatia has the managed floating exchange rate regime, is exchange rate level and volatility management<sup>2</sup>. Both the maintaining foreign currency liquidity and mitigating exchange rate fluctuations contribute to the stability of Croatia's financial system.

#### 4. THE TRADITIONAL AND COMBINATION METRICS

It has already been mentioned that three traditional metrics and two combination metrics are applied in the paper. The traditional metrics used in the paper are the ratio of international reserves to imports of goods and services, the ratio of international reserves to short term external debt and the ratio of international reserves to broad money. The selected combination metrics applied in the paper are the metric proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) and the metric suggested by Mwase (2012).

The ratio of international reserves to imports of goods and services shows the sufficiency of international reserves to cover imports of goods and services

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<sup>2</sup> Koški (2018) has shown that foreign exchange interventions have been effective in the Republic of Croatia.

in the absence of foreign exchange inflows (such as export revenue and external financing). International reserves that cover three months of imports are considered minimal although there is little empirical support for this critical value (IMF, 2011, p. 13). This metric is especially important in countries where shocks could arise from the current account and where the probability of shocks from the capital and financial account is small. In countries that are opened up financially, the applicability of this metric is less relevant (IMF, 2016, p. 23).

The ratio of international reserves and short-term external debt indicates the ability of a country to repay short term external debt. Put another way, this metric shows the liquidity of the country in a case that all foreign exchange inflows cease. The rule that international reserves need to cover 100% of short-term external debt is often called the Greenspan-Guidotti rule after Greenspan (1999) and Guidotti (1999) who proposed it almost simultaneously. Although the rule is pretty intuitive because it is based on debt that is due in one year, it loses its relevance if the financial crisis lasts much longer or shorter (IMF, 2011, p. 13).

The ratio of international reserves and broad money is important in countries with a more open capital and financial account, weak banking system and without the confidence in the value of local currency. In such countries, there is a relatively higher risk of capital flight. If such a country maintains the fixed exchange rate regime, the smaller this indicator, the higher the potential for capital flight. (Maier, 2006, p. 31). In fact, all money supply of that country could be seen as a potential drain on international reserves (Lipschitz and Schadler, 2019, p. 263). The critical value of this metric is 5-20%.

The combination metric proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) is derived in the following way: distributions of annual percentage losses of four variables in the event of exchange market pressure are estimated. These four variables are exports of goods and services, short-term external debt (on a remaining maturity basis), other liabilities<sup>3</sup> and broad money. Exchange market pressure is defined as an event in which an exchange market pressure index<sup>4</sup> exceeds its average by more than 1.5 times its standard deviation. The distributions are estimated for the period from 1980 to 2008 and separately for the

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<sup>3</sup> Other liabilities are calculated as sum of other investment liabilities and portfolio investment liabilities less short-term external debt on a remaining maturity basis (IMF, 2011b, p. 2).

<sup>4</sup> The index is calculated following Eichengreen et al. (1997).

fixed and floating exchange rate regimes of emerging market economies. For each distribution, the 10<sup>th</sup> percentile is calculated. A round number of the 10<sup>th</sup> percentile represents the risk weight for each related variable. The metric consists of the sum of weighted variables and is as follows (IMF, 2011a, 2011b):

Fixed: 30% of short-term external debt + 15% of other liabilities +  
+ 10% of broad money + 10% of exports,

Floating: 30% of short-term external debt + 10% of other liabilities +  
+ 5% of broad money + 5% of exports.

However, in order to better capture the risks associated with other liabilities, the IMF (2013a, 2013b) refined the metric<sup>5</sup>, by increasing the weight of other liabilities by five percentage points:

Fixed: 30% of short-term external debt + 20% of other liabilities +  
+ 10% of broad money<sup>6</sup> + 10% of exports,

Floating: 30% of short-term external debt + 15% of other liabilities +  
+ 5% of broad money<sup>7</sup> + 5% of exports.

Furthermore, the ratio of international reserves to the metric in the region of 100-150% is considered adequate. Countries with such the coverage have a smaller probability of a crisis and, in the crisis, they have smaller consumption drops and reserve losses than countries with ratios below this level (IMF, 2011a, p. 27).

The combination metric proposed by Mwase (2012) is constructed in a similar way with some differences. The metric encompasses the following three

<sup>5</sup> This metric is applied in the paper.

<sup>6</sup> In the case of capital controls, this value should be adjusted to 5% (IMF, 2016, p. 15).

<sup>7</sup> In the case of capital controls, this value should be adjusted to 2.5% (IMF, 2016, p. 15).

variables: exports of goods and services, broad money and short-term external debt. The estimation of distributions is conducted for the period from 1999 to 2010. That is done separately for the fixed and floating exchange regimes but also for currency unions of emerging markets and small islands. Furthermore, exchange market pressure is defined as a situation in which the exchange market pressure index exceeds its average by more than one times of its standard deviation. The metric is as follows (Mwase, 2012):

Fixed: 95% of short-term external debt + 10% of broad money +  
+ 35% of exports,

Floating: 40% of short-term external debt + 30% of broad money +  
+ 10% of exports,

Currency union: 80% of short-term external debt + 20% of broad money +  
+ 20% of exports,

The ratio of international reserves to the metric in the amount of 75-100% is regarded as adequate. In countries whose international reserves are about 75% of the metric, the probability of a crisis is less than two percent (Mwase, 2012, p. 19).

## 5. ASSESSING RESERVE ADEQUACY IN THE REPUBLIC OF CROATIA

International reserves of the Republic of Croatia in the period from 2013 to 2017 are evident from Table 1. In 2017, reserves amounted to approximately 19 billion US dollars, which was about 32% of Croatia's gross domestic product<sup>8</sup>.

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<sup>8</sup> In 2017, Croatian gross domestic product was 58,319.06 million US dollars (Croatian National Bank, 2019).

**Table 1.** International reserves of the Republic of Croatia (millions of US dollars: end of the period)

Year	Total	Special Drawing Rights	Reserve position in the Fund	Gold	Foreign exchange		
					Total	Currency and deposits	Bonds and notes
2013	17,765.9	468.8	0.2	-	17,296.8	5,117.3	12,179.5
2014	15,424.4	442.6	0.3	-	14,981.6	4,130.7	10,850.8
2015	14,967.6	423.3	0.3	-	14,544.1	5,294.0	9,250.1
2016	14,247.9	413.4	0.3	-	13,834.2	3,764.8	10,069.4
2017	18,822.3	438.0	0.4	-	18,383.9	6,547.7	11,836.2

**Source:** CNB, [available at: <https://www.hnb.hr/statistics/statistical-data/financial-sector/central-bank-cnb/international-reserves>, accessed March 15, 2019].

In order to assess the international reserve adequacy, it is necessary to calculate main traditional metrics, namely the ratio of international reserves to imports of goods and services, the ratio of international reserves to short term external debt (on a remaining maturity basis) and the international reserves to broad money. These metrics are based on the selected macroeconomic aggregates that are presented in Table 2.

**Table 2.** Selected macroeconomic aggregates in the Republic of Croatia (millions of US dollars)

Indicator	2013	2014	2015	2016	2017
Short-term external debt	14,256.52	14,351.28	12,510.02	13,032.67	14,407.14
Broad money	47,727.65	43,358.29	41,095.05	41,974.71	49,004.29
Goods and services, debit	24,713.93	25,038.67	22,692.74	23,722.92	27,028.50
Goods and services, credit	24,916.80	26,134.82	23,837.72	25,206.55	28,319.79
Other liabilities	41,830.00	35,390.00	31,980.00	25,590.00	26,620.00

**Source:** IMF, [available at: <https://www.imf.org/external/np/spr/ara/>, accessed March 15, 2019].

In Table 3, the three aforementioned traditional metrics are presented. The ratio of international reserves to short-term external debt amounts to over 100%, which exceeds the critical value. Furthermore, the ratio of international reserves to imports indicates that the reserves are sufficient to cover 7-8 months

of imports, which is acceptable as well. Finally, the ratio of international reserves to broad money is above the critical value and exceeds 30%.

**Table 3.** Traditional metrics in the Republic of Croatia

Traditional metric	2013	2014	2015	2016	2017
Reserves to short term external debt (%)	124.62	107.48	119.64	109.32	130.65
Reserves to imports (%)	71.89	61.60	65.96	60.06	69.64
Reserves to broad money (%)	37.22	35.57	36.42	33.94	38.41

**Source:** Author's calculation.

In Tables 4 and 5, two combination reserve adequacy metrics are calculated – the first one is proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) and the second one is proposed by Mwase (2012), respectively. The metrics are calculated for both floating and fixed exchange rate system. It has already been pointed out that the Republic of Croatia implements the managed floating exchange rate regime. However, for the assessment of international reserve adequacy, the International Monetary Fund classifies the countries into two groups: those with a floating exchange rate regime and others. Hence, the data on the metrics calculated for the fixed exchange rate regime is more relevant to the Republic of Croatia.

**Table 4.** The reserve adequacy metric proposed by the International Monetary Fund

Proposed metric	2013	2014	2015	2016	2017
Floating exchange rate regime (millions of US dollars)	14,183.68	13,088.54	11,796.65	11,107.37	12,181.35
Fixed exchange rate regime (millions of US dollars)	19,907.40	18,332.70	16,642.28	15,745.93	17,378.55
Reserve coverage against the metric - floating exchange rate regime (%)	125.26	117.85	126.88	128.27	154.52
Reserve coverage against the metric - fixed exchange rate regime (%)	89.24	84.14	89.94	90.49	108.31

**Source:** Author's calculation.



From Table 4 it is apparent that international reserve coverage against the metric for fixed exchange rate regime is within the critical values (100-150%) only in 2017 while in previous years it is below these values. Table 5 shows international reserve coverage against the metric for a fixed exchange rate regime, which is below the critical values (75-100%) over the whole observed period.

**Table 5.** The reserve adequacy metric proposed by Mwase

Proposed metric	2013	2014	2015	2016	2017
Floating exchange rate regime (millions of US dollars)	22,512.58	21,361.48	19,716.30	20,326.14	23,296.12
Fixed exchange rate regime (millions of US dollars)	27,037.34	27,116.74	24,337.23	25,400.80	28,499.14
Reserve coverage against the metric - floating exchange rate regime (%)	78.92	72.21	75.91	70.10	80.80
Reserve coverage against the metric - fixed exchange rate regime (%)	65.71	56.88	61.50	56.09	66.05

**Source:** Author's calculation.

Deficits and surpluses that stem from the reserve adequacy metrics are evident from Table 6. For calculating them, the minimum critical values of both reserve adequacy metrics are used. In other words, the minimum critical values of 100% and 75% are used for the metric proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) and the metric proposed by Mwase (2012), respectively. Likewise, they are calculated only for the fixed exchange rate regime. Considering the entire observed period and according to the metric proposed by Mwase (2012), the Republic of Croatia needed in average 3,613.09 million US dollars in order for its reserves to be considered adequate.

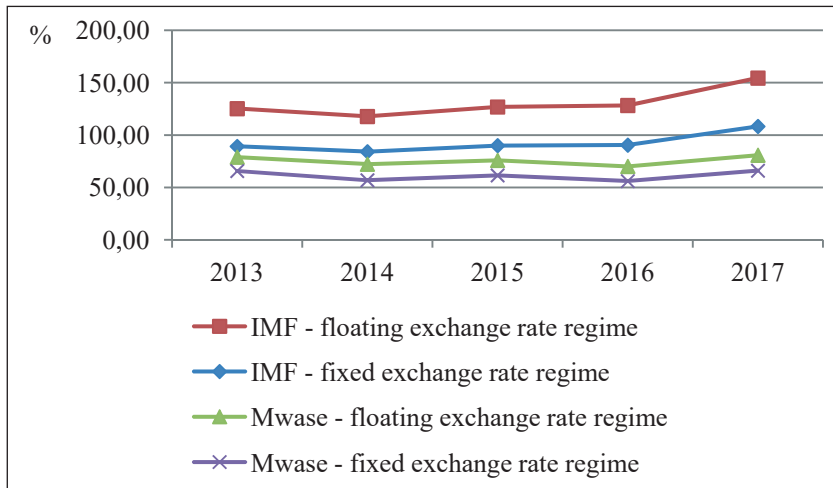
**Table 6.** Deficit or surplus in international reserves

Proposed metric	2013	2014	2015	2016	2017
The metric proposed by the IMF (millions of US dollars)	-2,141.50	-2,908.32	-1,674.67	-1,498.07	1,443.71
The metric proposed by Mwase (millions of US dollars)	-2,512.10	-4,913.18	-3,285.31	-4,802.74	-2,552.09

**Source:** Author's calculation.

In Figure 1, the comparison of international reserve coverages against the metrics proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) and Mwase (2012), for both floating and fixed exchange rate regime, is depicted.

**Figure 1.** The comparison of international reserve coverages against the metrics.



**Source:** Author's drawing based on data from Table 4 and Table 5.

Over the observed period, a very mild increase of international reserve coverages against the metrics for both floating and fixed exchange rate regime is evident. If the increase continues, international reserves will also become adequate, according to the metric proposed by Mwase (2012).

## 6. CONCLUSION

In 2017, Croatia's international reserves amounted to approximately 19 billion US dollars, that is, about 32% of Croatia's gross domestic product. The monetary authorities of the Republic of Croatia hold international reserves for the two main reasons. The first reason is maintaining foreign currency liquidity. The second reason is, given that the Republic of Croatia implements the managed floating exchange rate regime, the maintaining certain level of exchange rate or managing exchange rate fluctuations. In this way, the monetary authorities protect the stability of the financial system in the country and maintain confidence in the value of local currency.

In this paper, the adequacy of Croatia's international reserves is assessed. Assessment of reserve adequacy is conducted in the period from 2013 to 2017 using selected traditional and combination metrics. The traditional metrics, namely, the ratio of international reserves to imports of goods and services, the ratio of international reserves to short term external debt and the international reserves to broad money indicated that the level of international reserves is adequate, that is, above the critical values. More precisely, the ratio of international reserves to imports of goods and services shows that international reserves are sufficient to cover 7-8 months of imports. Likewise, the ratio of international reserves to short-term external debt exceeds 100% and the ratio of international reserves to broad money amounts to over 30%.

Among the combination metrics, the following two are applied: the metric proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) and the metric proposed by Mwase (2012). The metric proposed by the IMF (2011a, 2011b, 2013a, 2013b, 2015) indicated that the Republic of Croatia has an adequate level of international reserves only in 2017. According to the other metric, the metric proposed by Mwase (2012), the Republic of Croatia does not have the acceptable level of international reserves. In average, over the entire observed period, the level of Croatia's international reserves should be 3,613.09 million US dollars higher.

Still, a very mild increase in international reserve coverages against the metrics is evident. If the increase continues in the future, the level of international reserves will also become acceptable, according to the metric proposed by Mwase (2012).

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# EU LESSONS AFTER THE CRISIS AND... BEFORE THE RECESSION

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## Abstract

*The changes that have occurred in the last decade - on one hand, the new major crisis and its consequences, and on the other hand, the exponential growth and development and the applications of new technologies and the changes that that has wrought, have changed the world as a whole and specific parts of it and individual countries.*

*The basic theme of this work is to examine how those changes have been reflected in the conduct of economic policies globally and fragmentarily (US and EU). The outbreak of the crisis, and then the surprising renewal of protectionism confronted the EU, and then each individual country itself, with the need to find adequate responses to these challenges.*

*It is interesting to observe how the economic ideas and behavioral models from previous times have appeared in this new era and under new circumstances - neoliberalism, protectionism, industrial strategy and policy, the role of the state - and how they have become the reality in the present day.*

*It is necessary to take a position in regard to the recent past - which is to say, more recent (economic) history - and at the same time to confront pronouncements of a coming recession. The basic theme of this paper is to discuss what we should do so that its economic effects cause the lowest level of social problems and tensions, the forms of which are industrial (development) strategy and policy, especially at the EU level.*

**Keywords:** economic crisis, recession, protectionism, industrial policy, industrial strategy, EU, economic of the Republic of Croatia.

JEL Classification: E69, H12

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## 1. INTRODUCTION

The period of recovery from the Great Recession began in some developed countries earlier (2012-2013) than it did in Croatia (2015) because of the fact that the decline in the level of GDP in that period was considerably deeper than in the EU 10. Therefore, the economic recovery that began in 2015 was a turning point not only in economic terms but also in political and social terms; and it was an essential point in the overall life of the country.

The new geopolitical circumstances, soon to be followed by practical economic ones, characterized by each country turning to its own national priorities, which began with the new paradigm of AMERICA FIRST, caused expectations of economic growth, especially based on a trend of strong growth in international trade, to be drastically reduced, considered both globally and at the level of specific regions of the world: the US, the Far East and then also at the level of the EU and at the national level. The new framework of events (re)affirmed the position of defense of (economic) interests as a legitimate basis for creating a concept of protectionism, suitable to these circumstances and the current time.

The theme and interest of the work are to analyze the degree and character of the changes that have been achieved, but also to consider the medium and long-term responses that are prerequisites for creating the essential structural platform for effective behavior within the framework of such (expected) conjunctural-cyclical movements. This is primarily a matter of a modern/new conception of industrial policy that is a real foundation for achieving long-term, sustainable economic growth. At the same time, such a concept of economic policy, which was applied in different countries in accordance with their socio-economic traditions, and with limits, has achieved very successful results, beginning in the Far East and including the old and new members of the EU.

What these examples and models are and how they can be recognized and applied in order to: a) leave behind the consequences of the 2009-2014 crisis and b) await the coming recession more prepared with their own framework of behavior are fundamental questions that this scientific-research work wishes to address.

## 2. NEW CHALLENGES - PROTECTIONISM

The current economic era began with the announcement by the new US administration (after the 2016 elections) that foreign trade deficits are not just a financial-capital issue because that are deeply affecting vital economic aggregates - the degree of (un)employment of the working age population within a national economy - it is also a question of the sustainability of the quality of the structure of industry that has significantly declined, quantitatively and qualitatively, by the removal of a large number of jobs to the Far East, primarily to China. This shift was initially a subject only in academic and theoretical discussions, but it was soon followed by concrete forms of action. "Shifting the economy into a higher gear is a critical first step. The United States has to jumpstart growth and move forward on long-recognized priorities such as restoring business dynamism, investing in infrastructure, improving productivity, and revamping education and training. And the nation will have to do a better job of executing on these fast-growing firms that create jobs. To accelerate productivity growth, more companies need to be encouraged to adopt the technologies and best practices of frontier firms. Small enterprises need assistance to seek out global market opportunities and foreign capital. US companies and investors need to recognize the long-term value of creating training pathways and better-quality jobs—not just out of social responsibility but to protect their own long-term interests (Making it in America, 2017: 3-4). The same text also states: But economic growth alone may not be enough; growth also has to be more inclusive. We see four priority areas: reinvesting, retraining, removing barriers, and reimagining work. First, communities in distress need targeted investment from public, private, and foreign sources to bounce back. Second, continuous technological change means that mid-career workers need systems of lifelong learning to adapt—and currently the United States spends far less than other countries on helping displaced workers transition into new roles. Third, we can remove barriers that keep workers from seeking out better opportunities, such as non-compete agreements, excessive occupational licensing requirements, inadequate child and family support, and affordable housing shortages in booming job markets. Finally, we need to reimagine work with more flexible models, a more sustainable version of the gig economy, and more creative options for older workers". (Making it in America, 2017: 3-4)

How the indicated position looks in a comparative sense, observed in a wider time period, can be seen in Table 1.

**Table 1.** The US ranks second in the world in manufacturing value added

Top 15 manufacturers by share of global manufacturing gross value added (nominal)

Rank	1985	1995	2005	2015	2015 value added \$ billion
1	United States	United States	United States	China	3,166
2	Japan	Japan	Japan	United States	2,207
3	Germany	Germany	China	Japan	768
4	Italy	France	Germany	Germany	688
5	France	Italy	Italy	South Korea	349
6	United Kingdom	United Kingdom	United Kingdom	India	309
7	Canada	China	France	Brazil	285
8	China	Brazil	South Korea	United Kingdom	258
9	Mexico	South Korea	Brazil	Italy	241
10	Brazil	Spain	Spain	France	207
11	India	Canada	Canada	Mexico	204
12	Spain	Taiwan	Mexico	Indonesia	180
13	Australia	India	India	Canada	160
14	Argentina	Switzerland	Russia	Taiwan	157
15	South Korea	Mexico	Taiwan	Russia	155

**Sourcing:** Making It in America - Research Preview, Executive Summary, McKinsey Global Institute, A Special Initiative for the 2017 Aspen Ideas Festival, June 2017, p. 9.

The position of the United States in the last three decades in creating new value was unquestioned. At the start of the period of accelerating global processes (the mid-1980s), the US was by far the leading country in that ranking, followed by Japan, Germany, Italy, and France. Two decades later (2005), China entered the rankings and a decade later it topped the list, and South Korea was fifth, while Italy fell to ninth. In 2015, France was ranked 10th, followed immediately by Mexico and Indonesia.

It is evident that the development of these events is also creating (from a theoretical political evaluation) a framework for practical activity. The basis for the introduction of a new economic concept was created at the beginning of the mandate of the new US administration and is reflected in the document *Scoring the Trump Economic Plan*. “Donald Trump’s economic plan proposes tax cuts, reduced regulation, lower energy costs, and eliminating America’s chronic trade



deficit. Trump's goal is to significantly increase America's real GDP growth rate and thereby create millions of additional new jobs and trillions of dollars of additional income and tax revenues." (Navarro, 2016: 2)

That same document provided ratings and established the theoretical positions that would be the basis for the practical and concrete activity of the US government.

### BOX: US ECONOMIC POLICY - PAST AND PRESENT

China's 2001 entry into the WTO, negotiated by President Bill Clinton, opened America's markets to a flood of illegally subsidized Chinese imports, thereby creating massive and chronic trade deficits. China's accession to the WTO also rapidly accelerated the offshoring of America's factories and a concomitant decline in US domestic business investment as a percentage of our economy.

As David Dollar of Brookings notes, US direct investment flows to China were "fairly stable at about \$1.6 billion per year in the period 1999-2003" but "jumped in the period 2004-2008 to an annual average of \$6.4 billion."

Justin Pierce of the Federal Reserve Board of Governors staff and Yale School of Management's Peter Schott attribute most of the decline in US manufacturing jobs from 2001 to 2007 to the China deal. David Autor of MIT, David Dorn of the University of Zurich, and Gordon Hanson of UC-San Diego have described a "China trade shock" that has raised the unemployment rate, depressed wages, and the labor participation rate, and reduced the lifetime income of workers in American manufacturing most "exposed" to the shock.

Most recently, the 2012 South Korea trade deal was negotiated by Secretary of State Hillary Clinton – she called it "cutting edge." It was sold to the American public by President Obama with the promise it would create 70,000 jobs. Instead, it has led to the loss of 95,000 jobs and roughly doubled America's trade deficit with South Korea. Corporate America does not oppose these deals. They both allow and encourage corporations to put their factories anywhere. However, Mr. and Ms. America are left back home without high-paying jobs.

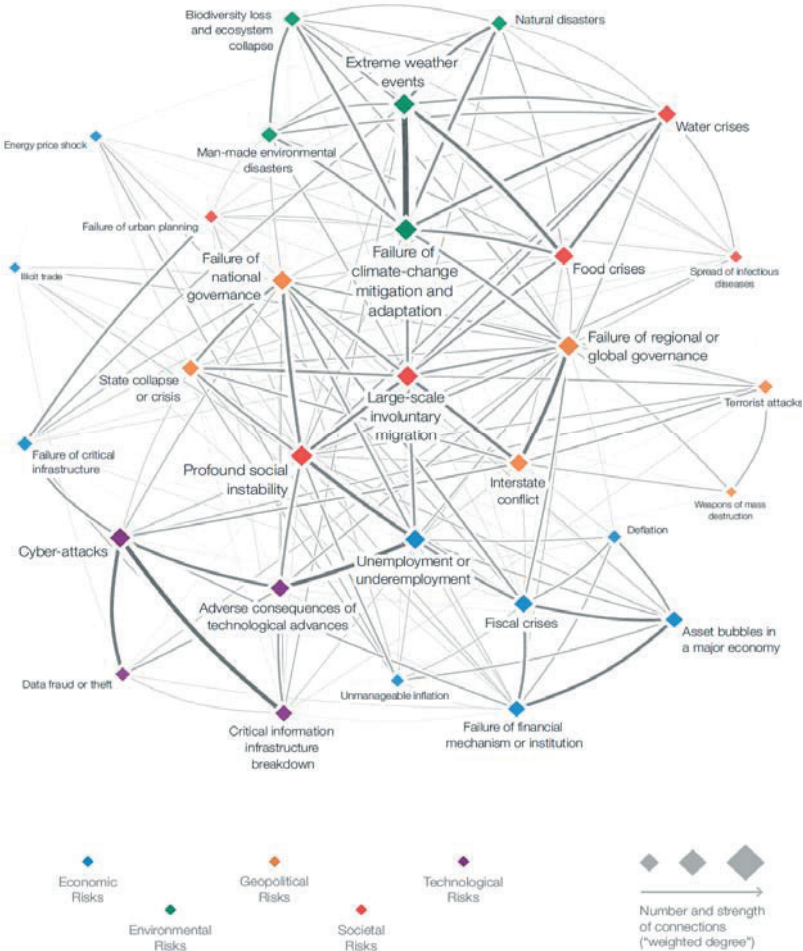
There is nothing inevitable about poorly negotiated trade deals, over-regulation, and an excessive tax burden – this is a politician-made malaise. Therefore, nothing about the "new normal" is permanent.

Donald Trump's tax, trade, regulatory, and energy policy reforms deal with the root causes of this problem. Trump understands that our economic problems are long run and structural in nature and can only be addressed by fundamental structural reforms.

**Source:** Navarro, P., Scoring the Trump Economic Plan: Trade, Regulatory & Energy Policy Impacts, September 29, 2016, p. 9

In addition to a new framework of behavior and relations of the two leading economic and geopolitical countries, the world of today is linked by a series of visible and less noticeable (economic) ties and relations and by a virtually unavoidable series of (open and potential) crises (sustainable development, migration, war, and geopolitical conflicts), that also create the basis (or limitations!) for their own actions. That state of affairs and relationships is apparent in the following graph.

**Graph 1.** The Global Risks Interconnections Map 2019



**Source:** The Global Risks Report 2019, 14th Edition, World Economic Forum, Geneva, January 2019.

In the foregoing text regarding the US-China relationship, and in a wider context, in the above matrix of events, the conditions have been created for a new, current dominant form of behavior - protectionism as a form of confrontation or defense against the trend of events, especially, but not wholly confined to, the economic sphere. To reiterate, these areas are environmental protection, sustainable growth, and development, large-scale migration, ongoing geopolitical conflicts in certain parts of the world, with old and new partnerships adopting the appropriate positions according to new circumstances.

### 3. NEW REGIONAL RESPONSES - EU INDUSTRIAL POLICY AS DEVELOPMENT POLICY

During its existence and development, the European Union substantively and organizationally followed the basic (economic) imperative that led to its founding: to respond more effectively to overall global challenges at the national level using increasingly sophisticated and complex forms of interconnection, thereby achieving positive synergistic effects. The period of accelerated processes of global networking, crisis and recession have fully confirmed the reality and inevitability of such association. Throughout the observed period, a variety of forms of industrial policy (both in their substance and priorities) were strongly present.

The beginning can be located in the period of more than 50 years ago. The literature states, "In the second half of the 1960s, the EU's industrial policy began to take on more serious outlines and to develop in parallel with national policies. In the 1970s, there was a crisis caused by the "oil shock," and during that period the countries were primarily concerned with their own economies. After the recovery from the "oil shock," in the mid-1980s, there was a revival of the need to apply a common industrial policy in the EU. In 1987, a key document was adopted that marked the overall economic policy of the EU of the late 1980s, the Single European Act. That act represented a turning point for the EU's industrial policy. It meant a transition from the model of centralized state intervention to the EU, in which the European Commission became the central bureaucratic body, according to a new model based on the cooperation of various national and local administrations, each of which has the ability to adopt and implement measures, but those measures had to be in accordance with those measures implemented by other levels of administration. The new approach to EU industrial policy, which stressed the importance of the regions,

was, in fact, regional development policy. Thus, the new approach to industrial policy meant abandoning old practices in which national governments were providing assistance to individual enterprises to minimize structural imbalances.” (Obadić, 2001: 657)

The course of the events further reinforced the need to realize industrial policy, giving it a new role, as shown by the following quote. “In the 1990s, the industrial policy of the EU took on entirely new characteristics. There was a widely accepted view that isolation of an economy leads to stagnation and that market liberalization helps entrepreneurs to become competitive in the conditions of the increased globalization of markets. Thus, in recent years competitiveness has become a basic characteristic of EU industrial policy. It is also why in 1991 the European Commission adopted the document “Industrial Policy in an Open and Competitive Environment,” which presented a new approach to industrial policy in a competitive environment (European Commission, 1991). That document, which provided the principles for a new European approach to industrial policy is known as “Bangeman’s Proposal” (Walser, 1999, p. 109). It sets out the basic principles of modern EU industrial policy, emphasizing that on the basis of a horizontal approach to industrial policy (i.e. by the use of measures that aid the development of key inputs - labor, capital, infrastructure, research and development) government authorities must create a stable environment as a prerequisite for an active industrial policy, to facilitate the required structural changes, and to ensure full functioning of the market.” (Obadić, 2001: 657)

Significant qualitative changes in the concept of industrial policy were achieved in a period of important transformations - economic and political, including the fall of the Berlin Wall - and the opening of new markets and investment platforms in the countries of the new Europe began an accelerated connection with the economies of old Europe. The stated concept of industrial policy as a complex platform of development in already developed countries was achieved in parallel with theoretical-pragmatic ideas (efforts) that the countries of the new Europe apply the Washington consensus model, which started from other initial premises and limited the role and responsibility of the state in managing active economic policies, starting with all the expectations of the activities of a free market and its legitimacy. Such expectations were soon shown by their results to be unrealistic, which meant (re)turning to the search for more complex solutions that included more complex and accountable engagement by the government and its institutions.

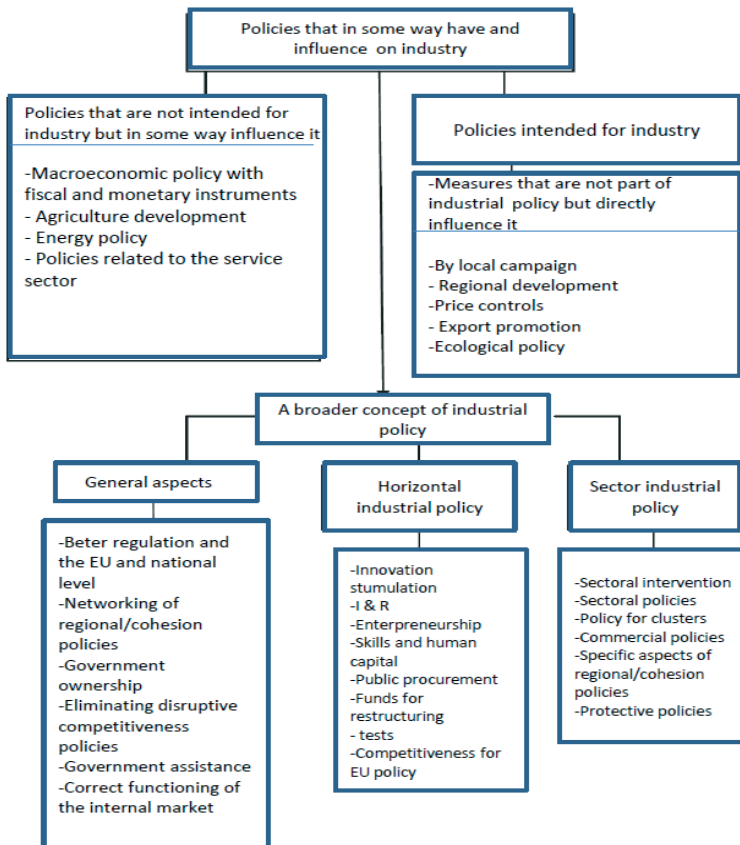
An understanding of the importance of and the need for constructing or formulating an adequate concept of industrial policy within the EU in the circumstances of globalization developed gradually, but continuously, which is apparent from the quotation: “A new approach to industrial policy began in March 2000 in Lisbon with the enactment of a comprehensive reform package entitled ‘Employment, Economic Reform and Social Cohesion - the Road to Europe Based on Information and Knowledge,’ known as the Lisbon Strategy.” In this document, the EU set a goal that by 2010 “the European Union will become the most competitive economy in the world, based on knowledge, innovation, and entrepreneurship.” The main task of industrial policy under the Lisbon Strategy was defined as an increase in the competitiveness of the industry, oriented to the growth of the standard of living, and with high long-term employment rates. This new approach to development implied a turn to structural reforms, a knowledge-based economy, investment in R & D, wider and more efficient use of information technologies, modernizing the European social model, and better social cohesion based on employment promotion, while maintaining healthy economic prospects and favorable growth. The Lisbon Strategy clearly showed that the efficient development of industry has positive external effects on an entire economy. (Savić and Ljutovac, 2017) Halfway through the implementation of the Lisbon Agenda, there came an awareness based on an analysis of the results that had been achieved that some effort should be made to fix several key goals and, at the same time, to enhance the monitoring of its implementation. The Wim Kok report, *Facing the Challenge, The Lisbon Strategy for Growth and Employment* was adopted in 2004. Its main recommendations were:

- ♦ By spring 2005, the European Council should make a priority of revitalizing the Lisbon strategy, sending a clear message to engage national governments and citizens. It must also ensure that sufficient time and attention are dedicated to assessing the progress made in achieving the Lisbon goals. The meeting should also focus on the progress that has been made in establishing “partnerships for reform”, which were called for at the spring 2004 European Council.
- ♦ A key focus for the EU and member states should be growth and employment, which will underpin social cohesion and sustainable development.
- ♦ The President of the Commission should focus on driving the Lisbon Strategy forward.

- ✦ By the end of 2005, national governments should draw up a national action program on delivering the reforms agreed as part of the Lisbon Strategy.
- ✦ The European Parliament should establish a standing committee on the Lisbon strategy,
- ✦ The EU budget should, as far as possible, be reshaped to reflect the Lisbon priorities, so as to encourage member states to achieve the Lisbon targets. (Eurofound, 2004)

Theoretically, the pragmatic turnaround recommended by the Kok report also received a new conceptual framework, which is summarized in the following way:

**Graph 2.** Industrial Policy at the EU and National Level

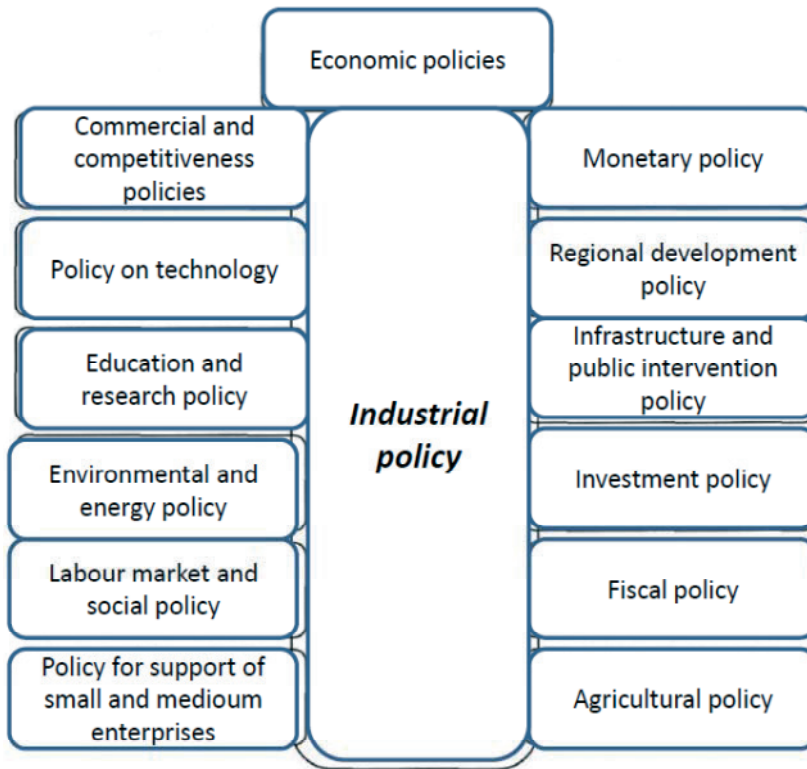


**Source:** Savić, Lj., Lutovac, M.: *Novi koncept industrijske politike u Evropskoj uniji* (A New Concept of Industrial Policy in the European Union), *Ekonomске ideje i praksa*, No. 25, Beograd, June 2017, p. 14.



It distinguished the division of policies that directly influence what can be considered incentives to industrial growth, from a broad concept that is closer to an understanding of industrial policy as development policy at the national level, when considered in the aggregate. Stated more directly, such a model, which considers the industrial policy as an important framework for the achievement of economic policy as a development policy, can be established in economic literature in the broader theoretical considerations of that timeframe.

**Graph 3.** Industrial Policy as Part of Overlapping Areas of Economic Policy



**Source:** Obadić, A.: *Industrijska politika kao dio ekonomske politike* (Industrial Policy as a Part of Economic Policy), *Ekonomski pregled*, 52/5-6/, 645-666, 2001, p. 650.

The above graph shows the aggregate character of industrial policy as the basis for the overall development policy. Thus, the author states, "There is an opinion that emphasizes that overall economic policy is industrial policy because in reality all economic decisions made by a government affect the state of

the industry. For example, changes in taxes, interest rates or customs duties will have a larger or smaller influence on the industry.” (Obadić, 2001: 651)

The sudden onset of the Great Recession (2007-2008, USA), which soon spread globally, halted theoretical discussions about whether industrial policy is necessary or not; and if the answer is yes, what type: structuralist (direct intervention of the state) or neoliberal (horizontal measures that help everyone equally). From that moment until today, industrial policy, depending on the particular country, has actually been shaped as an appropriate combination of these two approaches (Savić and Ljutovac, 2017). Such a new reality, theoretical and practical, also continued when, at the end of the Lisbon Agenda implementation period (2010), the EU continued to stimulate growth with the Europe 2020 strategy, or more specifically “Europe 2020 - A Smart, Sustainable and Inclusive Growth Strategy.”

Such is a new reality: theoretical and practical, and continued when, at the end of the Lisbon Agenda Implementation Period (2010), the EU model continued to stimulate growth in Europe 2020 strategy, or more specifically “Europe 2020 - A Smart, Sustainable and Inclusive Growth Strategy”.

#### **Box: EUROPA 2020 - A SMART, INCLUSIVE AND SUSTAINABLE GROWTH STRATEGY NEW INITIATIVES**

The new strategy proposes seven guiding initiatives, including:

- an “Innovation Union” to improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs.
- “Youth on the Move” to enhance the performance of education systems and to facilitate the entry of young people to the labor market. EN 6 EN
- a “Digital Agenda for Europe” to speed up the roll-out of high-speed internet and reap the benefits of a digital single market for households and firms.
- a “Resource Efficient Europe” to help decouple economic growth from the use of resources, support the shift towards a low carbon economy, increase the use of renewable energy sources, modernize our transport sector and promote energy efficiency.
- An “Industrial Policy for the Globalization Era” to improve the business environment, notably for SMEs, and to support the development of a strong and sustainable industrial base able to compete globally.



- An “Agenda for New Skills and Jobs” to modernize labor markets and empower people by developing their skills throughout the lifecycle with a view to increasing labor participation and better match labor supply and demand, including through labor mobility.
- The “European Platform against Poverty” to ensure social and territorial cohesion such that the benefits of growth and jobs are widely shared and people experiencing poverty and social exclusion are enabled to live in dignity and take an active part in society (European Commission, 2010).

The document *Industrial Policy: Strengthening Competitiveness* (14 November 2011) calls for the implementation of structural reforms and the adoption of concrete and harmonized policies in member states to increase EU economic and industrial competitiveness and to stimulate sustainable growth. The economic crisis, which then dominated the thinking and practical actions of each EU member state, made this issue and this concept an absolute priority for deliberation and action. The document lays out the priority areas of action: (1) structural changes in the economy; (2) innovativeness of industries; (3) sustainability and resource efficiency; (4) business environment; (5) a single market; and (6) small and medium-sized enterprises (European Commission, 2011).

Such orientation and engagement continued into the next period as an expression of new realities in the creation and implementation of economic policy at the EU level. In this context, the European Central Bank has taken more control over the implementation of monetary policy, overseeing the implementation of fiscal policy, and in a wider context, it became the task and responsibility of the macroeconomic framework called the European Semester, so that overall development policy is increasingly directed by and implemented through industrial strategy. Accordingly, at the beginning of 2014, the European Commission published the document “For a European Industrial Renaissance.”

#### **BOX: FOR A EUROPEAN INDUSTRIAL RENAISSANCE: ESSENTIAL GOALS**

- Continue to deepen industrial competitiveness orientation in other policy areas to maintain the competitiveness of the EU economy, taking into account the importance of the contribution of industrial competitiveness to the overall competitiveness of the EU. For example, special attention should be paid to increasing the productivity of business services to increase the industrial competitiveness and the competitiveness of the EU economy in general.

- Maximizing the capabilities of the internal market by developing the necessary infrastructure, providing a stable, simplified and predictable regulatory framework favorable to entrepreneurship and innovation, integrating capital markets, improving the capacity for the training and mobility of citizens, and complementing the internal market for services as a major contributing factor to industrial competitiveness.

Decisive implementation of regional development instruments with national and European instruments as support for innovation, skills, and entrepreneurship leading to changes in the industry and raising the competitiveness of EU economies.

In order to encourage investment, businesses need access to key inputs, especially energy and raw materials at affordable prices reflecting international pricing conditions. The draft and implementation of policy instruments for different goals at both the EU and national levels should not result in a distortion of prices implying a disproportionately higher relative price for those inputs. Activities should also be undertaken on the internal market and in international activities to ensure an adequate supply of these inputs, as well as increasing the efficiency of resources and energy and reducing waste.

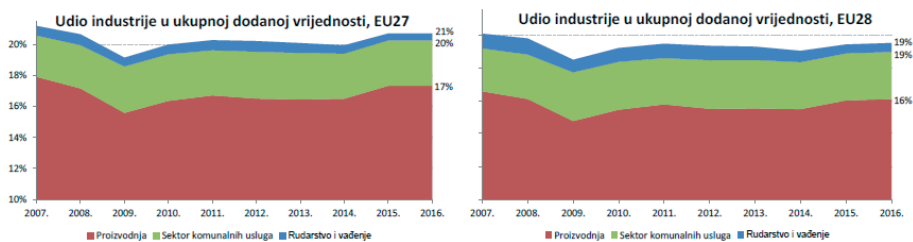
Do everything to facilitate the integration of EU companies into global value chains to increase their competitiveness and ensure access to global markets under more favorable market conditions.

Finally, the goal of revitalizing the EU economy is to accept the efforts of reindustrialization in line with the Commission's aspirations to raise the industry's GDP contribution to 20% by 2020 (European Commission, 2014).

This orientation is constantly evolving and adapting to overall (global) circumstances. After overcoming the consequences of the Great Recession and the beginning of global economic growth, a new era began in 2017 with the theoretical and practical turnaround achieved by the United States - the leading global economic power, referred to above as AMERICA FIRST - and the rest of the world, and the EU, were placed in the position of reflecting on the sustainability of their own positions in the new circumstances and new rules of the game. In the context of these events, the EU adopted the document, *Investing in Smart, Innovative and Sustainable Industry - The Renewal of EU Industrial Policy Strategy* which states: "... We need to strengthen our industry's ability to constantly adapt and innovate by making it easier to invest in new technologies and take advantage of the ever-changing digitalization and transition to a low-carbon and ever-more circular economy. Businesses need to be involved by upgrading their technology base, using future-oriented business models, incorporating sustainable development principles and embracing innovation. The opportunities offered by the industrial transformation are enormous, but to use them, they will need to invest heavily in advanced production, human talent and

skills, and non-material resources, such as research and innovation. For a speedy transformation, it will be necessary to have a more functional unified market. With technology as the torchbearer, modern industrial policy can revive the EU region and build up its resistance in order to adapt to changes in the global environment.” (European Commission, 2017: 4) The current position of industry within the EU economy is depicted in the following graphs.

**Graph 4.**



**Source:** Communication, Commission of the European Parliament, Council, European Economic and Social Committee, Committee for the Regions and the European Investment Bank: Investment in Smart, Innovative, and Sustainable Industry - A Revised Strategy of EU Industrial Policy, European Commission, Brussels, 13 September 2017, COM (2017) 479, Final, p. 3.

The document states that a downward trend in employment in the industry is evident. From 2009 to 2013, the number of jobs in the industry within the EU 27 fell by 1.8 million (5.4%), but from 2013, more than 1.5 million new jobs were created. The number of jobs in production grew even faster, especially in better-paid engineering, professional and managerial jobs. Employment growth in industry and its added value is also reflected in the annual growth rate of labor productivity in EU industries, averaging 2.7% between 2009 and 2016. The increase in work productivity in the EU is higher than in other major economies (for example, 0.7% per year in the US between 2009 and 2015, 3.4% in Japan, and 2.3% in South Korea). The added value of production itself increased by 25% in the EU 27 (23% in the EU 28) in real terms since 2009, and its share in the economy increased from 15.5% (14.7% in the EU 28) to 17.1% (16.1% in the EU 28) (European Commission, 2017: 3).

At the end of the same year, at the EU level, a new document called the *New Industrial Policy Strategy* was adopted that established:

**Box. THE MAIN NEW ELEMENTS OF THE EU INDUSTRIAL POLICY STRATEGY INCLUDE:**

✦ A comprehensive package to reinforce our industry's cybersecurity. It includes the creation of a European Cybersecurity Research and Competence Centre to support the development of technology and industrial capabilities in cybersecurity, as well as an EU-wide certification scheme for products and services, recognized in all Member States (adopted on 13 September 2017).

✦ A proposal for a Regulation on the free flow of non-personal data that will enable data to circulate freely across borders, helping to modernize industry and create a truly common European data space (adopted on 13 September 2017).

✦ A new series of actions on Circular Economy, including a strategy on plastics and measures to improve the production of renewable biological resources and their conversion into bio-based products and bio-energy (autumn 2017).

✦ A revised list of critical raw materials where the Commission will continue to help ensure the secure, sustainable and affordable supply for the EU manufacturing industry (adopted on 13 September 2017).

✦ New proposals for clean, competitive and connected mobility, including tightened CO2 emissions standards for cars and vans, an Alternative Fuels Infrastructure Action Plan to support the deployment of charging infrastructure, and actions to foster autonomous driving (autumn 2017).

✦ A set of initiatives to modernize the Intellectual Property Framework, including a report on the functioning of the Directive on the enforcement of intellectual property rights and a Communication on a balanced, clear and predictable European licensing framework for Standard Essential Patents (autumn 2017).

✦ An initiative to improve the functioning of public procurement in the EU, including a voluntary mechanism to provide clarity and guidance to authorities planning large infrastructure projects (autumn 2017).

✦ Extension of the Skills Agenda to new key industry sectors, such as construction, steel, paper, green technologies, and renewable energies, manufacturing and maritime shipping (autumn 2017).

✦ A strategy on sustainable finance to better orient private capital flows to more sustainable investments (early 2018).

✦ Initiatives for balanced and progressive trade policy and a European framework for the screening of foreign direct investments that may pose a threat to security or public order (adopted on 13 September 2017).

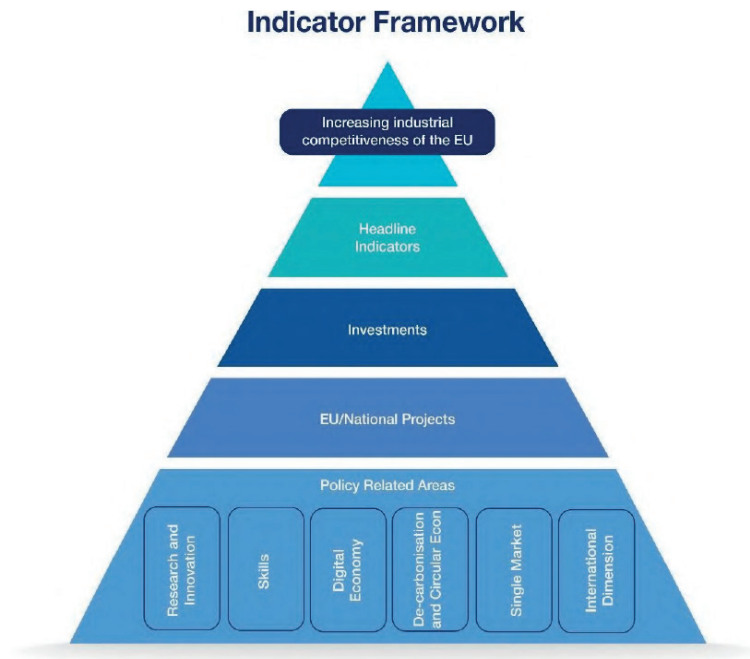
Putting this holistic strategy into practice is a shared responsibility. Its success depends on the efforts and cooperation of the EU institutions, Member States, regions and most importantly on the active role of the industry itself (European Commission, 2017).

The constant and continuous engagement of the European Commission (the EU as a whole) is reflected in the EU Council's demands that encourage further engagement on the continuous development of the industrial strategy. The conclusions call for the development of a comprehensive industrial policy that will make the best use of the opportunities arising from the transition to safe and sustainable technologies, and a low-carbon and circular economy that will be in line with consistent European climate and energy policies, with the aim of creating strong, resource-efficient and competitive European industrial foundations. That engagement EMPHASIZES that this comprehensive policy should take into account the sustainable supply of raw materials and the external dimension of EU climate policy while paying particular attention to addressing the issue of high energy costs and preventing significant difficulties in international competition, particularly for energy-intensive industries (Council of the European Union, 2018).

It also reiterates that issues of industry's competitiveness should be systematically included in all EU policy areas and repeats the call for the Commission to assess the impact of incorporating industrial policy into EU strategic initiatives and to propose ways in which inclusion could make it more effective; EMPHASIZES that estimates of cumulative costs and the reduction of unnecessary regulatory burdens are an indispensable part of overall efforts to support the global competitiveness of EU industries, and in this regard, STRESSES the importance of concrete targets for reducing unnecessary regulatory burdens, while respecting existing standards of protection and without prejudice to the main purpose of legislation; EMPHASIZES that systematic EU-level steps could effectively improve the measures at the national and regional levels and thus improve alignment and synergy between EU policy and member state policies; and INVITES the Commission to ensure a more thorough application of impact testing of small and medium-sized enterprises legislation in the preparation of initiatives (Council of the European Union, 2018).

What will be the process of monitoring the implementation of the future EU Industrial Policy Strategy, which is an indispensable prerequisite for its achievement, and thus achieving the established goals, is apparent from the graph below.

Graph 5. Multi-Layered Structure of Indicators



**Source:** Presidency Report on Industrial Policy - Governance and Mainstreaming /Annex, European Commission, Brussels, 13 November 2018, COMPET 764, ND 338, MI 825, p. 8.

The “Indicator Framework” model fully corroborates the (current) thesis on industrial policy and on policy as a framework for the concept of overall economic development, i.e. to stimulate growth under the conditions of globalization and the present globally competitive environment.

The stated multilateral EU level approach and all of the cited and analyzed documents emphasize the responsibility of member states and their economic policies in achieving jointly established goals - notably the EU 2020 document on industrial policy and strategy implementation.

In this context, a recent document prepared for (internal/external) debate in the Republic of Germany entitled The National Industrial Strategy 2030, was released for political, professional and public discussion prior to the government’s adoption of the final text and implementation. Right at the beginning, the document states: “Without its large share of industrial jobs, Germany could not maintain its high level of income and its high level of education, en-

vironmental protection, social security, healthcare, and infrastructure. This is why strengthening the country's industrial base is in the national interest and a task of national importance for which the state needs suitable instruments and means. A debate is required in this context and on the requirements and limits of their use that must be conducted frankly, without prejudice and in a results-oriented manner." (Altmaier, 2019: 5)

Undoubtedly, discussions of the same or similar character will follow or are already taking place in other EU member states, each analyzing in their own way the possibilities of their positioning in the newly created configuration of the global economy. The outcome of the EU parliamentary elections (May 2019) is certain to significantly shape future relations within the EU, well as the forms of response to the open challenges, both global and in relation to the world's leading economies - especially the US and China.

However, it is equally certain that such (joint) efforts cannot but reduce the intensity of deliberation on the national level, including in the Republic of Croatia. This commitment and effort cannot be replaced by any basic theoretical point of view, and even less by any policy of delaying the confrontation with reality.

#### 4. CONCLUSION

Through time - for centuries and decades - on the national, European and global economic scenes, periods of economic growth and conjuncture have been followed by periods of economic stagnation, recession, and even crisis. In the contemporary (macro) economic theory of the Great Depression and the appearance of J.M. Keynes, nothing is the same. The politics of government passivity and a reliance on a laissez-faire concept has been abandoned, theoretically and practically, as the only or best possible solution. The role of the state in creating the conditions for stable and sustainable economic growth has become dominant, again, theoretically and practically.

In this context, and in specific times and circumstances it has become clear that at certain times and in a certain way it is necessary to direct and stimulate economic growth by a wide range of instruments and measures commonly referred to as industrial strategy or industrial policy. Therefore, considering the circumstances of the recovery from the Great Recession, and also considering



what to do so that a (possible) recession is more simply amortized and anticipated, the issue is what and how to implement the measures and instruments of government direction, or more broadly stated, the (reintroduction) of the concept of industrial strategy and politics.

An understanding not only the responsibility of each state in itself but also the inevitability of its engagement in creating a framework for the successful implementation of economic activities in the past period, has been confirmed both theoretically and practically.

This paper has presented a statement of general events on the economic and geopolitical scene over the past decade, as well as in the latest period of globalization, characterized by the emergence of protectionism inspired by the world's leading economic and geopolitical forces. Such a theoretical shift, and practical behavior, especially by the United States, has led to fundamental changes in the behavior of other actors on the international scene.

In such circumstances and having a priority research interest in events at the EU level, particular attention was focused on an evaluation of the theoretical concept of industrial policy, and then its development within that community, to which the Republic of Croatia, from an economic standpoint, continually referred to even before acquiring the status of a full member. Since 2013, Croatia's new status has provided opportunities and possibilities for further and more consistent use of all of the tools, knowledge, and another potential in the EU, still universally considered the world's most powerful economic entity.

Finally, the paper states that the experience and lessons in managing economic policy during the period of overcoming the Great Recession, and then coping with the policy of protectionism that was a reaction to the changes that the process of globalization in economic relations had created, are important and valuable warnings, and even obligations, to now consider what to do to prepare for the announced (and trendily expected major) recession, at both the EU and national levels.

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# BASIC INCOME: HISTORICAL EVOLUTION AND CONTEMPORARY EXAMPLES

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## **Abstract**

*This paper expounds the concept and aspects of Basic Income (BI) using historical and contemporary examples. It also deals with the Philosophy of BI in a way to ask whether this is (or will be) a new human economic right? What are the ideas behind the proposition to introduce BI? We hope to answer these questions by using the „mixed“ approach in other words by using the economic and legal history, contemporary public and social economics and political Philosophy to answer these questions? Historical examples like BI in ancient Rome and early modern England (Poor Laws) are analyzed by showing which political, social and economic circumstances lead to the need for such a form of social benefit. In the present time, authors try to investigate the contemporary examples of BI in Alaska and limited experiments in Kenya and Finland with references to the results of these experiments (why were they introduced how did they fare). Problems, critique, and benefits or lack of them of introducing BI are discussed.*

**Keywords:** Basic Income, the historical development of BI, critique, and benefits of BI

JEL Classification: D31, P64

## 1. INTRODUCTION

Basic income (BI) is a relatively new concept in economics and has been around since 1980s and is closely related to negative tax. Is it a substitute for all existing social programs (such as social welfare, unemployment insurance, public health insurance, child allowance, etc.) or is it there to provide the individual with certain security in revenue together with existing programs? Because of the diversity of individuals' needs and the difference in wealth between states, there is no single answer, but it can be said that all theorists agree that basic income should provide a standard of living at least above the poverty line. In this work, we hope to show the Philosophy of BI and the reasons for and against it by using historical and present-day examples.

## 2. BASIC INCOME GENERAL INTRODUCTION

The BI can be defined as a social system whose purpose is to redistribute social wealth to guarantee a certain level of living standards for all the inhabitants in a society. The more common definition of BI would be "a periodic, cash income paid individually to all members of a political community without means test or work requirement (Widerquist, 2012: 15). BI is paid directly from the state budget to individuals and the right to the benefit is acquired by the very fact of living (legally) in that society (Fitzpatrick, 1999). This giving is unconditional and is manifested in the absence of any prerequisites for the acquisition of rights or control over the use of funds.

BI in the narrow sense is defined as the right of an individual to a periodic cash grant that is unconditionally paid to an individual irrespective of her income or employment (Birnbaum, 2016: 2). This type of income is not precluding individuals to acquire income from other sources (Van Parjis & Vanderbrought, 2017: 10).

In theory, there are many divisions of social systems with their distinct features, through which we can more thoroughly expound the basic income and point to its differences as a special system (Ravnić, 2004: 247). Regarding the general division, the system of BI represents a form of the general social system, i.e. the right to grant is realized by all individuals in a country.

From these characteristics of BI as a system, two specific issues arise in the literature. First, what level of living standards should such a system provide for

recipients, i.e. what is meant by “basic” income. The response is conditioned by many circumstances like social values and economic situation of the country in which the introduction of such a system is proposed. Theorists disagree about this problem and, on the one hand, certain authors such as Patemann believe that such income should allow a “modest but worthy life” (Pateman in Dowding et al, 2003: 130) or, like Wright, stand for a level that would be enough to meet the basic needs (Wright, 2010). On the other hand, there are those like van Parijs who think that this income should be set to be the highest sustainable level (Van Parijs, 1995: 30). Differences in theories are the result of dogmatic disagreements such as which function the basic income should have in society? The second question we must answer is one about the controversial features related to determining the recipient, or how to determine the affiliation of the individual to the society? Discussions on this issue are reduced to whether persons who are foreigners but live or find themselves in a country have the right to BI? Most of the authors agree that recipients should be members of a certain territorially defined community. Such an understanding is logical because this system redistributes wealth created in a country to reduce inequality among members of society. Parjjs and Vanderborgh argue that the recipient needs to be a tax resident of a specific country regardless of his/her nationality (Van Parijs, 2017: 9-10). In their opinion tourists and other travelers, unregistered migrants, diplomats, and officials of international organizations whose incomes are not taxable should not have the right to basic income. They also exclude prisoners who would only exercise this right at the time of release because the costs of their support in institutions exceed the amount of BI. Ferry, for example, claims only citizens of the specific country have the right to BI (Ferry, 1995).

Regarding the financing of the system, given the difference between the insurance system, the tax system and the social security system (Ravnić, 2004: 284), the system of BI is not dependent on liquid payments but is financed by the system of tax assignment i.e. the funding system is collected from different sources. This makes it easier to achieve the long-term stability of individual income due to relative resistance to changes in the economy.

Depending on the tax system and the tax forms which are used for the financing of the system the burden can be divided to all taxpayers which would reveal the purpose of BI as a measure of redistribution of social wealth, because no doubt the burden is borne more heavily by those who generate higher in-

comes or can be financed by tax certain perpetual sources of income (e.g. natural resources).

Given the non-linkage of the right to contribute, the system of BI is considered a non-binding system i.e. there is no obligation to pay contributions to obtain the right to grant. Acquired right is not a counterbalance to the contributions paid by individual person but is considered as fulfilling the duty of the state to take care of its citizens or residents. Unlike, for example, the pension insurance system where not only the right to benefit depends on whether the user has paid contributions but also the amount of the allowance is determined by the contributions paid (Ravnić, 2004), the BI is not conditioned by the earlier payment of the contribution and its value doesn't decrease or increase depending on previous payments.

Given that there is no linkage between the obligation to contribute and the rights that are obtained the system of BI is considered a non-binding system (Ravnić, 2004: 280) i.e. there is no obligation to pay contributions to obtain the right to BI. Acquired right is not balanced with the contributions paid by a specific person but is considered as fulfilling the duty of the state to take care of its citizens or residents (Ravnić, 2004: 250). Unlike, for example, the pension insurance system where not only the right to benefit depends on whether the user has paid contributions but also the amount of the allowance is determined by the contributions paid, the basic income is not conditioned by the earlier payment of the contribution or its height decreases or increases depending on it.

One of the essential features of BI is the payment of cash benefits that would make this system part of income support system (Ravnić, 2004: 237) which is aimed at keeping the recipient's income at a certain level. While existing income systems are conditioned by certain circumstances that have led to income loss (e.g. unemployment or disability), the BI system is not conditioned by the occurrence of any circumstances and the individual's income is determined in advance and independent of other factors.

The system of BI has certain similarities with the social welfare system. The social welfare system does not secure the individual from some future, potential and harmful dangers but aims to meet an existing and present social need of an individual (unemployment) (Ravnić, 2004: 239), which can also be fulfilled by BI. The most important difference in relation to the social welfare system is that the system of basic income is not related to the occurrence and termination of

some specific needs or circumstances but exists as a constant and unconditional income of an individual. There is also a difference in the guarantee that is given to the individual, i.e. the BI guarantees the individual not to fall below a certain standard of living which would still be higher than the standard guaranteed by the social welfare system. It can be understood as a system whose aim is, among other things, the elimination of poverty in society.

### 3. BASIC INCOME AS INDIVIDUAL'S RIGHT

There is a consensus among the proponents of BI about the main features of the system namely: a) payments in money; b) payments on an individual basis; c) unconditionality; d) regularity of payments and long-term stability (Parjis, 2017: 12-40).

#### a) Payment in cash

The reasons for the payment of BI in money follow from the desire to allow the individual free disposal of such funds. Donations in goods generally impose certain limits on the recipient (Ravnić, 2004; 279). Food, accommodation, and clothing can provide the recipient with necessities but are not tailored to her specific needs. The essence of BI is to enable the individual's preferences to be achieved, and in the market, economy money is considered the most appropriate means to achieve this goal. Cash payments have smaller administrative costs than attempting the equitable distribution of donations such as food or lodging arrangements (Parjis; 2017, 13). The costs of public procurement, transportation, food storage, salaries to persons responsible for distributing food to recipients as well as salaries of persons in charge of controlling the entire procedure greatly contribute to the costs of these programs. Other costs to society, such as corruption, clientelism, and lobbying, may arise from state-run benefits. Political actors who make decisions about these donations are particularly exposed to corruptive influence. Perhaps the most important argument in favor of cash payments is the increase in the purchasing power of the recipient, which contributes to the strengthening of the local economy (Parjis, 2017). The arguments about corruption and clientelism are quite important in developing countries where humanitarian aid flows make the economy of these countries dependent on foreign aid in the long run and local officials are often corrupt. All the arguments for cash payments should be understood in the sense that they imply the existence of an effective and transparent market free of discrimination.



#### b) Payments on an individual basis

BI is paid exclusively to an individual and its value is set and transferred independently of the household's level of income (Parjis, 14). It is individual because it is not paid to say *pater familias* who represents household and who would then dispose of it for the benefit of others. Every member of the household has the right to dispose of with their BI as they see fit (Guy, 2017, 17). Unlike BI certain social benefits may vary depending on the marital status, age, ability to work, etc. based on the understanding that households with more members make significant savings due to the fact of a common household. BI does not make such distinctions.

Some authors believe that only adults would be eligible for disbursement, while others include minors in the circle of beneficiaries. If minors were given BI they would get a smaller amount of income, and this would be paid to their parents or guardians (Parjis, 2017, 14).

#### c) Unconditionality

BI is given unconditionally to every member of society. Everyone has the right to BI and realizes it in the same amount regardless of their property or income from other sources (Raventos; 2007, 9). It seems ineffective to give BI to individuals who *de facto* fund the system. In the literature such criticisms are rejected for several reasons: it is primarily criticized for the inability of such systems to efficiently identify the needy because of the many bureaucratic obstacles, while at the same time some members of society appear to be parasitizing at the burden of the system (Parjis; 2017, 19). Also, when assigning the right to BI in correlation to the amount of earned income, the recipient is deferred to increase his/her income due to the so-called "unemployment trap" (Mankiw; 2006; 444). Another aspect of unconditionality is manifested in the absence of limitation or control over the spending of BI, the recipient is free to dispose of his/her income in whichever way he/she thinks fit (Standing, 2017; 17). The recipient is not obliged to undertake any activity, i.e. more specifically his right is not conditioned by employment, job search, volunteering, etc.

#### d) Regularity and stability

BI is given as a payout at regular intervals and is most often envisioned as a monthly income, but it is also possible to set it at longer or shorter time intervals (Standing, 2017: 16). Also, its amount must be stable enough for a longer

time, but this stability does not mean the need for fixing it to a certain amount, yet it may be linked to the GDP or the consumer price index (Parjis, 2017: 9). They should be paid automatically, without the need for any claim or other administrative barriers that would make the payment dependent on an individual's initiative.

#### 4. DEVELOPMENT OF BI THEORY

The real beginning of building up the contemporary concept of BI is mainly associated with the American Philosopher Thomas Paine (1737-1809) and his work "Agrarian Justice" in 1797. In it, Paine puts the idea of "creating a fund that would pay every person turning 21 15 pounds as a partial compensation for the loss of his/her natural heritage for the introduction of land ownership" (Pain, 1999: 17) He also suggests that "this fund" should pay a lifetime of £ 10 per year to every person who is 55 years old".

In his proposal, we can identify the characteristics that we associate with basic income such as unconditionality and individual payment in money while it differs from the modern concepts of BI that such payments were intended for young men as a one-time payment, and only for older ones as a continuous giving.

English teacher Thomas Spence was critical of Paine's proposal. In his work "The rights of infants" in 1797, he suggested creating universal payments, i.e. all individuals unrelated to age, gender or property status would receive regular payments, versus Paine's partial payments based on age (Spence, 1797). He also considers the land to be the basis for funding such a grant, while Paine only proposed to use the value of uncultivated land as the common good of mankind while he viewed the improvements of it as private property (Paine, 1999:17-18). Given that personal property was a product of society, owners had an enforceable obligation to contribute to the costs of the system that had made their accumulation possible (Cunliffe & Erreygers, 2004: XIV). Spence, on the other hand, believed that all the land and all its upgrades are common good from which everyone should benefit (Spence,1797). Spence's proposal was territorial since the organization of the system would be based on separate local units (ibid; Cunliffe & Erreygers: 2004).

The next step in the development of modern understanding of BI was made by the Belgian author Joseph Chalier in 1848 in his book *Solution du Problème Social*. It contains a more radical version of Paine's and Spence's proposals namely it extends the application of basic income to the national level. Chalier advocated the right of all individuals to a permanent income that would not be conditioned by work or any other fact and which would be high enough to allow the individual's basic needs to be met. That was the design of the idea of basic income as we understand it today (Cunliffe & Erreygers, 2001: 459– 484).

The French philosopher Francois Huet in his book *Le Règne Social du Christianisme* (1853) argued for “scheme for inheritance taxation of natural resources and produced assets that would subject goods to a zero-tax rate on the first intergenerational transfer but a 100 percent tax on the second. The proceeds would be disbursed through an equal basic capital grant (‘dotation’) to every maturing adult” (Cunliffe & Erreygers, 2004: XVIII).

A re-discovery of the BI theory began in the early 20th century England. The discussion was opened in 1918 by the English philosopher Bertrand Russell in his book “The road to freedom” (Parjis, 2017: 78) in which he advocates a social model that connects socialism and anarchism, and whose essential element is basic income. It differentiates between two variants of income, the first form being the one to which everyone would be entitled regardless of their employment and who would be big enough to meet the basic needs of the individual. The other form of income would be set to a higher amount and would be intended for those who would be prepared to do some work that society considers useful (Russell, 1966: 81-82).

Milton Friedman also gave his contribution to the understanding of BI. In his book “Capitalism and freedom” in 1962, he proposed a negative income tax, i.e. tax form that would be based on the taxation of high-income households and the transfer of funds to households with a low income (Friedman, 1992). This is strictly speaking not BI but negative income tax. The main difference is that BI is paid to all (and to those with higher incomes and lower income) while negative income tax has the form of tax refund only for low-income households. Key components of his proposal were: the income transfer that should give the recipients enough incentives to want to get out of the program and the price of the program that should be the lowest possible that the public would want to pay (Parjis, 2017:85; Friedman, 1992). This proposal in various interpretations

was accepted by many respectable economists such as Paul Samuelson, John K. Galbraith, and Robert Solow, as well as political activists such as Martin Luther King. The importance of Friedman's proposal is that he has been able to win advocates of different ideologies with his persuasiveness, as evidenced by the fact that American President Richard Nixon in his 1969 "Family Assistance Plan" (Birnbaum, 2016: 4) advocated a very broad grant that would be based on a negative income tax, which would effectively enable a broader circle of recipients material security similar to what is meant by BI. At the US presidential election in 1972 Nixon's adversary and Democratic Party candidate George McGovern in his program advocated an even more ambitious proposal called a "national income grant" (Parjjs, 2017: 91) that we could consider to be a BI. The failure of Nixon's proposal to win the majority in the Senate and McGovern defeat in the elections stalled for some time in a serious US debate on introducing basic income at the national level. It should also be mentioned that in 1982 Alaska's "Alaskan permanent dividend" was introduced, a modest but stable system of basic income.

An important year for the idea of BI was 1986 when the Basic Income European Network (BIEN) was established. The urge to convene the congress in which this network was founded came from the "Charles Fourier Collective", a group of scientists and researchers who published the article entitled "L'allocation universelle" for which they received a Belgian prize (Raventos, 2007). At the conference held in 2004, the network was renamed into the Basic income Earth network to encourage members of non-European countries to encourage greater global involvement. BIEN's aim is to "serve as a link between all individuals and groups interested in basic income and encourage informed discussions about it throughout the world" (BIEN, 2018). The importance of BIEN's work is largely in the standardization of the notion and its clear definition, but also as an important compendium of contemporary research into the introduction of basic income around the world that has been or is currently being carried out. The popularization of the idea of BI through the work of BIEN, as well as by numerous authors, led to the expansion of idea beyond the developed countries and today many research and experiments in basic income are being carried out in Africa and South America (Murray & Pateman, 2012: 33-58).

## 5. EXAMPLES OF BI

We will now turn to examples of BI in history and modern times. In the history, we can highlight three models of “primitive” BI which may not include all the features of BI in the modern understanding but are very close to it, namely Athens, Rome, and England.

### 5.1. ATHENS

The first rudimentary idea of a BI as something that would be disturbed to all members of society can be found in ancient Athens where the discovery of silver mines encouraged the Athenians to discuss whether they would use the mining income to pay each of the Athenian citizens certain amount of it or to use the money to strengthen the navy during the 480s BC (Plutarh, 2009). We can see here that only Athenian citizens who were adult males were eligible for this payment

After the Peloponnesian war, Athens lost its primacy and was weakened socially and economically. Respecting the place Athens had until then Xenophon proposed in his essay *Ways and Means* a plan of reconstruction. One of the suggested measures was the establishment of the financial fund which would (among others) provide for 3 obols of sustenance as daily wage. The income of the silver mines in Laurion would ensure the income as should taxes and voluntary payments. Xenophon’s attitude to the fact that it was a certain sum that every Athenian would receive was clear (Xenophon, 1925). This measure, Xenophon thought, would prevent poverty and would contribute to the growing popularity of the city.

### 5.2. ROME

The expression *panem et circenses* was used by the Roman poet Juvenal in his Satire to criticize the people who are uninterested in political and social problems but who are completely resigned to life and dependence on state food and entertainment. Juvenal’s criticism was expressed on the part of the population who was the most numerous and worst of. In his time (2nd century AD) it seemed it was better to be a rich man’s slave than poor freeman (Carcopino, 1964: 78).

The sale of grain as a measure to help the poor in the city of Rome began in 123 B.C with Gaius Gracchus, or by passing the first in a series of wheat laws known as *lex Sempronia Frumentaria*, which determined the monthly sale of a certain amount of grain to the citizens of Rome at a low and fixed price of 6 aces per modius as well as the construction of state granaries, thereby guaranteeing the fundamental right of every Roman citizen to buy cheap grain. Grain shortages and starvations were not a rarity in the ancient times and for this reason, the authorities were often forced to introduce a certain temporary form of relief or to help the area affected by shortage (Rickman, 1980). The novelty in Gaius Gracchus political activity was that he made provisional measure permanent. The need for such a procedure was due to several reasons: the growth of the population of Rome from about 180,000 in 270 B.C to 375,000 in 130 B.C (Rostoftzeff, 1998). Buying grain by law was unconditional, so anyone who wanted to stand in front of the state granary could earn the right to buy such grain, and according to some estimates, the price of grain was half the market price. Initially, there was no fixed place where citizens could buy grain under these favorable conditions only that the place and time of grain sale had to be announced in advance by authorities. There was no property census so rich and poor could have used this right. The *pater familias* as used this right in the name of the household. In the beginning, some 50,000 citizens came to use the right to cheap grain, but that number increased over time. There was a monthly limit on purchasing up to 5 movies per family (Garsey, 1993). As far as finance is concerned, a smaller share of the costs was born by richer Romans and most of it was collected by taxing provinces, forcible grain sales or even confiscation (Haskell, 1947). Immediately after the assassination of Gaius Gracchus the senatorial class did not dare to abolish this measure because of the pressure of the entire society that began to rely on it. It was shortly abolished by Sulla in his effort to balance the state finances, but it was reestablished later.

An important change in the system was in the 58 B.C. with the adoption of the *lex Clodia Frumentaria* which introduced free grain giveaways instead of the current system of sale at a more favorable price. One of the most important consequences of the Clodius Act was the increased immigration of people to Rome, which further financially burdened the sustainability of grain handouts (Haskell, 1947). Even though poorer peasants have moved to Rome before this law, the free division of grain has caused a great acceleration of this process. Another consequence was the increase in the number of liberated slaves because

the slave owners wanted to shift the burden of caring for the slaves on the state. Finally, from August to the end of the Roman state, free grain yield remained the privilege of the city of Rome. It could be said that citizens of Rome after the insecurity of Civil Wars in First Century B.C gladly gave up their freedom in exchange for stability which was provided by August and which included free grain (Watts, 2018).

### 5.3. EARLY MODERN ENGLAND

Given the number of the poor in 16<sup>th</sup> century England and fees that parishes had given to various types of poor these fees may be considered as a certain form of basic income. To clarify, the costs of wars with France and Scotland, inflation and the price increase of products, further burdened the English population in the 16th century, which is why the number of the poor was increasing. Because of the abolition of the monasteries and the lack of charitable funds the situation further aggravated. The state assistance was reserved for the impotent poor. The able-bodied poor who could work were treated like vagabonds and severely punished. In 1563 for the first time, the social assistance for socially vulnerable was arranged. Taxes for the poor were introduced in 1572 followed by a series of other laws that should aid the poor. But only with the law in 1601. begins the era of the state taking care of those less well off (Handel, 2009). The “poor law” implied the so-called “outdoor relief” and “indoor relief” and in 1830 the “indoor relief” as a permanent allowance for the poor was 2 % of national income which wasn’t enough to support the poor (Boyer, 1990).

### 5.4. ALASKA

Alaska is currently the only place in the World that has introduced a national BI system. Its emergence began in 1956 with the ratification of the constitution of the state of Alaska, which established joint ownership of all land and natural resources in Alaska (Widerquist & Howard, 2012: 3). Later with the discovery of large oilfields in 1967, there emerged ideas to establish a common fund which would be financed from oil-harvesting. This was done in 1976. The next step was made in 1982 when the decision was made to pay part of the fund’s earnings as an annual dividend to each resident of Alaska (Widerquist & Howard, 2012: 3).



Regarding the legal arrangement of this system, it consists of two components: Alaska Permanent Fund (APF) and Alaska Permanent Dividend (APD). APF is a state-funded investment fund established by a constitutional amendment that makes this component politically more stable due to the political majority needed to amend the constitution, while APD has been established by Statute and therefore subject to more frequent changes (determining the annual dividends) (Basic Income News, 2018). Fund management is entrusted to the Alaska Permanent Fund Corporation (APFC) a state corporation which has the task of investing fund assets on the capital market to achieve long-term financial sustainability. APFC is also tasked with paying dividends to Alaska residents.

The dividend is seen as a means of distributing the wealth generated by the exploitation of oil resources so that every Alaskan resident can participate in its profits. Implementing this idea required solving a series of dilemmas. Concerning the definition of the recipient at the beginning of the program in 1982, it was decided that the right to a dividend would be realized by persons with residence with a minimum duration of 6 months, and in 2010 that period was extended to a period of 12 months (Widerquist & Howard, 2012: 44). The question of whether the minors have the right to a dividend was also raised together with the question if dividend should be paid to them or to their parents or guardians? Or should the money be put into a special fund and the minors would be able to dispose of it after they came of age? The Alaskan assembly decided that minors were entitled to a dividend and that it will be paid to their parents or guardians. Also, death dividend was introduced in 2010 allowing the heirs to acquire the right to an undistributed dividend if death in the current year (Widerquist, & Howard, 2012: 44). Regarding the periodicity of disbursement, it is intended as an annual grant, i.e. the full amount for the previous year will be paid in October.

Certain observations of change in the economic behavior of the recipients of the BI in Alaska can be made. In the first period when they did not know whether the dividend would last or not, the recipients treated these additional funds as being temporary and used them to repay debts, purchase durable or luxury goods or save them (Knapp et al, 1984) which is in accordance with the theory of money windfall (Arkes et al, 1994: 331-347). However, as dividend became more permanent recipients began to treat it as part of their regular income. By changing perceptions, recipients began to spend dividends in a way



that does not differ from spending other income, which is reflected in the same level of consumption at the time of dividend payment and the rest of the year, and the unchanged structure of that spending (Hsieh, 2003: 397-405). Perhaps the biggest influence of the dividend was on the economy of Alaska. Regardless of how recipients spent money, dividends increased aggregate consumption and increased government tax revenue, and increased spending led to new jobs, primarily in the commercial and service sectors, which led to increased labor demand (Widerquist & Howard, 2012: 52).

### 5.5. KENYA

The 36 million people living in Kenya are severely hit by poverty and as many as 46 % of the population lives below the poverty line (Unicef, 2018). The Kenyan economy is based on sustenance agriculture. During the last few years, the rural population has been severely affected by climate changes which jeopardize food production and increase poverty.

It is in Kenya that NGO GiveDirectly (GD) decided to conduct research into the impact of unconditional money transfer on household behavior during the 2011-2013 period. Randomly selected households in western Kenya were given a minimum of \$ 404 per month which is more than twice the monthly average spending in this area. The aim of the research was to determine how such transfer affects the behavior of participants in making economic decisions and would it be a good tool to combat poverty. An advantage of this research was that a large amount of money was transferred over a short period of time, as opposed to existing programs that either transferred a large amount of money over a longer period or smaller amounts over a shorter period. The key factor was that the GD just started working in Kenya and therefore the participants did not expect to receive any money transfers (Haushofer & Shapiro, 2016: 2).

Households eligible for participation were selected according to the poverty criteria established by the type of roof of the house, namely GD found correlation between the type of roof and poverty with roofs made of straw and other natural materials were sign of poverty while metal roofs were associated with affluent households (Haushofer & Shapiro, 2016: 5). The money transfer was unconditional, it was not related to the obligation to work and the agency did not control the spending of it. The money was paid either in one payment or in nine monthly installments. There were two categories of recipients, the first one

receiving a larger sum of \$ 1,500 in the survey period, and the other group receiving a total of \$ 404 (Haushofer & Shapiro, 2016, 7). The recipients received a SIM card with which they had to register to the mobile payment service m-Pesa through which they received the money.

The research results were surprising. The opponents of this form of aid believed that it would increase the consumption of tobacco and alcohol which would lead to more criminal activities and more sexually transmitted diseases. Even the positive aspects of such money transfer were considered defective as they increased dependence on foreign aid (Burbidge et al; 1988: 123–127). By the end of the research, the opposite happened. The money was spent on food and the purchase of livestock and other durable goods (Haushofer & Shapiro, 2016: 36). The transfer increased savings and self-employment investments e.g. one of the participants bought a motorcycle that transported people as a taxi driver (Bregman, 2016: 56). Regarding the payment modalities, monthly payments proved to be more conducive to positive effects than a onetime payment, and variations in the amount seem to have no noticeable effect (Haushofer & Shapiro, 2016: 36).

## 5.6. FINLAND

In 2017 the Finnish government launched a pilot project by which 2000 randomly chosen unemployed persons aged 25-58 would get a monthly payment of 560 euros unconditionally and without any testing. The experiment ended on 31<sup>st</sup> of December 2018 and it will not be continued (Kela, 2019). In its study of BI effects Kela found out that “experiment did not increase the employment level of the participants in the first year of the experiment” but “according to a survey, at the end of the experiment the recipients of a basic income perceived their wellbeing as being better than did those in the control group. The recipients of a basic income had fewer stress symptoms as well as fewer difficulties to concentrate and fewer health problems than the control group” (Kela, 2019).

## 6. CONCLUSION

Is BI the future of Welfare State and solution to the problems of the social security system? As Nell in her analysis of Austrian economics stance on BI pointed out “all individuals can never be given a completely equal start, nor can

any government know the needs of all individuals, and differences in earning potential cannot be erased. However, a policy that offers all individuals a safety net and a head start could help to ensure opportunity for all those who can work, and subsistence for all those who cannot. Charitable and volunteer work would then more easily thrive and help to raise living standards for the least advantaged” (Nell, 2013: 34). As we have seen, the Finnish pilot revealed that BI and other forms of social security did not produce different results regarding the ability and motivation of the recipients to find work, but the BI was administratively easier for recipients. Our examples show that BI had much more impact on welfare in poorer countries like Kenya than in richer countries like the USA and Finland. The Alaskan example is a good example of how the resource management could financially benefit all the members of the community unlike unfortunately the mismanagement of oil resources in many countries.

Rudimentary systems of BI in Athens, Rome, and early modern England show that system of BI can function in economically less developed societies. Different conditions led to the establishment of these systems. As we have seen Romans were more than glad to exchange their political freedoms for stability which included free grain (Watts; 2018). It is not unimaginable that Western liberal democracies could come under pressure of populist parties promising the voters one or the other type of BI in exchange for the loss of political and human rights which are bound to follow the introduction of one or the other form of the populist authoritarian regimes.

Technological change with more automatization in production and more informatization and digitalization in the service sector is bound to increase the unemployment in the very long run (Frey and Osborne; 2013; Manyika et al, 2017) and the BI system might become the solution to these problems.

The BI in our opinion would make social security less bureaucratic and more manageable since it could replace the unnecessary duplications and administrative jungle in the social security system.

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# TAXATION OF INCOME FROM EMPLOYMENT AND INFLUENCE OF TAXATION ON CONSUMPTION AND SAVINGS

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## **Abstract**

*The tax burden on income from employment is a very important issue in the economy of the Republic of Croatia. In the last three years, a lot has been done by the legislature to relieve the citizens of various tax burdens. The tax reforms which were, among other changes, aimed at changes in the taxation of the income from employment, were the following: the basic personal allowance of the workers was increased, the number of tax rates was decreased with the extension of the tax rate for the application of the lowest tax rate, the deduction of income tax based on the residence of workers was abolished under special regulations and, with the last tax reform, some of the contributions paid on workers' salaries were abolished as well. For this very reason, the aim of this paper is to determine how these changes have reflected on the overall satisfaction of individuals and how reform measures of taxation of the income from employment have influenced the individuals' consumption and savings. In the*

*first part of the paper, an analysis of the taxation of the income from employment for the period from 2016 to 2019 was made, while the second part of the paper examined the attitudes of individuals about the changes in the system of taxation on the income from employment and the influence of taxation on their consumption and savings based on the executed research.*

**Keywords:** *tax burden, income from employment, savings, consumption*

JEL Classification: D14, H24

## 1. INTRODUCTION

The tax system of the Republic of Croatia is a pluralistic tax system that was established upon the independence of the country in 1991. It developed in several phases and is considered modern and in coordination with the guidelines of the European Union (Bibić, 2016). The Republic of Croatia saw the need for an additional alignment of fiscal policy measures, as well as the need for coordination with the legal acquis of the European Union along with accomplishing welfare for the Croatian economy (Šimović, 2006). The tax system of a certain state, thus also the tax system of the Republic of Croatia is neither permanent nor everlasting, i.e. every tax system is susceptible to amendments that strive to accomplish a greater efficacy and simplicity upon collecting taxes. The Republic of Croatia saw a great number of legislature and bylaw amendments during the last two decades and more of its existence, but the tax system reforms that came into force on January 1, 2017, are considered the most complete and most comprehensive reforms by far. Vlaić (2017) states that the total of eight legislatures was amended or complemented, while seven of them saw as many changes as to be considered new. If we add bylaws to the equation, the reform can be considered even more comprehensive and extensive.

The tax burden on employment is a significant part of the economic policy that can have a great impact on the level of individual consumption as well as on employment. It is unattainable to expect that the tax policy would lead to the resolution of economic instability. However, it can be expected that the tax policy will contribute to the establishment of stability (Šimović and Deskar-Škrbić, 2015). In accordance with the Income Tax Act (Act 20, Official Gazette 115/16), the income from employment represents the difference between the receipt and the expenditure that emerged in a certain tax period. Kesner-Škreb and Kuliš (2010) emphasize that salaries, pensions and benefits in kind that a



worker receives during the calendar year can be treated as sources of the income from employment, while Urban (2009) concludes that too high a tax burden can have consequences such as cessation of labor by the workforce, as well as their relying on state aid, which then leads to the demand for additional taxation.

## 2. ANALYSIS OF TAXATION ON INCOME FROM EMPLOYMENT FOR THE PERIOD FROM 2016 TO 2019

Large income tax rates have a discouraging impact on the most competent and creative young people, as well as on the corporate capital. The aftermath of such a condition is the emigration of individuals to areas with lower income tax rates (Roller, 2009). The mentioned aftermath is indeed evident in the past few years in the Republic of Croatia. The question of how to keep the workforce within the national borders is being raised, however, there exists no singular solution to this increasingly significant problem. One proposal imposes a reduction in tax rates, i.e. lowering the tax burden on the income from employment along with reducing the rigidity of the Croatian labor market. This process is, namely, considered to be apt to lead to higher supply and demand for labor, which would result in an increase in employment and, consequently, to a reduction in the emigration of the working-age population (Dragija and Pavlinec, 2016). According to the data of the Croatian Bureau of Statistics (2018), the number of relocated persons from the Republic of Croatia is increasing each year. If we compare the total number of relocated persons in 2016 and 2017, in 2016 the total number was 36,436 and by 2017 this number increased to 47,352 which is 10,916 more than in 2016 – and these numbers are increasing yearly.

### 2.1 THE LEGAL FRAMEWORK FOR TAXATION ON INCOME FROM EMPLOYMENT

For the purpose of this work, Table 1 presents the summarized data referring to new amendments and reforms that were based on recent legislative amendments which regulate the taxation of the income from employment. These data refer to the conceptual definition of the income from employment, the determination of the annual tax base, the determination of the basic personal tax relief, i.e. the non-taxable part of the income and the tax rate at which the income is taxed.

**Table 1.** The legal framework for taxation on income from employment

Income Tax Act (Official Gazette 115/2016), Act on Amendments to the Income Tax Act (106/2018)
In accordance with Art. 20, the income from employment is the difference between the receipt received in the tax period and the expenditure incurred in the same tax period. (OG 115 / 16).
According to Art. 18, the annual income tax base makes the total amount of the income from employment, self-employment, and other income which is not considered final but is reduced for the amount of personal allowance. (OG115 / 16).
Article 18, p.3 calculates the advance of the income from employment at the rate of 24% of the monthly tax base below HRK 30,000.00 and the rate of 36% of the monthly tax base above HRK 30,000.00. (OG 106/2018).
According to Art. 14, the basic personal tax allowance of the taxpayer amounts to HRK 3,800.00 (obtained as the coefficient 1.5 of the personal allowance base referred to in paragraph 1 of Article 14), increased for the parts and the amount of personal allowance to which the taxpayer exercises the right. The basic personal allowance under Article 14 p.1 amounts to HRK 2,500.00 (OG 115 / 16).
According to Art. 19, paragraph 1, the annual income tax is paid at the rate of 24% on the tax base below the amount of HRK 360,000.00 and at the rate of 36% on the part of the tax base above the amount of HRK 360,000.00. (OG 106/2018).

**Source:** Adjusted according to the Income Tax Act (OG 115/2016) and the Act on Amendments to the Income Tax Act (OG 106/2018)

It is also important to mention that the recent Act on Amendments to the Contribution Act (OG 106/2018, p.1) considers the compulsory pension insurance based on generational solidarity, the compulsory retirement pension insurance based on individual capitalized savings and the compulsory health insurance in case of occupational injury or occupational disease as mandatory insurances in accordance with this Act. Depending on the status of the insured person in relation to compulsory insurance, there is an obligation to calculate and compensate the contributions.

According to the Pension Insurance Act (O.G. 115/18), the pension system of the Republic of Croatia is based on the 1st and 2nd pillar of the mandatory pension insurance, as well as on the voluntary pension insurance based on individual capital savings (3rd pillar). In accordance with the Act on Contributions (O.G. 84/08), the insured person's pension insurance based on generational solidarity (1st pillar) is calculated and compensated by the employer by 20% if the person is insured solely in the system of the pension insurance based on generational solidarity. Provided that the person is also insured in the system of

the pension insurance based on individual capital savings, the contribution for the 1st pillar is then calculated in the amount of 15% based on the employee's gross salary. The assets paid from the basis of contributions for the 1st pillar of the mandatory pension insurance are used for the settlement of pensions of currently retired persons.

In relation to savings, what is of special interest for each insured person are the assets paid into the 2nd pillar of the mandatory pension insurance, as well as the assets paid into the 3rd pillar of the voluntary pension insurance. For the persons insured in the 2nd pillar of the mandatory pension insurance, the Act on Contributions (O.G. 84/08, Act 21) prescribes the monthly base for the calculation of contributions, which is the salary, i.e. the income from employment (gross salary), with the contribution calculated at the rate of 5%. The basis for the calculation of contributions and the number of contributions is determined and calculated by the employer. According to the Act on Mandatory Pension Funds (O.G. 19/14), the assets which were raised based on individual capital savings are arranged into pension funds by the Central Registry of Insured Persons (REGOS) and the insured person becomes a member of the selected pension fund. The paid assets of each member of the pension fund are their personal property. However, the insured person can manage the mentioned assets only after retirement and the accumulated assets are the subjects of inheritance. Based on the conducted research, Latković and Liker (2009:460) have concluded that it is unfavorable to plan savings for shorter periods of time in the system of capitalized pension insurance due to an exceptionally high sensitivity for the duration of the saving itself. In addition to that, the authors have emphasized that the amount of capitalized assets is also influenced by the duration of the savings themselves, the yield of the fund in which the capital is found—which also has the greatest impact on the amount of capitalized assets—as well as by the gross salary growth rate. Each insured person who decides to make fund payments into the voluntary pension insurance (3rd pillar) can personally decide on the dynamics and the amount of the assets that they wish to pay. The insured person can also attain a special benefit over the accumulated assets, i.e. the benefit of state incentives distributed from the state budget. 15% of the annual payment amount of up to the maximum of HRK 5,000 enables, namely, a state incentive of up to a maximum of HRK 750.00. The capitalized assets are inherited together with state incentives (Act on Voluntary Pension Funds, O.G. 19/14). Employers who make payments of their employees' premiums into the

3rd pillar of the voluntary pension funds are eligible for tax incentives for the amounts of up to HRK 500.00 per employee per month, i.e. HRK 6,000.00 per year, since they are not obliged to compensate for the income tax on these receipts (Income Tax Act, O.G. 115/16). In other words, the employees' premiums paid into the system of the voluntary pension insurance are considered to be the business expenditures of the employer (Act on the Amendments to the Profit Tax Act, O.G. 80/2010). According to the data of the Ministry of Finance (2017), the total amount of state incentives paid to members of voluntary pension funds amounted to HRK 65.6 million for the year of 2017.

## **2.2. TAXATION PARAMETERS BEFORE AND UPON THE TAX REFORM**

The laws and bylaws and their subsequent amendments led to the definition of the parameters for calculating the contributions and income taxes on employment, as well as the definition of the income surtax. Table 2 shows the parameters that emerged as the result of the tax reforms in the period from 2016 to 2019. In 2016, three tax brackets and three tax rates (12%, 25%, and 40%) were in use for the taxation of the income from employment, while the basic personal allowance amounted to HRK 2,600.00. With the tax reform in 2017, the basic personal allowance increased by HRK 1,200.00 and now amounts to HRK 3,800.00. In 2016, the income from employment was taxed at the rates of 12%, 25% and 40% according to tax brackets, while the year of 2017 saw the changes of tax brackets and tax rates. Three tax categories were no longer in use – there were now two tax categories with the tax rates of 24% and 36%. The same taxation regulations for the taxation of the income from employment were valid in 2018 (Income Tax Act, OG 115/16). Moreover, the year of 2019 brought about changes related to the taxation of the income from employment – an increase in the tax base of the first taxation class below HRK 30,000 compared to 2018 (Act on Amendments to the Income Tax Act, OG 106/2018) with an unaltered tax rate of 24%. A novelty that was brought about in legal regulations and is valid as of 1.1.2019 is that the contributions for occupational health (0.5%) and employment subsidies (1.7%) were abolished, but compulsory health insurance contribution increased from 15% to 16.5%. (Act on Amendments to the Contribution Act, OG 106/2018). Total salary contributions decreased by 0.7% in comparison to previous years, and hence the total cost of employers based on calculation and payment on the income from employment was lowered.

**Table 2.** Legislative changes to the parameters for calculating the income from employment for the period from 2016 to 2019 the amounts are shown in HRK

Tax rates and tax brackets							
2016		2017		2018		2019	
12%	0.00-2,200.00	24%	0.00-17,500.00	24%	0.00-17,500.00	24%	0.00-30,000.00
25%	2,220.01-13,200.00	36%	17,500.01-...	36%	17,500.01-...	36%	30,000.01-...
40%	13,200.01-...						
Basic personal allowance							
2016		2017		2018		2019	
2,600.00		3,800.00		3,800.00		3,800.00	

**Source:** Adjusted according to the Income Tax Act (OG 115/16) and the Act on Amendments to the Income Tax Act (OG106/2018)

According to the research by Nadoveza et al. (2016, p.11), “lower taxes on labor have a positive effect on the price of labor and negative effect on the price of capital” although the labor tax is lower, which implies lower government tax revenues, government consumption of all goods increases due to higher consumption and household income”.

Table 3. shows the taxation of the income from employment on the example of a certain taxpayer for the period from 2016 to 2019, i.e. it shows the taxation of the income from employment before and upon the tax reforms in question. The calculation was made on the assumption that the taxpayer resides in a town with the tax rate of 10%, the assumption that the taxpayer has no dependent family members and the assumption that his monthly gross salary level amounts to HRK 10,000.00. Contributions from salaries are calculated at the same rates in the four-year period as there were no legal changes in that part of the observed period that would affect the calculation of the sample. For this reason, the calculated contributions from salaries on the example of this taxpayer are equal for all four years. The observed period saw an increase in the amount of the basic personal allowance – the basic personal allowance in 2016 amounted to HRK 2,600.00 and with the tax reform of 2017, it was increased to HRK 3,800.00 in order to increase the existential minimum of the taxpayer. By increasing the basic personal tax allowance of the taxpayer in question, the tax base decreases, which for this taxpayer signifies a decrease in the tax base by HRK 1,200.00. In

the example given, total salary allowances were reduced by HRK 70.00, due to legislative amendments compared to previous years. In recent years, tax reforms have been aimed at increasing the net salaries of taxpayers for them to keep higher available amounts of capital for the improvement of living standards, i.e. for additional consumption or savings. Kesner-Škreb (1999, p. 67) emphasizes that a more progressive income tax puts a burden on savings more than a less progressive income tax, although the research made by Musgrave and Musgrave (1988) indicates that the impact of the taxation progressiveness is less significant for the level of savings than expected. Apart from the income tax, the consumption taxes also have an impact on savings, but ultimately, they put a higher burden on total consumption compared to savings. Savings represent a deferred consumption that will eventually still be taxed with a value-added tax.

**Table 3.** Calculation of the income from employment of a taxpayer before and upon the tax reform the amounts are shown in HRK

No.	Description	(2016)	(2017)	(2018)	(2019)
1	Gross salary	10,000.00	10,000.00	10,000.00	10,000.00
2	Contributions from salaries				
	1st pillar - contributions for pension insurance based on generational solidarity (15%)	1,500.00	1,500.00	1,500.00	1,500.00
	2nd pillar - contributions for pension insurance based on individual capitalized savings (5%)	500.00	500.00	500.00	500.00
	Total amount	2,000.00	2,000.00	2,000.00	2,000.00
3	Income (1st-2nd)	8,000.00	8,000.00	8,000.00	8,000.00
4	Basic personal allowance	2,600.00	3,800.00	3,800.00	3,800.00
5	Tax base (3rd-4th)	5,400.00	4,200.00	4,200.00	4,200.00
6	Income from employment tax	1,064.00	1,008.00	1,008.00	1,008.00
7	Subtax on income tax (10%)	106.40	100.80	100.80	100.80
8	Total amount of tax and subtax	1,170.40	1,108.80	1,108.80	1,108.80
9	Net salary (3rd-8th)	6,829.60	6,891.20	6,891.20	6,891.20
10	Income contributions				
	Contribution for health insurance (15%)	1,500.00	1,500.00	1,500.00	(new tax rate 16.5%) 1,650.00
	Contribution for occupational health (0.5%)	50.00	50.00	50.00	(revoked)
	Contribution for employment (1.7%)	170.00	170.00	170.00	(revoked)
	Total amount	1,720.00	1,720.00	1,720.00	1,650.00
11	Total cost for the employer	11,720.00	11,720.00	11,720.00	11,650.00

**Source:** Calculations made by authors according to the Income Tax Act (OG 115/16) Act on Amendments to the Income Tax Act (OG 106/2018), and the Pension Insurance Act (OG 115/18),

Table 4 shows the amounts of average monthly salaries for the period of five years, from 2013 to 2017, according to the Croatian Bureau of Statistics (2018). In 2013, the average net salary amounted to HRK 5,515 and it increased over the following years. In 2017, the net amount was HRK 5,985.00, which presents an increase of HRK 470.00 compared to 2013.

**Table 4** Average monthly net and gross salary per employee in the legal entity

Average monthly salary	Net amount (HRK)	Gross amount (HRK)
Year		
2013	5,515.00	7,939.00
2014	5,533.00	7,953.00
2015	5,711.00	8,055.00
2016	5,685.00	7,752.00
2017	5,985.00	8,055.00

**Source:** Adjusted according to the Croatian Bureau of Statistics (2018): Croatia in numbers 2018, Zagreb, 2018

The tax reform of 1 January 2017, which is considered the most complete and comprehensive reform by far, sought to achieve a simple and more stable tax system (with lower tax rates), which is less penalizing than the current tax system. Such a tax system leads, first and foremost, to a surplus of funds in the accounts of the citizens and increases the probability of additional citizens' consumption. Personal consumption is of crucial importance in the European Union since it constitutes somewhat less than 60% of the total GDP (Croatian Chamber of Economy, 2017). According to the data of the Government of the Republic of Croatia (2017), the European Commission has projected the growth of the Croatian economy by 2.6% for 2016, 2.5% for 2017, and an increase of 2.4% for the year 2018. In 2016, the economic recovery increased and was by 1.7% higher than anticipated. Moreover, the Chamber anticipated a consumption growth of 3.4% for the year 2017, which was particularly influenced by the decrease in the taxation of the citizens. Consumption growth was also anticipated for the year 2018, although somewhat more modest (The Government of the Republic of Croatia, 2017). With a per capita consumption of 62% of the European average (EU average = 100) in 2017, Croatia took the penultimate place with respect to other members of the European Union. The level of personal consumption in 2016 amounted to 61%. The consumption grew by 1% in 2017. If we compare the years 2017 and 2015, the situation is somewhat different – the consumption grew from 59% to 62% and the total consumption growth amounts to 3%. Moreover, when the years 2017 and 2016 are taken



into consideration, Croatia finds itself above the regression line, i.e. the personal consumption for this area is higher than anticipated (Levaj, 2018). On the other hand, citizens' deposits also recorded a certain growth and exceeded the amount of HRK 200 billion. Taking the annual growth rate into consideration we can see that it amounts to HRK 7.5 billion, i.e. almost 4% (Croatian National Bank, 2018).

### 3. METHODOLOGY AND RESEARCH RESULTS

Primary research was conducted on a selected sample of  $N = 128$  subjects. The research was conducted by means of a survey questionnaire via social media, as well as by means of individual interviews with the respondents. Out of the total number of respondents,  $N = 103$  responded to the survey questionnaire. Out of the total number of respondents, 76% responded via social networks, while the rest responded by means of individual interviews. The research was conducted over the last two weeks of January 2019, and the total time needed to prepare the research, to collect responses from the respondents and to process the obtained data amounted to about one month. The survey questionnaire included 12 questions structured in such a way that they included questions of a closed type as well as combined questions with responses offered. A total of 4 questions referred to the sociodemographic characteristics of the respondents. Taxpayers' views on the latest changes in the taxation system of the income from employment were examined based on the remaining 8 questions, while the respondents' views on the impact of taxation on their consumption and savings were examined by means of the Lickert scale with 7 statements and intensity levels of a claim. The respondents rated their attitudes with grades from 1 to 5 – with grade 1 corresponding to the attitude “I completely disagree with the stated claim”, while the grade 5 corresponded to the attitude “I completely agree with the stated claim”.

Out of the total number of respondents, 60.2% were male, while 39.8% of respondents were female. According to their place of residence, the greatest number of respondents (36.9%) came from Virovitica-Podravina county, followed by the respondents from Zagreb county (13.6%) and the respondents from Bjelovar-Bilogora and Koprivnica-Križevci counties (both with 10.7% of respondents). Other counties were represented by less than 10% in this research. According to the age structure, the majority of respondents (37.8%)



were of age 35-44, 22.3% of them were of age 18-24 and 18.4% of respondents were 45-54 years old. Other age groups included the age group 25-34 (14.5%), while the least represented were the respondents between the ages 50 and more (7%). According to the level of education, the most represented group of respondents were the respondents with a grammar school or a vocational school diploma (44.7%), followed by the respondents with a college or university diploma (30.1%), the respondents with master and doctoral degrees (8.7%), while the remainder of respondents have completed a three-year vocational school (16.5%).

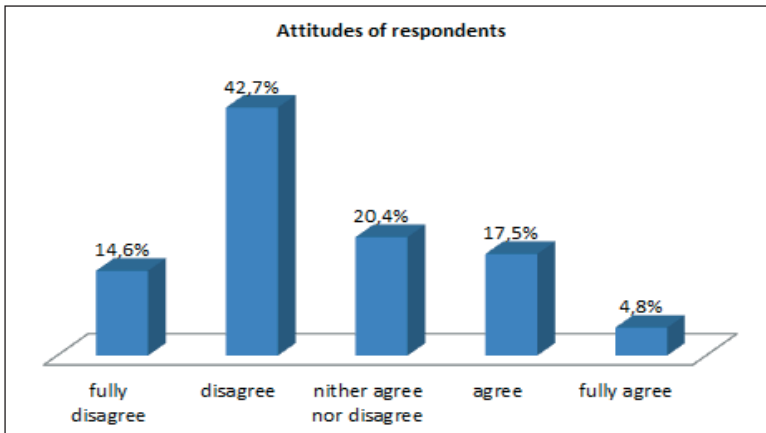
Out of the total number of respondents, 93.2% were employed in the period of the research, while the rest 6.8% were unemployed. The number of net salaries among the majority of respondents (39.8%) ranged between HRK 5,000.01 and 8,000.00. 13.6% of respondents received a salary higher than HRK 8,000.00, while 28.1% of respondents received a salary of between HRK 3,000.00 and 5,000.00. Since they were unemployed, the remaining 6.8% of respondents did not state their claims on the question of the range of their net salaries. Out of the total number of respondents, 11.7% received a net salary of up to HRK 3,000.00, which signifies that they received the amount of the minimum net salary<sup>1</sup> and were thus not obliged to pay the income tax on their employment. When asked whether they are familiar with current tax reforms, 59.2% of respondents answered yes, but superficially, while 23.3% of them answered that they were completely familiar with current tax reforms. The remaining number of respondents (17.5%) answered that they do not have any knowledge of tax reforms. Regarding the change of legal regulations in a part of the taxation of the income from employment, 76.7% of respondents were familiar with legal changes. When asked about the tax rate for the income from employment, 71.9% responded correctly (tax rates of 24% and 36%), and 79.6% of respondents were informed of the amount of basic personal allowance (HRK 3,800.00) – the amount by which the tax base for taxing the income from employment is reduced. Since the respondents could answer the question of *how do you spend your disposable income from employment* in more than one way (consumption, savings, utilities, loan repayments, other), the research has indicated that 88.3% of respondents spent a part of their disposable income

<sup>1</sup> According to the Regulation on Minimum Salary for 2018 (OG 122/17), the amount of the minimum net salary for 2018 was HRK 2,751.84 and in accordance with the Regulation on Minimum Salary for 2019 (OG 109/18), the minimum net salary amounts to HRK 3,000.00, or a gross amount of HRK 3,750.00.

mostly on consumption, 85.4% on the utilities, 61.2% on loan repayments, and 62.1% of respondents redirected a part of their disposable income to savings. Out of the total number of respondents in the sample, 98.1% of them received their salaries regularly.

In the part of the research which examined the respondents' attitudes towards the impact of the taxation of consumption and savings, the respondents were asked to evaluate the stated claims from 1 to 5 according to intensity levels. Out of the total number of respondents, 90.3% stated the view that they fully agree that *frequent changes to tax regulations are puzzling for the taxpayers*. Chart 1 shows the respondents' intensity levels for the claim that *The taxation of the income from employment affects the respondents' decisions about consumption and savings*. The total number of 42.7% of respondents did not agree with the stated claim, while only 4.8% completely agreed with the stated claim.

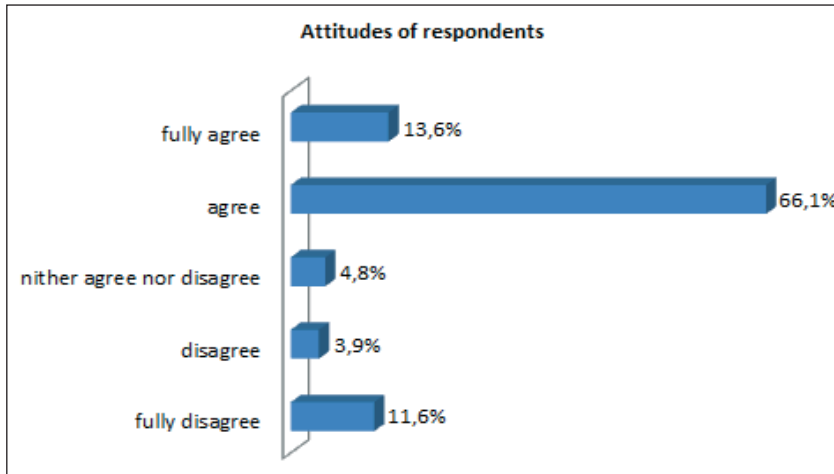
**Chart 1** Attitudes of respondents on the claim that the taxation of the income from employment affects their decisions about consumption and savings



**Source:** Calculations made by authors

68.9% of respondents neither agreed nor disagreed with the claim that *tax reforms affect consumption, but not savings*, while 20.4% of respondents did not agree with the mentioned statement. Chart 2 shows the respondents' attitudes towards the claim that they *put a certain amount of money on savings on a monthly basis regardless of the tax burden*. According to the obtained data, 66.1% of respondents save money on a monthly basis regardless of the tax burden on the income from employment.

**Chart 2** Attitudes of respondents on the claim that they put a certain amount of money on savings on a monthly basis regardless of the tax burden on the income from employment



**Source:** Calculations made by authors

Moreover, 57.2% of respondents stated that they agree with the claim that *they save money because they are afraid of uncertainty in the future*, and 82.5% of respondents make their savings from other sources of income (labor contract, income from capital, income from property, authoring fee) and not from the income from employment. A total of 52.5% of respondents agreed with the claim that they do not intend to change their consumption-related habits regardless of the taxation of the income from employment, while 27.1% completely disagree with the mentioned claim.

#### 4. CONCLUSION

Frequent amendments to laws and regulations have a puzzling impact not only on taxpayers but also on the experts dealing with the issue of taxation. Each amendment to tax regulations leads to certain disapproval by the ones affected by the amendment. The recent tax reform, which came into force in early 2019, increased the income tax scale in which a lower tax rate of 24% was applied, which ultimately allows every taxpayer to earn more income from his employment while his tax burden does not increase. What is more, higher incomes result in higher consumption or savings, depending on the preferences of taxpayers. Based on the conducted analysis and research made on a selected

sample of respondents for the purpose of this work, it was observed that certain taxpayers earn a minimum salary or a salary slightly higher than the minimum. Therefore, the amount of the taxation on the income from employment does not play too much a role on their deciding on consumption and savings since they are not obliged to pay taxes on the income from employment when using their basic personal allowances as the opportunity to lower their tax base. Although the likelihood of savings changes over the life cycle, research has shown that, despite the high cost of living, most of the respondents still put a part of their earned income on savings regardless of the tax burden on the income in question. What is also interesting is the fact that more than a half of all respondents in the survey claimed that they do not intend to change their consumption-related habits, regardless of the taxation of the income from their employment.

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# ENTREPRENEURIAL ACTIVITY IN THE EUROPEAN UNION MEMBER STATES: HOW IMPORTANT ARE PUBLIC POLICIES?

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## **Abstract**

*The study explores the nexus between the quality of governance and entrepreneurship in the 28-member states of the European Union between 2000 and 2017. In order to achieve the estimation results in terms of the correlation between quality of governance and entrepreneurial activity, we define quality of governance as public policies measured through Worldwide Governance Indicators (WGIs), published by the World Bank, namely Government Ef-*

*fectiveness (GE), Regulatory Quality (RQ) and Control of Corruption (CC). In terms of entrepreneurial activity, the following indicators were considered: Fear of Failure Rate (FFR), Entrepreneurial Intention (EI) and Total Early-Stage Entrepreneurial Activity (TEA) from the Global Entrepreneurship Monitor (GEM) database. Data processing was performed using the Pearson test and the ordinary least squares (OLS) method of estimation. The correlations established between the public policy indicators and the entrepreneurial activity indicators highlight an indirect relationship.*

**Keywords:** *Worldwide Governance Indicators, Entrepreneurial activity, Public policy, EU countries.*

JEL Classification: L26, H00

## 1. INTRODUCTION

The paper investigates the correlation between public policies, defined in terms of governmental efficiency, quality of regulation and control of corruption, and entrepreneurial activity, defined on distinct levels, such as fear of failure rate, entrepreneurial intention, and total early-stage entrepreneurial activity. It is well known that economic development is influenced by both, the entrepreneurial activity and the implementation of public policies, which are a stimulating process for economic growth and quality of life. Entrepreneurial activity is based on technological progress and the provision of balanced social relationships.

Within the European Union, entrepreneurial activity is based on a single market that, although regulated by unique standards, is specific to every member state depending on the social, economic and national policy environment. Due to this situation, there is an inequality of opportunities and outcomes across the European Union. EU policies promote entrepreneurial activity through development, education and information activities, creating an appropriate business environment through the involvement of specific economic agents.

The quality of public policies has an impact on entrepreneurial activity, influencing the economic environment by developing infrastructure while stimulating research and development and fostering labor and private initiative. Entrepreneurial activity can provide a basis for public policy implementation, ensuring institutional development.

The elaboration of public policies materializes in two ways: an analytical process, which consists in effectively solving a problem by identifying solutions and a political process that involves controlling the decision-making process in solving conflicts and disagreements, following the interest of the group initiated the process.

The study presents the correlation between public policies (Government Effectiveness, Regulatory Quality, and Control of Corruption) and entrepreneurial activity (Fear of Failure Rate, Entrepreneurial Intention, and Total Early-Stage Entrepreneurial Activity).

The paper is structured in five sections: the first and second ones consider the state of art in the field of public policies and entrepreneurial activity in order to highlight the interdependence relationships between them; the third section of the paper presents the research methodology and describes the data for the 28 EU members. Finally, the empirical results are presented, followed by the conclusions section.

## 2. LITERATURE REVIEW

Public policy can directly stimulate the business environment by developing regulations in the economy, thereby enhancing competition opportunities. Alternatively, the government can indirectly increase entrepreneurship by relaxing administrative and legislative burdens, allowing entrepreneurs to dedicate more of their time, money and efforts to productive activities (Storey, 1994). The process of data collection from 60 countries, that have been the subject of the Global Monitoring for Entrepreneurship (GEM) project, highlights the importance of the quality of public institutions and entrepreneurial activity (Amoros, 2009, p. 5). Public authorities must be involved in a complex and pragmatic decision-making process in order to materialize some previously established economic and social objectives. Entrepreneurial activity implies the involvement of modern technologies that ensure the progress and welfare of society. As regard to entrepreneurial activity within the European Union, it is known that it can be stimulated through competition and quality of regulation, based on appropriate fiscal policy. Some researches have established a positive link between good governance and good economic performance (Chong & Calderón, 2000, p. 69-81). Studies on the importance of decision-makers on entrepreneurial activity demonstrate that this is the solution for determining economic growth



based on skills, business environment opportunities and social norms (Beach et al., 2011, quoted by Dima et al., 2016, p. 427). Some hypotheses refer to differences in attitudes towards entrepreneurial activity and trends, thus reference is made to the need for entrepreneurial activity in less developed areas, increasing the capacity to become an entrepreneur and different types of entrepreneurship. The formal and informal norms and a set of values that trigger economic and social changes are developed by a number of institutions, with an important role in the rate and nature of the entrepreneurial activity (Todd et al., 2007, p. 467-493). A series of results related to entrepreneurial activity estimates its dependence on the quality of policies and institutions and on the general government efficiency. (Dima et al., 2016, p. 425-429). Some studies have revealed a significant positive link to government efficiency and joint projects in the form of public-private partnerships. Political stability and democratic positions play an essential role in entrepreneurial activity.

The Global Entrepreneurship Monitor (GEM) is a project on which differences in attitudes, aspirations and entrepreneurial activity are established considering a set of principles (Reynolds et al., 2005, p. 205-231): *i*) the spirit of entrepreneurial activity that is based on necessity is usually observed in regions with less economic development; *ii*) a company that stimulates the capacity and motivation to develop an entrepreneurial activity is favorable to entrepreneurship; *iii*) in an economy, an important role is represented by the high-aspirations of entrepreneurship, with a role in creation and innovation.

Developing business by entrepreneurs is of particular macroeconomic importance for decision-makers. Identifying institutional barriers in the business start-up process can be an advantage for developing a number of policy measures to maintain entrepreneurial activity in those countries under the conditions of proper economic development.

A series of literature studies reveal differences in entrepreneurial activity between different countries (Gedeon, 2010, p. 16-35). On the basis of an analysis performed by Bettignies and Brander (2007, p. 808-832) it has been concluded that a number of factors such as the economy or the specific conditions have an influence on the level of prosperity of entrepreneurship. The start-up activity (Department of Economic Social Affairs, 2007) is highlighted in terms of entrepreneurship in the Global Annual Monitor (GEM). This report refers to a total of 34 countries with a workforce of 784 million people within 6 years.

The studies were carried out by a number of 150 academics. Their research refers to the development of entrepreneurial activity in the national income of the respective countries and, depending on them, correlates the income of the population with the standard of living.

A number of studies highlight that government intervention can favorably influence entrepreneurial activity while stimulating economic activity. Government interventions are necessary in case of failures in the market. The causes of market failure are related to market structure, company size, capital market imperfections, information asymmetry, institutions, regulations, etc. (Baumol, 2002, p. 1-12). There are a number of arguments that confirm the positive relationship between firm size and innovation in entrepreneurial activity. In this case, the fixed costs of these actions are high, while also favoring large firms to invest in new projects on entrepreneurship. For small companies, there is a problem of limited strategic resources, with a major risk of loss of information.

The entrepreneurial policy is a public design program created to determine the level of entrepreneurial activity in society (Audretsch, 2004, p. 167-194). Another problem of market failure is the imperfection of the capital market. In the case of large firms, there is a possibility that they can finance their entrepreneurial activity from domestic sources, providing them with better stability, compared to small firms that need external finance (Moldovan et al., 2016). However, lending to small firms by foreign companies is difficult due to the lack of information on their work and agency issues, moral hazard and adverse selection (Cohen & Levinthal, 1989, pp. 569-596).

Government intervention is beneficial if it is correctly implemented. Important policy measures can be considered, such as industrial policy, innovation policy, and entrepreneurial policy. Although a definition of entrepreneurship has not been set, there is a small agreement on entrepreneurial policy. In addition, there are some theories specifying that entrepreneurial policy is based on different aspects, with several types of public programs (Hart, 2003, p. 69-76).

Entrepreneurial policy refers to the following (Quittainah, 2015, p. 1-5): *i*) entrepreneurship policy to stimulate a new entrepreneurial potential; *ii*) entrepreneurial activity policy refers to organization and analysis from individual, team, firm, industry and nationwide. The entrepreneurial policy encompasses global trade policy and policy on immigration, innovation policy, antitrust policy, property rights regulations on a national scale, and tax policy at an entre-

preneurial scale (Acs, et al., 2004, p.). The entrepreneurial policy is treated at the federal or state level, but the tendency is to address local businesses, farms or even individuals. In this sense, there is a focus on personalized policies to respond to individual differences as best as possible (Quittainah, 2015, p. 1-5). The entrepreneurial development process includes a number of components that influence one another: market information, opportunities, vigilance, entrepreneurial thinking, innovation, technical knowledge, creativity, and ultimately ensure income (Burgelman & Hitt, 2007, p. 349-352).

A number of policies implemented in a different context, of monetary stability, competition, or quality of infrastructure, can produce favorable results compared to a situation of financial instability, lack of rights and poor education. From this point of view, it is necessary to implement policies in the specific conditions of the respective country. The set of governance indicators called global governance indicators (Kaufmann et al., 2010, p. 1-31) is available for approximately 200 countries and refers to the following dimensions of government: voice and responsibility, political stability and absence of violence or terrorism, government effectiveness, quality of regulation, rule of law and corruption control. A series of studies aimed at creating the Corruption Perceptions Index (CPI) believe that the public sector is influenced not only by corruption but also by the quality of governance (Lambsdorff, 2005, p. 1-35).

The quality of public policies has a direct influence on entrepreneurial activity and its components (Dima et al., 2016, p. 428). Good governance in Asian countries has an important role to play in the development of entrepreneurship (Amorós & Bosma, 2013, p. 1-105). However, stimulating the development of entrepreneurship implies the government effectiveness to be sustained over the long run. (Gugler & Chaisse, 2009). Governments can implement a series of measures to foster entrepreneurial activity by increasing the quality of governance. However, in economically weak countries, measures that stimulate people with entrepreneurial activities by raising the quality of government cannot be achieved (Thai & Turkina, 2014, p. 490-510).

To highlight a country's overall performance from a sustainable economic growth perspective, the Institute for Management Development (IMD) has developed the Annual Competitiveness Analysis (WCY) indicator. This was realized by aggregating twenty sub-indicators in four important areas, namely: a) economic performance, b) governmental efficiency, c) business efficiency and

d) infrastructure. Data from the literature is contradictory, as there are different ways of considering concepts and methods of analysis that cause differences. Consequently, new approaches must be addressed for this issue. The literature studied highlights the strong influence of public policies on the business environment.

### 3. DATA AND METHODOLOGY

The dataset performed in this study refers to the public policies descriptors, namely Government Effectiveness, Regulatory Quality, and Control of Corruption and indicators of entrepreneurial activity, namely Fear of Failure Rate, Entrepreneurial Intention, Total Early-Stage Entrepreneurial Activity for the 28 countries of the European Union between 2000 and 2017. The public policy indicators were collected from the World Bank database, and the entrepreneurship indicators were centralized from Global Monitor Entrepreneurship database.

Entrepreneurial activity is reflected by the following indicators: Fear of Failure Rate (FFR), (*“Percentage of 18-64 population with positive perceived opportunities who indicate that fear of failure would prevent them from setting up a business”*), Entrepreneurial Intention (EI) (*“Percentage of 18-64 population (individuals involved in any stage of entrepreneurial activity excluded)”*) who intend to start a business within three years) and Total Early-Stage Entrepreneurial Activity (TEA) (*“percentage of 18 – 64 population who are either a nascent entrepreneur or owner-manager of a new business”*) as this is provided by The Global Entrepreneurship Monitor (GEM) database.

The dimension of public policies is described by the following indicators: Government Effectiveness (*“capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies”*), Regulatory Quality (*“capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development”*), set by Dima et al., 2010, p. 429 and Control of Corruption (*“capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private*

interests”) which is specific to public institutions and quality of a nation public policies, set by Kaufmann et al. (2010, p.1-31).

It should be specified that worldwide governance indicators (WGIs) are aggregates based on unobserved components. The aggregate measure is reported in standard normal units, ranging from -2.5 to 2.5, with a mean zero and a standard deviation unit in each period.

The relationship between the variables was done using the Pearson test. The correlation coefficient was determined with the following equation (Pearson, 1908):

$$r_{yx} = \frac{n \sum xy - \sum x \sum y}{\sqrt{[n \sum x^2 - (\sum x)^2] \cdot [n \sum y^2 - (\sum y)^2]}} \quad (1)$$

where: y – dependent variable  
 x – independent variable  
 n – sample size

The Pearson correlation coefficient has values between -1 and +1, passing through the value 0, indicating a non-correlation between the two variables x and y. A value of r close to -1 indicates a strong negative correlation, ie the trend of a variable to decrease significantly when the other variable increases, while the r value close to + 1 indicates a strong positive correlation, respectively, the significant increasing trend of a variable when the other variable increases.

Another approach applied to determine the influence of public policies indicators on entrepreneurial activity indicators is the ordinary least squares method (OLS). The form of the multiple linear regression model is the following: (Granger & Newbold, 1974, p. 111-120).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon \quad (2)$$

where: y – dependent variable;  
 $x_1, \dots, x_n$  – independent variables;  
 $\beta_0$  - is the value of y when the independent variables are equal to zero;  
 $\beta_1, \dots, \beta_n$  – estimated coefficients of regression;  
 $\varepsilon$  – the residual variable.

Multiple linear regression through the least squares method highlights the relationship between a dependent variable and a set of independent variables. In the best basic way, the linear regression model provides the best linear approximation of a variable from a set of other variables. The linear regression model realizes the best linear approximation of a variable in a set of other variables. Under these conditions, this model is a way of synthesizing data describing economic behavior.

#### 4. RESULTS AND DISCUSSIONS

The results obtained by using Person correlation are presented as follows: Table 1 presents the descriptive statistics of Worldwide Governance Indicators representative for public policies and the representative indicators for Entrepreneurial Activity such are Fear of Failure, Entrepreneurial Intention, and Total Early-stage Entrepreneurial Activity.

**Table 1.** Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Fear of Failure Rate (FFR)	298	15.12	61.58	36.9498	7.49818
Entrepreneurial Intention (EI)	298	1.55	31.70	10.0454	5.22105
Total early-stage Entrepreneurial Activity (TEA)	298	1.63	19.38	6.7097	2.68915
Government Effectiveness (GE)	298	-0.36	2.35	1.2140	0.60976
Regulatory Quality (RQ)	298	0.15	2.05	1.2302	0.45866
Control of Corruption (CC)	298	-0.26	2.47	1.1393	0.81001
Valid N (listwise)	298				

**Source:** Author’s calculations

Table 2 presents the correlation coefficients between the public policies indicators, namely, Government Effectiveness (GE), Regulatory Quality (RQ) and Control of Corruption (CC) and indicators of entrepreneurial activity: Fear of Failure Rate (FFR), Entrepreneurial Intention (EI) and Total Early Stage Entrepreneurial Activity (TEA).

**Table 2.** Correlations between public policies and entrepreneurial activity

Variables		FFR	EI	(TEA)	GE	RQ	CC
FFR	Pearson Correlation	1	0.298**	0.184**	- 0.304**	- 0.223**	- 0.281**
	Sig. (2-tailed)		0.000	0.001	0.000	0.000	0.000
	N	298	298	298	298	298	298
EI	Pearson Correlation	0.298**	1	0.621**	- 0.430**	- 0.382**	- 0.433**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
	N	298	298	298	298	298	298
TEA	Pearson Correlation	0.184**	0.621**	1	- 0.208**	- 0.038	- 0.212**
	Sig. (2-tailed)	0.001	0.000		0.000	0.511	0.000
	N	298	298	298	298	298	298
GE	Pearson Correlation	- 0.304**	- 0.430**	- 0.208**	1	0.859**	0.946**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000
	N	298	298	298	298	298	298
RQ	Pearson Correlation	- 0.223**	- 0.382**	- 0.038	0.859**	1	0.900**
	Sig. (2-tailed)	0.000	0.000	0.511	0.000		0.000
	N	298	298	298	298	298	298
CC	Pearson Correlation	- 0.281**	- 0.433**	- 0.212**	0.946**	0.900**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	
	N	298	298	298	298	298	298

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source:** Author's estimations

Between the public policies indicators (Government Effectiveness, Regulatory Quality and Control of Corruption) and entrepreneurship indicators (Fear of Failure Rate, Entrepreneurial Intention and Total Early-Stage Entrepreneurial Activity), there were reverse, weak and medium correlations, but significant. The linear correlation between Fear of Failure Rate and Government Effectiveness is  $r = -0.304^{**}$  ( $p = 0.000$ ). Between Fear of Failure Rate and Regulatory Quality was obtained  $r = -0.223^{**}$  ( $p = 0.000$ ) and between Fear of Failure Rate and Control of Corruption the linear correlation is  $r = -0.281^{**}$  ( $p = 0.000$ ). The correlations between Entrepreneurial Intention and Government Effectiveness, Regulatory Quality respectively Control of Corruption are  $r = -0.430^{**}$  ( $p = 0.000$ ),  $r = -0.382^{**}$  ( $p = 0.000$ ),  $r = -0.433^{**}$  ( $p = 0.000$ ).

Between Total Early-Stage Entrepreneurial Activity (TEA) and Government Effectiveness the correlation coefficient resulted is  $r = -0.208^{**}$  ( $p = 0.000$ ) and between Total Early-Stage Entrepreneurial Activity (TEA) and Control of Corruption is  $r = -0.212^{**}$  ( $p = 0.000$ ). There is a negative correlation between the Fear of the Failure Rate and the Government Effectiveness, ie the fear of failure is influenced by governmental efficiency. Therefore, the better



the government effectiveness, the less fear of failure. The Fear of the Failure Rate is influenced by the quality of the regulations, namely the good quality of regulation determines the decrease of this indicator.

There is also a significant influence between the Fear of Failure Rate and the Control of Corruption, in the sense that better control of corruption will induce less fear of developing an entrepreneurial activity. There is a negative influence between Entrepreneurial Intention and Government Effectiveness, therefore the intention to develop a business is highly dependent on Government Effectiveness. Entrepreneurial Intention is dependent on the quality of regulations and also on the control of corruption. Total Early-Stage Entrepreneurial Activity is in a dependence relation between government effectiveness and corruption control.

There is a positive linear correlation between Fear of Failure Rate and Entrepreneurial Intention, in this case, the correlation coefficient  $r = 0.298^{**}$  is significant, and between Fear of Failure Rate and Total Early-Stage Entrepreneurial Activity,  $r = 0.184^{**}$  is also significant. The linear correlation is significant as well between Entrepreneurial Intention and Total Early Stage Entrepreneurial Activity,  $r = 0.621^{**}$ . Based on this result, it is obvious that Fear of Failure Rate influences the intention to develop an entrepreneurial activity. It is also observed that there is significant influence between Fear of Failure Rate and Total Early-Stage Entrepreneurial Activity, and the business development is carried out in stages in order to control the various risks that may arise. There is a close relationship between Entrepreneurial Intention and Total Early-Stage Entrepreneurial Activity, which demonstrates that the intention to develop an entrepreneurial activity is carried out in several stages. By doing so, it becomes possible to control the risks that may arise during the entrepreneurial process.

Analyzing the relations between Governmental Effectiveness and the Quality of Regulations, a significant positive correlation is observed with a correlation coefficient  $r = 0.859^{**}$ . Between the Governmental Effectiveness and Corruption Control, there is also a significant positive correlation,  $r = 0.946^{**}$ . The correlation between Quality of Regulations and Corruption Control is significant with a coefficient  $r = 0.900^{**}$ . The results between Quality of Regulations and Governmental Effectiveness prove a strong dependence relation that demonstrates that government effectiveness is achieved under appropriate regulations suitable to the entrepreneurial environment. There is a strong, significant link between the Government Effectiveness and Corruption Control



which proves that government effectiveness is achieved in good conditions if there is control over corruption. The proper quality of the regulations and their correct application can keep corruption under control.

There is a negative correlation between Fear of Failure Rate and Government Effectiveness, and the fear of failure is influenced by governmental effectiveness. Therefore, the better the government's effectiveness is, the less fear of failure will be registered. Fear of failure is influenced by the quality of regulation, that is why the good quality of regulations leads to a decrease in this indicator.

There is also a significant influence between the fear of failure and the control of corruption, therefore the better the corruption control, the less the fear of developing an entrepreneurial activity. There is a negative influence between Entrepreneurial Intention and Government Effectiveness, so the intention to develop a business is highly dependent on government effectiveness. Entrepreneurial Intention is dependent on the quality of regulations and also on corruption control.

Total Early-Stage Entrepreneurial Activity is in a dependence relation to government effectiveness and corruption control. Based on this analysis, there is a strong influence between the public policy indicators and the indicators of the entrepreneurial activity. A series of governmental measures determine the stimulation of entrepreneurial activity, as noted by other authors in their published papers.

In table 3 is presented the regression results between Fear of Failure Rate and Government Effectiveness, Regulatory Quality and Control of Corruption using the ordinary least squares method (OLS).

**Table 3.** The results of multiple regression between Fear of Failure Rate and public policies indicators

```
. regress ffr ge rq cc
```

Source	SS	df	MS			
Model	1670.05983	3	556.686608	Number of obs =	297	
Residual	15001.0699	293	51.1981907	F( 3, 293) =	10.87	
Total	16671.1297	296	56.3213841	Prob > F	= 0.0000	
				R-squared	= 0.1002	
				Adj R-squared	= 0.0910	
				Root MSE	= 7.1553	

ffr	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ge	-4.809695	2.105429	-2.28	0.023	-8.953375	-.6660152
rq	3.045803	2.094318	1.45	0.147	-1.07601	7.167616
cc	-.722666	1.862598	-0.39	0.698	-4.388433	2.943101
_cons	39.88829	1.71545	23.25	0.000	36.51212	43.26445

**Source:** Author's estimations

The estimated equation of the multiple regression method is . Results indicate a statistically significant influence from Government Effectiveness (GE). The regression coefficient indicates that an increase in government effectiveness would lead to a decrease in Fear of Failure Rate. The R-squared for this model suggests that these public policy proxies explain approximately 10% of the variance in Fear of Failure Rate, which means that the model could be improved by adding other variables with potential impact on the entrepreneurs' fear of failure.

The multiple regression results between Entrepreneurial Intention and Government Effectiveness, Regulatory Quality and Control of Corruption is indicated in table 4.

**Table 4.** The results of multiple regression between Entrepreneurial Intention and public policies indicators

```
. regress ei ge rq cc
```

Source	SS	df	MS			
Model	1547.05815	3	515.68605	Number of obs =	297	
Residual	6483.24473	293	22.1271151	F( 3, 293) =	23.31	
Total	8030.30288	296	27.1294016	Prob > F =	0.0000	
				R-squared =	0.1927	
				Adj R-squared =	0.1844	
				Root MSE =	4.7039	

ei	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ge	-1.630047	1.384126	-1.18	0.240	-4.354136	1.094042
rq	.2472463	1.376822	0.18	0.858	-2.462467	2.95696
cc	-1.755014	1.224487	-1.43	0.153	-4.164919	.6548913
_cons	13.69317	1.127751	12.14	0.000	11.47365	15.91269

**Source:** Author's estimations

By using the ordinary least squares method the following equation is obtained: According to second OLS model, the Worldwide Governance Indicators are not the best factors to explain the variance in the Entrepreneurial Intention, as regression coefficients are not statistically significant for any of the explanatory variables considered.

Table 5 indicates the multiple regression results between Total Early-Stage Entrepreneurial Activity and Government Effectiveness, Regulatory Quality, and Control of Corruption.

**Table 5.** The results of multiple regression between Total Early-Stage Entrepreneurial Activity and public policies indicators

Source	SS	df	MS			
Model	322.241171	3	107.413724	Number of obs =	297	
Residual	1664.44541	293	5.68070107	F( 3, 293) =	18.91	
				Prob > F =	0.0000	
				R-squared =	0.1622	
				Adj R-squared =	0.1536	
				Root MSE =	2.3834	
tea	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ge	-.4036091	.7013167	-0.58	0.565	-1.783866	.9766476
rq	4.384246	.6976157	6.28	0.000	3.011273	5.757219
cc	-2.655298	.62043	-4.28	0.000	-3.876362	-1.434234
_cons	4.794984	.571415	8.39	0.000	3.670386	5.919582

**Source:** Author's estimations

The equation obtained by using ordinary least squares method is the following: . The linear regression results prove that the Regulatory Quality and Control of Corruption have an important influence on the Total Early-Stage Entrepreneurial Activity entrepreneurship proxy. According to its results, a higher regulatory quality would induce an increase in the percentage of the population who are either an entrepreneur or owner-manager of a new business. The control of corruption has the opposite effect, as the negative value of the coefficient is expressing. Accordingly, for countries where the public power is exercised for private gains, the Total Early-Stage Entrepreneurial Activity would have lower scores. The level of TEA variance explained through the world governance indicators considered is rather low (17%), and therefore there are other influential factors for the Total Early-Stage Entrepreneurial Activity which should be considered in the analysis.

## 5. CONCLUSIONS

The study analyzes the relationship between public policies and entrepreneurship for the 28-member states of the European Union, between 2000 and 2017. Entrepreneurship within the European Union is stimulated by public policies materialized through development, information and education activities and the creation of an appropriate business environment. Entrepreneurship is a support for the implementation of public policies. Government interventions in the economy are necessary for the event of disturbances in the functioning of the market. There is a significant positive relationship between government efficiency and the realization of projects in the form of public-private partner-

ships. Some studies have expressed a significant positive link with governmental efficiency and joint projects in the form of public-private partnerships.

Fear of failure is determined by the quality of the regulations, namely, a better regulation quality will lead to a decrease in this indicator and will encourage people to set up a business. A significant dependence is also set between the intention to develop a business and its development. There is also a relationship between public policies and those of entrepreneurial activity. The research results of OLS estimation outline an indirect relationship between Fear of Failure Rate, Entrepreneurial Intention, Total Early-Stage Entrepreneurial Activity and public policy indicators (Government Effectiveness, Regulatory Quality, and Control of Corruption). The development of entrepreneurial activity is influenced by the correct implementation of public policies, namely by legislative stability, coherent decision-making, monitoring, and evaluation.

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# A SYSTEMATIC REVIEW OF PUBLIC SECTOR PERFORMANCE LITERATURE: NEW PERSPECTIVES

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## **Abstract**

*This paper aims to bring together both theoretical and empirical academic research on public sector performance (PSP). In order to achieve the research objective, a systematic literature review was applied. To best-achieve the purposes of a systematic review were collected and analyzed articles published in scholarly literature between 2008 and 2018 on public sector performance research area. The systematic review was focused on four directions, namely (1)*

*definition of public sector performance, (2) methodologies for measurement of public sector performance, (3) impact factors and difficulties in measuring public sector performance, (4) theories and paradigms in public sector performance. Our results reveal that PSP is still confusing, because on one the hand, the public sector has unique proprieties, and on the other hand, can emanate in paradox, which refers to a weak correlation between performance indicators and performance itself. However, it remains necessary to consider appropriate public sector measurements, since PSP bears the primary social responsibilities and obligations, both at an institutional level and as a means for sustainable economic growth.*

**Keywords:** *public sector, performance measurement, systematic review*

JEL Classification: H00, P43

## 1. INTRODUCTION

This paper analyses the state of the art on public sector performance research area. For a long time, the public sector has been exposed to allegations of wastefulness and inefficiency (Modell, 2005, 64). Because nowadays organizations of the public sector are forced to operate in a dynamical environment, they need to adjust constantly to changing environmental conditions, so performance measurement is now considered an indispensable element in modernizing local government entities (Bouckaert & Peters, 2002, 362). Since the beginning, the measurement of an organization's performance has been view as one of the management functions, but nowadays it is analyzed as the independently developing branch of science. The organizations of the public sector have as a primary goal the satisfaction of public needs, to provide qualitative and accessible services, therefore is very important to apply suitable methods to measure it at all levels of government.

The global economy has struggled under the most significant recession in decades, so the public sector all over the world was facing significant revenue deficits. Furthermore, citizens started to notice and complain about the poor quality of the services offered by the public sector. Facing these challenges, the public sector needed to become more creative and to explore more options in order to resolve the problem. Thus, in a quest to improve the public sector, public managers perceive performance measurement as an indispensable element

to achieve a better result. Usually, the economic crisis provides some insights on the role of measurement systems in societies (Van Doreen et al. 2012, 489).

In this paper, we identify the role of public sector performance measurement in the past, in a period of recovery for all countries, after 2008 and until 2018, in studies published in scholarly literature. This research, related to public sector performance (PSP), brings added value to literature because explore the subject from different perspectives, namely conceptual understanding of PSP, methods, and methodologies for measurement, impact factors and theories or paradigms specific for the public sector.

This paper is structured as follows: In the first part, we begin with a general situation and some definitions that help us to understand the framework better. In the second part, we present the methodology used, followed by some findings and discussion in part three. We conclude with the conclusion and future roles and perspective in measuring public sector performance.

## 2. LITERATURE REVIEW

Unlike in the private sector, the aim of the public sector is not to motivate by profit. Public sector operates and control by the government and provides services, like healthcare, police and military services, public transportation, education, infrastructure, that benefit the general public. New Public Management has spread in the last decades and comes like an alternative to a traditional public sector. It has tried to change the function of the public organization, to be as those of the private sector through decentralization and less bureaucratization, and to be more accountable.

The term of performance in a general context can be defined from two angles: the first perspective is the focus on all the action that a performing actor is carrying out for completion of a task, and from a different angle incorporate a value comprehension. Performance has an attribute that can be either high or low.

Establishing performance is not easy, notably in the public sector, because it is needed to explain the concept of performance, to identify performance indicators and then to find ways of obtaining performance. A relationship between objectives, results, and means has to exist, or in other words an approach is needed in terms of effectiveness, efficiency and budgeting (Profiroiu, 2001, 8).



Performance measurement is defined as the process of quantifying the efficiency and effectiveness of actions (Neely et. al.1995, 1229).

Critics talk about the fact that public sector organizations did not focus on measuring the right amount of the things that matter (Atkinson et al., 1997, 26) and they need to identify and combine strategies, long-term issues of mission and objectives (Chow et al., 1998, 278). Although performance measurement has been included in the public sector to ensure transparency, some academic defend the idea that it only generates speculative and perverse behaviors (Hans de Bruijn 2002, 20).

Ideally, government performances identify and measure the things that governments are supposed to accomplish (Grenwood 2008, 56).

For most countries, the purpose of performance measurement is clear and straightforward (Gao, 2009, 27). A report from Organisation for Economic Cooperation and Development (OECD) pointed out that in its member countries performance measurement is used to support better decision making and to heightened awareness of the cost of the goods and services provided, obtaining a more efficient and effective public services that answer citizen requirements and consistent with government objectives (OECD, 1994, 18).

In the complex multi-governance and networking system that involves stakeholders in different policies, as well as in different stages of policy cycle information is provided with the help of performance indicators. Many authors and international organization reckon public sector performance indicators for the entire sector, as well as for various parts and its core function, the appraisal considering different output and input data. Trying to determine the relevant subsector of the public sector and public sector performance indicators Afonso et al. (2003, 2006, 2013) define seven significant sub-indicators, four "opportunity"/"process" indicators namely: administration (corruption, red tape, quality of judiciary, shadow economy), education(Secondary school enrolment, education achievement) , health (infant mortality, life expectancy), public infrastructure (quality communication & transport infrastructure) and three "Musgravian": economic stability (income, stability of GDP growth), distribution (income share of households) and economic performance (unemployment, GDP growth, GDP per capita).

Taking into consideration that pinpointing several indicators to measure public sector performance has been a concern both for academics and several

international bodies, is needed a robust framework for comparison between countries, in terms of quality of public policies, institutional and decision-making perspective. On this subject, we consider the perspective offered by Kaufmann et al. (1999, 260) which considers three dimensions of bureaucratic quality, the rule of law graft necessary for the assessment of governance, to be representative.

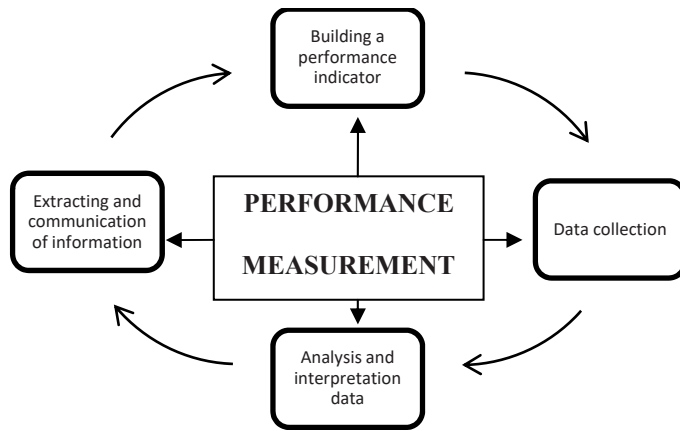
In 2010 Kaufmann et al. developed a set of indicators named The World-wide Governance Indicators and reveal six governance dimensions: (1) voice and accountability, (2) political stability and absence of violence or terrorism, (3) government effectiveness, (4) regulatory quality, (5) control of corruption and (6) rule of law. The OECD (2007) supports the development of a necessary comparison framework by dividing the data inputs, outcomes, process and outputs. Trough Country Policy and Institutional Assessment index, The Word Bank measures public policies in line whit economic growth and poverty reduction. Corruption and quality of governance are measured trough Corruption Perception Index, created by Transparency International.

Summarizing the full range of possibilities for sizing different dimension of the public sector performance through aggregate indicators, Lobont et al. (2018,142) highlights the importance of differentiating between indices and parameters. Indices of performance measurement are obtained by considering some weighted average parameters, allocating to each other weight of relevance in the index construction.

There are numerous parametric and non-parametric research methods used in the construction of public sector performance indicators. Because non-parametric ones apply to ordinal, nominal or interval data is considered more appropriate for social science, not parametric ones that generally apply to data intervals, whit a Gaussian normal distribution. (Lobont et al., 2018,143).

Performance indicators should respect some essential features: to be measurable, to be adapted to strategic objectives, to be easy to understand and use, to not have dysfunctional consequences, to be adaptability to new requirements, to be active and should not be ambiguous (Marr, 2008, 153). A logical scheme that attempts to represent Marr's definition graphically is presented in figure 1:

**Figure 1:** The process of measuring performance:



**Source:** Bernard Marr, (2008), *Managing and delivering performance*, Butterworth-Heinemann imprint of Elsevier, pp. 179

Performance indicators are defined as indices that measure and evaluate the results of the entities; they show how well the entity achieves the stated goals and desired results (Kaplan, 2001).

### 3. DATA AND METHODOLOGY

We perform a qualitative systematic literature review in order to best respond to the research objectives on the measurement of public sector performance. This method was preferred instead of a non-systematic review due to the attempt to develop following discussions about the existence of real academic interest in the subject.

The review was organized in two steps that are particularly important: the strategy of locating and selecting the potential studies and the setting of inclusion criteria to potentially identifiable literature (Alderson et al. 2004). To this end, only articles focused on the theme of public sector performance measurement have been selected.

The selection has been carried out using EBSCOhost Research Platform. The platform offers high-quality articles licensed from reputable publishers, reliable, peer-reviewed content. The databases used: Academic Search Complete; Academic Search Premier; Alt Health Watch; Business Abstracts with Full Text (H.W. Wilson); Business Source Complete; Business Source Pre-

mier; Central & Eastern European Academic Source; CINAHL Plus with Full Text; Econ Lit; General Science Full Text (H.W. Wilson); Health Source Consumer Edition; Human Resources Abstracts; International Political Science Abstracts; MEDLINE; Middle Eastern & Central Asian Studies; Political Science Complete; Professional Development Collection; Public Administration Abstracts; Public Affairs Index ;Social Sciences Abstracts (H.W. Wilson); Sociological Collection.

As a first step, we used Boolean/Phrase for introducing keywords: (“public sector” or government or federal or “public administration”) AND performance AND (indicator\* or measurement or assessment). In doing so, the platform generates 78.600 results.

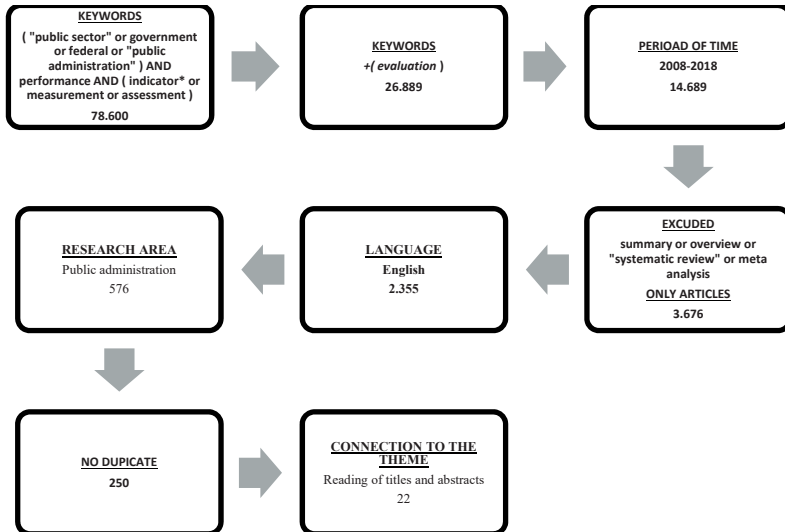
Afterward, the research has been refined by adding the word “evaluation”, giving back 26.889 results. Due to the fact we are interested in a contribution after 2008, we limited only to the contributions published in the period 2008-2018. The contributions published in 2019 have been ignored because the reference period is still ongoing, giving back 14.689 results. We excluded review or summary or overview or “systematic review” or meta-analysis; the attention has been paid only on articles, and no books or book chapter was considered, obtaining 3.676 results.

Also, the only contribution written in English have been selected, to allow the replicability of the review and to ensure an international audience for all the research included in the analyzing. This criterion has reduced the number of contributions previously identified to 2.355. Next, the research has been filtered by limiting it only to the interest areas, “*Public administration*”, “*Public sector*” generating 576 papers. Excluding all the duplicates we remain whit a total of 250 articles.

Finally, based on the title and abstract of identifying articles, the authors, considering only those containing one or more determinants that directly or indirectly affect the scope of our research. The latter selection criteria have induced the inclusion of 22 papers.

The process summarized above in steps is illustrated in the flowchart of systematic literature review (Figure 2).

**Figure 2:** Flowchart of the review process



**Source:** Data process by authors

The full article text for the chosen papers have been recovered from EBSCO-host Research Platform and, when not available, from external sources. Table 1 evidence the title, authors, name of journal and publication date for each of the articles selected:

**Table 1:** Articles selected for PSP research area

Title	Authors	Journal	Year
Governing by goals and numbers: A case study in the use of performance measurement to build state capacity in China	Gao, Jie	Public Administration & Development	2009
Performance measurement: roles and challenges	Phusavat, Kongkiti	Management & Data Systems	2009
Public sector: Its scope and performance assessment in Balochistan	Mohammed, Jan	Journal of Global Intelligence & Policy	2011
Assessing New Public Management's Focus on Performance Measurement in the Public Sector.	Patrick, Barbara A French, P. Edward	Public Performance & Management Review	2011
Performance management in the sphere of public administration	Pastuzkova, Eliska Palka, Premysl	Annals of DAAAM & Proceedings	2011
Performance measurement, organizational learning, and strategic alignment: an exploratory study in the Thai public sector	Suwit Srimai Nitirath Damsaman Sirilak Bangchokdee	Measuring Business Excellence	2011

Title	Authors	Journal	Year
How to Measure Public Administration Performance	Van Dooren, Wouter De Caluwe, Chiara Lonti, Zsuzsanna	Public Performance & Management Review	2012
Performance analysis of the Romanian public administration	Profiroiu Marius	Transylvanian Review of Administrative Sciences	2013
The advantages of the balanced scorecard in the public sector: beyond performance measurement	Dreveton, Benjamin	Public Money & Management	2013
The influence of information, organizational objectives and target, and external pressure towards the adoption of the performance measurement system in the public sector	Citra Wijaya, Anthonius H. Akbar, Rusdi	Journal of Indonesian Economy & Business	2013
A strategy framework for performance measurement in the public sector	Jääskeläinen, Aki Laihonen, Harri	Public Money & Management	2014
Is Performance Measurement Applicable in the Public Sector? A Comparative Study of Attitudes among Dutch Officials.	Borst, Rick Lako, Christiaan de Vries, Michiel	International Journal of Public Administration	2014
Measuring performance in the public sector: between necessity and difficulty	Mihaiu Diana	Studies in Business & Economics	2014
Performance Measurement in the Public Sector of Transition Countries	Veledar, Benina Bašić, Meliha Kapić, Jadranka	Business Systems Research	2014
The use of performance measurement systems in the public sector: Effects on performance	Speklé, Roland F	Management Accounting Research	2014
Consideration regarding performance measurement in the public sector	Mihaiu, Diana Marieta	Revista Economica	2015
Performance Management and Performance Appraisal: Czech Self-Governments	Špalková, Dagmar Špaček, David Nemeč,	Journal of Public Administration & Policy	2015
Role of performance indicators in policy development	Reinholde, Iveta	Economic Science for Rural Development Conference Proceedings	2015
Performance evaluation systems in the public sector	Leoveanu, Andy	Juridical Current	2016
The Design and Execution of Performance Management Systems at State Level: A Comparative Analysis of Italy and Malaysia.	Bianchi, Carmine Xavier, John Antony	International Journal of Public Administration	2016
Difficulties concerning public sector efficiency and performance measurement	Lobonț, Oana Ramona Bociu, Alexandru	Regional Formation & Development Studies	2017

Title	Authors	Journal	Year
A study on the criteria of internal transparency, efficiency and effectiveness in measuring local government performance.	Røge, Kristian, Mohr Lennon, Niels Joseph	Financial Accountability & Management	2018
Performance measurement and benchmarking as "reflexive institutions" for local governments.	Kuhlmann, Sabine JoergBogumil	International Journal of Public Sector Management	2018

**Source:** Data process by authors

## 4. FINDINGS AND DISCUSSIONS

The content analysis of the 22 selected articles proves that there are different approaches to performance measurement in all levels of public sectors. Phusavat et al. 2009 and Suwit et al., 2011 examine the role of performance measurement in the Thai public sector. Phusavat et al. (2009) through collaboration with the Office of the Public Sector Development Commission of Thai government tries to integrate measures obtain by measuring public sector performance into the management process by applying grounded theory. Using regression equations, Suwit et al. in 2011, used path analysis technique using cross-sectional data. The inspiration for the construction of the questionnaire was translated by a professional academic and use borrowed lessons from developed countries from the west, from studies that exist in the private sector.

In China, the central government also wants to transpose the result of public sector measurement into specific policy objectives, but demonstrate that the way the performance is done is not suitable for the context of the country. Is hard to measure objectively, because the compliance of the persons involves providing sufficient and valid information, governance and social address being ignorant due to the political context that exists in the society. Another threat is that local Party committees may manipulate the results of the performance measurement to make unfair decisions concerning rewards and penalties. Some of the indicators being measured are economic development, party building, public service provision, bureaucratic institution building, and social development. The mentioned author categorized performance target in two groups: common targets (7 common targets and 81 different performance indicators) and functional targets (in the year 2007 were 1143 indicators) (Gao 2009, 30).

Goals and outcomes of educational policy across the USA were shaped by using the observing and testing indicators like minority student population, administrative capacity and achievements gap in public schools across the United States. Instituting performance accountability is view as the best way to improve performance, (Patrick et al. 2011, 361) taking into consideration that developing measure to hold bureaucrats accountable for their action.

Every public sector activity is directed toward the ability of certain prearrange goals. In the public sector of Balochistan is to study the effective and efficient utilization of human resources, studying the appropriate strategy (Muhammad & Farooq, 2011, 66). There is a need for capable and skilled manpower, adequately supervised, that would play an important in the public sector, efficiency and effectiveness increasing, so evaluation of employees is critical.

The use of the 3E principles (Economy, Effectiveness, Efficiency), in measuring performance allows managers to support positive synergy effect that can lead to increase performance but is necessary to set criteria for each particular organization (Pastuszkova & Palka, 2011, 1487). A few years later Mihaiu (2014, 41-46) suggest to add two more variables to make the system 5S, adding Environmental and Equity, because of the fact the previous indicators are mainly financial, so it may result in a failure to measure social and environmental objectives, and so not to measure proper the performance. Based on the 5E principals they categorized the performance measurement models into two main categories: one-dimensional (financial cost-benefit indicators, net economic present value), and multidimensional (Public service value model (PSV), Total Quality Management (TQM) in Public Sector, Performance Prism, Performance pyramid, Balanced Scorecard for the public sector, Benchmarking,).

A survey conducted in public administration in Romania by Profiroiu in 2013, demonstrated that there is a need to increase the awareness of the decisional factors, to clarify, improve and to embrace the utilization of such instruments in order to use them as political and managerial tools at the same time, and to acknowledge the importance of external factors (economic, social, political, international responsibilities, governmental policies and the legal framework).To understand the measurement of performance

Borst et al. 2014 (926) apply a regression to point out the attitudes toward the applicability of performance measurement in Dutch from the perspective of public officials. They adopt variables like applicability of performance measure-



ment, public sector versus private sector, politically steered organization, nature of work, work complexity, experience with performance measurement and quality of functioning of oneself and colleagues.

Wijaya and Akbar 2013 uses Partial Least Square (PLS) and Thematic Content Analysis to evidence that the factors of information, organizational objectives, and targets as well as external pressures determent the adoption of the performance measurement system.

The principal causes of an absence legal system of performance measurement in the case of Bosnia and Herzegovina, are highlight: i) little or no practice of conducting performance audits, ii) the lack of public reaction to the alarming situation in the public sector, iii) indifference of the responsible persons in the public sector to change the existing status quo and iv) inadequate legislation relating to public sector. Applying the Mann-Whitney non-parametric tests reveals that the degree of measuring and reporting performance indicators in the public sector in FB&H has a direct impact on the operational results shown in financial statements (Veledar et al. 2014,75)

The inductive use of performance measures enhances performance when performed a multivariate OLS model. The method used provides public sector managers the opportunity to communicate goals more clearly, to evaluate them and to revise policies. Is difficult for public managers to balance the proper measure for the proper time to use, taking in consideration that different purposes for using performance are associated with the situation. Taking this into consideration is difficult for public policy to improve performance but is also very important. (Spekléa & Verbeeten, 2014,139).

The public sector is view as composing from three dimensions: economic, social and environmental, so the use of only financial indicators does not increase performance but can generate a speculative behavior that is biased for the performance concept. Some difficulties in measuring the performance in the public sector are revealed as i) defining objectives for complex mission, ii) the lack of relevant and measurable, iii) the absence of a correlation between objectives and specific targets, iv) the lack of resources for building the necessary information systems, v) the cost of measuring performance, vi) high bureaucracy, vii) high corruption, viii) the relative inexperience of officials regarding the development and use of performance measures (Mihaiu, 2015, 42).

Even for developed countries, proper and effective performance measurement is challenging, and only benchmarking, and Common Assessment Framework (CAF) produce a real effect when public servant opinion. (Spalkova et al.,2015, 76). After analyzing 18 policy filed and 46 papers, the idea of combining performance indicators and public budgeting, in the case of Latvia, the result after approximative ten years, prove to be a fail, because the indicators lack a clear approach and guideline (Reinholde, 2015,55). Even before joining EU, in Romania were developed a series of measures to promote the adoption of systems and tools of quality management, particularly ISO and CAF (Leoveanu, 2016,34).

In a comparison between two countries, Italy and Malaysia, at a state level using the grounded-theory approach is revealed that although exist different levels of development in PMS, in both jurisdictions exist the same problem. PMS has not matured to measure outcomes and impact. The comparative study revealed that bureaucratic culture can be adjusted to become more performance orientated, with the help of performance management in the public sector. (Bianchi & Xavier, 2016, 10).

Since the tendency is to equate the resource consumption with service quality, by removing the financial aspect and only taking into consideration the human recourses, customer satisfaction, and effects, managers hope that key performance indicators would directly measure outputs and outcomes instead. For example the quality in teaching not to be equaled whit cost per student (Røge Lennon, 2018, 400).

A process for a smooth performance measurement process has started, and it must continue. A universal public sector performance tool applicable to all countries, and it was highlighted the existence of a variety of sizes measuring dimensions, applied at several levels of performance, using a non-parametric method (Lobonț & Bociu, 2017, 25).

Benchmarking exercises are supported to a certain extent since administrations and local governments do not have yet external standards of comparison, so we substitute a real market-based competition with the aim of improving the quality of service, and saving taxpayers' money (Kuhlmann & Bogumil, 2018, 26). The situation of measuring public sector performance is more difficult in less developed countries, countries less favorable cultural and political 'starting conditions' so compulsive benchmarking is more likely to prompt innovation

and learning than voluntary measures as they always encompass the risk of relapsing into old routines, but a certain degree of freedom is needed (Kulmann et al. 2018, p27).

Four measurement approaches can be summaries: standardization, benchmarking, contingency-based and service process-orientated (Jääskeläinen & Laihonen, 2014, 355). The most used instrument, on the opinion of public authorities, is CAF and benchmarking (Spalkovaet al.2015, 76).

The bodies of paper gander reveal that measuring public sector performance is essential and necessary for policymakers, as well as academia and citizen of a country. No matter at what level of the state the measurement happened, the gold is the same: to improve the performance.

## 5. CONCLUSIONS

To best-achieve the purposes of a systematic review were collected and analyzed articles published in scholarly literature between 2008 and 2018 on public sector performance particular research area. The systematic review was focused on four pillars in terms of public sector performance definition, measurement tools and methods, difficulties and other specific paradigms in the field.

Causes of difficulties of defining and measuring performance in the public sector are the multiplicity of the social and economic environment, perception and typologies of the public sector, informational asymmetry and the lack of skills of the users concerning performance, managers low interest in finding a new solution, the influence of the political system.

The future direction on performance measurement in the public sector includes a drive towards good governance, transparency, and accountability, and an integral part of the performance audit and organizational competency/capability. It also has to be taken into consideration the fact that implementing a PMS in the public sector can generate negative consequences such as increasing public expenditure, unjustly, on a higher rank of reported performance indicators that may contain errors in design to obtain more funds.

For future research is it recommend to apply the mixed method because it helps to explore more profoundly and it advances a more various and more productive point of views than one analysis does.

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# YOUTH UNEMPLOYMENT-EFFECTS AND EXPERIENCES OF SELECTED EU COUNTRIES

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## **Abstract**

*Unemployment, along with other negative phenomenon's, over the past few years has been affecting the Republic of Croatia and its inhabitants. Unemployment is one of the biggest problems of today that affects not only the individuals but also their close family and in the end the wider community.*

*Croatia records a high percentage of youth unemployment. The task of the state is to suppress unemployment and make it easier for young people to enter the labor market because long-term unemployment causes loss of self-confidence and negative consequences for further professional development. At the EU level since 1981, the Youth Guarantee works to guarantee education, training, and employment for young people in line with the goals and needs of the economy. When we talk about the consequences of long-term unemployment, we can divide them into the social and psychological consequences of long-term unemployment that will be elaborated in this paper. Social consequences include changes in work ethics and work values due to long-term unemployment*

and aggressive reaction to unemployment, such as criminal acts and delinquent behavior. Long-term unemployment and exclusion from the labor market also lead to the forgetting of previously acquired knowledge and skills, lagging behind the latest trends in the labor market, which makes the job search process even more difficult.

For reducing unemployment, it is necessary to implement measures for mitigation of youth unemployment. The aim of the paper is to analyze the consequences of youth unemployment and to explore the experience in solving this problem of selected European countries: The Republic of Croatia, Austria, Portugal, and the United Kingdom. The role of the state and its institutions must be proactive through active employment policies. According to research, the best solution for reducing youth unemployment is a political and social commitment to full employment.

**Keywords:** youth unemployment, long-term unemployment, active employment policies, EU countries

JEL Classification: F63, I25, O1

## 1. INTRODUCTION

Young people are the pillar of every society and the strength at which the future remains, they are the foundation of healthy growth and the basis for the development of the state. The labor market crisis and high unemployment rates are the cause of labor market disturbances in the Republic of Croatia and throughout the European Union. The group most affected by its consequences are young people. Unless serious measures for reducing unemployment will not be undertaken, the population of the Republic of Croatia will face the social, psychological, economic, and political consequences of unemployment, which have a major impact on society as a whole.

Croatia is fighting a high youth unemployment rate and is at the top of the list of priorities to ensure youth employment and their inclusion on the labor market. Youth unemployment is a growing problem that has long-lasting consequences for both society and the economy.

For the purpose of alleviating unemployment, each country carries out the determination of passive and active measures. Under passive measures, it involves the provision of material care during unemployment, relating to various monetary benefits, the right to retirement and health insurance, etc. Active mea-



asures aim to directly recruit or direct unemployed people through retraining to occupations with a workforce deficit.

## 2. CONSEQUENCES OF LONG-TERM UNEMPLOYMENT

Unemployment, along with other negative phenomenon's, over the past few years has been affecting the Republic of Croatia and its inhabitants. Unemployment is one of the biggest problems of today that affects not only the individuals but also their close family and in the end the wider community. In the case of young unemployed people, the consequences of their long-term unemployment are manifested in a large number of cases on their decision to postpone the establishment of the family because of the unfavorable financial situation in which they are unable to support the family and resolve the issue of buying a home. These reasons lead to the remaining unemployed people in joint households with their parents by the time they should already set up their own family and independent life. Most of them never set up their own family if they come to some later years of life. All of these reasons lead's to the aging of the population, the birth rate is slowly declining, a large number of young families are leaving the Republic of Croatia in a search for a job. All these reasons have great consequences for the whole population and economy of the Republic of Croatia.

When we talk about the consequences of long-term unemployment we can divide them into social, psychological, economic and even political consequences of long-term unemployment that will be addressed in this paper.

“The high unemployment rate in the Republic of Croatia indicates the inefficient use of working-capacity human resources. When employment is high, the outputs are high and they also drop high income. When unemployment is high, output drops income decreases and people's dissatisfaction increases. This leads to multiple negative consequences: economic, political, social and psychological” (Bušelić; 2001, p. 47).

### 2.1. SOCIAL CONSEQUENCES OF LONG-TERM UNEMPLOYMENT

Social consequences include changes in working ethics and work values due to long-term unemployment and aggressive reaction to unemployment, such as criminal acts and delinquent behavior.



Many authors emphasize the dangers of unemployment for an individual's mental state. According to K. Young (see Miller, Form, 1996), unemployed can express extreme aggressive attitudes towards their situation, escape into the world of fantasy by thoughts and acts, reveal in drinking alcohol and drugs, escape to illness, or seek a solution in criminal behavior. With multiple mental disorders, researchers point out that ones that have social nature, such as a greater degree of poverty, demoralization, and disturbed family relationships (Hawkins, 1979, Daniel, 1981). On the other hand, when it comes to the consequences of unemployment society as a whole, the same authors emphasize the inability to realize a social investment in human capital during the educational process (Štimac, 2002, p. 356).

Long-term unemployment can lead to criminal behavior, and criminal behavior also leads to unemployment, because employers are very careful when recruiting new staff so that their employees have no criminal dossier. Unemployed people often turn to crime as a solution to their current problems and blame the state and the state of the economy as the cause of their problems. The population of working age should be able to be effective and realize themselves on the business plan because the lack of the same potential leaves negative consequences on the psychological health of the person and the social position in society.

Over past few years, there is a trend of emigrating young long-term unemployed people who are in a search for a job, which is called a "brain drain" in the study of social consequences of unemployment. It represents the migration of highly educated experts and scientists from the country they live in.

## 2.2. PSYCHOLOGICAL CONSEQUENCES OF LONG-TERM UNEMPLOYMENT

Psychological health means a series of "affective, cognitive and behavioral processes, ranging from disrupted to high psychological health. Different aspects of psychological health can represent special measures in the research of psychological consequences of unemployment. Unemployment includes learning new roles and adapting to changed circumstances. All these changes for the individual are a source of stress that retreats specific changes in their perception and behavior. They are called psychological consequences of unemployment" (Milas, 2016, p.65).

Psychological health is a combination of different processes. Situations, when people are left without permanent employment, require new adjustments, creating new competencies and learning, and are a source of stress for an individual that results in changes in the behavior of an unemployed person. An unemployed person remains without monthly income, the realization of herself through work and losing social contacts. These facts increase the stress that leads to psychological consequences of unemployment. Some recent research has shown that there is a higher number of suicides amongst the unemployed, especially during the holiday season. The impact of unemployment on the psychological health of an unemployed person occurs within the first few weeks to three months after the loss of a job. After that time the unemployed person's length of unemployment is a less important fact than the fact that he lost his job and financial security. Psychological consequences of unemployment are most affected by people belonging to the age group of 30 to 59 years. For such persons, it is essential to attend various training and seminars through various programs aimed at unemployed people. Long-term unemployed feel excluded from the labor market and have a sense of helplessness and loss of compass from where to start again. For these reasons, it is necessary to carry out a number of training designed exclusively for them and tailored to their needs.

We can conclude that unemployment really affects people's health, especially psychological and is a major source of everyday stress due to the inability to find a job and to earn the income necessary to meet basic living needs as well as the realization of various social interactions and the impossibility of realization of themselves on a professional level.

### **2.3. ECONOMIC CONSEQUENCES OF LONG-TERM UNEMPLOYMENT**

Looking at the economic consequences of unemployment, we come to the conclusion that it is possible to analyze them from an individual's point of view and from the point of view of the impact on the economy. The consequences of unemployment that are manifested in an individual are the loss of income and financial security of an individual. From a point of view and the impact on the economy, the high unemployment rate represents a loss in production, but also the loss of value of human capital. A long-term unemployed person does not generate income that is the source of taxation, apropos the state does not receive funds from the contribution from work. In addition to this fact, the

state is obliged to pay a fee to unemployed persons under the law, and every unemployed person is a cost to the country in which he lives. Unemployment ultimately makes an enchanted circle that does not bring benefits to either the individual or the economy as a whole.

#### 2.4. POLITICAL CONSEQUENCES OF LONG-TERM UNEMPLOYMENT

A large number of unemployed persons means a reduction of taxpayers, which directly affects the reduction of state revenues. The increase in youth unemployment is causing higher allocations for social benefits. The country is facing a budget deficit that has to be settled by the most frequent increase in taxes, and increases of tax affect the further reduction in purchasing power as well as the greater pressure on employers. (Državni zavod za zaštitu obitelji, materinstva i mladeži, 2002, p. 356)

As a result of unemployment, as mentioned above, states are faced with one of the biggest problems, namely “brain drain”. By leaving the experts that are already mentioned, who with their knowledge and skills greatly contribute to the development of the economy and the state, the state loses the prospect for future development. The second fact is that long-term unemployed persons and young families are emigrating from the Republic of Croatia and the demographic picture does not have a bright future.

It is imperative to begin to create conditions that motivate young people to stay and live in the Republic of Croatia. Provide conditions for formal education, and then create measures, projects, and activities for their employment, work, and progress. Accordingly, the level of personal satisfaction, the achievement on the business plan, and the contribution to growth and development of the country in which they live will increase.

To conclude, all the consequences of long-term unemployment, as well as labor market outgoings, lead to the forgetting of previously acquired knowledge and skills, lagging behind the latest trends in the labor market, which makes the job search process more difficult.

Therefore, measures to reduce youth unemployment are necessary in order to reduce unemployment and prevent the emigration of young people.

### 3. MEASURES TO ALLEVIATE YOUTH UNEMPLOYMENT

Unemployment is a condition in which a part of working-able members of a society cannot be appropriately employed with their abilities and qualifications, with the usual salary (Bejaković, 2003, p. 662).

The Europe 2020 Strategy aims at achieving long-term sustainable growth with high employment, productivity and social cohesion. Within the aforementioned strategy, one of the initiatives is named “Youth on the move”. The initiative was launched in 2010, aimed at achieving greater mobility of young people, lifelong learning, and reducing early school leaving. The biggest remarks by employers related to the lack of skills, expertise, knowledge and work experience of young people. The task of the state is to suppress unemployment and make it easier for young people to enter the labor market because long-term unemployment causes loss of self-confidence and negative consequences for further professional development.

In order to improve the position of young people in the labour market, the Youth Guarantee, first mentioned in 1981, is defined as a social context in which all young people guarantee the chances of education, practice, and employment in accordance with their personal aspirations, opportunities, and interests, as well as the needs and goals of society and economy (Bejaković & Mrnjavac, 2014, p. 34).

The Youth Network of Young Croatian Youth Organizations, which brings together 64 Youth and Youth Associations, has invested several years of efforts in advocating a systematic approach to addressing youth unemployment problems by recognizing the challenges that arise from the complexity of such a comprehensive reform (Bejaković & Mrnjavac, 2014, p. 35).

The Youth Guarantee should ensure that every person under the age of 30 gets a quality job offer (competition, exercise, job training, education or continuation of education within 4 months of the occurrence of unemployment.) Measures include providing a good career counseling counselor to start a new job as well as adjusting the education system, especially vocational, to the real needs of the labor market, by adjusting the enrolment quotas. Measures include empowering the workplace learning system, encouraging continued higher education and increasing the quality of education with as much practical. The

guarantee seeks to cover the broader circle of young unemployed people, with particular attention being paid to young people with lower qualifications and highly educated without work experience (Ministarstvo rada i mirovinskog sustava, 2019).

Part of the funding for the Youth Guarantee Fund comes from the national budgets of each EU country, but the largest source of funds is the European Social Fund. The implementation plan contains a complete description of the reforms and measures to be taken to facilitate the transition from education to employment to youth and establish a Guarantee scheme for young people.

The implementation plan is divided into two basic units:

- The first is reforms and measures to prevent early abandonment of education and the activation of inactive youth (persons not registered as unemployed and not in the education or training system);
- The second part is reforms and measures aimed at activating young people in the labor market by empowering young people to create jobs through subsidies, empowering employers to offer quality workplace training schemes (internships, vocational training), incentives for youth entrepreneurship,

It is a flexible document that changes and adds to changes in circumstances such as funding availability, labor market changes, the efficiency of a particular measure, and the like (Portal Garancija za made, 2019).

For regions affected by the highest rates of unemployment, where Croatia is certainly entering, the Council of the European Union and the European Parliament have launched the Youth Employment Initiative. This initiative is moderate in regions with an unemployment rate of over 25%, which would include youth, unemployed persons up to 30 years of age, who are categorized as NEET. In May 2013, the European Commission published Special Recommendations by the Member States within the so-called “European Semester, in which it published recommendations to each member on what is needed to rebuild growth and jobs. Among other recommendations, the Member States propose to re-examine the gap in the labor market created between older workers who enjoy the contractual privilege of indefinite, favorable working conditions and fixed-term workers (Bilić & Jukić, 2014, p. 497).

The European Learning Association, established by the European Commission in July 2013, aims to improve the quality and supply of apprentices across

the EU and change the way students think about learning. The Alliance leads to co-operation between public bodies, business partners, youth representatives, and other key stakeholders to coordinate and validate various initiatives for successful apprenticeship programs. In response to the establishment of the Alliance, in October 2013, the Council issued a statement in which high-quality education was recognized as an effective tool for improving the transition from education to the labor market. Teaching Reform can be included in the implementation plans of the Youth Guarantee Program. If needed, they can use EU funding and available technical expertise to improve their vocational education and training systems (Bilić & Jukić, 2014, p. 497).

In addition to investing in education and internship programs, labor mobility is one of the solutions to the issue of youth unemployment, so young people, as a result of the inability to find a job in their state, are encouraged to look for it outside its borders, in one of the member states. This is enabled by the establishment of the EURES network of public employment offices of the Member States of the European Economic Area and Switzerland coordinated by the European Commission. The purpose of EURES is to provide information, consultation, and brokerage services to employers and job seekers, as well as to all citizens who consider them to be able to use the principle of free movement of people. With Croatia joining the EU, the Croatian Employment Service became part of the European Network of Public Employment Services and thus became available to Croatian citizens for employment mediation services in other countries (Bilić & Jukić, 2014, p. 497).

For the purpose of alleviating unemployment, each country carries out the determination of passive and active measures. Under passive measures, it involves the provision of material care during unemployment, relating to various monetary benefits, the right to retirement and health insurance, etc. Active measures aim to directly recruit or direct unemployed people through retraining to occupations with a workforce deficit.

The first well-known classification of active labor market policies adopted by the OECD in 1993 is still well illustrated by what active policy work deals with and distinguishes five groups of measures:

1. Public Employment and Administration Institutions - Help unemployed job seekers by providing them with information on vacancies, as well as controlling and implementing unemployment benefits

2. Measures of education - additional education and retraining for unemployed, unempoyed and unempoyed persons
3. Measures for young people - refer to the transition of young people from the education system to the labor market
4. Subsidizing employment - more professional training is available to work without establishing employment relationships by which employers from the private sector reimburse the costs of contributions. Vocational training can last from one to three years, depending on the requirements of each profession
5. Measures for groups with a difficult employment factor - refer to the recruitment of persons with specific problems, eg, defenders, invalids, addicts, former prisoners, etc.
6. Measures of active employment policy of the Croatian Employment Service of the Republic of Croatia (Portal Od mjere do karijere, 2019):
  1. Employment subsidy
  2. Training grants
  3. Self-employment support
  4. Education of the unemployed
  5. Training at the workplace
  6. Measures for acquiring the first work experience/internship
  7. Public Works
  8. Measures to preserve jobs
  9. A permanent season.

Professional training without establishing a working relationship is the measure that has the largest number of users and is, therefore, the most well-known in the public. The duration of vocational training is usually 12 months, and it can be up to 36 months if it is a particular profession where a master's exam is required at the end of the program. During vocational training, participants are paid a fee in the amount of non-taxable scholarships as well as transportation costs, and employers have reimbursed the costs of compulsory contributions. From the aspect of employers, the difference is between employers from the private and public / state sectors. Private sector employers must retain at least 50% of young people who have been trained to work or otherwise in the following year are not entitled to use this measure. On the other hand, this obligation does not bind the employers and the public/state sector, they can take new young people after the expiry of the professional training, while their



participants return to the register of unemployed persons after this completed program without switching to employment.

As much as the positive measures of active employment policies can be - providing additional education and offering the ability to overcome new skills and advancement in the profession, the best means of reducing unemployment can only be to create new jobs, which is only achievable with the help of economic growth. The problem of youth unemployment can't be solved by itself, it can only come as a result of structural economic reforms, not only in Croatia but also in the rest of Europe (Bilić & Jukić, 2014, p. 502).

#### 4. THE YOUTH GUARANTEE INDICATORS

Youth Guarantee was adopted in 2013 by the European Commission. The main reason for adopting Youth Guarantee was to ensure that (European Commission, 2018a, p. 5):

1. Young people need to receive a good-quality offer of a job,
2. Appropriate apprenticeship and traineeship
3. Continued education within 4 months of leaving formal education or becoming unemployed.

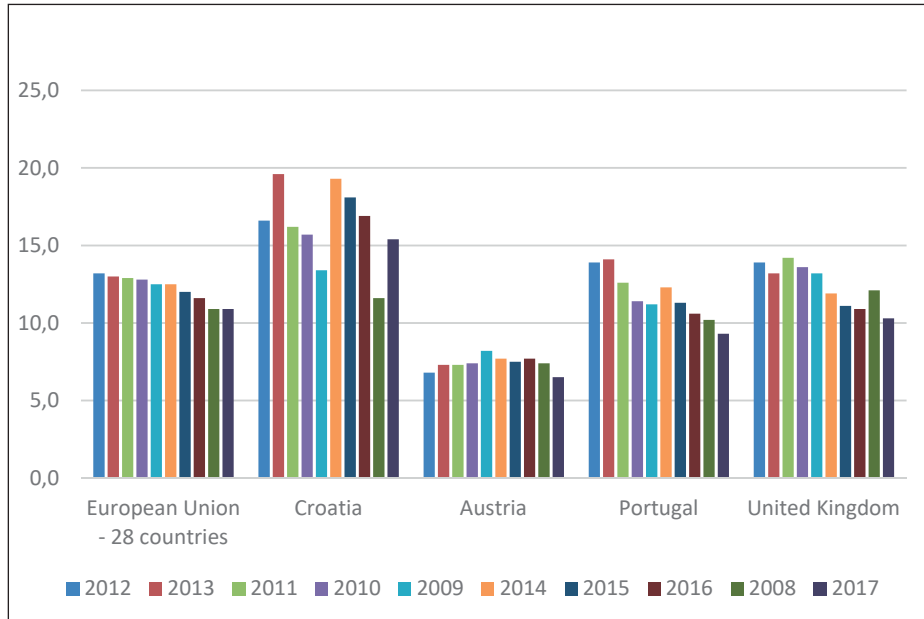
European Commission was established *Methodological manual and Indicator Framework for Monitoring the Youth Guarantee*. The main indicator of youth unemployment is the NEET rate. In 2014 were under 7.0 million of young NEETs, and 2017 were over 5.9 million of young NEETs. In the 2014 the Republic of Croatia had over 10 % inactive young NEETs (Greece, Italy, and Cyprus also). The NEET population includes young people who actively looking for a job, also young people who eighter do not seek a job. Some of them are disabled, sick and discouraged in seeking for a job. The total NEET rate shows the size of the youth population for the Youth Guarantee scheme. (European Commission, 2018a, p. 10).

Each EU Member State designing Youth Guarantee scheme according to national circumstances. (European Commission, 2016).

According to the Monitoring Manual, the target population for the Youth Guarantee is „young people under the age of 25 years and NEET population (young people not in employment, education or training).



**Figure 1.** Young people neither in employment nor in education and training by age and labor status (NEET rates), WSTATUS: Not employed persons, in percentage

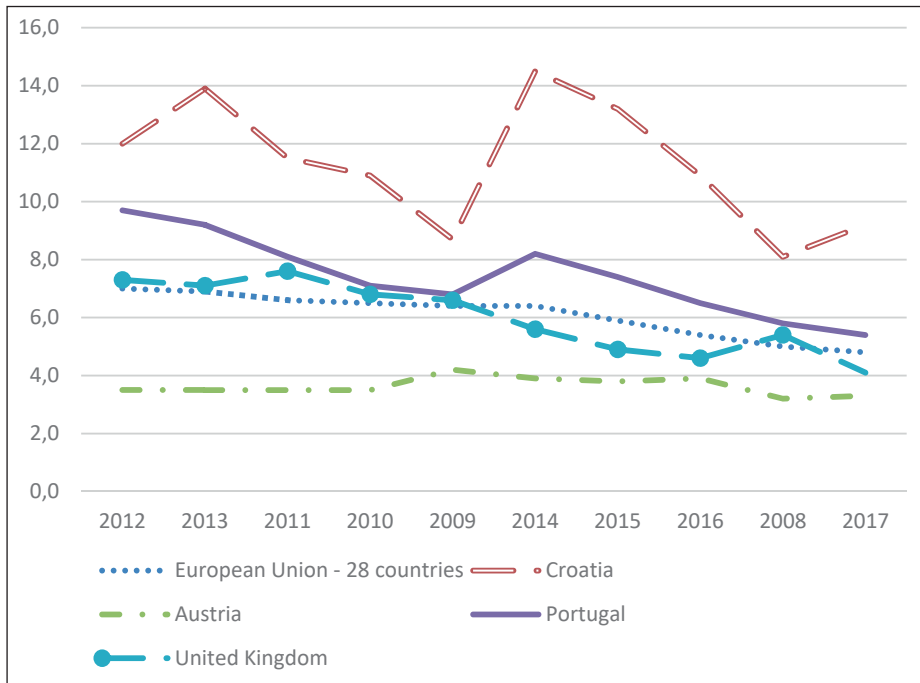


**Source:** Eurostat, 2019b

Figure 1 shows not employed persons at EU-28 level, and the level of selected countries. Austria has the lowest percentage of not employed persons in the period 2012-2017. Croatia has the highest percentage of not employed persons and the increasing percentage in 2017.

Figure 2 shows the movement of NEET's group at the level of the total population of EU-28 and the selected countries. NEET's group is a targeted group for Youth Guarantee measures. Each member state administration should be able to adequately target their needs. These indicators also point to the ability of the administration to recognize the needs of target groups and formulate adequate support measures for young people

**Figure 2.** Young people neither in employment nor in education and training by age and labor status (NEET rates), WSTATUS: Unemployed persons, in percentage

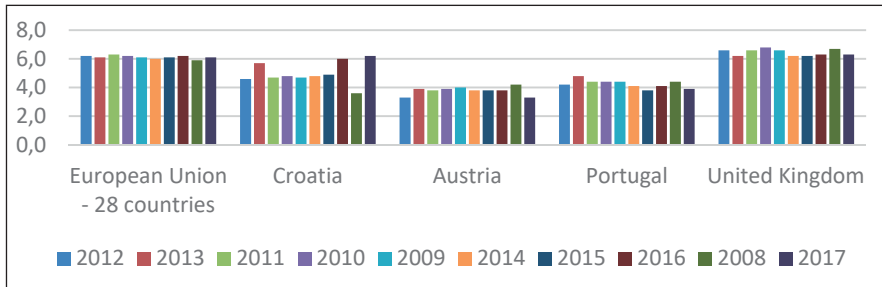


Source: Eurostat, 2019b

The number of unemployed persons, as figure 2 shows is similar as figure 1 was showed. Based on these data, Croatia has a problem with dealing with this indicator. At EU-28 level a drop-in percentage can be observed in period 2012-2017.

The Austrian example should encourage other EU member states to make more effort in seeking better solutions.

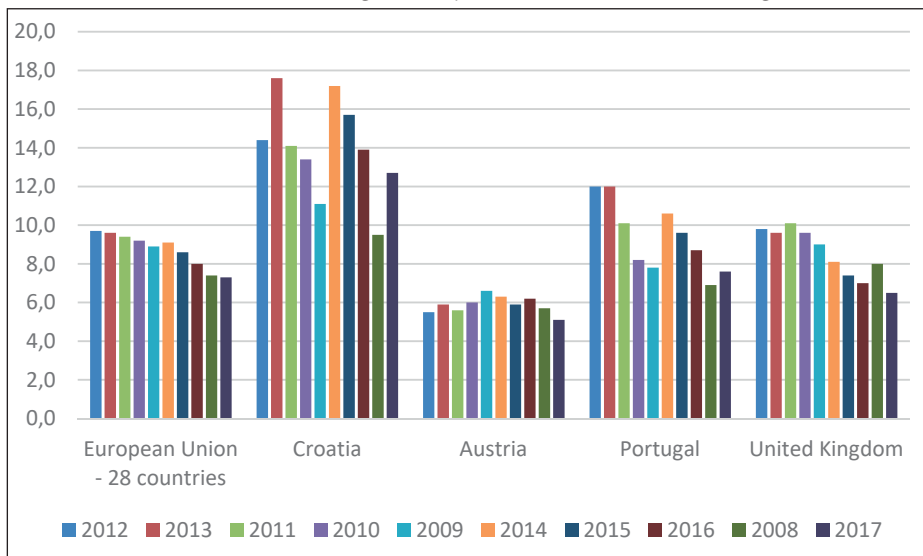
**Figure 3.** Young people neither in employment nor in education and training by age and labor status (NEET rates), WSTATUS: Inactive persons, in percentage



Source: Eurostat, 2019b

The United Kingdom has a fairly high rate compared to the other selected countries. Group of inactive persons represents the target group for youth initiative schemes in all selected countries.

**Figure 4.** Young people neither in employment nor in education and training by age and labor status (NEET rates), WSTATUS: Persons would like to work (seeking employment or not), in percentage



Source: Eurostat, 2019b.

## 5. KEY INDICATORS OF YOUTH GUARANTEE IMPLEMENTATION BY SELECTED COUNTRIES

There are four key indicators for direct monitoring Youth Guarantee by country (European Commission, 2018a, p. 46):

*In Youth Guarantee beyond the 4m target.* This is the main indicator which explains the proportion of young people in the Youth Guarantee preparatory phase beyond the 4-month target (% annual average stock), this target is 0%.

*Timely & positive exits.* This is a supplementary indicator Target for Positive and timely exits from the YG preparatory phase is 100% (% total exits).

*NEET coverage indicator.* This is a supplementary indicator for direct monitoring: stock of young people in the YG preparatory phase (annual average, in percentage) / NEET population (annual average, in percentage), the target is 100%.

*Follow-up 6m (positive).* This is the main indicator for follow-up monitoring: Situation of young people six months after exiting the Youth Guarantee preparatory phase (percentage of total exits), the target is 100%.

**Figure 5.** Key indicators of Youth Guarantee implementation by selected countries



**Sourece:** European Commission, 2018a, p. 46-47

The United Kingdom does not use a 4-month observation. Instead of 4-month observation, the United Kingdom use 3-month observation. Also, follow-up data are not available for the United Kingdom in 2017. The Republic of Croatia needs to improve the NEET coverage indicator. Austria is a good example of the level of this indicator. Portugal, Croatia and the United Kingdom needs to improve especially NEET coverage indicator, which is targeted to 100 %. Portugal, Croatia and the United Kingdom also needs to improve Timely & positive exits indicator, which is also targeted to 100 %. The overall picture of the implementation of the Youth Guarantee scheme indicates that will be necessary to make an extra effort to improve these indicators, following a good example of Austria.

## 6. YOUTH UNEMPLOYMENT, AT EU LEVEL AND AT THE LEVEL OF SELECTED MEMBER STATES

Resolving the issue of youth unemployment, at EU level and at the level of individual Member States, has attracted the attention of both politicians and scientists over the last few years. Reducing the youth unemployment rate, therefore, requires efforts at EU level, but also for each of its members. According to data from relevant databases, there is a growing interest of scientists to study this issue.

Young people are particularly vulnerable in the labor market. It is therefore not uncommon to address the issue of employment or youth unemployment as the focus of the researcher. Young people by definition are those aged between 15 and 24. This group of young people is particularly sensitive to the impact of the crisis and the recession as it turned out in 2009. One particularly vulnerable group of young people makes the NEET population. This population includes young people who are not employed and are not currently in education either. Different countries of the European Union have different policies and national circumstances in which this issue of youth unemployment is addressed. According to Eurofound data, some of the biggest risk factors for young people are (Eurofound, 2017):

- Young people with low levels of education have a three times higher chance of falling into the NEET category
- Especially vulnerable young migrants who have as much as 70% chance of falling into a category such as the NEET group.
- Young people with some forms of disability or children of divorced parents or living in low-income households- Young people living in remote areas.

Solving the problems of youth unemployment requires adherence to specific circumstances of each Member State. The results of this issue are different for individual EU member states. For the purposes of this paper, examples of Austria, Portugal, United Kingdom and the Republic of Croatia have been taken. Eurofound has identified three European clusters representing different indicators of young people in the labor market. The first cluster includes the Nordic, Western and Continental countries (Austria and the United Kingdom were selected for this research). The second cluster includes Mediterranean countries (Croatia and Portugal were selected for this research). The third cluster consists of Eastern European countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia) (Eurofound, 2017)

The Austrian example is good for studying. Austria has one of the lowest youth unemployment rates in the EU.

**Table 1.** Youth labor market indicators in the EU 27, 15-24 years of age

	Urate %	Rank	Uratio %	Rank	NEET ratio %	Rank	OLF ratio %	Rank	Emp. ratio %	Rank
DE	8.1	1	4.1	1	7.7	5	49.3	8	46.6	5
AT	8.7	2	5.2	3	6.5	3	40.1	3	54.6	3
NL	9.5	3	6.6	6	4.3	1	30.1	1	63.3	1
DK	14.1	4	9.1	16	6.6	4	35.9	2	55.0	2
MT	14.2	5	7.3	9	11.1	10	48.9	7	43.8	6
LU	18.0	6	5.1	2	5.9	2	73.2	26	21.7	21
FI	19.0	7	9.8	17	8.6	7	48.4	6	41.8	7
CZ	19.5	8	6.1	4	8.9	8	68.7	19	25.2	16
BE	19.8	9	6.2	5	12.3	14	68.5	18	25.3	15
SI	20.6	10	7.1	8	9.3	9	65.6	16	27.3	14
EE	20.9	11	8.7	13	12.5	15	58.3	9	33.0	9
UK	21.0	12	12.4	24	14.0	17	40.7	4	46.9	4
RO	22.7	13	7.0	7	16.8	22	69.1	20	23.9	18
SE	23.7	14	12.4	23	7.8	6	47.4	5	40.2	8
FR	24.6	15	9.0	15	12.2	13	62.2	15	28.8	10
LT	26.4	16	7.7	11	11.1	11	70.7	23	21.6	22
PL	26.5	17	8.9	14	11.8	12	66.4	17	24.7	17
ZY	27.8	18	10.8	20	16.0	21	61.0	12	28.1	13
BG	28.1	19	8.6	12	21.5	27	69.6	22	21.9	20
HU	28.1	20	7.3	10	14.7	19	74.1	27	18.6	24
LV	28.4	21	11.4	21	14.9	20	59.9	11	28.7	11
IE	30.4	22	12.3	22	18.7	23	59.5	10	28.2	12
SK	34.0	23	10.4	19	13.8	16	69.5	21	20.1	23
IT	35.3	24	10.1	18	21.1	26	71.3	25	18.6	25
PT	37.7	25	14.3	25	14.1	18	62.1	14	23.6	19
ES	53.2	26	20.6	27	18.8	24	61.2	13	18.2	26
EL	55.3	27	16.1	26	20.3	25	70.8	24	13.1	27

Source: Tamesberger, 2015, according to Eurostat, 2012.

Table 1. shows that Austria has one of the lowest rates of youth unemployment in the European Union, Urate 5.2% NEET ratio of 6.5%, OLF ratio of 40.1% and Youth Employment ratio of 54.6%, which had ranked third in the European Union.

Unlike Austria, the United Kingdom has Uratio 12.4%, NEET ratio 14%, OLF ratio 40.7% youth Employment ratio 46.9%, which ranks fourth in the

European Union, although the United Kingdom is at 24th Place in the EU by Uratio.

Portugal, unlike Austria and the United Kingdom, has Uratio 14.3%, which ranks it at 25th place, NEET ratio 14.1% (18th place), OLF ratio 62.1% (14th place) and youth employment ratio 23.6% (19th place).

According to Table 2. Youth unemployment figures, 2007-2017 (%) (Eurostat, 2018a) it is noticed that EU-28 had a youth unemployment ratio of 6.9% in 2007, while this percentage in 2017 was 7.0%. Croatia had a youth unemployment rate of 9.2% in 2007 and 9.7 % in 2017 years. Austria recorded the youth unemployment ratio in 2007 by 5.6% and in 2017 5,5 %. Similarly had Portugal, 8.6% in 2007 and 8.1% in 2017. The United Kingdom in 2007 had a rate of 8.8% and 7.0% in 2017.

**Table 2.** Youth unemployment figure 2007-2017

	Youth unemployment rate				Youth unemployment ratio			
	2007	2015	2016	2017	2007	2015	2016	2017
<b>EU-28</b>	15.8	20.3	18.7	16.8	6.9	8.4	7.8	7.0
<b>Euro area</b>	15.6	22.3	20.9	18.8	6.7	8.8	8.3	7.4
<b>Belgium</b>	18.8	22.1	20.1	19.3	6.4	6.6	5.7	5.4
<b>Bulgaria</b>	14.1	21.0	17.2	12.9	4.2	5.0	4.1	3.4
<b>Czech Republic</b>	10.7	12.6	10.5	7.9	3.4	4.1	3.4	2.5
<b>Denmark</b>	7.5	10.8	12.0	11.0	5.3	6.7	7.9	7.0
<b>Germany</b>	11.8	7.2	7.1	6.8	6.1	3.5	3.5	3.4
<b>Estonia</b>	10.1	13.1	13.4	12.1	3.8	5.5	5.8	5.6
<b>Ireland</b>	9.3	20.5	17.0	14.5	6.4	9.6	8.5	6.7
<b>Greece</b>	22.7	49.8	47.3	43.6	7.0	12.9	11.7	10.9
<b>Spain</b>	18.1	48.3	44.4	38.6	8.7	16.8	14.7	12.9
<b>France</b>	19.5	24.7	24.6	22.3	7.2	9.0	9.0	8.0
<b>Croatia</b>	25.4	42.3	31.8	27.0	9.2	14.0	11.6	9.8
<b>Italy</b>	20.4	40.3	37.8	34.7	6.3	10.6	10.0	9.1
<b>Cyprus</b>	10.2	32.8	29.1	24.7	4.2	12.4	10.8	9.0
<b>Latvia</b>	10.6	16.3	17.3	17.0	4.5	6.7	6.9	6.8
<b>Lithuania</b>	8.4	16.3	14.5	13.3	2.3	5.5	5.1	4.6
<b>Luxembourg</b>	15.6	16.6	19.1	15.3	4.0	6.1	5.8	4.7
<b>Hungary</b>	18.1	17.3	12.9	10.7	4.6	5.4	4.2	3.5
<b>Malta</b>	13.5	11.8	11.0	10.4	7.3	6.1	5.7	5.5
<b>Netherlands</b>	9.4	11.3	10.8	8.9	4.3	7.7	7.4	6.1
<b>Austria</b>	9.4	10.6	11.2	9.8	5.6	6.1	6.5	5.5
<b>Poland</b>	21.6	20.0	17.7	14.0	7.1	6.0	6.1	5.2
<b>Portugal</b>	21.4	32.0	28.2	23.8	8.6	10.7	9.3	8.1
<b>Romania</b>	19.3	21.7	20.6	18.3	6.1	6.8	5.8	5.5
<b>Slovenia</b>	10.1	16.3	15.2	11.2	4.2	5.8	5.1	4.4
<b>Slovakia</b>	20.0	26.5	22.2	18.9	7.1	8.4	7.2	6.3
<b>Finland</b>	16.5	22.4	20.1	20.1	8.8	11.7	10.5	10.7
<b>Sweden</b>	19.2	20.4	18.9	17.8	10.1	11.2	10.4	9.8
<b>United Kingdom</b>	14.3	14.6	13.0	12.1	8.8	8.6	7.6	7.0
<b>Iceland</b>	7.1	8.8	6.5	8.2	5.6	7.1	5.4	6.5
<b>Norway</b>	7.3	10.5	11.3	10.7	4.4	5.5	6.1	5.6
<b>Switzerland</b>	-	-	-	-	-	-	-	-
<b>Turkey</b>	17.2	18.6	19.6	20.7	6.3	7.7	8.2	8.9
<b>United States</b>	10.5	11.6	10.4	9.2	-	-	-	-
<b>Japan</b>	7.7	5.5	5.1	4.7	-	-	-	-

: data not available

\* The quarterly youth unemployment rate is seasonally adjusted.

Source: Eurostat, 2019a



The main features that influence youth unemployment in Austria are: (Tamesberger, 2015, p. 36): the higher the adult unemployment rate and the size of the apprenticeship system (vocational) reduce the rate of youth unemployment. What country is investing more in active employment policies for young people is the lower the NEET ratio and the OLF ratio are. (Tamesberger, 2015, p. 36). The youth unemployment survey conducted in Austria indicates that the adult unemployment rate (with a positive sign) and the size of the apprenticeship system (with a negative sign) have become apparent as the main factors affecting all four youth unemployment indicators. Economic policy measures pushing demand and affecting the reduction of the general unemployment rate also affect the reduction of the youth unemployment rate. Therefore, in the research in question, the importance of public investment in active youth employment policies, stimulation of demand and the importance of education, has been noted. Austria is more effective in integrating youth into the labor market, more so than in other EU member states, but less successful in integrating the NEET youth group.

In the Republic of Croatia, the issue of active employment policies is also studied by the professional and scientific public. Results of the research suggest the need for active employment policies to move closer to European contexts (Babić, 2012). According to the evaluation of active employment policies from 2009 and 2010, according to types of measures, they are modest in the funds, but if they are well designed they can help the participants (Matković, 2012, p.95). The research of NEETs population in the EU 28 was conducted by Eurofound (2016) and brought profiles countries that are displayed below.

## 7. EXPERIENCE IN RESOLVING THE YOUTH UNEMPLOYMENT FROM SELECTED EUROPEAN COUNTRIES

### 7.1. THE YOUTH GUARANTEE SCHEME IN CROATIA

The NEET rate (16,9 % in 2016) and the youth unemployment rate in Croatia (26,4 % in 2017) were high.

The European Commission from the 2018 country report discussed next achievements in Croatia (European Commission, 2018c, p. 4):

- ✦ „The establishment of a network of Lifelong Career Guidance (LLCG) Centres across Croatia is a step forward in the integration of employment programmes,
- ✦ Active labor market measures are insufficiently targeted at vulnerable groups,
- ✦ Secondary vocational education would benefit from further alignment with labor market needs“.

Croatia has 13 Centres for Lifelong Career Guidance, and by 2020 the plan is to reach at least 22 Centres across the Republic of Croatia. Also, Croatia has established data exchange system between the Croatian Public Employment Service and the Ministry of Labour and Pension System as well as the Ministry of Science, Education and Sports (European Commission, 2018c, p. 4). Active Labour Market Policy’s measures need to be better defined for long term unemployed and low-skilled persons. The Croatian Youth Guarantee scheme is reached 54 % of NEET’s and 68,3 % of participants were in employment in 18 months after leaving the Youth Guarantee scheme. Progress has been made, although efforts are still needed to improve the indicators. In June 2013 the Ministry of Labour and Pension System formed the Youth Guarantee Council and brought the measures for employment policies at the regional and local level through Local Employment Development Initiatives (European Commission, 2018c, p. 6).

## 7.2. THE YOUTH GUARANTEE SCHEME IN AUSTRIA

Austria has presented a Youth Guarantee Implementation Plan in 2014. This country has established an effective and strong partnership between public authorities and social partners. Some of the main measures are „Education and Training until 18“and supra-company apprenticeship scheme (European Commission, 2018d, p.5). The European Commission from the 2018 country report discussed next achievements in Austria (European Commission, 2018d, p. 4):

- ✦ „On the back of solid economic growth, employment is growing faster than the labor force,
- ✦ Implementation of Austria’s education reform agenda has so far not translated into improved education outcomes,
- ✦ Various policy and legal initiatives seek to help young people with a migrant background, including recognized refugees and people under ‘subsidiary protection’ to integrate into Austrian society“.

Austria has established in 2008 the *Training guarantee*. The aim of this measure was to complete vocational education for young people, and in 2016 has established the Education/Training until 18“ (European Commission, 2018d, p. 5).

### 7.3. THE YOUTH GUARANTEE SCHEME IN PORTUGAL

Portugal is a good example of a country which has been improving the labour market for young people. This country has a network of partnership form implementing the Youth Guarantee and a high level of sustainable integration. The European Commission from the 2018 country report discussed next achievements in Portugal (European Commission, 2018e, p. 4):

- „Labour market conditions keep improving, thanks to the economic recovery but youth unemployment remains a challenge,
- Programmes are being rolled out and reforms implemented in Vocational Education and Training to upgrade the skills of the adult population,
- Employment is fast increasing contributing to a decrease in total unemployment while wage pressure remains low,
- The recent strong increase in job creation has substantially improved the country’s labor market,
- Portugal Social Innovation is an example of an advanced initiative investing in social innovation and entrepreneurship projects“.

### 7.4. THE YOUTH GUARANTEE SCHEME IN THE UNITED KINGDOM

United Kingdom doesn’t implement the Youth Guarantee but has a strong political commitment for improving labor market indicators for young people in the UK. One of the interesting data is a relatively high rate of inactive young persons.

According to the Commission’s assessments (European Commission, 2018b) some of the recommendations were:

- Improving public and private investments and raise productivity
- Improving labor market progression for most people (in skills, wages, in their qualifications)
- Dissemination of participation in higher education for young people is still a political priority.

United Kingdom's government have The Youth Contract (from 2012 to 2015). This is package support for young people (16-17-year-old NEET's) which included (European Commission, 2018b, p. 6):

- „extra Jobcentre Plus (PES) advisor support, including a referral to the national careers service,
- additional apprenticeship and training places,
- work experience,
- sector based work academies and additional support for NEETS and disengaged 16-17-year-olds to help them get into sustained learning, an apprenticeship or jobs with training“.

The Youth Contract continued to be funded after 2015, until March 2017. Instead, the Youth Contract United Kingdom has introduced the Youth Obligation, after April 2017. Instead of Job Seekers Allowance, the Youth Obligation provides support by a new scheme – Universal Credit. Universal Credit is supporting not only for a youth unemployed person but also for people who cannot work or people who need support in different labor market situations. This support includes assistance for childcare and housing.

According to available data, the share of NEETs population which was covered by the Youth Guarantee and 2016 was only 10.5% and 58.4% of young people were unemployed or inactive. Data for the new universal credit schemes show that population coverage by these measures is still close to 20%, but yet the vast majority of young people in the UK do not get any unemployment related benefit (European Commission, 2018b, p. 7).

## 8. CONCLUSION

Unemployment caused by a long-term job-search or loss of an existing job causes a great deal of stress to people in the situations mentioned and represents the existential problem of the individual as well as society as a whole. Long-term unemployment leads to negative consequences for a long-term unemployed individual, and ultimately to the state's economy. In order to stop negative trends, the Republic of Croatia must define measures, projects, and activities aimed at the employment of people and setting up detailed investment programs.

Because of the high unemployment rate of the youth, Croatia and some other EU countries have to make great efforts to alleviate such unemployment.

One of the main goals of the Europe 2020 strategy is to carry out a series of measures and projects aimed at facilitating and accelerating the transition of young people from the education system to the labor market.

Among the most famous is the Guarantee for Youth, and also the Youth Employment Initiative and the EURES Network. All of them are being implemented to increase the quality of education, greater mobility of young people and faster employment after the completion of the educational process.

Reducing youth unemployment is of paramount importance for every country because young people are the future of development and survival of every economy.

In the selected countries (Croatia, Austria, the United Kingdom, and Portugal), further improvements can be made in the following indicators: in Youth Guarantee beyond the 4m target, Timely & positive exits, NEET coverage indicator and Follow-up 6m (positive). Each of these countries has its own goals and strategies in addressing youth unemployment issues.

At the EU-28 level, positive trends in the reduction of youth unemployment rates are observed in the ten-year period. Active youth employment policies need to be well designed, generous funding and the results evaluated. In this regard, further research on key indicators of youth labor market activities, employment measures are needed in order to formulate more effective youth employment policies in selected countries.

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# CORPORATE GOVERNANCE REPORTING AND FINANCIAL AND MARKET PERFORMANCE OF SELECTED COMPANIES ON ZAGREB STOCK EXCHANGE

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## **Abstract**

*Issuers whose shares are admitted to trading on a regulated market operated by the Zagreb Stock Exchange are obliged to follow Corporate Governance Code recommendations and annually report to the public about their compliance with the respective provisions of the Code. When reporting to the public about their compliance the “comply or explain” principle is applied. Moreover, issuers of shares as public interest entities have an obligation to include their corporate governance statements into management reports when making their annual financial reports available to the public. The main goals of corporate*

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*governance reporting are to raise awareness of the importance of corporate governance itself for the sustainability of the issuers' performances and to further enhance the transparency of the issuers' business activities. The objective of this paper is to analyze corporate governance compliance reports of respective issuers whose shares are admitted to trading on the Zagreb Stock Exchange in order to determine if there is a linkage between corporate governance compliance degree and the issuers' financial and market performances and to what extent. The aim of this paper is, if possible, to define the next steps in corporate governance improvements as an important determinant towards sustainable growth of the issuers.*

**Keywords:** corporate governance code, corporate governance reporting (“comply or explain”), issuers with securities admitted to trading on a regulated market, financial performance, market performance

JEL Classification: G29, L19

## 1. INTRODUCTION – THE ROLE OF CORPORATE GOVERNANCE IN TRANSPARENCY REPORTING OF LISTED COMPANIES

The latest financial crises have put into focus corporate governance and the impact of corporate governance on the issuers' competitiveness, their financial success and long-term sustainability.

Good corporate governance ensures to the issuer simpler and more affordable access to capital, reduces the risks of investing in the issuer, reinforces the investors' trust in the capital market and contributes to the community (Korporativno upravljanje: Priručnik, 2016, 14).

In its Action Plan (2012, 6), the European Commission recognizes several activities to be undertaken with the aim of increasing issuers' transparency, among which quality enhancement of corporate governance reporting and explanation in case of any departure from the recommendations of the corporate governance codes of companies whose securities are admitted to trading on a regulated market.

This article analyses the compliance of selected issuers whose shares are admitted to trading on a regulated market operated by the Zagreb Stock Exchange (hereinafter: ZSE) with corporate governance recommendations with

the aim of determining whether there are links between corporate governance reporting and financial and market performances of issuers.

## 2. CORPORATE GOVERNANCE FRAMEWORK IN CROATIA OF COMPANIES LISTED ON ZAGREB STOCK EXCHANGE

Corporate governance in the Republic of Croatia is regulated by various corporate governance codes, the so-called *soft law*, consisting of principles, standards, and recommendations, compliance to which represents the adoption of the expected corporate governance. The requests for obligatory corporate governance itself stem from the so-called *hard law*, that is, legislation setting out the obligation of reporting on compliance with the corporate governance code, presuming the existence and application of such codes (Ravlić Ivanović & Hašček, 2018, 136).

The main feature of European and Croatian corporate governance is adhering to the “comply or explain” principle. In keeping with this principle, if a company breaches a respective corporate governance code it must provide a public explanation of the parts of the code they are departing from any of the reasons for their non-compliance to the corporate governance good practice recommendations.

Companies whose shares are admitted to trading on a regulated market operated by the ZSE adhere to the Corporate Governance Code (hereinafter: the Code) adopted by the Croatian Financial Services Supervisory Agency (Hanfa) and the ZSE. The Code covers three interest groups, namely: (1) shareholders and investors, (2) management and supervisory bodies and company employees and (3) internal and external company audit. The basic principles aimed at by the Code are as follows: (1) business transparency, (2) clear and elaborated procedures for the operating of a supervisory board, management board and other management structures, (3) avoiding conflict of interest, (4) efficient internal control and (5) efficient company liability system.

### 3. ANALYSIS OF CORPORATE GOVERNANCE REPORTING AND FINANCIAL AND MARKET PERFORMANCE OF SELECTED COMPANIES LISTED ON ZAGREB STOCK EXCHANGE

#### 3.1. SAMPLE SELECTION AND LIMITATIONS

As on 31 December 2018, the regulated market of the ZSE2 included 132 issuer shares, 4 of which on the Prime Market, 25 on the Official Market and 103 on the Regular Market. Since 6 issuers have both regular and preferred stocks admitted to trading on a regulated market, on 31 December 2018 there were a total of 126 issuers on the regulated market (Pregled trgovine u 2018. godini, available at <https://www.zse.hr/default.aspx?id=178>, access 13 March 2019).

All issuers whose shares are admitted to trading on a regulated market were not the subject of this analysis. Instead, it was conducted on a selected sample of issuers.

The departure point of the analysis was the market component – trading days in 2018. The market component was taken as the starting criterion because liquidity is the basic and crucial indicator of an investor’s “interest” in an issuer and their securities. The sample was created by including, on the one hand, those issuers who had the most trading days in 2018 and, on the other, issuers whose shares have not seen any trading in the selected period. In other words, the sample consisted of issuers representative of two markets “extremes”, with the purpose of clearly identifying the possible linkage between an issuer’s market and financial performances and corporate governance level.

The first group of issuers, the one with the most trading days in 2018, is made up of issuers whose shares, on 31 December 2018, were part of the CROBEX<sup>3</sup> ZSE index. They are 19 issuers, namely: Ad Plastik d.d., Adris grupa d.d.

<sup>2</sup> The regulated market operated by the Zagreb Stock Exchange is divided into three segments – Prime, Official and Regular markets, depending on the level of the admission request and listing maintenance, as well as on the level of issuer reporting request in a particular segment; Prime Market is the most demanding segment, Official Market is somewhat less demanding and Regular Market sets out the basic conditions for the regulated market.

<sup>3</sup> The condition for an issuer’s share to be included in CROBEX is 80% trading days. The regular audit of the CROBEX content takes place semi-annually, on each third Friday in March and September. The last CROBEX audit of 2018 was an extraordinary audit conducted on 12 October

(preferred stocks), Arena Hospitality Group d.d., Atlantic grupa d.d., Atlantska plovidba d.d., Đuro Đaković grupa d.d., Dalekovod d.d., Ericsson Nikola Tesla d.d., HT d.d., Ingra d.d., Jadran d.d., Končar-elektroindustrija d.d., Kraš d.d., Maistra d.d., OT-Optima telekom d.d., Podravka d.d., Valamar Riviera d.d., Brodogradilište Viktor Lenac d.d. i Zagrebačka banka d.d. This group of the sampled issuers does not include Jadran d.d. because its shares have been admitted to trading on a regulated market in the course of 2018. Due to the comparability of financial indicators and corporate governance, the sample also does not include Zagrebačka banka d.d., since it was the only financial institution in the sample. The first group of issuers is thus made up of 17 issuers. Of the 17 issues, 4 are on the Prime Market, 5 are on the Official Market and 8 are on the Regular Market.

The second group of issuers consists of issuers whose shares were not traded at all in 2018. These are 21 issuers, namely: 3. maj brodogradilište d.d., Bilokalnik-IPA d.d., Brionka d.d., Čateks d.d., Dalma d.d., Domaća tvornica rublja d.d., Dubrovačko primorje d.d., Elektropromet d.d., Hoteli Baška Voda d.d., Hoteli Vodice d.d., Istra d.d., Jadran film d.d., Jelsa d.d., Kamensko d.d. in receivership, Maraska d.d., Nava banka d.d. in receivership, Plava laguna d.d. (preferred stocks), Pounje d.d. (preferred stocks), Stanovi Jadran d.d., Terra Mediterranea d.d., Vodoprivreda Zagreb d.d. (Pregled trgovine u 2018. godini, available at <https://www.zse.hr/default.aspx?id=178>, accessed March 13, 2019). This group of issuers does not include Dubrovačko primorje d.d., Hoteli Baška Voda d.d., Kamensko d.d. u stečaju and Nava banka d.d. u stečaju since these companies' shares were delisted on the regulated market in the course of 2018. Also, Plava laguna d.d. and Pounje d.d., whose regular shares were traded in the selected period, and Stanovi Jadran d.d., because their shares have been admitted to trading on a regular market in the course of 2018 (available at <https://www.zse.hr/default.aspx?id=191>, access March 13, 2019). The second group is thus made up of 14 issuers. All 14 issuers are admitted to trading on the Regular Market.

For the selected sample issuers' annual Corporate Governance Code questionnaires for 2017 were analyzed (available at <https://www.zse.hr/default.aspx?id=20&tip=novostiIzdavatelja>, access March 13, 2019), with the purpose

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2018. [available at: <https://www.zse.hr/default.aspx?id=44101&index=CROBEX>, access March 13, 2019]

of determining the issuers' compliance with corporate governance demands in the selected period. Furthermore, selected financial indicators from annual financial reports for 2017 were analyzed for these issuers with the purpose of determining the issuers' financial performance in the same selected period. The data obtained were then examined with reference to the issuers' market performances in 2018. On the basis of analyzed data, it was determined whether there were links between corporate governance and the issuers' market and financial performances and to what extent. The results of this analysis are as follows in this article.

Apart from the manner of selecting the sample, the limitations of this research were the quality of replies on the application of corporate governance recommendations, the issuers' (lack of) understanding of the concept of compliance with corporate governance recommendations, the quality of presented financial information and failure to monitor data in a longer period of time.

### 3.2. CORPORATE GOVERNANCE REPORTING ANALYSIS

The Corporate Governance Code (hereinafter: the Code) says that the issuer must fill in a questionnaire (the annual questionnaire which is an integral part of the Code) and state whether they are in compliance with the Code recommendations or not; if the issuer is not in compliance with the Code recommendations he must explain in the annual questionnaire the reasons for failure to apply or not to comply with recommendations (Kodeks korporativnog upravljanja, 2010, 5). The issuer must publish the filled-in annual questionnaire on his web pages and on the ZSE web site.

The annual corporate governance questionnaire comprises of 62 questions divided into five areas, in keeping with the structure of the Code itself: dedication to corporate governance principles (4 questions), shareholders and the general assembly (14 questions), management and supervisory bodies (32 questions), audit and internal control mechanisms (6 questions) and business transparency (6 questions). The questions in the questionnaire require YES or NO answers. Depending on how a question is formulated, the answer indicates whether, in a given question (from the area of corporate governance), the issuer is in compliance with the Code recommendations or not. Every answer indicating a recommendation application in its content is marked as compliance, whereas every answer indicating noncompliance by its content is marked as

noncompliance. For each issuer, in each of the said corporate governance areas, a percentage of compliance for that particular area is established by dividing the number of compliance-indicating answers in the area with the total number of questions for the same area. In addition, total compliance with Code recommendations is established for every issuer by assigning equal weight to every segment of the Code, by adding compliance results for each individual area and then dividing them with the total number of areas. Finally, total compliance for each area, as well as total compliance with Code recommendations, was calculated for the first and the second groups of issuers. The results of the analysis are presented below.

All 17 issuers (100%) from the first group published their annual corporate governance questionnaire for 2017 on the ZSE website. Of the 14 issuers from the second group, 9 (64.23%) published their annual corporate governance questionnaire for 2017, whereas for the remaining 5 (35.71%) the annual questionnaire for 2017 is not available.

In the corporate governance area pertaining to Dedication to Corporate Governance Principles and Social Responsibility, 11 issuers of the first group provided answers indicating 75% compliance, and 5 issuers provided answers indicating 100% compliance. With the second group issuers, 1 issuer provided answers indicating 25% compliance, 2 issuers had 50% compliance, 4 issuers had 75% compliance and 2 issuers had 100% compliance.

In the corporate governance area pertaining to Shareholders and the General Assembly, in the first group, 1 issuer provided answers indicating 71.43% compliance, 2 issuers had 78.57%, 8 issuers had 85.71%, 5 issuers had 92.86% and 1 issuer had 100%. In the second group, 5 issuers provided answers indicating 85.71% compliance and 4 issuers had 92.86%.

In the corporate governance area pertaining to Management and Supervisory Bodies, in the first group, 1 issuer provided answers indicating 65.63% compliance, 2 issuers had 71.88%, 2 issuers had 75%, 2 issuers had 78.13%, 2 issuers had 81.25%, 3 issuers had 84.38%, 2 issuers had 87.50%, 1 issuer had 90.63%, 1 issuer had 93.75% and 1 issuer had 100%. In the second group, 1 issuer provided answers indicating 68.75% compliance, 6 issuers had 71.88%, 1 issuer had 75% and 1 issuer had 84.38%.

In the area of corporate governance pertaining to Audit and Internal Control Mechanisms, in the first group, 6 issuers provided answers indicating 66.67%

compliance, 7 issuers had 83.33% and 4 issuers had 100%. In the second group, 4 issuers provided answers indicating 66.67% compliance, 3 issuers had 83.33% and 2 issuers had 100.00%.

In the area of corporate governance pertaining to Transparency, in the first group 3 issuers provided answers indicating 66.67% compliance, 2 issuers had 83.33% and 12 issuers had 100%. In the second group, 4 issuers provided answers indicating 66.67% and 5 issuers had 83.33%.

The average compliance rate in the first group of issuers was between 71.93% and 96.07%. In this group of issuers, 1 issuer had 71.93%, 1 issuer had 73.18%, 1 issuer had 75.86%, 1 issuer had 77.14%, 1 issuer had 80.48%, 1 issuer had 82.83%, 1 issuer had 85.06%, 1 issuer had 85.92%, 1 issuer had 86.34%, 1 issuer had 86.93%, 1 issuer had 87.11%, 1 issuer had 88.18%, 1 issuer had 91.49%, 1 issuer had 92.32%, 1 issuer had 93.81%, 1 issuer had 94.17% and 1 issuer had 96.07%. The average compliance rate in the second group of issuers was between 68.18% and 90.68%. In this group of issuers, 2 issuers had 68.18%, 1 issuer had 73.99%, 1 issuer had 76.51%, 1 issuer had 77.14%, 2 issuers had 77.95%, 1 issuer had 86.28% and 1 issuer had 90.68%.

**Table 1.** Compliance with the recommendations of the Corporate Governance Code for 2017

	Dedication to Corporate Governance Principles and Social Responsibility	Shareholders and the General Assembly	Management and Supervisory Bodies	Audit and Internal Control Mechanisms	Transparency	Total
First group of issuers	83.82%	86.97%	81.80%	81.37%	92.16%	85.23%
Second group of issuers	69.44%	88.89%	73.26%	79.63%	75.93%	77.43%

**Source:** ZSE [available at: <https://www.zse.hr/default.aspx?id=20&tip=novostiIzdavatelja>, access March 13, 2019], authors' calculations

The first group of issuers shows a higher degree of compliance in four out of five areas of corporate governance - Dedication to Corporate Governance Principles and Social Responsibility, Management and Supervisory Bodies, Audit and Internal Control Mechanisms and Transparency. The area of corporate governance in which the second group of issuers have a higher degree of compliance than the first group of issuers is the area of Shareholders and the General



Assembly (first group 86.97%, second group 88.89%). The potential reasons for this result are different degrees of understanding of the complexity of the issuer-investor relationship between the two groups and/or the fact that the second group of issuers has not been faced with the circumstances that could have impacted compliance with recommendations in this area. However, the first group of issuers have demonstrated significantly higher compliance than the second group in Dedication to Corporate Governance Principles and Social Responsibility (first group 83.82%, second group 69.44%), Management and Supervisory Bodies (first group 81.80%, second group 73.26%) and Transparency (first group 92.16%, second group 75.93%). The proposal is, therefore, to use further research to determine the segments in each of these areas that contribute to better compliance with the Code recommendations. As for the total compliance with the Code recommendations, the first group of issuers demonstrated higher total compliance (85.23%) than the second group companies (77.43%).

Considering the manner in which the sample was created, the first group being issuers from CROBEX issuers and the second group of issuers whose shares have not been traded at all in 2018, and based on the results obtained from the analysis of total compliance of issuers with the Code recommendations, the conclusion is that the CROBEX issuers demonstrate a higher total compliance with the Code recommendations than the issuers whose shares have not been traded at all, that is, the companies whose shares have no market performance whatsoever.

### **3.3. FINANCIAL AND MARKET PERFORMANCE ANALYSIS**

#### **3.3.1. Financial Performance Analysis**

Financial indicators offer the information required for business management and company development, that is, they are being calculated in order to provide an information background for business decision making (*Žager, 2016, 225*). Since this analysis focuses on issuers whose shares are admitted to trading on a regulated market, selected financial indicators were calculated for the purposes of this article measuring business success – cost-effectiveness indicators, profitability indicators, and investment indicators. Calculations were made on the basis of the issuers' data for 2017, published in GFI questionnaires (<https://www.zse.hr/default.aspx?id=36774>, access March 13, 2019).



The calculations used in this article are as follows: total business cost-effectiveness = total revenue/total expenses; net profit margin = (net profit+interest)/total revenue; net return on assets = (net profit+interest)/total assets; return on own capital = net income/own capital; income (profit) per share = net profit/number of shares.

Additionally, Altman's synthetic financial stability indicator – Z-score (Altman, 1968) was calculated for issuers, according to the following formula:  $1,2 \cdot X1 + 1,4 \cdot X2 + 3,3 \cdot X3 + 0,6 \cdot X4 + 0,999 \cdot X5$ , where  $X1 = (\text{short-term assets} - \text{short-term liabilities}) / \text{total assets}$ ,  $X2 = \text{retained earnings} / \text{total assets}$ ,  $X3 = (\text{profit before tax} + \text{interest}) / \text{total assets}$ ,  $X4 = \text{market capitalization} / \text{total assets}$  and  $X5 = \text{total revenue} / \text{total assets}$ . Since the second group of issues is made up of issuers whose shares have not been traded at all (which is why, for the said issuers, there is no market value of their shares or market capitalization), a revised Z-score (Altman, 2000) was additionally calculated where, instead of market capitalization,  $X4$  is the book value and the formula for the calculation of the revised Z-score is as follows:  $0,717 \cdot X1 + 0,847 \cdot X2 + 3,107 \cdot X3 + 0,42 \cdot X4 + 0,998 \cdot X5$ .

The analysis shows that, from the total of 17 issuers in the first group, 2 (11.76%) have seen a loss, whereas 15 issuers in the first group (88.24%) made a profit in 2017. In the second group of issuers, of the 9 issuers who replied to the annual Code questionnaire, 4 issuers (44.44%) have seen a loss and 5 issuers (55.56%) from the second group made a profit. If we consider the entire sample of the second group of issuers, made up of 14 issuers, 8 issuers (57.14%) have seen a loss and 6 issuers (42.86%) made a profit.

As net profit is used when calculating selected financial indicators – net profit margin, the net return on assets, net own capital return on assets and income (profit) per share, the above results are reflected in these financial indicators as well.

If we analyze Z-score and revised Z-score, the results are as follows. Of a total of 17 issuers in the first group, not one issuer has the Z-score higher than 3, 9 issuers (52.94%) has the Z-score between 1 and 3, and 8 issuers (47.06%) have the Z-score of less than 1. In the second group of issuers, of the 9 issuers who have replied to the annual Code questionnaire, 4 issuers (44.44%) have the Z-score between 1 and 3, and 5 issuers (55.56%) have the Z-score less than 1; also, 3 issuers (33.33%) have a negative Z-score. As for revised Z-score in

the first group of issuers, 1 issuer (5.88%) has the revised Z-score higher than 3, 8 issuers (47.06%) has the revised Z-score between 1 and 3, and 8 issuers (47.06%) has the revised Z-score of less than 1. In the second group of issuers, 5 issuers (55.55%) have the revised Z-score between 1 and 3, and 4 issuers (44.44%) have the revised Z-score less than 1; also, 1 issuer (11.11%) has a negative revised Z-score.

**Table 2.** Average compliance with the Corporate Governance Code with reference to Z-score and revised Z-score

	Z-score 1-3	Z score > 1	revised Z-score < 3	revised Z-score 1-3	revised Z-score > 1
First group of issuers	89.78%	80.10%	92.32%	89.46%	80.10%
Second group of issuers	79.78%	75.54%	0.00%	77.46%	77.39%

**Source:** ZSE [available at: <https://www.zse.hr/default.aspx?id=20&tip=novostiIzdavatelja>, access March 13, 2019], authors' calculations

If we look at the average compliance with the Corporate Governance Code with reference to Z-score and revised Z-score, results show that issuers in the first group have higher average compliance with the Code than the second group of issuers. Also, in both groups of issuers average compliance increases with the increase of Z-score or revised Z-score. For further conclusions on the mutual impact of compliance with Code recommendations and financial performances of the issuer, the suggestion for future research is to expand the sample to include all issuers and conduct an analysis of other financial indicators.

### 3.3.2. Market Performance Analysis

For the purposes of this article, the following market performances were selected: turnover, volume, transactions made and market capitalization. These are the performances usually used to “position” and establish the issuers’ significance on a market. The data on market performances for shares on a regulated market on 31 December 2018 were taken from the ZSE website.

The issuers’ market performances were seen as on 31 December 2018, in order to establish whether compliance with Code recommendations for 2017 had had an impact on the issuers’ market performances in 2018. Also, the share of market performances of the sampled issuers was analyzed with reference to the totality of market performances of all issuers on the regulated stock market.

**Table 3.** Overview of market data for shares on 31 December 2018.

	Turnover (in HRK)	%	Volume	%	Trans- actions	%	Market Capitalisation (in HRK)	%
Prime Market	44.171.534	2.80%	57.285	0.19%	778	0.84%	9.025.809.770	6.80%
Official Market	902.501.361	57.15%	18.878.546	62.41%	49.605	53.76%	57.304.941.333	43.17%
Regular Market	632.513.179	40.05%	11.314.491	37.40%	41.886	45.40%	66.417.792.928	50.03%
Total	1.579.186.074		30.250.322		92.269		132.748.544.031	
First group of issuers	1,190,438,475	75.38%	21,870,745	72.30%	59,207	64.17%	36,303,268,265	27.35%
Second group of issuers	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Total	1,190,438,475	75.38%	21,870,745	72.30%	59,207	64.17%	36,303,268,265	27.35%

**Source:** ZSE [available at: <https://www.zse.hr/default.aspx?id=178>, access March 13, 2019], authors' calculations

Of the 17 issuers in the first group, 4 are on the Prime Market, 5 are on the Official Market and 8 are on the Regular Market of the ZSE. All 14 issuers are on the ZSE Regular Market (including the 9 issuers who have published the annual corporate governance questionnaire for 2017).

Market performance data show that the first group issuers' shares (which is the data for the entire sample because the second group issuers have no market performances) make up 75.38% of the total annual share turnover on the regulated market, with a volume of 72.30% of the total annual share turnover on the regulated market and with 64.17% of the total number of share transactions made on the regulated market. In other words, the 12.88% of shares of the first group of issuers (17 issuers' shares of the total of 132 shares admitted to trading on a regulated market) make up  $\frac{3}{4}$  of the total annual turnover and volume and around  $\frac{2}{3}$  of all shares transactions made on the regulated market. Looking at market capitalization (calculated as the product of multiplication of the total number of shares issued and the last price), the first group issuers' shares make up 27.35% of the total market capitalization.

Departing from the data on the share of market indicators for the first group of issuers in total market indicators, the recommendation for further research

is to establish compliance with the Code recommendations with other issuers who have not been sampled and the market performances of their shares, with the purpose of finding mutual linkage and impact.

#### 4. CONCLUSION

The subject of this article is to determine whether there is a mutual link between corporate governance and the financial and market performances of the issuer. The analysis was conducted on two groups of issuers representing two markets “extremes” – the first group of issuers sample includes CROBEX issuers and the second group sample includes issuers whose shares have not been traded in the selected period and only the issuers who have made their Code questionnaires publicly available.

Results show that the first group issuers demonstrated on average higher total compliance with corporate governance recommendations (85.23%) than the second group issuers (77.43%). In addition, both groups of issuers show higher total compliance with corporate governance recommendations with the increase of Z-score and revised Z-score. Also, the first group issuers make for 3/4 of the total annual turnover and volume and for around 2/3 of all share transactions made on the regulated market. The analyses conducted gave the conclusion that there is a positive linkage between corporate governance and the financial and market performances of issuers.

However, taking into consideration the above mentioned limitations of this research, the results obtained do not allow any conclusions on the impact of corporate governance compliance on financial and market performances of the issuer or vice versa, nor do they allow any conclusions on the impacting factors of corporate governance or the extent of their impact on the financial and market performances of the issuer. These conclusions will have to be made in future research that will be free from the above-stated limit.

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URBAN, RURAL,  
AND REGIONAL  
ECONOMICS



# REGIONAL DEVELOPMENT OF CLUSTERS IN THE REPUBLIC OF CROATIA SHOWCASED BY THE ASSOCIATION OF THE BUSINESS CLUSTER - CROATIAN INSULAR PRODUCT

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## **Abstract**

*Nowadays there are several meanings defining the word cluster. Surely the most familiar one is that of Michael E. Porter to which the majority of other authors refer as well. It is indisputable to agree that clusters, in the context of this scientific paper, are a specific form of concentration of businesses mutually connected to provide better service, greater flow of information and to increase competitiveness. Businesses that form a cluster not only collaborate but also compete among each other at the same time. The conditions of globalization put emphasis on information and capital flow because they spread faster than the flow of products and services and it is inevitable to expect that the development of clusters themselves will in most cases rely on information and capital flow if it is in their interest to think and act globally. More and more businesses*



organized into clusters recognize the necessity of interconnecting and presenting at the domestic as well as global market and this is supported by the fact that the main characteristics of clusters are precisely innovation and constant improvement of working processes.

Creativity and innovativeness of small and medium-sized enterprises joined into clusters enable a better placement on the market. Due to their position and numerous other possibilities, insular clusters can contribute to the development of economic operators. By including a local government into strategy development, scientific structures can greatly contribute to reversing negative trends that affect insular communities in particular. Regional clusters are incubators of creating a certain advantage in terms of specialized goods, services, knowledge, education, skills as well as innovations.

The purpose of this paper is to identify the role of insular clusters in promoting autochthonous products, putting emphasis on economic growth and competitiveness towards better performance on the market, creating synergy with the local government and sharing knowledge, novelties, and information between cluster members. Precisely insular clusters and their products are in the scope of this paper.

This scientific paper is divided into a theoretical part offering a description of clusters and explaining their function and a practical part which investigates the problem of clusters on islands. The recommendation of this paper is to encourage research and put clusters into promotional function both on regional as well as the global level of business activities.

**Keywords:** clusters, products, employment, competitiveness, innovation

JEL Classification: R11

## 1. INTRODUCTION

Competitiveness and innovation in terms of small and medium-sized entrepreneurship present a certain advantage in today's turbulent environment and globalization trends. However, the question arises as to how this advantage should be observed because small and medium-sized enterprises do not have a big opportunity as opposed to big corporative organizations both in the domestic and global business environment. On the contrary, it has been indicated that small and medium-sized enterprises have an ability to change and adapt very quickly to new situations, unlike big and inert systems. Of course, the said

business entities individually do not have such great opportunities unless they collaborate and present themselves on the market together. The size advantage can be reached by joining into business clusters which initiate development on local as well as regional level. Agglomeration of business entities concentrated on a specific geographical area that is both competitive with each other as well as collaborative fosters the necessity of coordination with representatives of local community and other consulting organizations and financial institutions. Local systems are the ones that should be oriented on the specificity of demands and needs of clusters.

Globalization has imposed on certain locations and regions to appear more inviting and competitive in order to be able to offer successful management to potential business entities. Small and medium-sized business entities that have requirements and prospects of stepping outside the national framework also have a chance to present and prove their competitiveness on the global market. The advantage in terms of innovation and maintaining competitiveness among small and medium-sized entities in a specific area rests on making connections with other branches in the economy.

Business cluster association “Croatian island product” represents one of the most successful examples of the development of regional clusters in the Republic of Croatia. Autochthonous products are a paradigm that should serve as a guiding force towards a successful business to other regions as well. An association that has recognized a potential and thus managed to stop the negative trends like depopulation (brain drain of young people) of people living on islands has already awoken the interest not only on local but also on a national level to cherish the old heritage, that is to produce autochthonous products. The said business cluster states in its statute book that the aim of the association is to strengthen competitiveness and excellence of the carrier of the label “Croatian island product” by connecting all relevant factors from both public and private sectors as well as the scientific and research community. The association was founded to promote the development and improvement of all islands in Croatia (Association’s Statute Book, 2018).

The main object of research in this scientific paper will be regional clusters and in this case the region of Croatian islands. The paper will present the structure of clusters and their beginnings. In the scientific work, the main subject of the study will be regional clusters, in this case, the region of the Croa-

tian islands. The cluster structure and its beginnings will be displayed. Further, SWOT will show the weaknesses, opportunities, threats, and strengths of the business cluster association, thus finding the answer to where the future of the clusters is. In which direction they should turn.

## 2. THE CONCEPT OF CLUSTERS AND COMPETITIVENESS

It is impossible to start, and maybe even unnatural to write any scientific paper about clusters without including one of the most widely used definitions of clusters in economic circles. According to Michael E. Porter (1985), a cluster is a “geographical proximate group of interconnected companies and associated institutions in a particular field that is complementary”. It is a clear definition that should, next to the word *complementary*, inevitably include words like *compete* and *collaborate*.

Clusters are determined by the interaction between the enterprises. They are not the simple concentration of businesses, as claimed by Garelli (2006, p.54)

Clusters represent an extremely effective policy of the competitiveness development of a certain country. In the beginning, they appear as “islands” of competitiveness, and later their development multiplies the competitiveness on the national level (Garelli, 2006, p.55)

In terms of a new, global trend of development of economic entities, the development of clusters is of great importance for the Republic of Croatia. The emphasis is put on already formed clusters that head outside the national framework, i.e. those that strive to have a good placement on the foreign markets.

One of the key roles in forming clusters, next to the local government, belong to agencies for regional development, scientific and research centers, employment agencies, and trading associations. Inherent characteristic lies in the fact that everybody should collaborate with each other in order to exchange information, knowledge, experience, technical support, development and research.

It must be highlighted that membership does not play such an important role as the relationship based on trust does. Being a member of a cluster is not essential if the foundations are built upon trust. In terms of that, agglomera-

tion into clusters enables greater productivity and innovativeness for the participants, which is more than what they could achieve by working individually.

In today's modern environment one of the main factors of competitiveness is productivity. The equation of productivity is very simple, and it contains the overall amount of produced goods and services over the *input* unit. *Input* refers to work, raw material, and capital. This brings us to the conclusion that competitiveness no longer entirely depends on the factor of the size of industry or the enterprise nor the reach of raw material, but what matters are productivity and ability of fast-changing and adapting.

According to the cluster development strategy in the Republic of Croatia 2011-2020, great importance is given to the development of competitiveness. Cluster policy in Croatia should be observed from the positional point of view, mainly as a small transitional economy. Advantages of clustering rest specifically on the following characteristics (Cluster development strategy in the Republic of Croatia, 2010):

- ♦ strengthening the competitiveness of enterprises
- ♦ strengthening the competitiveness of Croatian regions
- ♦ improving the structure of economic activities (new technologies, restructuring enterprises)
- ♦ networking of public, business and scientific and research sector
- ♦ understanding one's own economy.

## 2.1. LIFE CYCLE

When talking about clusters, but also about any agglomeration of business entities that have a common vision and a goal, one can say they have a life cycle. In the following, the life cycle is going to refer to clusters. The division of the cluster's life cycle was described in five phases by Andersson (2004, p.30):

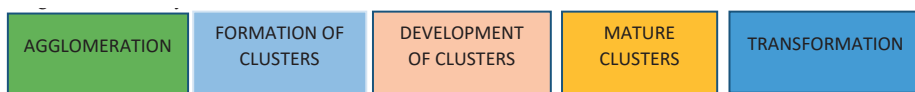
- ♦ accumulation (agglomeration) – a region has numerous enterprises and other participants. It should be pointed out that this is one of the more important phases because it is a process of gathering same business entities based on not only common interest but also on the awareness of every single business entity that competes among each other. If the in-

terested parties succeed in overcoming this phase, then vulnerability, i.e. the possibility of cluster collapsing, before it was even set up, reduces;

- ✦ formation of clusters- while forming clusters, the participants of the agglomeration start collaborating around main activities and implement joint opportunities using one's own connections;
- ✦ development of clusters- the emergence of new participants in activities that bond them into a region, and new connections are developed;
- ✦ mature clusters- they reached a specific, critical number of participants. A mature cluster also has developed connections within itself as well as outside with other clusters, activities, and regions;
- ✦ transformation- over time, market technology and processes change, and so do clusters. In order to be sustainable, i.e. to overcome stagnation or degradation, a cluster must innovate and adapt to changes. This is done through a transformation into one or several new clusters that concentrate around other activities or simply change in a way products and services are delivered.

Development of clusters also depends on several factors that determine whether its formation will succeed. The concept of the development is not identical, and it is practically impossible to copy it. What is essential is that all phases of development are extremely important. Confidence from business entities, especially in the first phase (agglomeration), reaches the greatest importance. Of course, it must be of equal intensity in all phases. Degradation, but also vulnerability emerge in the beginning phases. Of course, it is clear to all participants and cluster members that collaboration enables greater benefits in relation to what it would be like if they participated in the market alone.

**Figure 1.** The life cycle of a cluster



Source: author

## 2.2. ADVANTAGES AND DISADVANTAGES OF CLUSTERS,

Every business entity, by which we mean small and medium-sized entrepreneurs, get greater benefits on the market than those who present themselves as individuals. Of course, we need to mention downsides that one cannot avoid, as well as some limitations or obstacles. Advantages are those that encourage clusters to better and more intensive collaboration because an approach to new ideas, information, and technology guarantee benefits that otherwise could not be achieved if one presented itself on the market an individual.

Advantages (Horvat and Kovačević, 2004, p.33) are:

- productivity- a better approach to employees and suppliers, to specialized information, better motivation and taking measures;
- innovation- clusters create an environment that enables innovations and ensure a better approach to a wider source of information, knowledge, contacts, and insight into the market;
- transactional costs- clusters can reduce transactional costs by sharing information with other business entities and by creating a consortium, but also by enabling access to special services (statistical data, market information) and by employing universities and technical faculties.

Disadvantages (Horvat and Kovačević, 2004, p.37) are:

- perceiving a cluster as a panacea (cure-all), i.e. thinking a cluster is a solution to all economic problems
- too narrow specialization within clusters that reduce the diversity of the national economy.

### 3. REGIONAL DEVELOPMENT OF CLUSTERS

The book “Clusters and cluster development policies” (Dragičević and Obadić, 2013, p.23) states how the importance of the location and its context is becoming more and more important for the interested parties. Observing the global economy, it is precisely the location one of the determinants of the diversity between the competitors that cannot be easily copied. Enterprises around the world are constantly trying to understand the advantages and possibilities of clusters, and many managers are beginning to understand how their active participation in strengthening domestic clusters is becoming an inherent part of their role.

The regional or localized cluster is a spatial association of similar or connected economic activities that shape the foundations of a local area which can facilitate knowledge transfer and encourage different forms of learning and adapting. Stated clusters usually consist of small and medium-sized enterprises, and their success is directed towards the strength of social capital and geographical vicinity. (Andersson, 2004, p.31)

In 2011, the Ministry of Economy, Work, and Entrepreneurship adopted a strategy for cluster development for the period of 2011-2020, which highlights the fact that the world as we know it today is based on specialization. Importance is given to the global market. The global economy is aiming at the development and diversity of regions which then develop a new form of competitiveness. Regions determine competitiveness in the global economy. Competitiveness between regions can be seen in several parameters. Some of them are workforce characterized by quality and mobility, then basic and business infrastructure, entrepreneurial climate, an environment that is encouraging and motivational for innovations, inventions in terms of cluster development, efficiency and effectiveness of local and regional government as well as the attitude towards the environment. Knowledge, which is the foundation upon which to build a region, and an effective partnership between the public and private sector, including scientific and research institutions, demands a platform based on innovations with the purpose of promotion and support in building a cluster.

Furthermore, the strategy states that local and regional cluster initiatives are supported by a “bottom-up” approach. The “bottom-up” approach is often focused on a specific local economy and the (potential) clusters there. The initiative is taken over by the future participants themselves; members of the cluster (Dragičević and Obadić, 2013, p.57).

Cluster initiatives were based on impulses from the companies that were aiming towards a better collaboration and merging with regional partners. Over the years, the Croatian government as well as many public and supporting institutions give support to a great number of cluster initiatives that appeared on the field (Engl. *bottom-up*) and included different forms of collaboration on a local and regional level. A special role in promoting clusters belongs to the local and regional level, particularly the Agency for Regional Development as a key agent in creating and connecting clusters of innovative enterprises, as well as in creating new clusters (Strategy for Cluster Development in Croatia, 2011, p.8).

On the regional scale, the existing clusters create heterogeneity in their own surroundings in that they encourage the growth of innovations thereby enabling the enterprises to create a certain advantage in terms of specialized suppliers, services, knowledge, information, skills, education and today's omnipresent initiative about sustainable development. One of the characteristics of clusters rests precisely on continuous improvement of processes and innovations.

Regions in the Republic of Croatia, each for itself, make up a specific and potential territorial capital, which, basically, means that their diversity comes into picture when attracting investments and providing foundations for one's own development. According to the Strategy for Cluster Development in Croatia (Zagreb, 2011, p.14), "territorial diversity is the basic developmental potential of the European Union and that is why it is necessary to increase the coordination of national sector policies and the policies of territorial cohesion with the purpose of creating a synergy of different programs. The experience of the European Union shows that the best instrument for specialization of regions is forming regional clusters for sectors that have the potential to be competitive both on local as well as on the global market. Regional clusters can be found on geographical area that encompasses an economically logical space unit which emphasizes the entirety of comparative advantage that a cluster needs to exploit. The development of regional clusters enables networking of public, private and scientific and research sector (Triple Helix) and in that way leads to the increase on regional competitiveness.

**Figure 2.** Triple Helix- networking of public, private and scientific and research sector



Source: Author



#### 4. BUSINESS CLUSTER ASSOCIATION “CROATIAN ISLAND PRODUCT”

The work platform that the Business Cluster Association adopted for the year 2015 states a series of details important to describe and closely explain the beginnings of the Association, but also its vision, mission, and goal.

Business Cluster Association “Croatian Island Product” was founded in Zagreb on 17<sup>th</sup> October 2014 with the purpose of concentrating producers that carry the label HOP. The value of forming that cluster can be seen in a series of components such as direct advantage over competitors, economic growth and competitiveness due to stronger placement on the market, quality approach to the labor market, constant knowledge transfer between cluster, synergy with the local community, etc. ([https://otocniiproizvod.hr/upload\\_data/site\\_files/hop-program-rada.docx](https://otocniiproizvod.hr/upload_data/site_files/hop-program-rada.docx)).

It should be pointed out that the Business Cluster Association “Croatian Island Product” accounts for over 70 crafts enterprises, family farms, associations, enterprises and all that on 20 islands (we will mention only a few of them: Brač, Cres, Korčula, Raby, Silba, Ugljan, and Vis) and one semi-island (Pelješac) (<https://otocniiproizvod.hr/hr/o-hopu/clanovi-klastera/8>).

Furthermore, the platform states that the foundations of clusters lie in the project “Croatian Island Product” (HOP) which was launched at the beginning of 2007 by what used to be the Ministry of Sea, Tourism, Traffic, and Development, after which it was taken over by the Ministry of Regional Development and European Union Funds. The project itself was being prepared through several years and it very much relied on the National programme for the development of islands in Croatia. The basic aim of the project is to identify, distribute and promote autochthonous and quality insular products which will be recognized in Croatia and abroad. These are products that are the result of tradition on islands, developmental-research work, innovation, and invention, whose level of quality must be measurable. They stem from the limited insular locations and are produced in small quantities. Visualization of the project is manifested by a yearly awarded label “Croatian island project” in form of a plaque and breadboard to the producers whose companies are situated on islands and whose nominated products are produced on islands. The basic function of clusters is to ensure certain benefits for the business entities which they cannot be given independently. Such benefits are the result of direct business collaboration with

other business entities and public institutions in the form of research, training, and professional development of the employees or some other specialist services. When talking about clusters and their goals, it should be pointed out that these goals are somewhat different than those of bigger companies considering the fact that they cannot be in conflict of members' interests. We start with the general goals such as ([https://otocniproizvod.hr/upload\\_data/site\\_files/hop-program-rada.docx](https://otocniproizvod.hr/upload_data/site_files/hop-program-rada.docx)):

- + merging of economic entities according to vertical or horizontal principles
- + creating new jobs for the members based on demands
- + increasing competitiveness by professional development and implementation of new knowledge
- + winning new markets by mutual business collaboration
- + developing quality forms of collaboration with suppliers, buyers, distributors, etc.
- + performing different activities in specific parts of the business process
- + faster development of innovations and their implementation in business

## 5. SWOT ANALYSIS

The aforementioned analysis tends to identify a strategy by which strength is to be identified and utilized, and, on the other hand, weaknesses should be reduced to a minimum. By successful implementation of the previously mentioned, threats shall be minimized, and opportunities capitalized. The SWOT analysis is of great help when planning and evaluating certain business activities.

Analysis of weaknesses, strengths, threats, and opportunities is based on the collected data from the Business Cluster Association "Croatian Island Product". Data were collected through oral interaction. What follows are details supported by the collected data.

The weaknesses are: more difficult exchange of information within a cluster, insufficient awareness within a cluster, dispersion of producers within a cluster, computer literacy, the producers do not any sense in spreading the production, weakened coordination with the local government, inertia.

On the other hand, strength is ecologically preserved environment, rich cultural and natural heritage, old crafts, and traditional production, ecological production, connecting interested producers at one place with the purpose of strengthening their position on Croatian market as well as on the global market, strengthening the competition, autochthonous products, use of traditional tools in production and manufacture of products, etc.

Threats are potential dispersion of clusters, interest loss with the producers, lack of clearly defined view on the national level regarding the development of agriculture on islands.

Opportunities are visible in improving communication, increase in production, and strengthening competitiveness, merging with clusters both on a national and global level Business cluster association “Croatian island alliance” provides information and counseling via workshops and thus tries to point out new possibilities and opportunities to the existing members as well as to potential new members. The importance of such workshops has been recognized by the association thanks to difficulties that the cluster members have encountered.

We will name some of them:

- ♦ shortage of human resources and competence
- ♦ too high costs of business activities
- ♦ weak or undeveloped managerial skills
- ♦ disadvantages in terms of obtaining information about business and developmental policies
- ♦ the inertia of the local government regarding biddings for getting subsidized participation and traveling costs.

According to available data, i.e. notes from financial reports of the Business Cluster Association “Croatian Island Product”, a certain stagnation can be noticed for the time interval 2015, 2016 and 2017. Based on the income of 231.328 HRK from 2015, and expenditures of 229.495 HRK, and income of 186.323 HRK for 2016 and expenditures of 144.022 HRK, one can notice the decrease in the income of 19% (lease and membership are items that showed the most significant fall). Furthermore, the difference lies in the fact that in 2015, as opposed to 2016, a greater amount of money was provided by the local government. According to the experience of clusters on a global scale, the share of support by the local government in the beginnings of the cluster was far

greater than the amounts that follow a few years of cluster's business activities. ([https://otocniproizvod.hr/upload\\_data/site\\_files/financijski-izvjestaj-2015.pdf](https://otocniproizvod.hr/upload_data/site_files/financijski-izvjestaj-2015.pdf)). Data for 2017 show the same indicators as for 2016. This means that nothing was done regarding additional financing resources. Additional resources of financing would surely enable a step forward, but they would also strengthen the cluster regarding joint placement on the market.

In terms of the difficulties that the cluster is facing, an exchange of experience and opinions with similar clusters in the Republic of Croatia, but also abroad can be of great help. There are already similar clusters in Croatia which contain similar links in their basic structure just like the association which is the basis of this work. EUVITA cluster is a cluster which, in its basics, strives toward rural development and traditional and ecological production (Euvita, 03.02.2019). Also, from the information gathered from secondary resources, one can notice, but also compare the amount of information that both clusters provide for each other over their websites. EUVITA cluster provides with information that reaches toward international projects as well, but also innovational. As previously pointed out, recognizing further collaboration with clusters of the same or similar businesses from other areas and regions can contribute to the exchange of information towards an effective, but also a more efficient life cycle of the cluster.

## 6. CONCLUSION

By reading and comparing definitions related to the word cluster, one can conclude that they differ from each other in details and word order. However, by observing a cluster as a living being that has its beginning when different competitors on a specific area join together as well as visionaries who represent themselves on the market together, one should point out that the functioning of a cluster is not a simple activity at all, and it is even harder to maintain that unit despite the obstacles it faces along the way. In this scientific paper, we have described one cluster that has good grounds for further development, but where a stagnation can lead to its dispersion. Collecting data from different resources, mainly the literature, scientific papers, personal conversations with members of the cluster, but also comparing with other cluster associations on national as well as the international level has brought us to a few conclusions and sug-

gestions for further development of the Business Cluster Association “Croatian Island Product”.

SWOT analysis showed some weaknesses that should be turned into strengths. There are certain things to work on like strengthening communication, a more intensive flow of information between cluster members regarding new possibilities that they can achieve through clusters and on a more aggressive influence on the local and regional government. With the help of institutions of higher education like the Faculty of Agriculture and Faculty of Economics, one should identify new models for production as well as for placement on new markets.

There is an impressive number of clusters, better to say examples in the world, where these clusters, with the help of regional government, were able to achieve great results at the very beginning of their existence. Clusters in Italy serve as a good example, where whole regions were developed in that way. The point of it all is that the awareness about the development of such area like islands, which by their own virtue are individual units, should be encouraged both by local as well as regional government. Daily drain of young people from those areas should be the main guiding force for strengthening collaboration, but also finding exact solutions. Preserving the production of autochthonous products and cultural heritage (which is the primary goal and vision of Business Cluster Association) should be in focus to sustain the development of the region of islands.

The concept of sustainable development, especially in this kind of production, with the emphasis on the autochthony of the products, should not present a problem during implementation. Autochthony of products, ecological production and preserving cultural heritage are the foundations of the Business Cluster Association “Croatian Island Product”. All the above stated indicates that persistence, recognizing strengths and weaknesses, but also opportunities and threats, can be a good starting point for improving the vision of clusters.

According to research, the flow of information among members of clusters, and collecting and comparing information with other clusters both on national as well as on an international level, represent key guidelines in the further development of clusters. Connecting and exchange of experience both on national as well as on an international level, creating new ideas, preventing the drain of young workforce, innovations, and inventions; all this and more is there before

a cluster. It is necessary to create a strategy (mission, vision and a goal) and start with implementation.

In this scientific paper, it was corroborated by the fact that the business cluster association had promising, progressive movements soon, but after gaining entry into the EU initiative, its membership weakened. Instead of taking advantage of the market opening, the business cluster association seemed to be asleep. Looking at the indicators or the movement of the association through figures it is noticeable that the same stagnate, the last two to three years. The hypothesis, therefore, lies in the fact that the engagement of members of the association must focus on cooperation with other clusters both at the national and global level. This will be achieved by branding and revision of the existing members, in which capabilities, each of them will individually guarantee the seriousness of the business cluster association on the global scene

In the end, one of the main issues will be to encourage future discussion of the topic, whether synergies between the primary sector (agriculture) and the tertiary service sector (tourism) develop a creative economy.

Based on the collected data in this scientific paper on island clusters as well as the follow-up of trends in the global market, recommendations for further exploration should first be based on the merging of the existing production of autochthonous products and the tourist season. Knowledge of origin is one of the most important drivers that unites and connects the products and the place. Future research certainly should be focused on tourists. What is the awareness, the need and the desire of tourists for the autochthonous products of the places they visit?

One of the recommendations for further research is to see how many manufacturers in the cluster of business clusters are attending the hotel's gastronomic offer. It is thought how many hotels have developed cooperation with local producers, more specifically a business cluster

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## THE INFLUENCE OF "THE WINE ENVELOPE" ON THE DEVELOPMENT OF WINERIES IN THE AREA OF ISTRIAN COUNTY

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### **Abstract**

*The Republic of Croatia in the 2014-2018 programming period year from the National Wine Sector Support Program "Wine Envelopes", a total of EUR 11.8 million a year is available. According to Council (EC) no. 1234/2007 of 22 October 2007 establishes a joint organization of the agricultural market. There are three measures available from the program period: Winery and Wine Marketing, Restructuring and Conversion of Vineyards and Promotion on Third Country Markets.*

*In the region of Istria County, during the period from 2014 to 2018, 45 beneficiaries received support through measures. How many funds have been withdrawn during the financial period and how the winemakers in the region of Istria continue to be leaders in the production of quality wines, the aim of this paper is to prove the need for the possibility of increasing the total allocation through the Investment in Wineries and Wine Marketing.*

*The number of funds spent in the program period will be presented through secondary research based on data from the Agricultural Payments Agency, Fisheries, and Rural Development, while primary research will be carried out on beneficiaries in the County of Istria.*

**Keywords:** *European funds, Wine Envelope, County of Istria.*

JEL Classification: L66, R58

## 1. INTRODUCTION

Viticulture and winemaking in the Republic of Croatia have a rich tradition. In order to preserve and enhance the wine sector, the Republic of Croatia has adopted the National Wine Sector Aid Program 2014-2018<sup>1</sup> in line with Commission Implementing Regulation (EU) 2017/256 of 14 February 2017 amending the Commission Implementing Regulation (EU) 2016/1150 on the establishment of rules for the application of Regulation (EU) No. 1308/2013 of the European Parliament and of the Council as regards the national programs in the wine sector<sup>2</sup>, Delegated Commission Regulation (EU) 2016/1149 amending Regulation (EU) No 1308/2013 laying down rules for the application of European Parliament and Council Regulation Wine Sector Support Programs, in relation to Third Country Marketing Promotion, Member States Information, Restructuring and Conversion of Vineyards and Investment.

The goal of the National Program is to increase the quality of wine and the efficiency of production through modernization and new investments in the manufacturing infrastructure and the relocation of vineyards to areas that provide more quality products, all in order to strengthen the competitiveness of wine producers.

By joining the EU, Croatia has received considerable funding to finance the wine sector. The program, popularly known as “Wine Envelope”, amounts to EUR 11.8 million per year for the period 2014 to 2018, and Croatian vintners entering the EU have the opportunity, among other things, to increase wine sales.

<sup>1</sup> National Wine Assistance Program 2014-2018, Ministry of Agriculture, available at: [https://poljoprivreda.gov.hr/datstore/filestore/73/Nacionalni\\_program\\_pomoci\\_sektoru\\_vina\\_2014\\_-2018.pdf](https://poljoprivreda.gov.hr/datstore/filestore/73/Nacionalni_program_pomoci_sektoru_vina_2014_-2018.pdf) (07.01.2019.)

<sup>2</sup> Commission Implementing Regulation (EU) 2017/256 of 14 February 2017, available at: <https://eur-lex.europa.eu/legal-content/HR/TXT/?uri=CELEX%3A32017R0256>, (03.01.2019.)

On the total of 22 competitions from the Wine Envelope announced in the program period from 2014 to 2018, 276 potential beneficiaries were registered, while the largest relative share in that number had the Istrian winemakers but at the same time did not outline the number of withdrawn funds. By applying for a bid, most often in the desire to invest in infrastructure, they encountered numerous administrative obstacles, which caused many of them to quit the project. Also, a large number of small family farms, winemakers from the Istrian region, are under-informed at all about the opportunities provided by the National Wine Sector Aid Program and are involved in tenders are dissatisfied with the financing conditions of projects that prevent them from achieving the goal or "withdrawing" envelopes.

Although the quality of Croatian wines has been confirmed by numerous awards, production has been upgraded, and modern sales trends have been monitored, wine production has not increased as well as no placement in exports.

Within this paper, research will be carried out with the aim of new knowledge of work issues. Population surveys will be conducted on the impact of the use of funds from the EU funds for wine sector development in the area of Istria County.

Furthermore, research within this paper can contribute to a better understanding of the use of funds from the "wine envelope", and thus contribute to the increased utilization of funds in the area of Istria. By analyzing and exploring, we will get answers to the ways in which funds from the European Agricultural Guarantee Fund affect the development of wineries in Istria.

## 2. MEASURES WITHIN THE NATIONAL WINE PROGRAM

Measures funded under the aforementioned National Program are vineyard restructuring, winery investment, and wine marketing and promotion on the market of third countries. The Ministry of Agriculture is the competent authority for the management of the National Program, and within the budget allocation of the said ministry provides funds for the implementation of the program. The Paying Agency for Agriculture, Fisheries and Rural Development (hereinafter referred to as the Paying Agency) is the body responsible for imple-

menting measures under the National Program, including the implementation of a public tender.

Funds for the implementation of the National Program Wine envelopes are provided within the budget plan of the Ministry of Agriculture of the European Agricultural Guarantee Fund and partly from the funds of the Republic of Croatia. The funds of the European Agricultural Guarantee Fund are financed by direct payments in agriculture and so on. trade measures and aid to the wine sector. "The purpose of market management is to assist in market organization and response to market disturbances by using measures such as intervention buying, export refunds or other exceptional market support."<sup>3</sup>

The European Agricultural Guarantee Fund provides annual funding of EUR 11.8 million for the first three years, and EUR 10.8 million a year for the last two years. The wine program does not have the capability to spend funds over several years, ie that the unused portion of the funds is transferred to the next year and is spent on the  $n + 2$  models, but the unused funds are returned to the EU budget.

Considering the fact that the Republic of Croatia has a large number of small wine producers, old vineyards, low capacity equipment, and insufficient promotion both domestically and on the markets of third countries, the proposed measures of the National Support Program are for the development of the wine sector.

### **Measure - Restructuring and conversion of vineyards**

The main objective of the measure Restructuring, and conversion of vineyards is to increase the competitiveness of wine producers through the modernization of vineyard techniques, the promotion of high-quality vineyards and the production of wine according to the needs and preferences of consumers. Support for this measure may be granted for the activities it covers; replacement of sorghum (including grafting), vineyard relocation, and improvement of vineyard techniques.

Support for restructuring and conversion of vineyards is approved for activities that lead to structural changes in vineyards as a substitute for the variety,

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<sup>3</sup> European Agricultural Guarantee Fund, available at: [https://ec.europa.eu/agriculture/cap-funding/funding-opportunities\\_en](https://ec.europa.eu/agriculture/cap-funding/funding-opportunities_en), (3.1.2019)

the relocation of vineyards to more favorable areas and the improvement of vineyard techniques<sup>4</sup>.

The above activities can be carried out independently or in combinations of the aforementioned, and project activities should be carried out and executed in a chronological logical order and must lead to the ultimate goal of the project or to the structural change in the vineyard. The project completion deadline is normally one year, and for justified reasons, it may approve the extension of the deadline for one year, but the final deadline for the project cannot be granted in aggregate over a period of five years<sup>5</sup>.

### Measure - Investing in Wineries and Wine Marketing

The measure includes support for investment in wine production and sales. Grants are granted for tangible and intangible investments in wineries, as well as sales and presentation facilities of wine, including warehouses and infrastructure facilities, with a view to improving overall efficiency<sup>6</sup>. Permissible Measures for Investments are construction/reconstruction/ improvement of immovable property, purchase of new machinery and equipment, including computer software, patents, licenses and copyrights, and joint trademark registration and general expenses (architects, engineers, consultants, feasibility studies).

### Measure - Promotional activities in third country markets

This measure aims at finding new consumers, increasing the recognition of Croatian wines, enhancing wine competitiveness with a protected designation of origin, a protected geographical indication and wine with a designation of grape variety, with emphasis on high-quality standards from the Union with regard to quality<sup>7</sup>.

<sup>4</sup> Ordinance on Measures Implementation Restructuring and conversion of vineyards from the National Wine Sector Aid Program 2014-2018 (Official Gazette No. 49/15, 73/17, 39/18)

<sup>5</sup> Restructuring and conversion of vineyards, available at: <https://eufondovi.hr/natjecaji/najava-otvoreno-zatvoreno/restrukturiranje-i-konverzija-vinograda>, (4.1.2019.)

<sup>6</sup> Ordinance on Measures Implementation Wines and Wine Marketing from the National Wine Sector Aid Program 2014-2018 (Official Gazette 49/15, 23/16, 73/17, 39/18)

<sup>7</sup> Ordinance on Measures Implementation Market Promotion in Third Countries from the National Wine Sector Aid Program 2014-2018 (Official Gazette 37/15, 49/15, NN 40/17, 39/18)

Project implementation can take up to three years, with the possibility of extension for another two years. An individual project must relate only to one country from the markets of third countries. If a particular project relates to promotional activities that are not of a general character but are intended solely for a particular product, the brand or only one producer cannot be eligible for state aid for the budget of the Republic of Croatia.

Eligible activities within the scope of this measure include Advertising in third country markets, public relations, promotion and marketing, promotion of third-country marketing materials and their distribution, participation in international fairs and other international events on third-country markets and administrative costs and user staff costs.

### 2.1. UTILIZATION OF WINE COVERAGE FUND RESOURCES FOR THE PERIOD 2014 – 2018

According to the data available on the pages of the Agency for Payments in Agriculture, Fisheries and Rural Development, the Ministry of Agriculture paid in the period between 2014 and 2018 from the funds of “Wine Envelopes” the total amount of 15,3 million EUR.

**Table 1.** Amounts of paid aid for the wine envelope for the period 2014-2018.

Year	The total amount of aid paid in EUR
2014.	1.381.484
2015.	1.567.363
2016.	3.278.440
2017.	3.305.789
2018.	5.777.230
TOTAL	15.310.305

**Source:** Made by authors based on the Agency for Payments in Agriculture, Fisheries and Rural Development and EUROSTAT

Following the above data in Table 1, the utilization of funds increased over the years, so that it was 318% higher in the last observed year than in 2014. During the program period, the largest shift in the funds’ repayments was recorded in 2016 when 109% more funds were paid out than in the previous observed period. By analyzing official data, it is evident that the largest amount of funds was invested in the Measure - Winnings and wine marketing totaling

10,8 million EUR. The total amount of 1,07 million EUR was paid for advertising activities and 3,5 million EUR for Measure - Restructuring and Conversion of Vineyards.

**Table 2.** Amounts of paid aid for wine envelope by measures in the period 2014-2018. (in EUR)

Year	Promotional activities	Restructuring and conversion of vineyards	Investment in wineries and wine marketing	Total
2014.	139.555	592.845	649.084	1.381.484
2015.	141.023	1.023.587	402.753	1.567.363
2016.	233.926	687.872	2.356.642	3.278.439
2017.	176.551	204.329	2.924.909	3.305.789
2018.	377.302	923.261	4.476.666	5.777.230
TOTAL	1.068.357	3.431.894	10.810.054	15.310.305

**Source:** Made by authors based on the Agency for Payments in Agriculture, Fisheries and Rural Development and EUROSTAT

Although payments during the program period have increased especially in the last two years, the Republic of Croatia has made use of the minimum resources available from the European Agricultural Guarantee Fund for wine sector assistance. Taking into account that Croatia was available for the first three years at an annual level of EUR 11.8 million, and in the last two years the amount of EUR 10.8 million, it can be seen that only 26% of the total available funds were used. The complexity of the administration, or the required documentation of public tenders, as insufficient promotion of the opportunities available to winemakers and winemakers, is the fact that Croatia is at the mercy of EU countries through the use of wine envelopes. Top of the famous wine country Italy, France, and Spain, and Germany and Romania.

## 2.2. SUPPORT TO THE WINE SECTOR IN ISTRIA COUNTY

The Istrian county has always been known as the end of vineyards and good wines. The transitional sub Mediterranean climate has a favorable influence on the growth and development of grapevine and the geographical position has very favorable agroecological conditions for the development of vineyards. Rich experience in wine production and great opportunities for wine placement through tourism activities are the main advantages of wine growing and

wine growing in Istria. Istrian winemakers have recognized the possibilities of financing the business from the “Wine Envelopes” funds, and in the period from 2014 to 2018, 45 of them were supported.

The largest number of subsidies from the wine envelope funds for the County of Istria was realized in 2016 when 14 winemakers received total support of 622.162 EUR or 19.4% of the total outstanding funds of that year. By watching the entire program period, only 45 beneficiaries received support from the National Wine Sector Aid Program, which is 14.5% of the total number of beneficiaries receiving support.

**Table 3.** Aid payments from “wine envelopes” for the Istrian County in the period from 2014 to 2018 in relation to the total disbursement of funds

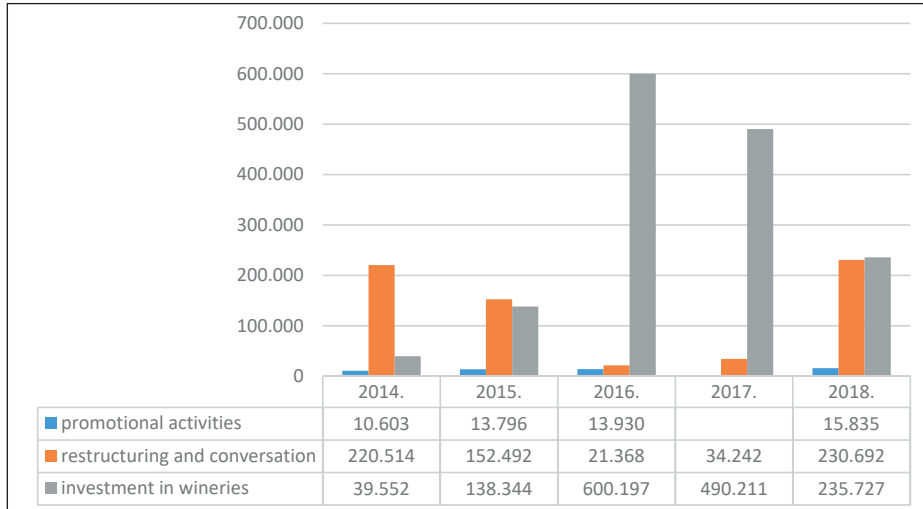
Year	Number of users of the Istrian county	Istrian County	Total number	Total	The share of funds of the Istrian County in total payments	User share from Istrian County
2014.	3	270.669	8	1.381.484	19,6	37,5
2015.	6	304.629	23	1.567.363	19,4	26,1
2016.	14	635.495	60	3.278.439	19,4	23,3
2017.	13	524.453	65	3.305.789	15,9	20
2018.	9	482.254	38	5.777.230	8,4	23,7
TOTAL	45	2.217.500	194	15.310.305	14,5	23,2

**Source:** Made by authors based on the Agency for Payments in Agriculture, Fisheries and Rural Development and EUROSTAT

The largest number of users from the Istrian region gained support for Winery and Wine Marketing, with the aim of modernizing wine production through new investments in winery and processing infrastructure. At the same time, this measure is financially and largely in view of the financing of capital investments. According to the data in Graph 1, it is evident that the total amount of 54.164 EUR was paid for the Measure - Promotion Activity in the program period, amounting to 659.308 EUR for Measure Restructuring and Conversion of Vineyards and the amount of 1.504.031 EUR for Winery and Marketing Investment



**Chart 1.** Remittance aid for beneficiaries from the Region of Istria in the programming period from 2014 to 2018 by Measures (in EUR)



**Source:** Made by authors based on the Agency for Payments in Agriculture, Fisheries and Rural Development and EUROSTAT

### 2.3. INVESTMENTS FOR THE AREA OF ISTRIAN COUNTY COMPARED WITH OTHER COUNTIES IN THE REPUBLIC OF CROATIA

The wine sector is very important for Croatian agriculture because of the very high share of the total production but also of the rich traditions of Croatian vineyard production. Wineries are one of the first bright examples of the institutional serious association through the Association of Winegrowers and Wine Producers who have been operating at the Croatian Chamber of Commerce since 2011 and who have been very serious in many different areas. Following the challenges and opportunities of European funds provided to the Republic of Croatia by joining the EU, wineries from all over the country have applied for tenders from the National Wine Sector Aid Program. On the total of 22 competitions from the Wine Envelope in the program period from 2014 to 2018, 276 potential beneficiaries were registered, with the largest relative share in that number being Istrian winemakers and winemakers from five Slavonian counties. Although beneficiaries from the Istrian County prevailed in the number of applications, the most successful withdrawals were beneficiaries from the Požega - Slavonia County.

**Table 4.** Deposited funds from the Wine Envelope by counties of the Republic of Croatia

County	Number of users	Total funds disbursed
Bjelovarsko-bilogorska	1	32.169,45
Brodsko-posavska	0	0
Dubrovačko-neretvanska	19	1.387.711,90
Grad Zagreb	8	431.988,78
Istarska	42	2.217.500,17
Karlovačka	3	49.764,60
Koprivničko-križevačka	2	226.945,42
Krapinsko-zagorska	4	18.915,90
Ličko-senjska	0	0
Međimurska	5	270.115,11
Osječko-baranjska	16	2.363.176,24
Požeško-slavonska	17	4.419.636,85
Primorsko-goranska	7	391.262,77
Sisačko-moslavačka	5	85.704,24
Splitsko-dalmatinska	10	586.687,92
Šibensko-kninska	2	63.032,30
Varaždinska	6	214.381,43
Virovitičko-podravska	9	904.577,13
Vukovarsko-srijemska	13	1.292.620,91
Zadarska	5	127.283,16
Zagrebačka	4	217.253,43

**Source:** Made by authors based on the Agency for Payments in Agriculture, Fisheries and Rural Development and EUROSTAT

Users from the Slavonia County, 17, in the total programming period, withdrew the total amount of 4,4 million EUR while users from the Istrian County (42) used 2,2 million EUR from the Wine Coverage funds. Thus, although there is no doubt that the wine region of Istria is due to the climatic conditions, beautiful landscapes and exceptional wines produced by Istrian winemakers recognized throughout the world and undoubtedly the more advanced Croatian wine region, it cannot be said that their development is based solely on the means of wine envelopes.

The low utilization of funds, both for the whole of Croatia but also for the territory of the Istrian County, have also contributed to the competition rules, which limit the amount of the advance to 20% of the grant amount, and then allowed the rest of the advance to be credited only after the completion of the

entire investment. Without the possibility of paying in installments, the implementation of projects proved to be financially exhausting for part of the beneficiaries. Also, for wineries investments, some customers were offered significantly lower amounts of the intensity of support than those requested, and so often the investment was often abandoned

Investments made from wine envelopes have certainly contributed to the development of wineries in the Istria area, but financial data indicates that the possibilities for EU funds are far greater. Istria is a region well-known for the development of tourism, and by arranging numerous wine roads and unifying wineries and tourism, it is invested not only in the region but also in the whole country. Highest Istrian wines are the achievements of the last twenty years of intensive development of wine-growing and viticulture in Istria, so it is necessary to strengthen or to edit the administrative system in order to allow further investment in this area.

#### 2.4. MOST IMPORTANT ISTRIAN WINE

Today more than twenty wineries in Istria are competing and are constantly fighting for prestige in the most important category of quality wines. We emphasize the four names that have been breaking in the last couple of years both domestically and internationally, who are also beneficiaries of the National Wine Program.

Kozlović - Gianfranco Kozlović is the largest Croatian small winery, recognized primarily by the production of Malvasia, which he perfected to the extent that he set a universal criterion for this type of wine.

Matošević - Ivica Matošević is one of the Istrian small winegrowers who with their products suffered Croatian restaurants and hotels, and for acquaintances say that his "Antiqua" is one of the best Croatian wines.

Coronica - Moreno Coronica is known for its Gran Terano wine produced from autochthonous varieties, which proved that Istria can be an example of large black wines.

Clai - Giorgio Clai is one of those Istrian winemakers who try to produce wines from classical varieties but in their own way. Their wines are an integral part of every serious wine industry.

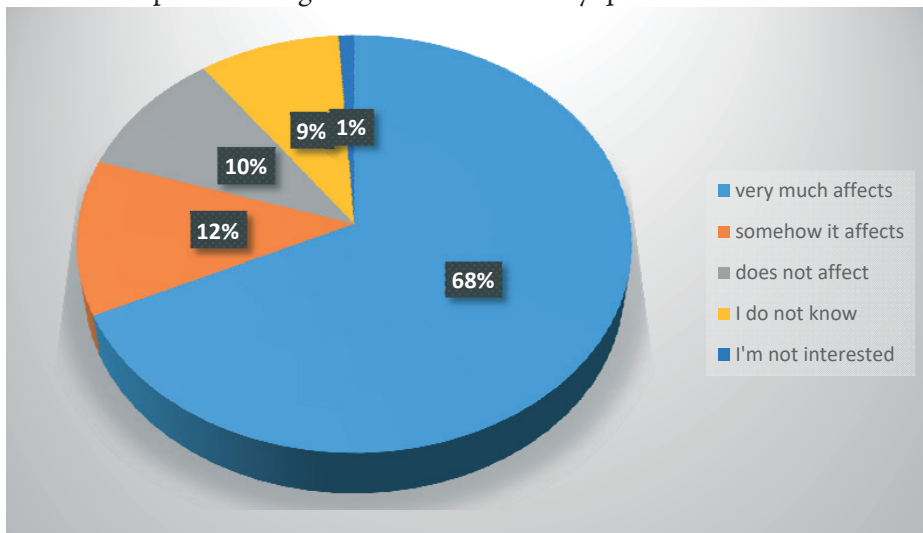
The aforementioned winemakers export more than 50% of the produced wine to the Austrian, Italian and German markets, but also to the United States and Japan. Their stories can serve as an inspiration to many future generations of Croatian farmers. In addition to being beneficiaries of the National Wine Sector Aid Program, they also made grants from the European Agricultural Fund for Rural Development, which is also being implemented by the Ministry of Agriculture.

Like other users, they also faced the problem of self-financing and the administration's severity and expect that the changes brought about by the new program period will ensure a simpler withdrawal of EU funds that was the case so far.

## 2.5. RESULTS OF THE CONDUCTED RESEARCH

For the purpose of this work, a survey was conducted on 173 respondents, all registered companies in the Istrian region dealing with sales and wine production. By analyzing the results of the study, 68% of the respondents believe that the administration's weaknesses, too long processing of documentation, greatly affect the low absorption of media from the wine envelope, while only 10% of respondents do not agree with that opinion.

**Graph 2.** Impact of administration slowdown on the utilization of wine envelopes according to data from the survey questionnaire

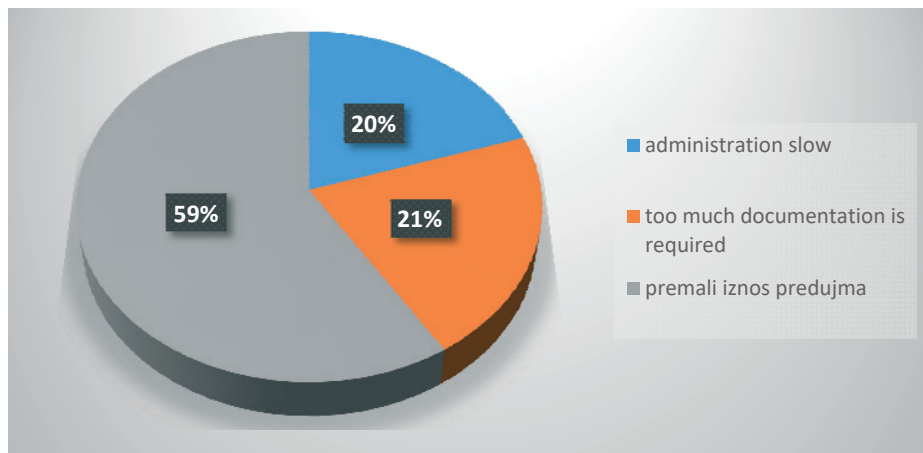


**Source:** Composed of authors based on the conducted survey

Furthermore, a large number of respondents, 70% of them, are fully aware of the opportunities provided by means of wine envelopes, while 63% of them have all the information on tenders being carried out under the National Wine Support Program. The analysis found that mostly "small" producers are not sufficiently informed about the possibilities of EU funds. They argue that one of the major problems in administering a bank letter of intent as all winemakers is not liquid, so the question is raised as to how to bring the small funds closer to EU funds. Furthermore, crediting through the Croatian Bank for Reconstruction and Development requires a longer period of processing of documentation, which prevents the receipt of letters of intent from banks without which it is impossible to obtain grants.

Apart from the slowness of the administration as one of the major problems, the respondents point to the inability to self-finance or to the small amount of the advance.

**Graph 3:** Obstacles to the EU's funding for the respondents



**Source:** Composed of authors based on the conducted survey

A large number of respondents, almost 70% of them believe that Croatian wineries are predominantly oriented to the domestic market and tourism, and that is why five times the import of exports. Croatia spends more wine than it produces. They agree that the problem stems from insufficient investment in the brand of Croatia as a wine destination and relatively expensive production. With this problem, the struggle for water with adaptation to EU rules, where Croatia has only partially implemented necessary changes.

They find that the wine image of Istria is quite colorful. In the area of the Istrian region, there are top quality wines, which are also the best promoters but also operate facilities that offer cheap “domestic” or imported wines whose quality is very controversial, and that is exactly what makes the damage directly to themselves but also to the entire wine region.

Furthermore, respondents state that today they often encounter wineries that import wine, and which attract their customer at low cost to those customers whose price is crucial when making a purchase decision. With imported wines, there is still a “gray” market that occupies a large part of the market with which they cannot compete.

### 3. SOLUTIONS FROM THE NEW PROGRAMMING PERIOD

Recognizing the disadvantages of the administrative system, which had a low impact on the payment of the wine envelope funds, the Ministry of Agriculture as the competent institution for the implementation of the National Wine Sector Aid Program has revised existing rules. The key change is certainly to increase the advance amount from 20 to 80% of the approved aid amount. Specifically, the return rate for the restructuring of vineyards is 75%, and for the 50% investment in the winery, while in the first two measures related to the information and promotion of the return rate for all projects 80%, with 50% of funds from EU funds, and 30 percent from the state budget of the Republic of Croatia. Additionally, the new Measure “Information in the Member States”<sup>8</sup> is included in the Program, through which 50% participation in fairs and exhibitions will be co-financed.

Support for this measure can be used by organizations of wine producers and associations, sector organizations and public bodies representing wine producers. Informative activities financed include informing consumers in the Member States regarding responsible wine consumption and risks associated with harmful wine consumption and protected geographical indications of the

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<sup>8</sup> The National Wine Sector Aid Scheme for the period 2019-2023 and the Rulebook on Implementation of the Measures of Information in the Member States from the National Wine Sector Support Program 2019-2023 (NN 08/19) available at: <https://www.aprrr.hr/en/mj-informiranje-u-drzavama-clanovi/>, (08.01.2019.)

Union's geographical origin in respect of particular quality, reputation, or other characteristics of wine due to a particular geographical environment or origin.

Eligible costs within the scope of the new measure are information campaigns, participation in fairs and exhibitions, media advertising, production, and distribution of information materials, making videos, websites, photographs, and staff costs, transportation, hotel accommodation, catering services, etc. Also, in all measures, and for the faster flow of funds into the project, support payments were introduced for each project's implemented activities. The possibility of multiple prolongations of the project will be limited, leading to reduced use of the Envelope financial resources.

In the new period available from the wine envelope is 55 million euros. The wine envelope, unlike other European funds, works in such a way that the funds planned in a particular year have to be spent in the same and there is no possibility of transferring unused funds over the next period. Therefore, the amendment of the rulebook, the reduction of the administration, ie the modification of the terms of the competition, is crucial for increasing the intensity of EU funds.

In addition, in order to break the wine sector, in 2019, the state has the overall control system for which sector has allocated 1,6 million EUR each year, transferred to the burden of the state budget. This opens the possibility for winemakers to use these means to promote wine and the activities of regional wine-growers. Namely, the new law provides for the association of winegrowers and winemakers at the regional level due to their more active role in the marketing activities and marketing of Croatian wines. The Wine Act was adopted for the purpose of consolidating EU regulations with national regulations in the wine and wine sector. In one regulation, nowadays, the areas that have been regulated at the national level by two laws, such as the Wine Act and the Law on the Common Organization of the Agricultural Products Market and the specific measures and rules related to the market for agricultural products, are now linked.

#### 4. CONCLUSION

In recent years, Croatian winemaking and viticulture have undergone major changes. Today, Croatian wine production is focused on quality development,

which is confirmed by the fact that quality wines in total turnover account for more than 70%. Similarly, from the system where wineries prevailed in former agricultural combinations, Croatian winemaking has changed in structure today, and numerous small to medium-sized wine producers are present beside large wineries. The same fact influenced the change of the Croatian wine image, which is now far richer in the diversity of producers, technology and even wine offerings. The rich offer of more than a hundred autochthonous wine varieties and a long tradition of strength are both Croatian and Istrian winemaking. Significant potential lies in the marketing of quality domestic wines through a tourist offer, one of the ways of promoting the quality of Istrian wines on the foreign market.

The National Wine Sector Aid Program is being implemented since 2014, and in the next five years, new wine grapes and winemakers should be able to co-finance winery investments, promotion, and conversion of vineyards with the aim of achieving more competitive production and better positioning of our wines on the world wine map.

Although the new regulations have changed the conditions for removing administrative shortcomings, the question remains as to how small Istrian winegrowers will be able to handle paperwork, particularly with regard to lending through the Croatian Bank for Reconstruction and Development, and whether or not the system upgrade will increase the number of applications to tenders from the new programming period.

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# BICYCLE ROUTES AS A POTENTIAL FOR TOURISM DEVELOPMENT IN BARANJA

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## **Abstract**

*The Baranja region is suitable for the development of cyclotourism due to the natural resources of Nature Park Kopački rit, which represents a tourist attraction as well as social resources, rich cultural and historical heritage. The perspective of cyclotourism development is recognized in the need to extend the tourist season through the activation of tourist resources that are largely neglected in the continental area of Croatia. The continental temperate climate has a beneficial effect on the tourist product of cyclotourism that can be offered whole year. The precondition for the development of this specific form of tourism is cycling infrastructure and attractive cycling routes EuroVelo 6 Atlantic - Black Sea - Dunav route and EuroVelo 13 Iron Curtain Route - Drava route. At the same time, they link natural and cultural values through the gastronomic and enological offer, tourists can learn about local culture and Baranja tradition. The aim of this paper is to analyse the state of the cycling infrastructure on bicycle routes, the availability of accommodation, catering and service facilities in the offer and to determine the possibilities for improving the tourism product of the cyclotourism in Baranja area. From the secondary data source, it is expected to identify disadvantages in the cycling infrastructure based on which it is possible to suggest improvements in order to intensify development.*

**Keywords:** cyclotourism, cycling infrastructure, Baranja

JEL Classification: L83, Z32

## 1. INTRODUCTION

Tourism represents a very important system and one of the main developmental priorities in Baranja area. The primary reason for slow tourism development, despite rich cultural and historical heritage, natural resources, rich gastronomical and oenological offer, is especially visible in underdeveloped touristic infrastructure, or in other words, an inadequately designed touristic product which is the fundamental prerequisite for the arrival and stays of tourists.

Cycling has been developed in other countries for many years not only as a means of transport but also as a way of life. The bicycle represents ecologically most acceptable means of transport which provides a cheap alternative to other forms of transport, and at the same time, cycling contributes to health and quality of life.

Cyclotourists lead an active life, preferring rides through the river and rural areas, enjoying natural beauty. Baranja area is rich in attractive natural locations alongside rivers, lakes, swamps, rural areas, and agricultural land. Natural resources of Kopački rit nature park are of particular importance and represent an ideal destination for cyclotourists. Baranja area has mainly lowland relief, which is convenient for the development of cyclotourism because of the ease of driving.

It is estimated that the demand for cyclotourism as a specific form of tourism will rise sharply in the next ten years, and the market segment of the tourists to whom cycling during their vacation is an important additional activity is even more significant. From all the above, it is notable that cyclotourism represents one of the touristic products with the biggest developmental perspective.

This paper aims to perceive the potentials of international and local cycling routes in Baranja area and recommend the ways how to make them attractive for both active and recreational cyclotourists. With that goal in mind, the paper analyzes the condition of cycling routes and recommends the completion of touristic offer on the existing routes that need to be valorized and put to the function of cyclotourism.

## 2. LEGISLATIVE PROVISIONS FOR THE DEVELOPMENT OF CYCLOTOURISM

Cyclotourism represents an active form of tourism which implies cycling, that is, touring a certain touristic locality or destination riding a personal or rented bicycle. Three ways of using a bicycle during a vacation can be highlighted:

- it is entirely used as a means of transport during the vacation,
- it is used in a destination for the purpose of recreation and sightseeing,
- it is used in mountainous areas of a destination (Galičić; 2014, 135)

The first step in planning cycling infrastructure is the selection of appropriate infrastructure considering the type of cycling road. According to the Regulation on Cycling Infrastructure (NN 28/16), cycling roads are:

- cycling roads,
- cycling paths,
- cycling tracks,
- cycling lanes,
- cycling – pedestrian sidewalks

Cycling road is a road intended for bicycle traffic with built and furnished road construction beyond road profile and marked with corresponding traffic signalization.

Cycling track is a road intended for bicycle traffic, built separately from the road and marked with corresponding traffic signalization.

Cycling path is a road intended for bicycle traffic without built road construction and marked with corresponding traffic signalization.

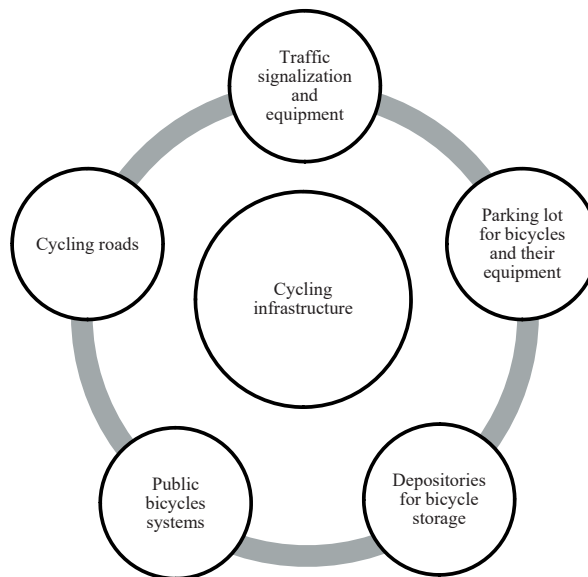
Cycling lane is a part of the road intended for bicycle traffic, marked with corresponding traffic signalization.

Cycling – the pedestrian sidewalk is a traffic area intended for cyclists and pedestrians, built separately from the road and marked with corresponding traffic signalization.

Cycling route is a way where cycling traffic takes place and it is marked with a prescribed traffic sign. Cycling route consists of cycling roads and mixed traffic roads.

Mixed traffic road is a traffic area where cycling and motor traffic take place simultaneously. In accordance with this Regulation, those sections of road have to be additionally marked with traffic signs and road signs that warn drivers of motor vehicles on the occurrence of cyclists in traffic. Figure 1. depicts the components of cycling infrastructure.

**Figure 1.** Components of cycling infrastructure



**Source:** made by the authors according to the Regulation on Cycling Infrastructure (NN 28/16)

According to figure 1., cycling infrastructure includes cycling roads with tracks, paths, lanes, cycling – pedestrian sidewalks, routes, and mixed traffic roads. The next component is traffic signalization and equipment, followed by parking lots for bicycles and equipment, depositories for bicycle storage and public bicycles systems.

When planning and projecting cycling infrastructure, it is necessary to apply the principles of:

- safety,
- economy,
- wholeness,
- directness,
- attractiveness.

The safety of cycling infrastructure needs to be secured by projecting, planning and building, taking care that the adopted solutions satisfy the safety requirements. The economy of cycling infrastructure when projecting and building implies selecting the solutions that are justified and economically acceptable. The wholeness of the cycling network is secured by mutually connecting the cycling traffic areas into a cycling network and their integration into the road network. The directness of traveling is secured in the way that cycling roads, including the road network that can be used by cyclists, enable cyclists to choose the optimal route of motion from the starting point to the finish line. The attractiveness of cycling roads is achieved by planning beyond the road profile when it is possible and economically justified, in a way that the route of cycling road is aimed at attractive objects in the area and lead in a way that it provides a clear view between the cyclist and attractive objects in the surroundings. Thus, a regulated infrastructure suitable for safe and unobstructed flow of cyclotourism is provided.

### 3. CYCLING INFRASTRUCTURE AS A DEVELOPMENTAL ASPECT FOR CYCLOTOURISM

The basis of the perspective of cyclotourism development in Baranja represents the condition of cycling infrastructure or international and local cycling routes. By analyzing the existing cycling routes in the territory of Croatia, a good connection on the national and international level has been found. The network consists of several European cycling routes, and those are:

EuroVelo is a network of cycling routes which connects the entire European continent. It passes through Croatia, particularly through its Pannonian region. EuroVelo network includes 15 European cycling routes with more than 70.000 kilometers. The marked routes can be used by tourists, cyclists, and the local population.

Four cycling routes pass through Croatia, and those are EuroVelo 6 – Danube route, EuroVelo 13 – the Iron Curtain route, EuroVelo 8 – Mediterranean route and EuroVelo 9 – Baltic-Adriatic Sea route.

The Danube route (EV 6) stretches through the easternmost part of Croatia, along with the flows of Drava and Danube. It starts on the entry into Croatia,

from the direction of Hungarian town Mohacs on border crossing Duboševica, and passes through Kneževi Vinogradi, nature park Kopački Rit, and cities Osijek, Vukovar and Ilok where cyclists exit Croatia (138 km).

The Iron Curtain route (EV 13) starts in Croatia from the direction of Hungary, on the border crossing Gola, and stretches through Slavonian and Podravina part along the Drava up to Donji Miholjac where it ends, only to start again on crossing Baranjsko Petrovo Selo. It goes through northern Baranja and exits in Batina on the Danube, in the total length of 240 kilometers (Vrećar Mišćin & Rigo; 2017, 24-25).

The Mediterranean cycling route (EV 8) passes through Croatia from the border crossing Sečovlje – Plovanija in Istria County up to Dubrovnik – Neretva County and border crossing Vitaljina – Njivice in Montenegro, along with the coast and islands of the Adriatic Sea in the length of 1.100 kilometers (<https://cikloturizam.hr/eurovelo/>).

The Baltic – Adriatic route or Amber cycling route (EV 9) goes through six European countries. It starts on the shores of the Baltic Sea and passes through Poland, Czech Republic, Austria, Slovenia, and Italy, and ends in Croatia in the length of 80 kilometers (HT'Z). The following table shows the described cycling routes with a special review on the local routes that pass through the Baranja region.

**Table 1.** EuroVelo and local routes of Baranja

Route category	Route name/mark	Route length, km	Total length, km
EuroVelo routes	EV6	89.60	194.40
	EV13	104.80	
Local routes	L-Osijek	48.00	184.86
	L-Panonski put Mira	80.97	
	L-Podravlje	18.36	
	L-Popovac	8.57	
	L-Drava alternative	28.96	
<b>Total length</b>			379.26

**Source:** made by the authors according to data from <https://cikloturizam.hr>

It is visible from the table that two EuroVelo routes EV6 and EV13 stretching through Croatia pass through Baranja in the total length of 194.40 kilome-

ters. At the same time, five local routes in the total length of 185.29 kilometers were built in the area. Accordingly, the total length of cycling routes in the Baranja region is 379.26 kilometers.

The level of development of cycling infrastructure can be perceived on the level of the entire area of Baranja, and on the level of individual town and municipality. On the south and west of Osijek – Baranja County there are no cycling routes and the level of infrastructure construction is weak. Cycling network is more developed in the Baranja region and along the Hungarian border, which is the result of the development of routes which are in the EuroVelo program and paths that gravitate towards Osijek. The sections of the Danube EuroVelo 6 route are properly marked and in accordance with regulations, on the other hand, there are sections that need to be marked and aligned with the standards. Sections of the route are lead by a built cycling infrastructure.

The Iron Curtain route EuroVelo 13 – Drava route in Baranja region is mainly developed through programs of cross-border cooperation with Hungary, but there are few built and marked cycling routes and areas in that area.

The following table shows the presence of cycling tracks in different municipalities of the Baranja region.

**Table 2.** Lengths of cycling tracks in municipalities in Baranja region

Cycling tracks in Baranja, km			
Municipality	outside Kopački rit	in Kopački rit	Total
Draž	27.54	-	27.54
Kneževi Vinogradi	24.08	6.83	30.91
Petlovac	39.95	-	39.95
Jagodnjak	10.08	-	10.08
Darda	20.03	-	20.03
Bilje	34.48	21.83	56.31
Total	156.19	28.67	184.86

**Source:** made by the authors according to data from [www.obz.hr](http://www.obz.hr)

According to the data from the table above, it is notable that the highest presence of cycling tracks in Baranja is in the area of Bilje municipality (30%), which is the result of perennial efforts in terms of connection Osijek urban area and Kopački Rit nature park. Cycling has long been in the active touristic offer to tourists who visit Baranja, as a part of the existing international cycling route Panonian peace route and the Danube route ([www.obz.hr](http://www.obz.hr)).



By analyzing international and local cycling routes in Baranja region, good connection and a smaller or bigger presence in certain municipalities has been noted, as well as in the protected area of Kopački Rit nature park.

#### 4. CYCLOTOURISM IN BARANJA REGION – CONDITION AND PERSPECTIVES

The touristic offer has been intensively enriched with specific forms of tourism, and their coherence makes the touristic product of Baranja. Cyclotourism as one of the specific forms of tourism of the Baranja region is present in the touristic offer, but it is relatively underdeveloped and insufficiently recognized on the touristic market.

Sport and recreation are becoming an inevitable stay in modern tourism, and often the main motive for shorter or longer trips to a particular destination. (Bartolucci, Čavlek, 2007, 79)

According to the explanations (Ružić, 2005, 44), the development factors of the touristic offer are natural and social attractions. In accordance with the data provided by the Agency for managing the protected natural resources, in Baranja region there is a large number of natural attractions which are protected by law and divided into five categories: nature park (Kopački Rit), special reserve (zoo reserve of Kopački Rit nature park and Podpanj), regional park (Mura – Drava), monument of park architecture (parks and gardens surrounding the castles – Bilje and Kneževo), and natural monument (grassland area, Bilje cemetery).

As the development factors of the touristic offer, social attractions in the form of different events are very important. Cycling events are occasionally organized in Baranja region. Bike tours and cycling races very often cover the area of Slavonia and Baranja. The most prominent is Tour de Slavonia – bike tour (135 km) which is held in May on the route Donji Miholjac – Našice – Valpovo – Beli Manastir – Donji Miholjac, and the second event is XC MTB race Banovo Brdo – Baranja, which is held in July in Beli Manastir in the presence of both domestic and foreign guests. The following table shows folk and cultural events in the Baranja region.

**Table 3.** Folk and cultural events as social attractions in Baranja

Ord. Num.	Name	Location	Time
1	Vinceška	Bansko Brdo	January
2	Petaračke Buše	Baranjsko Petrovo Selo	February
3	Carnival horseback riding	Branjih Vrh/Popovac	February
4	Easter in Beli Manastir	Beli Manastir	March
5	Spring Fair	Karanac	March
	Kulin Fair	Jagodnjak	May
	Mountain bike Croatia cup	Banovo brdo/Popovac	May
6	Motorbike Festival	Beli Manastir	June
7	Gatorfest	Banovo brdo/ Kneževi Vinogradi/Batina/Zmajevac	June
8	Beans Festival	Beli Manastir	June
9	Baranja Trail	Bansko brdo	June
10	Mud Academy	Karanac	July
11	Beli Manastir Youth's Summer	Beli Manastir	July and August
12	Plaster Heel	Karanac	August
13	Tarda Festival	Darda	August
14	Our Lady of the Assumption	Popovac	August
15	Diversity is Wealth	Beli Manastir	August
16	Autumn in Baranja	Beli Manastir	September
17	Wine Marathon	Zmajevac	September
18	St. Martin's Day	Bansko brdo	November
19	Čvarakfest and winter fair	Karanac	November
20	Advent in Baranja	Pelovac/ Darda/Kneževi Vinograd/ Beli Manastir	December

**Source:** made by the authors according to the data from <http://www.tzbaranje.hr/hr/aktivnosti/manifestacije>

From the table above it can be concluded that there is a continuous and diverse touristic offer in form of folk and cultural events throughout the year.

The next group of social attractions is contained in the accommodation and food offer. In Baranja, cyclotouristic offer of accommodation and food is mainly concentrated in the EuroVelo route area. Accommodation offer is adapted to cyclotourists, and it is not significantly different from standards and criteria for bike-friendly objects in other European countries. The most important criteria are: bike rack, bike depository, bike tools for basic repairs, space for washing and drying cycling clothes and travel equipment, diverse breakfast menu or the possibility to use kitchen, information corner with maps and promotional materials and possibility of Wi-Fi connection (Vrećar Mišćin & Rigo, 2017, 19).

Accommodation objects in Pannonian Croatia have the mark – Bike&Bed. In Baranja, none of the objects has Bike&Bed mark and fails to meet the standards from the Regulation on classification, categorization and special standards of hospitality objects from the Hotel category, but numerous objects have the possibility to accommodate cyclotourists and store bikes. At the same time, there are two cycling camps – Camping Suza Baranje, in Suza (<http://camping.suzabaranje.com/>), and Zlatna školjka, in Kopačevo, where it is possible to accommodate cyclotourists. Among the municipalities of Osijek-Baranja County, the most prominent is Bilje with the most developed cyclotouristic offer.

It can be concluded that in the Baranja region, there is a lack of cycling camps, services and equipment stores, bike rental service and hospitality offer designed for cyclotourists. There is a distinct deficit in adequate signalization for cyclists, which would contribute to their safety during the trip. It is extremely important to make quality and reliable cartographical materials in order to merge cyclo-tourism and touristic attractions in cyclotouristic routes. By designing a mobile application as a contemporary and easily accessible form of informing and presenting events all year long, the experience and offer of cyclotourism would be completed.

## 5. SEGMENTATION OF CYCLOTOURISTS AND TRENDS IN CYCLOTOURISM

Tourist destinations need to divide the market into different market segments of potential tourists who may have the desire and the need for their offer, to choose target groups to directly address and position their products and services in a form that will in the best possible way provide the satisfaction, desire and the needs of the selected target group. (Marušić, Prebežac, Mikulić, 2019, 302)

The modern tourist is becoming more and more curious, becoming a researcher of people, content and processes in the space they visit, his ever-increasing cultural and educational level, defining a different approach to the use of annual vacations and leisure activities, while sport and recreation become more and more important content of tourist movements or the pursuit of free times. (Vukonić, Čavlek, 2001, 365)

Cyclotourism represents an active and/or recreational form of tourism which implies cycling, that is, touring a certain touristic locality or destination riding a personal or rented bicycle. Cyclotourists can be divided into two main groups. The first group is composed of cyclists who use bikes as the primary means of transport during the whole trip and stay, as well as those who travel with other means of transport and bikes serve them on shorter relations within the area where they are staying. During the stay in the destination, they visit and tour as many localities as possible and rarely stay in the same place for a long time. According to Strum (2004, 128), the growth of the leisure industry has far exceeded gross domestic product growth. Between 1987 and 2001 GDP in dollars grew by about 50%, while sales of sports equipment and bicycles more than doubled, ie, the growth of the leisure industry is faster than the total economy.

According to the UNTWO estimates (action plan), there is more than 60 million active cyclists in Europe, 60% men and 40% women, of different age groups. Around 90% of cyclotouristic trips are independently organized, and only 10% are organized by travel agents. According to the data by the European Parliament (2013), cyclotouristic market of the European Union is constantly increasing. The number of one-day visitors who use bikes during their trip is hard to estimate, while the number of tourists who realized at least one overnight stay is estimated at about 20 million. More than one-quarter of European cyclotouristic trips take place in Germany, and around 8% take place in Scandinavian countries. Cyclotourists are in the medium- to high-educated tourist group. Usually, they travel in pair (50%), around 30% come in groups of three to five people, and the remaining 20% are singles. Almost 60% of cyclotourists change the accommodation several times during the trip, while 40% stay in the same place. On average, cyclotourists spend 53 euros a day including the accommodation, whereas one-day visitors spend 16 euros a day on average.

Table 4 shows the segmentation of cyclotourists according to their preferences, target market, and psychographic segmentation.

**Table 4.** Cyclotourists segmentation

Segmentation of cyclotourists		Target market	Psychographic segmentation	Preferences of cyclotourists
Cycling amateurs	Sporadic cyclotourists	-Croatia -Hungary -Bosnia and Herzegovina	Prefer physically less demanding routes, have a pre-planned and organized itinerary, look for cozy accommodation, mostly mid- and mature-aged (35-60), come with the personal bike. Usually, travel in groups or with family.	-less demanding cycling routes, -ride through preserved nature, -cultural and natural attractions, -thematic events
	Short-track cyclo tourists	-Croatia -Hungary -Bosnia and Herzegovina -Austria		
Active cyclists	Long-track cyclotourists	- Croatia - central-european countries	Usually, don't have an elaborate travel plan, look for simple and acceptably priced accommodation, mostly younger age, from twenty to early thirties. Interested in the challenge and demanding cycling routes. Come with a personal bike.	-longer, demanding routes, -ride through preserved nature, -cultural and natural attractions, -international and national cycling competitions.
	Sports cyclotourists	- Croatia - central- and west-European countries		

**Sources:** made by the authors according to the data from <https://mint.gov.hr>

As it is notable from the table of described market segments, special groups of cyclotourists can be singled out, depending on their preferences, out of which priorities on infrastructure emerge.

- Sporadic cyclotourists including day holidaymakers and amateurs who prefer relatively shorter cycling routes near their accommodation object. Alongside that, attractive routes with little car traffic are important to them, and additional services offer plays a minor role,
- Short-track cyclotourists choose other locations alongside their place of stay as the itinerary for their trip. They transport their bikes to the location with cars of their own, by railway, or rent them on spot directly or using Bike-sharing system. The attractiveness of routes is more significant to them than to the prior group, as well as diverse hospitality offer and service facilities.
- Long-track cyclotourists prefer longer routes of at least 100 kilometers, well-set and attractive routes with diverse hospitality offer, cyclotourist-adapted accommodation and service facilities in the route.

- Sports cyclotourists have similar preferences as long-track cyclotourists. To them, the intensity of car traffic is also important, as well as favorable climatic conditions, especially outside the summer season. Since they usually travel in groups, larger hotels are necessary, alongside diverse offer.

Cyclotourism is more or less physically demanding when it comes to the distances, so nutrition has great importance, but at the same time, due to their activities, cyclotourists usually eat in local restaurants in the route. Therefore, restaurants near cycling routes in Baranja should complement their gastronomic and oenologic offer.

According to the Action plan on cyclotourism development in Republic of Croatia (2015-2020), the main motif for cyclotourists' trip is active or recreational participation in cycling, and additional motifs that affect demand are participation in competitive cycling and watching cycling events. Since touristic forms are defined by the duration of the vacation, it is necessary to differentiate:

- one-day cyclotourism – a most frequent form of cyclotourism, characteristic for domestic tourists, i.e. day holidaymakers
- vocational cyclotourism – the form of tourism where cycling is one of the activities of the tourist during the vacation
- active cyclotourism – cycling is the main motif of the trip.

Therefore, it can be concluded that future trends of cyclotourism development in Baranja will be directed at market segments of active and recreational cyclotourists. It will most often be domestic recreational cyclotourists and foreign tourists who visit because of social and cultural events.

Activities during the stay in the destination were ranked according to the most common forms. Out of a total of 30 recognized bicycling as an activity is ranked 16th in rank rankings 12.6% (Tomas's research, 2017, 42).

According to the preferences of recreational cyclotourists, Baranja region enables fewer demanding routes due to lowland relief and the vicinity of inhabited places where local gastronomic and oenological offer exist, as well as diverse cultural and historical heritage.

Simultaneously, active cyclotourists can enjoy long, demanding routes in Baranja which are connected on the international level (EuroVelo routes), as well as hilly routes, with vineyards and wine cellars which contribute to the attrac-

tiveness of the route. The moderate continental climate is a desirable factor that contributes to perennial cyclotourism offer.

## 6. CONCLUSION

Touristic demand for different forms of active vacation is a growing trend. Cyclotourism is one of the specific forms of tourism that connects other forms of tourism such as gastronomical and oenological tourism, agritourism, cultural-historical, sports-recreational, camping tourism, adventure, and eco-tourism. In order to create the preconditions for intensive development of cyclotourism, cycling infrastructure that relates to local, regional, national and international routes is indispensable. At the same time, the attractiveness of cycling infrastructure is one of the cyclists' basic motifs for visiting, and it is achieved through long-term planning of facilities on the routes and successful realization.

Cyclotourism in Baranja is relatively poorly developed, so it is necessary to recognize and valorize natural and social resources and put them to touristic use. Natural attractions in Baranja are recognized, protected by law, and divided into five categories: nature park (Kopački rit), special reserve (zoo reserve of Kopački Rit nature park and Podpanj), regional park (Mura – Drava), monument of park architecture (parks and gardens surrounding the castles – Bilje and Kneževo), and natural monument (grassland area, Bilje cemetery). Alongside natural attractions, there are numerous social attractions in the form of different events, both cycling and cultural-historical. Since almost 60% of cyclotourists change accommodation several times during the trip, so it is necessary to complete and enrich hospitality and accommodation offer adapted to the needs of cyclotourists.

In the Baranja region, there are only two accommodation objects which cater to cyclotourists' needs. The offer can be completed through accompanying infrastructure – traffic signalization, mobile application, services, and bike equipment stores. Baranja region as a touristic destination has different market segments as potentials for cyclotourism development.

Two groups of cyclotourists have been recognized by market segmentation, and those are cycling amateurs and active cyclists. Cycling amateurs prefer less demanding routes, thematic events, cultural and natural attractions. On the other hand, active cyclists prefer longer and more demanding routes, competi-

tions and ride through preserved nature. Market segmentation is an important part of positioning a touristic destination, which is a long and complex process. That way, the level of quality of touristic product and destination image is maintained and raised. Therefore, long-term planning and short-term organizing of touristic offer for every segment of cyclotourists are indispensable.

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# ECONOMIC INFLUENCE OF HIGHER EDUCATION INSTITUTIONS IN A REGIONAL ECONOMY: THE EXAMPLE OF THE UNIVERSITY OF PECS

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## **Abstract**

*Managing a university and providing opportunities for development is a hard task that today's university leaders are facing. In an economically and technologically rapidly changing environment that is given today leaders must have a vision for their institutions and detailed plans for the long-term growth are necessary to achieve this goal. Innovation is essential in a university's life considering its role in society. The 4th generation universities have a mission to change or shape society, and the easiest way to do this is to take an important role in its life. Being up-to-date with new technologies, being a rational business partner for companies is inevitable in today's environment. Innovations help universities strengthen this role and make it an important investor in the region. The article encompasses a review about the tender investments provided by European Union sources to the University of Pécs in the last 10 year. The goal of the article is to measure the importance of these tenders and to provide an insight into the role of the university in the region.*

*Keywords: RDI, 4th generation university, regional economy, Hungary, University of Pecs*

JEL Classification: A20, R11

## 1. INTRODUCTION

In the transformation process of higher education institutions, several factors played an important role, including the restructuring of the educational structure (eg.: the bologna-system in Europe), and the change in the social engagement of universities. In the case of universities, currently 4 generations are separated by the specialized literature, and there is a mission associated with every generation. In Wissema's book (Wissema, 2009) the first 3 generations are discussed in details, and one can find the fourth generation's discussion in Pawlowski's work (Pawlowski, 2009). The first generation is defined as the medieval universities which were founded based on the sample of the ancient Greek and Latin schools, for which the sole purpose was teaching. In the XV. century during humanism, the thinking of the society has changed, and the usual master-disciple relationship was not enough or adequate for more and more students, and institutions came to life where the main aim was to find and comprehend new knowledge, where professional researchers and amateurs worked together. Besides universities, another kind of specialized institutions came to life, where more practical disciplines and sciences were taught. After the cultural revolution, the former universities started to gradually incorporate the recent research methods, for the unofficial universities and other specialized institutions posed as a threat and serious competition to them. At the end of the XVIII. century the Humboldt University arose. The Humboldt University was named after the Prussian diplomat, Wilhelm von Humboldt, who was an enlightened philosopher, neologist, minister of education, and the founder of the University of Berlin (which was later named as the Humboldt University). Researchers started to draw conclusions from objective, systematic and repeatable experiments, which were collectively named as the "modern scientific method" (Wissema, 2009, old.: 13). The process of transition was the longest between the first and the second generations. The role of the second-generation universities besides education was expanded with research, which developed parallel with industrialization and they helped the progression of each other to a great extent. However, the Humboldt-model had several problems: after the

initial boom, the number of students increased so greatly, that the standard of education declined, the duration of the education lengthened, and proportionally fewer students graduated than earlier, and also the governmental restraints on budgets made it more difficult to educate such a huge number of students. Besides, many worldwide changes occurred that fostered the end the era of this type of universities: globalization; the appearance of interdisciplinary research; increase in the cost of cutting-edge research; the appearance of special research centers; universities as the cradles of new economic activity, cooperation with the industry; the rise of entrepreneurship. Along the lines of these changes, the third level university missions appeared: the cooperation with industry partners. Business use of education and research had a great impact on the operation of universities, as these involve students in the industry during their education, complementing the university education with practical know-how. Wissema's book was published in 2009 but comparing his work with later specialized literature one can see, that Wissema forecasted a longer future to the third generation universities but he was mistaken, not long after his book was published, structural changes in the market started to evolve that had an effect on higher education institutions.

Based on Pawlowski (Pawlowski, 2009), the changes in universities in the most developed regions started in 2006, and the "fourth generation university" appeared, the influence of which is starting to unfold these days. Recently the supply and demand regarding universities have shifted from the previous teacher-student angle to the economy-education angle. Based on the knowledge obtainable through researches and practical training it is the role of universities to shape the society around them through investments and innovations and to shepherd it to a future where sustainable economy and way of living is an integral part social thinking. Besides that, another role of universities to foster the competitiveness of their region. Multiculturalism has evolved next to interdisciplinary research, meaning that the regional overlap of the latitude of universities is much more than earlier, which is also a reason of the lower costs of communication and transportation resulting from globalization. When taking internationalisation into mind, one needs to consider the cooperation with international companies and also the exchange programs with foreign universities and other foreign scholarships in the case of the economic impact of universities, as a foreign university coming to a particular university strengthens the economy of that region for one or more semesters with their spendings. Im-

portant to emphasize that as a given time period was needed for the transition between the first and second, and the second and third generations, it will also be needed for the transition from the third to the fourth generation, and currently the higher education system is in this transition phase, but with altering advancement from region to region. The University of Pecs is already fulfilling its third-generation tasks, but to be able to perform its fourth-generation tasks a structural change is needed, and also the university needs to obtain a position through investments, with which it further strengthens the economic roots in the region.

From another aspect but with similar conclusions another theory appears in the work of Etzkowitz and Leydesdorff (Etzkowitz & Leydesdorff, 1997), the Triple-Helix model. After its 1996 creation, the publishers wrote several related articles, and workshops and conferences were held in the topic. The essence of the Triple-Helix model is the interaction and cooperation of the university-economy-government trio in a knowledge-based society. Another grouping of universities appeared in Hrubos' (Hrubos, 2001) and Clark's (Clark, 1998) works, who named the previously mentioned "fourth generation university" as the "entrepreneur" university, which expands the previous self-supporting (managing its own finances) and providing (creating and supplying knowledge, obtaining business partners) concept of the university with the role of shaping and responsibly leading governance the society. Detailed specialized literature analysis and assessment was performed and can be found in the works of Kotosz (Kotosz, 2013) and Kotosz et al (Kotosz et al, 2016), the article does not comprehend a detailed interpretation of these models.

## **2. IMPORTANCE OF RESEARCH AND DEVELOPMENT IN THE LIFE OF UNIVERSITIES – EUROPEAN UNION SOURCES AT THE UNIVERSITY OF PECS**

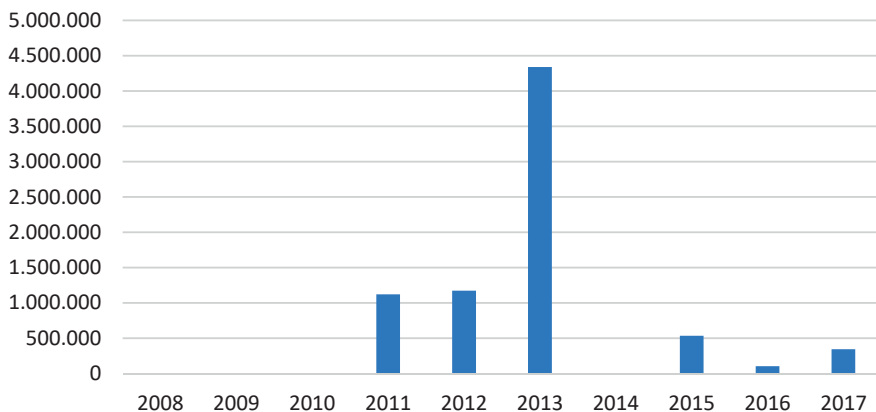
As it can be seen in the introduction, the tasks of the universities these days include making researches available for economic usability. The prevailing of these researches on the market depends on many factors. Today it is unambiguous that research and development is an integral part of the modern economy (Glaziev & Schneider, 1993). In a transitional economy such as Hungary's, many principles need to be fulfilled: the government needs to support basic

research; financing of applied research and development must be taken over by the private sector (with an exception for the specialized researches that serve governmental purposes); the main problem of the transition period is the lack of demand for researches (this needs to be compensated somehow); the diversity of enterprises is favorable from the viewpoint of investments (demand for business applicability for more lines of research will rise); there is a fundamental dependence of science and technology to the legal and economic environment.

Based on these findings it is not expectable from a university that does not fulfill its fourth-generation roles to finance its RDI projects that require a great amount of capital investment. These investments are usually supported by the government, the private sector or another institution. In the following parts of the article, a university will be analyzed that is important in the south-Transdanubian region.

The University of Pécs (UP) in the last ten years (2008-2017) accumulated a total of € 7 617 004 support from European Union sources. The 1st graph below shows the yearly sum of these supports (a detailed table with the exact amount and the titles of the projects can be found in the first appendix, and in the second appendix a graph shows a yearly distribution of these sources grouped by the four major areas regarding the number of the projects and the amount granted for these projects).

**Figure 1.** Amount of financial support (€) by the EU to the University of Pecs



**Source:** European Commission, edited by Abel David Toth

The department responsible for tenders at the University of Pecs underwent a transformation that started in 2015, and in 3 years it nearly tripled its human

workforce. Recently there are less European tenders that are directly targeted by the university, the focus is on the tenders provided by the state (this change is mostly because of the legal and bureaucratic severity of the tenders). The European Commission mainly supported the following areas: research and development, education development, investments aiming the increase of living conditions. The distribution of the tenders shown on the graph are as follows (based on the number of tenders): medical/health: 47%, social: 34%, economic: 13%, IT: 6%, whilst the amount supported distributes as follows: medical/health: 51%, social: 35%, economic: 8% IT: 6%. Medical tenders focused on medical research and development and the implementation of these findings; social tenders mainly focus on the IT socialization of the elderly, religion topics and the presentation of researchers' life to the public, trying to endear this lifestyle with the younger generation. Economic tenders aimed agricultural innovations, reforms regarding economic institutions, the applicability of genetic researches in agriculture. As for the IT tenders' smart technologies were supported, together with those IT technologies and equipment that increase living conditions.

The previously mentioned ratios confirm the assumption that most supports are dedicated to those medical research and development, the applicability of which has a great impact on the increase of European living standards.

### **3. A SWOT ANALYSIS OF THE SOUTH-TRANS-DANUBIAN REGION'S RDI ENVIRONMENT**

If one wants to define the relationship of the university and RDI investments in a complex system, it is necessary to first assess the outer and inner environment, more specifically the arising opportunities and threats, and the weaknesses and strengths (Farkas et al 2015). The second graph represents these factors.

**Figure 2.** Opportunities and threats, strengths and weaknesses regarding the UP



**Source:** PTE KTTO, edited by Marcell Farkas

Considering opportunities, it can be said that the potential sources that can support institutions with their RDI investments are the international and national tenders focusing on this field. This means an approximately 700 billion HUF source regarding the current period (2014-2020) for SMEs. The M6-M60 highways are not fully utilized and not integrated into the nation-wide public road system. If these roads could be somehow connected to the Croatian system, then it will be more probable to increase the entrepreneurial activity of the quarter sector in the region. The relations of the university are focusing on Tolna county, mainly Szekszárd and Paks are interested. In this county the research and development related to the expanding of the Paks nuclear plant means the opportunities in the external environment of the UP, with which it cannot live without limits because of the special legal environment, also the UP needs to compete with other higher education institutions, for example the University of Debrecen (nuclear physics specialization). Orders from multinational companies and SMEs – however, they cannot be forecasted – are significant, and henceforth need to be considered as an opportunity. However, these orders in many cases only require basic research, that could not be seen as real RDI investments. The main research areas defined by the Research-utilization and Technology-transfer department (KTTO) and the University of Pecs are

focusing on the medical innovations (3D microscope, intelligent patient tracking systems, biotechnology, genetic engineering) and the engineering developments (intelligent city designing, sustainable urban management, smart cities). The opportunities provided by sponsor action is currently utilized by the Medical Faculty and the Faculty of Business and Economics, and this kind of sources could be a good starting point for the future. The South-Transdanubian Cooperation and Research Center is an initiative that has come to life to be the mediator between the corporate sector and the university, and also has untapped opportunities that could be further utilized, for the results that were achieved in the medical and engineering field are not efficiently available and usable for the economy, and this problem highlights the great distances between the university and the corporate sector. There is another notable initiative with a similar profile, the South-Transdanubian Regional Innovation Agency that serves as a bridge between the knowledge centers and the transfer organizations -such as the Pécs-Baranya Chamber of Commerce and Industry, or the Innovation and Technology-development Center – but only with modest success. Other factors that are mentioned in the RDI strategy of the university can only be considered theoretically or in a longer time period.

As for the threats, it should be mentioned that there is no developed, hierarchic strategy, so in many cases, the harmonization of the (sometimes ad hoc) projects is a difficult task. Legal obstacles mainly come from the different lead time of the governmental and university regulations, in many cases, the latter constricts the former. General legal uncertainty is also typical, meaning that rapid changes in the legal environment are not closely tracked by the institutional regulations. Because of this, and the bureaucratic system of the university and the state, the fundraising could be further hampered. Another potential danger is the decreasing attractiveness of the career of researchers and the low motivation of researchers arising from the overloading of the teachers. Furthermore, the *brain-drain* phenomenon is even more considerable regarding RDI projects. The weak economic impact of the city of Pécs, its relative isolation, the total lack of high tech industry and large investors create an unfavorable investment environment. As another threat, one should mention the strong lobby activity of other rural universities (UD, USZ) as a more important factor compared to the emergence of corporate research centers.

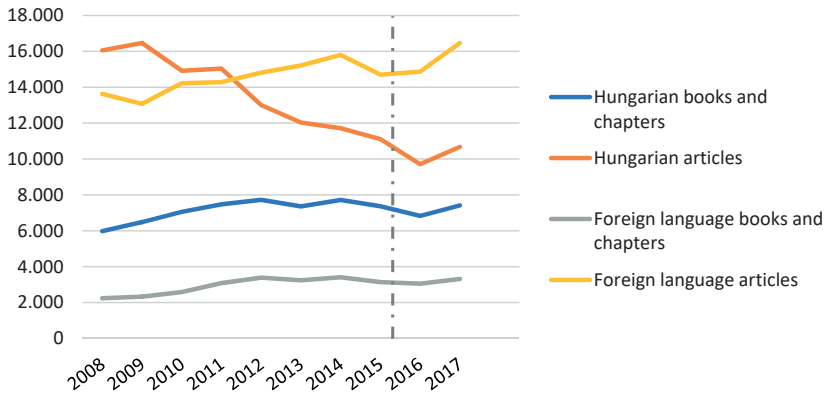
Amongst strengths, the first thing that needs to be mentioned is the national and international fundraising from tenders, as the major proportion of sources



that could be spent for innovations come from this activity. The role and the prestige of the clinics and other health institutions are also important, as the benefit originating from these advantages could be utilized by the university. The KTTO and the Innovation Committee serves as an institutional and corporate background for the innovative activities, which has already partly succeeded in some areas. From the aspect of human resources, the UP stands out regarding the number of certified researchers, and the reinforcements are also ensured by the 20 doctoral schools functioning at the university. InnoPoints and Innovative Researcher Teams were created in a 2009 TÁMOP tender, also a Knowledge map was created to map the innovation potential of the university. On this map, only 50-60% of the researches were shown because either teacher doesn't know about the existence of this map, or the data is insufficient they provide for the system. The reason for the latter is mainly originating from the fact that those project or ideas that could be applied by market characters are "outsourced" to companies, to sell or utilize them privately, thus they are invisible for the institution. We can highlight the advanced state of laboratories, instruments and other institutional infrastructure (research center, knowledge center – library) that could be used for clinical and other researches. The other so-called "soft" factors that were detailed in the strategy and other factors that could only be connected to innovations indirectly, are irrelevant concerning RDI investments.

The University of Pecs has much more weaknesses than strengths. The first and probably most important problem is that the university has no substantial economic relations, so it is rare that the institution has an order for a complex research and development project requested by corporations, most of these orders are limited to basic research. The other essential component of the weakness of the UP is that the main emphasis is rather on publication than on patents, publications serve as the real possibility for academic progression in the institution, and this is the basis for the decisions of research applications (3rd appendix shows the change in the number of patents 2008-2017). Teachers are not forced to execute other types of researches, and they can't bear the risk related to patent, or they cannot be persuaded to work more than the daily requirements because they have no capacities for that.

**Figure 3.** change in the number of Hungarian and foreign publications. For a change in the statistical methods on the side of the KSH, years 2016-2017 are not comparable with previous years.



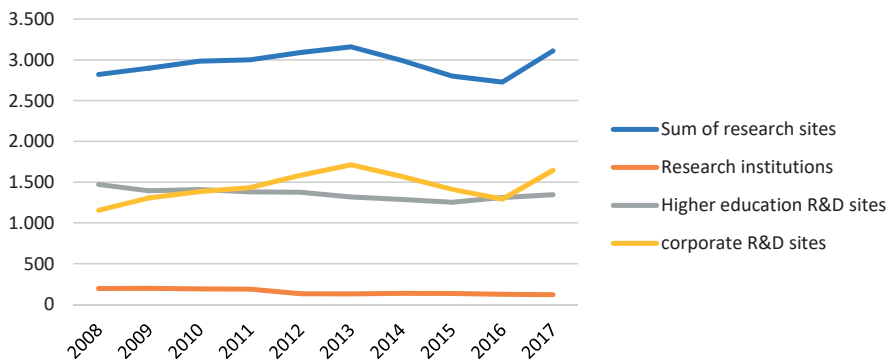
**Source:** KSH, edited by David Toth

The most important reason, besides that there is no previous practical knowledge about industrial research utilization, is that at the University of Pecs there is no tradition of innovation. Additionally, the institution lacks a harmonized application system for the faculties and the institution and there is no cooperation between faculties; efficiency of quality control and monitoring is negligible, and regulations are often inconsequential. Because of the ad hoc projects, the fragmentation and unequal utilization of the modern infrastructure is inherent, and the available equipment are not properly registered, so their potential is often unexploited. Important to mention that due to the financial instability that originates from the institutional and governmental withdrawal of financial sources, unpredictable contribution and the burden for provisioning will cause liquidity problems and drawbacks in competition later on (for example in the case of the clinics). The excessive workload of teachers and the lack of financial motivation plays an important role in slightly efficient research and development works. This way researchers carry out isolated researches, and the possible innovation is managed to bypass the university. This is partly because of the impenetrable institutional bureaucracy, that could lead to distrust and weak supply of data, but only the mutual trust is the pledge of networking and cooperation that could serve as the basis for successful innovation.

## 4. EVALUATING THE RDI SITUATION OF HUNGARY AND THE SOUTH-TRANS-DANUBIAN REGION

The RDI activity in Hungary had been decreasing from 2014 regarding the number of research sites (research institution, universities and corporations) and researchers, but in 2017 this ratio seems to turn around: in that year the number of research sites grew by 14%, and the number of researchers grew by 12%, reaching the level of 2014 regarding the number of employed and the GDP expenditures spent on RDI projects (however, it is still lower than in 2013 in both cases). The proportion of research sites is shown in the graph below.

**Figure 4.** Sum of all sites and institutions dealing with research and development between 2008 and 2017.



Source: KSH, edited by David Toth

As for the financial expenses, growth was continuous except for the year 2016, and in 10 years, expenses grew by 94% until 2017 compared to 2008. When analyzing this value we found that the expenses of research institutions grew by 4%, that of higher education institutions grew by 17%, and expenses of corporate R&D sites grew by 170% in the mentioned time period. In 2017 the expense-related proportion of higher education institutions were only 13,29%, while that of the corporate sector was 73,11% (the remaining proportion was dedicated to research and development institutions). These numbers can further support the hypothesis that the business applicability of RDI activities of universities is not necessarily preliminary requirements when starting research and that the business relations of the university are not strong enough to effi-

ciently monetize the results of these research results in the industry. The largest proportion of the expenses of higher education research sites come from governmental support (78,19%), the remaining amount is provided by corporate or other national or foreign sectors. In 2017 the funds for tenders exceeded the 2013 level (contrary to the employment rates), and regarding the sum of research sites the country reached the 2014 level (but still behind the 2013 level).

Regarding the proportion of companies that brought out new products as a result of research and development projects, Hungary is at the 22nd place among the 28 EU members, with a proportion of half of the EU average (24%). When Switzerland, Iceland, and Norway are also considered, Hungary is at the 25th place, for this list considers the financially strong large corporations that have R&D projects with the same weight as the SME sector that has the much less financial strength to carry out such researches. Hungary is in the midfield regarding RDI employment data in the EU that indicates the presence of the economic weight of large corporation. The proportion of RDI employees compared to all employees is between 0,7-0,9% on average in the 2008-2017 era, while the proportion of R&D expenditures compared to the GDP is 0,98-1,36% in the same time period, which shows the sector's higher-than-average capital requirement. When analyzing the actual data, we found that the employees of the R&D sector were growing from 2008 until 2013, then it started to decline until 2016, and in 2017 it started to grow again (these changes are shown in the fourth appendix).

Before going into details about the RDI environment of the university, first, we would like to demonstrate the situation in the South-Transdanubian region. As the analysis of the KSH regarding 2017 shows, the region has a huge drawback in the quarter sector compared to other rural regions (all regions except for the one where the capital is placed). This is especially true for the proportion of full-time employees of the RDI sector, and also for the expenditures of the sector in this region. The proportion of R&D employees in the region compared to the national data is only 6%, only two regions have lower values (West-Transdanubian and North-Hungarian regions), but in the West-Transdanubian region the level of RDI expenditures is higher (more than 1,5 times more) and the number of research sites is also higher. The drawback is even more significant if we compare the region with other regions that have similar regional centers, the advantage of Szeged or Debrecen appears to be even larger, as Hajdú-Bihar and Csongrád counties are more relevant in themselves than the whole South-

Transdanubian region. Regarding the number of RDI sites, the region is ahead of the South-Hungarian region and the Middle-Transdanubian region (but the latter doesn't have a large university center).

If one wants to shed light on the reasons behind this situation, it would be interesting to take a glance at the number of publications per employee working in the RDI sector in each region. It is clear that in 2015 the South-Transdanubian region was in the first place amongst the rural regions regarding all types of publications except for the foreign journals. Proportionately the number of publications per 100 million HUF of RDI expenditures shows a similar picture. After analyzing the absolute number of publications, it can be stated that in 2017 the region is the first with respect to books and book chapters, and third with respect to journal articles after South-Plain and North-Plain regions. Based on these we can say that the region relies on the universities and research institutions, and primarily on the University of Pecs, regarding RDI activities. Representatives of the state in the region are mainly the MTA (Center of Regional Research, and the Academic Committee of Pecs) and the FVM Viticultural and Winery Research Institution, which carry out basic researches in most cases.

The researches in the university – as we can see – do not create real employment opportunities for the RDI sector, spend even less on research and development activities from their budget, and realize hardly any profit. Without the necessary entrepreneurial skills and know-how, the publication is much more dominant compared to patenting, as we can see from the demonstrated data.

#### 4. CONCLUSION

Based on the previous chapters in the article it can be seen that the transformation of the social engagement of the university implies the change of the daily tasks of the institution and the correction of the previously determined goals. The international changes always came later to the Middle-European region as to our western neighbors, but for universities to be able to compete with foreign universities it is necessary to change its educational standards, the social engagement of the institution and the attitude towards the economic partners.

In the case of the University of Pecs, the European and national investments that were realized in the last few years had helped the university in its academic

research and development activities especially in the field of medical studies, but the industrial applicability of these findings are hardly visible yet. Besides these investments and researches, however, the region needs the development of the industry and the economy to strengthen. This could not be fulfilled by the university alone in Baranya county and the South-Transdanubian region, for this purpose it would need the help of the local communities and businesses. As the chancellor of the University of Pecs said at one of his speeches, the university stands at the door before an interesting period, where it needs to fulfill and execute unusual and extraordinary tasks, for example getting more involved in business activities and to create a working portfolio with the city management that would help the region rise. According to him one of the possibilities is through RDI activities and tenders, the business applicability of which can be achieved by vitalizing the regional economy and involving local entrepreneurs. But the basis of this all is the change of the approach of the residents and the city management, from the passive or indifferent behavior to the proactive and productive lifestyle with an urge to find solutions is essential. In Pecs, the university has connections with most entrepreneurship directly or indirectly, so the changes in the life of the University of Pecs has a huge impact on the city and the region.

Utilizing governmental investments and attraction of companies to the region that could help with its uprise is a hard task, which requires careful planning and proper work, so the leaders of the city and the university must put huge emphasis on the cooperation with current partners and on the development of new partnerships, and must support such RDI activities that not only serve as a good starting point in the educational/academic area, but also accompanied by the rise of living standards in the region.

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## APPENDICES

### 1. Appendix: detailed table on the sources provided by the European Commission to the University of Pecs in the 2008-2017 period. Source: European Commission, edited by David Toth, January 2019

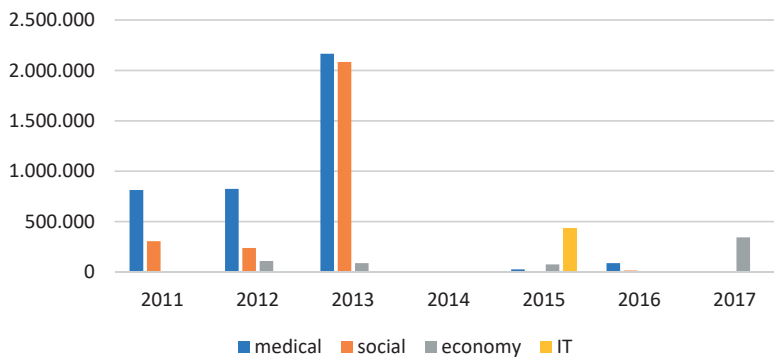
Year	Amount (€)	Title
<b>2017</b>	344 063	crop diversification and low-input farming
<b>2016</b>	88 275	joint actions on rare cancers
	15 314	social inclusion through education, training, and youth
<b>2015</b>	249 250	ICT services for the life improvement of the elderly
	75 585	financial and institutional reforms for the entrepreneurial society
	183 025	smart ground - smart data collection and integration platform
	26 802	international higher education capacity building (experimental education in healthcare)
<b>2014</b>	-	
<b>2013</b>	1 652 438	Center - TBI (traumatic brain injury)
	143 333	BBMRI-LPC (approx.)
	197 256	small artery remodeling
	123 333	BBMRI-LPC (approx.)
	89 196	rastanews
	2 079 485	vernacular religion on the boundary of Eastern and Western Christianity: continuity, changes, and interactions
	49 740	joint action under the second health programme (mental health and well-being) (approx.)
	4 400	bringing researchers closer to the public (night for researchers)
<b>2012</b>	109 900	combining innovation in vineyard management and genetic diversity for a sustainable European viticulture
	157 760	To decipher the optimal management of systemic sclerosis
	210 514	Patient-centered palliative care pathways in advanced cancer and chronic disease
	67 200	SP1 cooperation - a collaborative project
	121 000	genes and proteins fir autoimmunity diagnostics (approx.)
	67 476	we: wor(l)ds which excludes (approx.)
	335 668	transcontinental research on a highly invasive plant species solidago gigantic
	4 400	bringing researchers closer to the public (night for researchers)
	59 699	information and research activities for "learning EU at school"
	40 722	unilateral projects: Borderless Europe - Jean Monnet Centre of Excellence Pécs
<b>2011</b>	382 060	determinants of eating behavior in European children, adolescents, and their parents
	119 342	dobutamine for NEOnatal CIRCUlatory failure defined by novel biomarkers
	75 400	sharing knowledge assets: internationally cohesive neighborhoods
	30 944	ERA-Net on rare diseases
	227 236	joint efforts of police and health authorities in the EU member states and third countries to combat and prevent trafficking in human beings and protect and assist victims of trafficking (approx.)



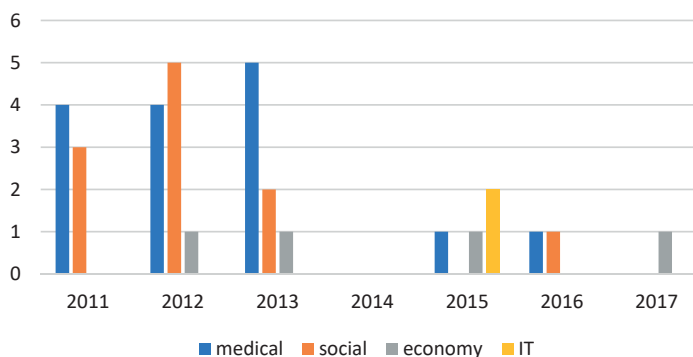
	281 788	cooperation Uni-Ent: European Cooperation for Improved Application of Academic Teaching in Commercial Uses of Medical Biotechnology
	4 400	a Hungarian night for researchers 2011 - hungry-EU research careers
<b>2010</b>	-	
<b>2009</b>	-	
<b>2008</b>	-	
<b>Sum</b>	<b>7 617 004</b>	Sum of all monetary support from the EC to the University of Pecs

2. Appendix: yearly graph on the number and value of tenders granted by the European Commission in the 2011-2017 period. Source: KSH, edited by David Toth

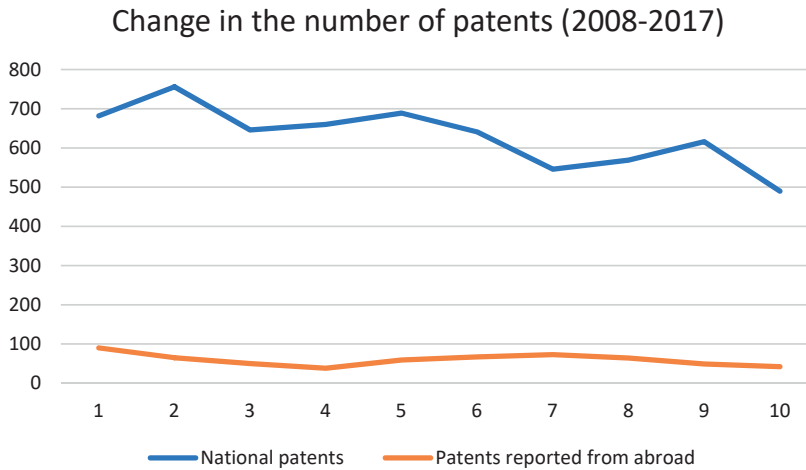
Yearly amount of financial support (€) for tender / type (2011-2017)



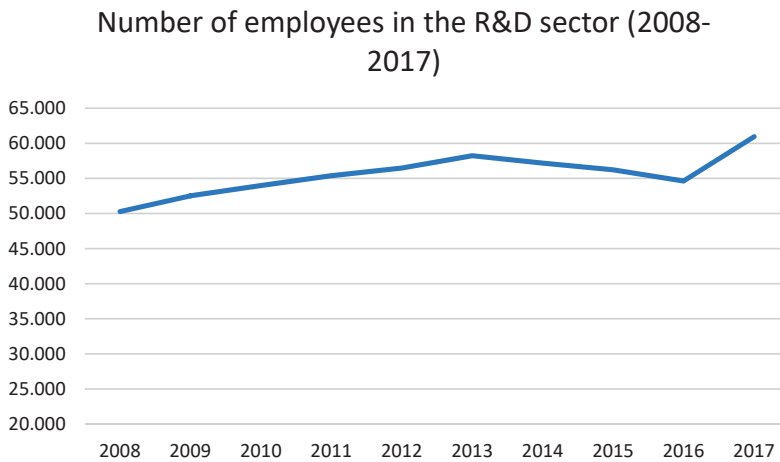
Number of tenders / type (2011-2017)



3. Appendix: Change in the number of patents in Hungary, in the 2008-2017 period. Source: KSH, edited by David Toth



4. Appendix: Change in the number of employees in R&D sites in the 2008-2017 period. Source: KSH, edited by David Toth



## AGRITOURISM IN CROATIA: AN OVERVIEW OF CURRENT RESEARCH

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### *Abstract*

*In the 21<sup>st</sup> century, the century of megatrends, tourism has been going through a certain structural transformation. Almost every day, the sector of tourism faces certain changes that leave deep and strong implications, both positive and negative. Although mass tourism still remains the leading form of tourism in the global tourism market, it is – so to say – being increasingly opposed to by specific forms of tourism that are based on the platform of meeting the tourist's needs and experiences. However, mass tourism will never be fully replaced by specific forms of tourism – they will only stand as strong alternatives to mass tourism. One such form of tourism is certainly agritourism – the most rapidly growing form of rural tourism worldwide. Precisely agritourism has been of great interest to a growing number of international scientists in the last three decades. In the Republic of Croatia and its academic community, this form of tourism has unjustifiably not gained the place and the significance that it deserves. There is namely a very scarce base of theoretical, as well as empiric research. Therefore, the main goal of this work is to represent the present*

*knowledge and empirical results of Croatian scientists and experts, which were collected in various Croatian tourist regions, at the theoretical and research level. The collected knowledge will be analyzed by the use of corresponding scientific methods.*

**Keywords:** *specific forms of tourism, agritourism, tourist regions, research.*

JEL Classification: L83, Z39

## 1. INTRODUCTION

In its essence, the subject of this work presents a rational sequence of the works presented and published in the work collection titled *Interdisciplinary management research* (Bosnić & Tubić; 2012, Tubić & Bosnić, 2013, Tubić et al.; 2014, Tubić et al.; 2015.; Bakan et al.; 2016, Tubić et al.; 2017, Tubić et al.; 2018) from 2012 to 2018. The introductory chapter and the chapter connected to the terminology of rural tourism were mostly taken from the work titled *The marketing activities and barriers of the agritourism economies of the Continental region of the Republic of Croatia: TFF owners perception* by Tubić et al. (2018), but they were also additionally corroborated by the insights of other authors and experts. Tourism has become one of the greatest industries where the concept of borders lost significance since the number of international tourist visits has been growing rapidly (Tubić et al.; 2017, 1231). In accordance with that, there are also many changes in market competition. Modern tourist consumers can no longer be satisfied with the offer of tourism products that are based on the hard3 platform (sun, sea, and sand), but they need to be offered a tourism product that will satisfy their physical, emotional, intellectual and all the other needs of an emancipated consumer of the 21<sup>st</sup> century. In a concrete sense, that refers to the product based on the soft 6E platform (experience, excitement, escape, education, entertainment, ecology). Precisely this approach will result in the development of the 4M soft tourism (moderate growth, multi diversification, multitasking, mobile), the part of which is surely made of the rural forms of tourism with agritourism as its fastest-growing form in Croatia and worldwide. The holders of agritourist offer, which consists mostly of small economic units, need to have a high level of marketing knowledge and reasoning in order to place the product of rural tourism in the ever more saturated market and to ensure its recognition and competitiveness.

## 2. RURAL TOURISM: TERMINOLOGY

It is exceptionally hard to write about the terminological definition of rural tourism in the academic jargon, especially due to the great number of controversies among the authors, as well as the perplexities of a terminological nature. Numerous different terms for this type of tourism can be found in the literature (rural tourism, village tourism, agritourism, green tourism, etc.) and they are unjustifiably identified as the same term. Differing criteria for defining rural areas, the differing perception of rural tourism in developed and undeveloped countries, diversity and a great number of phenomena alike are only some of the elements with a confusing defining nature. The following controversial reasons have been mentioned and taken into consideration by the OECD (1994, 8-9) in its publication under the name of *Tourism strategies and Rural Development*:

- urban tourism is not limited only to urban areas – it also includes rural areas;
- rural areas are hard to define since the defining criteria differ from country to country;
- tourism that takes place in rural areas is not strictly “rural” – it can also be “urban” by form when it takes place in a rural area;
- historically, tourism is an urban concept – most of the tourists live in urban areas. In accordance with that, tourism can have an urban impact on a rural area by causing cultural and economic changes and new construction;
- different forms of rural tourism have developed in different regions;
- rural areas by default are found in a complex process of changes. The impact of global markets, of communication and telecommunication, leads to market condition changes, as well as to orientation towards traditional products. Although some rural areas are still facing depopulation, other rural areas are experiencing the influx of people or the development of “untraditional” jobs. A previously clear difference between the urban and the rural has been annulled by suburbanization, better communication and the growing number of weekend-houses in the countryside;
- rural tourism is not only tourism on the agricultural farm but a complex activity. It includes stays on agricultural farms but also special vacation forms such as holidays in nature and eco-tourism, hiking, climbing and horseback riding, adventure, sports, and health tourism, hunting and

fishing, educational travels, art, and culture tourism. All of the mentioned forms imply a growing market interest in less-specialized forms of rural tourism.

Due to all of the mentioned facts, there is still does not exist a single commonly-accepted definition in the international academic scene nor in the praxis, which was corroborated in the work of Tchetchik et al. (2006.), Polo & Frías (2010.), Mili (2012.), Nair et al. (2015.), Tubić (2015.), Tubić et al. (2018a.). Many international and domestic authors such as Lane (1994, 2009), Rátz & Puczko (1998), Roberts and Hall (2001), Thompson (2004), Brščić (2005), Jelinčić (2007), Kušen, (2007), San Martín and Herrero (2007), Ružić (2009), Sznajdera et al. (2009), Irshad (2010), Krajnović et al. (2011), Pesonen et al. (2011), Pröbstl Haider et al. (2014) and many others have tackled the topic of rural tourism in their scientific and professional works. The resolution of terminological perplexities beings with defining the rural area according to the most commonly-implemented criteria which are based on the population density that defines a rural area through two basic approaches:

- ♦ the first – local units (e.g. boroughs) – can be identified as rural if the population density stands below 150 inhabitants per square kilometer.
- ♦ the second criterion classifies the regions according to three categories:
  - ♦ Predominantly Rural Region – PR: if more than 50 percent of the region’s inhabitants live in rural units (with less than 150 inhabitants per square kilometer);
  - ♦ Intermediate Region – IC: if 15 to 50 percent of the region’s inhabitants live in rural local units;
  - ♦ Predominantly Urban Region – PU: if less than 15 percent of the region’s inhabitants live in rural local units (European Commission; 2006, 3).

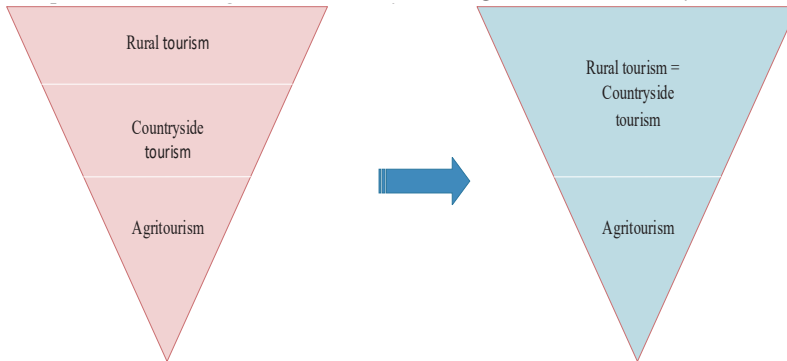
This approach was implemented by Tubić et al. (2017) in their works “Agritourism: a new power of Croatian tourism”. In a broad specter of definitions of rural tourism, the key definition will be the one created by the OECD from two fundamental reasons. The first reason is that it is the only definition that follows the methodology of defining a rural area and the second reason is that it the most comprehensive in terms of content. The definition by the OECD (1994, 34-35) reads as follows: “Rural tourism fundamentally takes place in rural areas and is primarily in the function of agriculture. It is based firmly on the agricul-

tural world with special features of the open space, the contact with nature, the rural heritage and the society. Rural tourism must be in an agreement with the environment and the social community in which it takes place. The community includes less than 10,000 people and it includes the farms inside that area of work. The focus of rural tourism is oriented towards a whole line of sustainable business subjects and the community inside the rural area. The goal of rural tourism is ensuring long-time sustainability of life in the region where it takes place; it must be a force for the preservation of the rurality and not a force of urbanization.”

With the fundamental purpose of minimizing the unjustified mixing of the three key terms (rural tourism, village tourism and agritourism), Tubić (2015, 68-69) proposes that rural tourism should be terminologically equalized with village tourism since all three forms of tourism are defined by the rural area and, unlike agritourism, they can be primary and/or secondary sources of income without depending on the agricultural activity. In conclusion, rural tourism stands as a synonym for village tourism and conversely, while agritourism stands as a manifestation of rural, i.e. village tourism (Figure 1.)

Due to the subject matter of this work, it is necessary to define the term agritourism in more detail. Although agritourism is not a new phenomenon, a unique consensus in academic circles in terms of the terminological definition of agritourism has still not been reached, which has been confirmed by Hajdaš Dončić et al. (2007), Chesky (2009), Erstić et al. (2011.), Tew & Barbieri, (2012.), Flanigan et al. (2014) and Grgić et al. (2015). Due to a broad spectre of various interpretations of international and national authors, this work defines agritourism as a special form of tourism that takes place on a passive or active agricultural farm, where tourism, as a secondary activity, complements and raises the level of agriculture as the primary activity, where the visitor enjoys the natural and cultural attractions of the farm, consumes and/or buys the agricultural produce, and where the tourist can voluntarily take part in the agrotechnical processes and thus experience the authenticity of the former rural idyll. (Vrsaljko & Viljac; 2015, 204).

**Figure 1.** A hierarchical division of rural tourism according to the source of income and the dependence on the agricultural activity



**Source:** adjusted according to Tubić (2015).

In terms of the provided services, Demonja & Ružić (2010) divide tourism into the following forms:

- forms of agritourism that provide only catering services. These forms are intended for tourists who want to try or who like homemade authentic foods and beverages. A characteristic feature of this form of tourism is serving foods and beverages in a specialized facility which is located on the family farm which is decorated and equipped according to the original architecture;
- forms of agritourism that provide only accommodation services. A characteristic feature of this form of agritourism is a great number of facilities that provide accommodation services, some of which are: rural houses of traditional architecture, rural rooms, rural family hotels, traditional and new architecture suites;
- forms of agritourism that provide catering and accommodation services. What is specific for this form of agritourism is the possibility of providing the complete service of accommodation and catering, as well as the full additional vacation program with excursions, farm tours and other contents that are organized in the area and its proximity. Precisely this form presents a complete family farm service package and is considered extremely attractive and thus economically viable.

In term of facilities, there are different forms of vacation agritourism (Ružić 2009, 20).

- rural houses of traditional architecture;



- ♦ rural family hotels;
- ♦ rural rooms and traditional architecture suites;
- ♦ rural rooms and new architecture suites;
- ♦ agricultural farms with an eco-offer.

### 3. AGRITOURISM IN THE CROATIAN ACADEMIC COMMUNITY

The consideration of agritourism in the Croatian academic community should begin with an analysis of study programmes of the Croatian educational institutions in the area of rural tourism. It is evident that there is only one operating institution of higher education (College for Management in Tourism and Informatics in Virovitica) that deals with the overall rural matter throughout the full study programme of the undergraduate professional studies of Management, course Management of rural tourism. The programme is aligned with the principles of the Croatian Qualifications Framework, i.e. the platform of work market demand, which certainly presents an additional value for the programme. An analysis of the programmes and topics from six educational institutions of the Republic of Croatia in the area of rural tourism made by the authors Smolčić Jurdana & Milohnić (2018) corroborates the aforesaid thesis. Precisely this fact stands as the evidence that rural tourism, along with its fastest-growing basis and form, unjustifiably does not enjoy the deserved place and significance in the Croatian academic community.

By deepening the subject of agritourism at the national level from the aspect of scientific and professional theoretical and empirical research, it is essential to emphasise that there was only one official research (2007) that was conducted in the overall area of the Republic of Croatia by far (2019) by the Croatian Chamber of Economy – Tourism Sector under the name of Current State of Tourism in the Rural Area of Croatia in 2008. The research has incorporated 88 out of the total number of 352 registered tourist rural family economies, i.e. 25%. The primary goal of the research was to show the real state of agritourism in the Republic of Croatia. However, since the questionnaire was of a general type, including questions on operating hours, accommodation capacities, excursion organization, sports and leisure activities, nearby facilities, the methods of promoting the tourist rural family economies – and taking into consideration the content of the research instruments – the question that arises is How well

can the gained response indicate the real state? It is important to emphasize that the research by the Croatian Chamber of Economy was conducted with a goal of composing the first Croatian catalog on tourist rural family economies, which was officially publicized eight years later under the title of Rural Tourism in Croatia – National Catalogue through the cooperation of the Croatian Ministry of Tourism and the Croatian Chamber of Economy. The main advantage of the mentioned catalog was that it encompassed the whole offer of rural tourism, i.e. agritourism for the first time in one place. By critically taking into consideration the past contribution to the theoretical as well as the practical development of agritourism in Croatia, the authors of this paper find it hard to understand the reasoning behind shutting the Community of Rural Tourism at Croatian Chamber of Economy and incorporating it into the Tourism Sector even though the matter of rural tourism and agritourism is notably complex in its nature and is also of a great importance for the development of the year-round tourism in Croatia.

Moreover, it is important to emphasize the role of the Croatian association for tourism and rural development “Klub članova Selo”, also the organizer of the past four International Congresses on Rural Tourism. It should also be indicated that the academic community, as well as the real sector, have continuously been pointing to numerous limiting factors that have been inhibiting the development of rural tourism and agritourism over the period of eleven years. The academic community has also proposed certain recommendations for the improvement in the mentioned limiting factors, however, none of the recommendations have been adopted by far, which is a strong enough indicator of the mutual disconnectedness and misapprehension of the key stakeholders in the process of development. Precisely this is the proof that the mentioned form of tourism has been developing without a clear developmental vision in academic, institutional and practical terms.

Taking into consideration the academic development of agritourism, it is important to state that there is an unjustifiable lack of interest, although there is a small group of academic enthusiasts who continue to examine the phenomenon (Kušen; 2006, Brščić; 2005, Franić & Cunj; 2007, Leko-Šimić & Čarapić; 2007, Ružić; 2009, Demonja & Ružić; 2010, Brščić et al.; 2010, Grgić et al., 2011; Baćac, 2011; Tubić, 2012, 2015; Vrsaljko & Viljac; 2015, Kantar; 2016, Tubić et al.; 2018). As is known to the authors of this work, there exist only two doctoral dissertations (Brščić; 2005, Tubić; 2015) with a strong focus on

the topic of rural tourism and agritourism. It should be clearly stated that the existing research mostly encompasses one county as a territorial unit, i.e. as the empirical research area.

Prior to displaying the key empirical findings of the two most comprehensive research, we should emphasize the contribution of the doyen of rural tourism by Eduard Kušen (1995), who is – by the opinion of Tubić (2015, 65) – one of the first Croatian authors who analysed the terminological issue of rural tourism. In his article *Tourism on farms*, Kušen (1995:130) proposed the term of village tourism be replaced by two names – rural tourism and farm tourism (tourism on farms). It is important to give full credit to Pavao Ružić (2009) – the author who contributed to the better understanding of the complicated topic of rural tourism and agritourism in a systematic and lengthy way, by using an understandable jargon in the extended edition of the book *Rural Tourism*, the first of such works in Croatia. There are a few other authors whose scientific and professional contribution and importance cannot be denied, however, due to the limitations on this article, their credits will be emphasized in the upcoming works of the authors of this article.

When acquiring the highest academic degree in postgraduate doctoral studies in “Management” at the J.J. Strossmayer University in Osijek, the Faculty of Economics, Kristina Brščić, Ph.D., mentored by full professor in tenure Drago Ružić, Ph.D., wrote and defended the doctoral dissertation *Marketing Assumptions of Agrotourism Householdings in the Istrian County* on October 7, 2005. The research was conducted on the sample of 216 respondents, consumers of agritourism products and services, as well as on 43 owners of tourist rural family economies. Upon the analysis of the obtained data, Brščić (2005, 230-232) states the following:

- agritourist economies are held by younger families;
- it is problematic that some registered agritourist economies do not possess or cultivate land and are not engaged in cattle breeding so they cannot be treated as agritourist economies;
- the most common form of capacity sale is carried on only by word reference;
- the promotion of agritourist economies is very scarce and is mostly based on small gifts and group appearance in a catalog or on the Internet;
- there are problems connected to the insufficient organization, legislative regulations, and absence of ongoing educations;

- only a few agritourist economies plan on broadening their offer, 9% of them in the short term and 16% of the economies plan to broaden their offer in the long term;
- tourist rural family economies should fight for their interests, not only individually, but also by forming a joint cluster;
- the future of tourist rural economies depends greatly on the success of the integration of the traditional way of life and new forms of vacation, as well as new economic activities in these areas.

As was stated earlier in this paper, this chapter will serve to interpret the results of the only research in the Republic of Croatia that included the creators and co-creators of the national tourist policy as well as the owners of tourist rural family economies. The empirical research was conducted for the purpose of the doctoral dissertation Model development of Rural Tourism of Continental Croatia by dr.sc. Dejan Tubić. The dissertation was mentored by a full professor in tenure Đula Borožan, Ph.D., and defended on April 13, 2015, at the Faculty of Economics in Osijek. In addition to Professor Borožan, the committee was comprised of the Osijek Faculty of Economics full professor in tenure Mirna Leko-Šimić, Ph.D., the president and Danijela Križman Pavlović, Ph.D., full professor in tenure at the Faculty of Economics and Tourism “Dr. Mijo Mirković” in Pula. Upon the obtained data, Tubić (2015, 302-304) concluded:

- core components of institutional support (legislative regulations, strategy for the development of rural tourism, statistical monitoring, marketing, and interest clusters) present a significant limitation for the development and management of the stakeholders of agritourism;
- the development of a separate strategy for the development of rural tourism is essential for the overall strategic development of rural tourism in Croatia since the current modern era does not allow for an accidental success;
- the majority of rural-tourist resources and potentials are undermined or even completely neglected by the national tourist policy;
- at a confidence level of 95%, it was found that the inadequate legislation regulation stands as one of the crucial limiting factors, but probably not the most important one according to the owners of tourist rural family economies;
- from the standpoint of tourist rural family economy owners, inadequate marketing activities in the local and national level, as well as the poor

level of understanding marketing and interest clusters among the local (rural) inhabitants stand as important limitations to the improvement and development of the tourism management;

- a pronouncedly small percentage of tourist rural family economies (21,50%) recognized the importance and significance of joining a common interest association.

### 3. FINAL CONSIDERATIONS

The research results imply a lack of understanding of a terminological meaning of rural tourism and agritourism, despite it being the crucial step towards the institutional and practical development. If the well-known – and, unfortunately, persisting problem of the lack of awareness for the need of the joint cooperation of the real, academic and institutional sectors – is added to the equation, it is evident that Croatian agritourism is developing without a clear vision and mission, as a result of certain private initiatives – which is unacceptable. It should also be indicated that by developing the sector of rural-mountain tourism, the country of Austria succeeded in ensuring the country with two tourist seasons and, from the income side, insured itself with almost double the amount of income from tourism than the year-round tourism of the Republic of Croatia. In conclusion, the authors of this paper will repeatedly name the public-political suggestions for the development of rural tourism and agritourism which stem from a scientific basis, put forth by Tubić (2015: 295-297):

- current statistical monitoring, as well as the tourist-statistical terminology, should be adjusted to and correlated with rural tourism;
- the current legislative framework of Croatian rural tourism should be precisely organized and simplified;
- a certain constant educational system should be established;
- the communicational process among the stakeholders of tourism should be promoted;
- a system of marketing affiliation should be established;
- the development of rural tourism should be incited by way of the philosophy (approach) of clusters, i.e. interest affiliation.

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# ACCOUNTING



# PREVENTION AND DETECTION OF FRAUD IN COMPANIES OWNED BY LOCAL AND REGIONAL SELF- GOVERNMENT UNITS

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## **Abstract**

*The research subject of this paper are recommendations given after efficiency audits of the prevention and detection of fraud in companies owned by local and regional self-government units. The data from the efficiency audits performed by the State Audit Office was used. The paper confirms the presumption of correlation between the number of recommendations given and the number of employees in the companies. Recommendations were given to improve the operations and the effectiveness of preventing and detecting fraud was rated. The audit covered 106 companies. Some companies have taken the necessary actions to prevent and detect fraud, others have taken action to prevent and detect fraud, thus requiring certain improvements, while some companies have not undertaken the necessary activities to prevent and detect fraud, and significant improvements are needed. Research has been carried out on companies that have not undertaken the necessary activities to prevent*

*and detect fraud, requiring significant improvements. Areas were explored in which recommendations were given to all companies and types of recommendations given, and recommendations in a particular area, and then in companies where significant improvements are needed. The number of employees covered by the audit was investigated, as well as the number of employees in companies where significant improvements were needed. An assumption is made that companies that require significant improvements have a greater number of recommendations than the average number of recommendations for all companies, while the average number of employees in these companies is considerably lower than the average number of employees per audited company.*

**Keywords:** auditing, efficiency, recommendations, companies, business

JEL Classification: H83, M42

## 1. INTRODUCTION

The research is based on data from the efficiency audit reports on the effectiveness of fraud prevention and detection in companies owned by local and regional self-government units. The State Audit Office has compiled 21 individual and bulk reports. Performing audits of the efficiency of these subjects derives from the legal provisions. In the area of each county, the audit covered several companies owned by local and regional self-government units. The subject of efficiency audits were the policies and procedures for preventing and detecting fraud and the activities the company has undertaken to prevent and detect fraud. It is not necessary to emphasize the importance of the problem. The most common forms of fraud include abuses or alienation of property, fraud in financial reporting, the unlawful creation of costs and obligations for the company and corruption (especially in the area of procurement and sales). Fraud needs to be prevented, because prevention is the most cost-effective way of controlling it. Therefore, a system should be established that would reduce the possibility of its occurrence. The consequences of fraud in the public sector are immense, from financial losses, destruction of reputation, loss of public's trust etc. Selection of companies was done on the basis of the amount of income earned, the number of employees, the nature of the activity, the received remonstrance, and the number of announcements in the media. The objectives of the audit were to determine whether the company has established appropriate policies, procedures and controls to prevent fraud, take the necessary actions to increase

the awareness of managers and other employees about the possibility of fraud, to evaluate the effectiveness of the internal control system with regard to the risks of fraud and to determine which company's actions have been established to detect fraud as soon as possible. The methods and procedures for collecting audit evidence are different. Discussions with responsible persons and employees were conducted, with explanations by the responsible persons about certain business events. Direct examinations were carried out in relation to certain areas, relating to treasury operations, calculation of salaries and fees, purchases of goods, works and services, and recruitment and promotion procedures.

In the implemented auditing procedure, irregularities and recommendations were given, the implementation of which would contribute to the establishment of standards of behavior, the application of which would reduce the possibility of fraud, increase the awareness of managers and other employees about the possibility of fraud, their obligation to report suspected fraud and improve the disclosure system irregularities and reporting of suspected fraud. This would contribute to prevention or early detection of fraud, with an aim of better management of public funds and greater transparency and accountability. The audit encompassed 106 companies, majority of which, i.e. 84, were conducting fraud prevention and detection activities, still requiring certain improvements, seven companies took the necessary actions to prevent and detect fraud, while 15 companies did not undertake the necessary activities for prevention and detection of fraud, and significant improvements are needed. The paper explores the areas of the recommendations given, and the companies in which significant improvements are needed.

## **2. EFFICIENCY AUDITS OF THE PREVENTION AND DETECTION OF FRAUD**

### **2.1. EFFICIENCY AUDITS OF THE PREVENTION AND DETECTION OF FRAUD IN COMPANIES OWNED BY LOCAL AND REGIONAL SELF-GOVERNMENT UNITS**

The State Audit Office has performed efficiency audits of the prevention and detection of fraud in companies owned by local and regional self-government units. A total of 21 individual reports were prepared (for 20 counties and Za-

greb Holding Ltd., Zagreb). Based on individual reports, a bulk report was prepared. The consolidated bulk reports that auditing encompassed a total of 106 trading companies that were given recommendations in five areas. According to the areas where the recommendations were given, we conducted an analysis of the recommendations given (Table 1). From the presented data we conclude that the area of internal control is represented the most in regard to the occurrence of fraud (25.0%), followed by policies and procedures for the prevention of fraud (20.26%). The other three areas have an individual representation of up to 20.0%, with a total representation of 54.73%.

**Table 1.** Areas where recommendations to companies are given

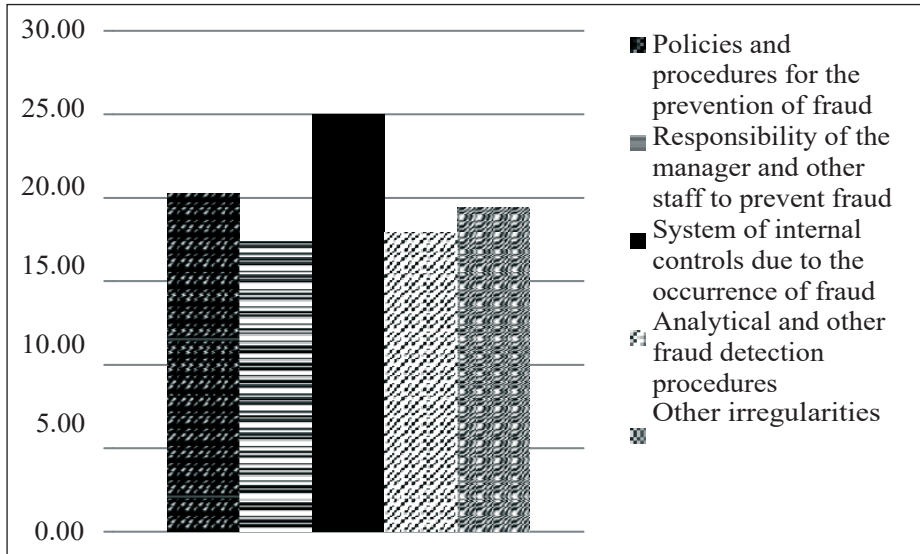
Areas where recommendations were given	The number of companies to whom the recommendation is given	%
Policies and procedures for the prevention of fraud	77	20.26
Responsibility of the manager and other staff to prevent fraud	66	17.37
System of internal controls due to the occurrence of fraud	95	25.00
Analytical and other fraud detection procedures	68	17.89
Other irregularities	74	19.47
TOTAL	380	100

**Source:** Table drafted by the authors on the basis of data from Izvješće o obavljenoj reviziji učinkovitosti sprječavanje i otkrivanje prijevара kod trgovačkih društava u vlasništvu jedinica lokalne i područne (regionalne) samouprave, skupno izvješće, Državni ured za reviziju, Zagreb, November 2015, p. 13.

The efficiency audit report states that the companies that were the subject of the audit were, among other things, selected due to the amount of revenue earned. We did not have the ability to track and analyze the amount of revenue generated in this paper, since it was not listed in stated reports, and we did not have the necessary data. The data on the number of employees was from the end of 2014 and we have therefore conducted a survey of the number of employees covered in the said audits and the number of employees in the companies in which the audit found significant improvements needed.

Figure 1 shows the share of the number of recommendations in the mentioned areas, in the total number of recommendations. Most Recommendations (95) refer to the area of internal control system with regard to the occurrence of fraud, and this area accounts for 25.0% of the total number of irregularities.

**Figure 1.** Revenues from communal contributions and benefits by levels of government (cities and municipalities)



Source: author by data from Table 1, column 3

### 2.1.1. Number of companies and number of employees in companies

Out of a total of 106 audited auditing companies, the State Audit Office estimates that 84 companies have undertaken fraud prevention and detection activities, requiring certain improvements, 15 companies have not undertaken the necessary fraud prevention and detection activities, and significant improvements are required, and seven companies took the necessary actions to prevent and detect fraud.

According to data from Table 2, 106 of the companies involved in auditing have employed 18,209 workers. In 15 companies that did not undertake the necessary activities to prevent and detect fraud, where significant improvements are needed, employed 905 workers. Companies that did not take the necessary actions to prevent and detect fraud, i.e. 15 companies, make up 14.2% of the total number of companies (106) and have 905 employees, accounting for 5.0% of the total number of employees covered by auditing (18,209). The aforementioned indicates that the share of employees in audited companies requiring significant improvements is considerably lower than the share of these companies (5.0% and 14.2% respectively).



Regarding the number of employees, we have determined that 106 audited companies have 18,209 employees, which is 171.8 employees per company.

**Table 2.** County, the number of utility companies owned by local and regional self- government units covered by efficiency audits of the prevention and detection of fraud, the number of employees in the audited companies, and the number of employees in companies that have not been covered by efficiency audits of the prevention and detection of fraud, per county

County	Number of audited companies	Number of employees by the end of 2014 in the companies covered by the audit	Number of employees in companies requiring significant improvements
Zagreb county	5	876	-
Krapina-Zagorje	5	327	-
Sisak-Moslavina	5	350	-
Karlovac	5	342	-
Varazdin	5	662	-
Koprivnica-Križevci	6	504	8
Bjelovar-Bilogora	6	267	-
Primorje-Gorski Kotar	8	1084	449
Lika-Senj	5	121	-
Virovitica-Podravina	5	243	-
Požega-Slavonia	5	176	-
Brod-Posavina	5	289	-
Zadar	5	1079	-
Osijek-Baranja	5	622	-
Sibenik-Knin	5	377	277
Vukovar-Srijem	5	328	19
Split-Dalmatia	7	1491	136
Istria	5	253	-
Dubrovnik-Neretva	4	464	-
Međimurje	4	271	16
City of Zagreb – društvo Zagrebački holding d.o.o., Zagreb	1	8083	-
TOTAL	106	18 209	905

**Source:** Table drafted by the authors on the basis of data from individual reports on performed efficiency audits of the prevention and detection of fraud in companies owned by local and regional self-government units (21 Report)

The 15 companies requiring significant improvements have 905 employees, which is 60.3 employees per company. It means that the average number of employees in companies that require significant improvements is considerably lower than the average number of employees in audited companies. It should be examined whether the number of employees has an impact on the audit recommendations for the necessary significant improvements, i.e. the relationship between the number of employees and the number of recommendations, and the areas in which the recommendations are given.

### **2.1.2. Companies that have not undertaken the necessary activities to prevent and detect fraud, and significant improvements are needed**

We have conducted a survey of companies that have not undertaken the necessary activities to prevent and detect fraud, and in which significant improvements are needed, as shown in the Table 3. As a source of data, a bulk report on the effectiveness of fraud prevention and fraud detection by companies owned by local and regional self-government units (State Audit Office, 2015, p.19). In the same table, we listed the areas in which the recommendations were given (State Audit Office, 2015, p. 13). In 15 companies, there are 68 recommendations, out of which 15 are recommendations in the area of responsibility of managers and other employees to prevent fraud, and 15 recommendations in the area of internal control system regarding the occurrence of fraud. In the audit process, a total of 380 recommendations were submitted. Out of a total of 106 companies, 15 companies or 14.2% of companies received 68 recommendations, i.e. 17.9% of all recommendations. This suggests that the share of recommendations in audited companies requiring significant improvements is higher than the share of total number of recommendations for all companies (17.9% and 14.2% respectively). If we count the average number of recommendations per company, then the average number of recommendations for all companies is 3.6 (380/106). The average number of recommendations for companies requiring significant improvements is 4.5 (68/15). The average number of recommendations for companies requiring significant improvements is 25% higher than the average number of recommendations for all companies ( $4.5 / 3.6 \times 100$ ).

**Table 3.** Companies that have not undertaken the necessary activities to prevent and detect fraud, requiring significant improvements and areas where recommendations are given

Company	Number of areas where recommendations were given	Policies and procedures for the prevention of fraud	Responsibility of the manager and other employees to prevent fraud	System of internal controls with regard to the occurrence of fraud	Analytical and other fraud detection procedures	Other irregularities
Čempresi LLC, Šibenik	4	+	+	+	-	+
Čistoća i zelenilo LLC, Knin	4	+	+	+	-	+
Elektro-voda LLC, Cres	5	+	+	+	+	+
Energo LLC, Rijeka	5	+	+	+	+	+
Gradska čistoća LLC, Šibenik	4	+	+	+	-	+
Komunalac LLC, Vrbovsko	5	+	+	+	+	+
Komunalne usluge Cres Lošinj LLC, Cres	5	+	+	+	+	+
Komunalno društvo Kostrena LLC, Kostrena	4	-	+	+	+	+
Leć LLC, Vodice	4	+	+	+	-	+
Makarski komunalac LLC, Makarska	5	+	+	+	+	+
Peovica LLC, Omiš	5	+	+	+	+	+
Selsko komunalno društvo Molve LLC, Molve	5	+	+	+	+	+
Stanorad LLC, Čakovec	4	+	+	+	+	-
Vode Vrbovsko LLC, Vrbovsko	5	+	+	+	+	+
Vranjevo LLC, Otok	4	+	+	+	+	-
TOTAL – 15 companies	68	14	15	15	11	13
TOAL – 106 companies	380	77	66	95	68	74

**Source:** Table drafted by the authors on the basis of data from Izvješće o obavljenoj reviziji učinkovitosti sprječavanje i otkrivanje prijevара kod trgovačkih društava u vlasništvu jedinica lokalne i područne (regionalne) samouprave, skupno izvješće, Državni ured za reviziju, Zagreb, November 2015, p. 13. and p. 19.

Recommendations are given in five areas, as shown in Table 3. Below, we are going to detail the areas in which recommendations are given to companies.

Representation of a occurrence is shown by relative numbers (State Audit Office, bulk report, pp. 7-11), and are shown graphically below.

In the area of fraud prevention policy and procedures it has been established that:

- 84, i.e. 79.2%, companies have a document listing ethical values, business principles and liabilities by interest groups
- In 77, i.e. 72.6%, companies, weaknesses and omissions related to fraud-proofing policies and procedures have been identified and largely relate to omissions in rules of conduct, property protection and transparency requirements
- In 39, i.e. 36.8%, companies, there is no provision in the general acts for giving and receiving gifts and hosting
- In 33, i.e. 31.1%, companies, the use of the company's funds for business purposes is not regulated in the general act
- In 15, i.e. 14.1%, companies, weaknesses were identified with respect to the requirements of transparency and documentation of business decisions.
- 52, i.e. 49.0%, companies did not publish on their web site all the information they are required to publish.
- In the area of responsibility of managers and other employees to prevent fraud it has been established that:
  - In 65, i.e. 61.3%, companies, weaknesses and omissions related to the responsibility of managers and other employees to prevent fraud have been identified, relating to insufficient regulation of reporting and reporting procedures for possible conflicts of interest, failure to regulate the obligations of the manager and other employees in case of suspected fraud and lack of regular training on fraud
  - In 43, i.e. 40.1%, companies, the general act contains no general procedures for reporting potential conflicts of interest
  - In 30, i.e. 28.3%, companies, a general act does not regulate the obligations of managers and other employees in case of suspected fraud.
  - In the area of internal control system regarding the occurrence of fraud it has been established that:

- In 94, i.e. 88.7%, companies, weaknesses and omissions related to the system of internal controls were identified regarding the occurrence of fraud, relating to omissions in regulating the functioning of internal controls in general acts and their regular evaluation
- In 37, i.e. 35.3%, companies, the general acts do not regulate the functioning of internal controls, i.e. there is no written regulation on control activities, the procedures and measures they encompass, the way in which they are applied and in which phases of the process, and who is authorized and responsible for their implementation
- In 25, i.e. 23.6%, companies, internal controls are not regulated in a way that prevents fraud, since general acts do not regulate division of duties, employee rotation and affairs, approval, proper documentation, physical control, monitoring and independent audits
- In 70, i.e. 66.0%, companies, the functioning of internal controls is not evaluated regularly, or at least once a year
- 66, i.e. 62.3%, companies did not evaluate areas of their operations where there is a greater risk of fraud and have not developed adequate countermeasures and action plans to manage those risks and thus prevent the occurrence of irregularities and fraud.
- In 42, i.e. 39.6%, companies, there was no approval of financial transactions exceeding certain set amounts.
- In the field of analytical and other fraud detection procedures it has been established that:
- In 68, i.e. 64.2%, companies, weaknesses and omissions related to analytical and other fraud detection procedures have been identified and relate to omissions related to disclosure and reporting of suspicious activities
- In 44, i.e. 41.5%, companies, the general acts did not regulate reporting requirements regarding suspected fraud,
- In 43, i.e. 40.6%, companies, the general act does not guarantee the anonymity and protection of individuals reporting suspected fraud
- In 32, i.e. 30.2%, companies do not investigate suspicious activities,
- In 30, i.e. 28.3%, companies, fraud detection methods and techniques do not cover individual level of responsibility

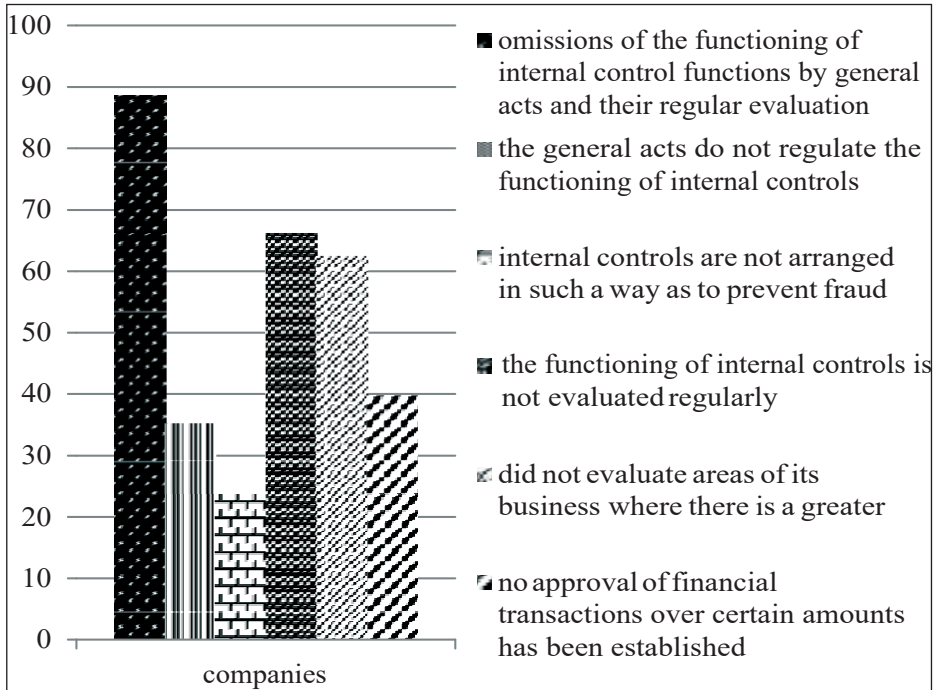
- ✦ In 27, i.e. 25.5%, companies, no anonymous and trusted reporting channels for employees, service users, suppliers, and other interest groups have been established with the purposes of reporting suspicious activities
- ✦ In 9, i.e. 8.5%, companies regularly monitor data relating to areas subject to fraud, and most companies have stated that they have not received any complaints that may indicate fraudulent activities.
- ✦ In the area of other irregularities, performed investigation in relation to areas most often considered susceptible to fraud (employment and promotion, calculation and payment of salaries and remuneration, public procurement and donations) has established that:
  - ✦ In 37, i.e. 34.9%, companies, weaknesses and omissions have been found in the field of employment
  - ✦ In 25, i.e. 23.6%, companies, weaknesses and omissions have been found in the area of salary and compensation calculation
  - ✦ In 31, i.e. 29.2%, companies, weaknesses and omissions have been found in the field of public procurement.

Revision procedures covered business operations for the year 2014. Below we list 15 companies, number of employees at the end of 2014, their share capital and ownership (Table 4). The companies listed in Table 4 have performed communal activities. Below we list the activities for those companies that have more than 100 employees, while other companies have also carried out similar activities:

- ✦ cleaning and washing of public areas and collection and disposal of waste
- ✦ supply and distribution of natural gas and production, distribution and supply of heat and hot water and public lighting maintenance
- ✦ collection and disposal of municipal waste, maintaining public space cleanliness, maintenance of green areas, cemeteries, funeral services, and the management and maintenance of premises and facilities used for market services in the area of founder cities.

In 25% of the companies covered by the audit, recommendations were given in the area of internal control systems (Table 1). Below, we show the percentages we have indicated regarding the area of the internal control system. (Figure 2)

**Figure 2.** The area of internal control system with regard to the occurrence of fraud



**Source:** Table drafted by the authors on the basis of data from Izvješće o obavljenoj reviziji učinkovitosti sprječavanje i otkrivanje prijevara kod trgovačkih društava u vlasništvu jedinica lokalne i područne (regionalne) samouprave, skupno izvješće, Državni ured za reviziju, Zagreb, November 2015, p. 9.

**Table 4.** Companies that did not undertake the necessary activities to prevent and detect fraud, the county in which the company is located, the number of employees at the end of 2014, share capital and ownership

Company	Number of employees at the end of 2014	Share capital	Owner
SIBENIK-KNIN COUNTY			
Čempresi LLC, Šibenik	41	11,556,376.56	The City of Šibenik
Čistoća i zelenilo LLC, Knin	48	1,408,000.00	The City of Knin
Leć LLC, Vodice	53	4,088,700.00	The City of Vodice
Gradska čistoća LLC, Šibenik	135	7,966,500.00	The City of Šibenik
PRIMORJE-GORSKI KOTAR COUNTY			
Elektro-voda LLC, Cres	71	1,122,500.00	Compan Komunalne usluge Cres Lošinj LLC, Cres
Energo LLC, Rijeka	151	222,015,000.00	Share capital City of Rijeka with a share in the amount of HRK 126,045,100.00 or 56.8%, company Amga Azienda Multiservisi, Udine in the amount of HRK 75,480,000.00 or 34.0%, Croplin LLC, Zagreb, amounting to 20,474.900,00 HRK or 9.2%, the City of Kraljevica and the municipality of Čavle and Kostrena totaling HRK 15,000.00 or 0,00675%
Komunalac LLC, Vrbovsko	58	7,362,300.00	The City of Vrbovsko
Komunalne usluge Cres Lošinj LLC, Cres	124	2,044,000.00	The share of the City of Cres and the City of Mali Lošinj with a value of HRK 1,022,000.00 or 50.0%
Komunalno društvo Kostrena LLC, Kostrena	25	2,861,600.00	Municipality of Kostrena
Vode Vrbovsko LLC, Vrbovsko	20	10,865,000.00	The City of Vrbovsko
SPLIT-DALMATIA COUNTY			
Makarski komunalac LLC, Makarska	83	2,560,000.00	The City of Makarska
Peovica LLC, Omiš	53	2,646,700.00	The City of Omiš and two municipalities
KOPRIVNICA-KRIŽEVCI COUNTY			
Selsko komunalno društvo Molve LLC, Molve	8	20,000.00	Molve Municipality
MEDIMURJE COUNTY			
Stanorad LLC, Čakovec	16	20,000.00	The City of Čakovec
VUKOVAR- SRIJEM COUNTY			
Vranjevo LLC, Otok	19	20,000.00	The City of Otok
Total – 15	905	276,556,676.56	-

**Source:** Table drafted by the authors on the basis of 6 individual reports by the State Audit Office on the performed efficiency audit of preventing and detecting frauds in companies owned by local and regional self-government units



Preventing or early detection of fraud affects better public funds management. “The auditor should rely on experience, professional judgment, and understanding of the manner in which abuse is being used to identify it” (Mahaček, 2016, p. 126). On the role of state audit in detecting misuse, look in more detail in the same work. Taking action in this area is of special importance. The recommendations given in the audit process need to be constantly monitored and work on their elimination.

According to international auditing standards and available literature “prevention and detection of fraud is the responsibility of management through the constant introduction and operation of the appropriate accounting system and internal control system. The auditor is not, nor can he be responsible for the prevention of fraud or error” (Tušek, Žager, 2006, p. 418).

In the process of auditing, it is important to identify irregularities and errors. Among other “errors discovered in previous audits of financial statements, it is likely that errors will probably occur in the ongoing audit” (Messier Jr., 1998, p. 365). Therefore, it is necessary to work on their elimination.

### 3. CONCLUSION

This research has shown that the majority of companies owned by local and regional self-government units have undertaken activities to prevent and detect fraud, but that certain improvements are needed. In this paper, a survey was conducted covering the areas where the recommendations were given, as well as the number of employees, in companies that did not undertake the necessary activities to prevent and detect fraud, and in which significant improvements are needed. An assumption was made that companies in which significant improvements are needed have a greater number of areas in which the recommendations are given than the average number of areas established for all companies. The average number of employees in companies requiring significant improvements is considerably lower than the average number of employees in audited companies. In this paper establishes the correlation between the number of employees and the number of recommendations, but further research would be useful to determine whether there is a correlation between the number of employees and the recommendations of the audit in the part of specific recommendations within the given area. In addition, it would be useful to establish the correlation

between total revenue and number of recommendations, which was not the research subject in this paper.

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- Izvrješće o obavljenoj reviziji Sprječavanje i otkrivanje prijevара u trgovačkom društvu Zagrebački holding d.o.o., Zagreb, Državni ured za reviziju, Krapina, rujан 2015. [available at: [http://www.revizija.hr/datastore/filestore/70/zagrebacki\\_holding\\_d.pdf](http://www.revizija.hr/datastore/filestore/70/zagrebacki_holding_d.pdf) access December 22, 2018]

# COMPARATIVE ANALYSIS OF THROUGHPUT ACCOUNTING AND ACTIVITY-BASED COSTING

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## **Abstract**

*Activity-Based Costing has been developed as a possible alternative and a practical solution to overcoming deficiencies in existing traditional cost accounting systems that can significantly affect product valuation and pricing. Throughput Accounting is a simplified management accounting approach that provides managers with support in decision-making concerning the improvement of the company's profitability. It is a relatively new approach that identifies constraints and limitations that prevent the company from achieving its goals and focuses on simple measures that direct the functioning of key areas towards achieving organizational goals. While Throughput Accounting is a profit-focused cost accounting method designed for short-term decision making, the ABC method focuses on cost management and is used in making long-term decisions, which is why it is widely used in the business world. A comparative analysis provides a detailed overview of these two contemporary cost accounting methods, both*

*developed in the 1980s. This is achieved by looking into their characteristics, concepts, differences, specificities, and adequacy. Another aim of the work is to highlight and examine the possibilities and benefits of their mutual application.*

**Keywords:** *decision-making, Throughput Accounting, Activity-Based Costing (ABC), comparative analysis*

JEL Classification: M41, M49

## 1. INTRODUCTION

Due to significant changes in the business environment during the 1970s and 1980s such as globalization, the rapid development of new technologies, growing competition, changes in the cost structure, an increased focus on customer wants and needs, etc., cost management has become imperative for the survival and growth of any company, which is why cost management methods have become increasingly important. The implementation of the Theory of Constraints (hereinafter referred to as TOC) developed by Eliyahu Moshe Goldratt in the early 1980s, which focuses on eliminating all constraints that restrict a company's value-adding process, has been labeled Throughput Accounting (hereinafter referred to as TA). TA is a simplified management accounting approach that provides managers with support in decision-making aimed at increasing a company's profitability. Numerous management techniques, methods, and tools are based on the Theory of Constraints, of which the TA method focuses entirely on direct costs and supports production decisions in the short and medium term. It is mainly used, both in theory and practice, in making product mix decisions (Souren et. al., 2005, p. 362).

In the late 1980s, two new cost accounting methods were developed: Activity-based Costing (hereinafter referred to as the ABC method) and *Prozesskostenrechnung* (PKR); an American and a German cost accounting concept variant, both of which are process-oriented (Gulin et al., 2011, p. 483). Around that same time, Robin Cooper and Robert S. Kaplan developed the ABC method as a potential alternative to existing traditional cost accounting systems whose deficiencies started to have a significant impact on product valuation and costing. It was first introduced into practice in the 1990s when Information Technology began to grow exponentially. In this approach, processes or activities provide the basis for cost accounting and management in line with the fol-

lowing statement: Costs do not cause activities; activities cause costs (Gulin et al., 2011, p. 483).

## 2. THEORETICAL CONSIDERATIONS OF THROUGHPUT ACCOUNTING AND THE ABC METHOD

TA is a relatively new method of management accounting aimed at identifying factors that limit the company in achieving its goals and then focuses on simple measures that drive behavior in key areas towards reaching organizational goals. According to Northrup (2004, p. 75), this method is characterized by a simplified approach, which any profit-focused accounting department will welcome. TA operationalizes the key facets of TOC management and focuses management's attention on three basic objectives: increasing throughput, reducing inventory, and reducing operating expenses (IMA, 1999, p. 25). As maintained by Northrup, it differs considerably from traditional approaches and thus requires significant political and procedural changes as well as changes in the measurement systems. The three key elements of throughput accounting include throughput - the rate at which a system generates money, that is, the amount of products or services that an enterprise can produce and sell in a given period; operating expenses - all costs incurred in achieving the throughput, other than direct material costs, and assets - the focus is on inventory which is defined as the money that the system spends on things it intends to convert into throughput. One of the main driving forces of TA lies in predicting maximum throughput and in the way in which a company's goals are met. Primary obstacles to maximizing throughput are scheduling and identifying constraints (Northrup, 2004, p. 82). This method creates a focus on bottom-line results, i.e. profit or loss, using global operational measurements which identify net profit as the absolute measure and look at its relationship with the amount of investment made by the owners or shareholders of the enterprise. In practice, the specific applications of Throughput Accounting differ. The two strengths of this method are its relative simplicity and ability to generate weekly and even daily reports. Given that Throughput Accounting is not accepted under Generally Accepted Accounting Principles (GAAP), it must be kept separate from the official financial statements, and therefore many companies do not consider using it (Stenzel & Stenzel, 2003, p. 159). TA also provides a more realistic reporting



of the effectiveness of the system in relation to its goal - making money now and in the future. The main advantage of this method is that it yields the best short-term incremental profits if it is religiously followed when making production decisions. However, this can result in production mixes that seriously delay the completion of jobs for some customers, which is not good for customer relations (Dharma Putra, 2014). Its disadvantages also include the fact that it focuses mainly on short term performance and ignores strategic performance. Furthermore, it does not focus on specific costs but the whole cost of the operations (Sebastiao, 2013). According to Freeman (2007, p. 6), TOC and TA have several specific drawbacks that limit their application; they are short-term decision tools; they may only be valid concepts if applied to the totality of the supply chain including management, production, resources, and support; and dependent on circumstances, operating expenses under TOC/TA are regarded as fixed, which is simplistic in the view of detractors.

The ABC method was developed to address the deficiencies of traditional cost allocation systems. Growing competition and market globalization have forced the management of many companies to focus not only on reducing the amount of time required to complete a process (Time Based Management - TBM) and increasing the quality (Total Quality Management - TQM) but on the costs as well. The share of indirect costs in total costs has grown dramatically due to the increasing number of turnkey jobs, a growing variety of products and activities, and increasing product complexity. The ABC method represents a departure from traditional costing concepts. Traditional methods allocate costs to cost centers using an allocation key, which can lead to inadequate cost transparency, inaccurate accounting, and finally, poor business decisions. In order to maintain and improve its competitive advantage, a company needs to have the ability to make quality business decisions, which is provided by the ABC method (Pajić, 2000, p. 14). The basic assumption of activity-based costing is that processes consume resources, and products consume processes. In other words, this accounting method is based on the principle that costs are not incurred by products and services, but by processes, i.e. logistics, production, marketing, sales, and other support functions. Process costs are then allocated to cost objects (products, services, buyers, etc.) based on how much each of them was actually supported by the defined processes. The assumption here is that each expense has a driver and that these drivers need to be managed. In a way, process costing eliminates the concept of overhead costs, given that each



type of cost has a driver, thus establishing a strong link between the cost driver and the cost itself. A resource is an economic element used for process implementation, while the process is defined as a chain of activities needed to produce the output. It is characterized by measurable output, qualitative nature, cost-per-resource requirements, and a factor that causes the creation of a process that can be a process performance measure. The cause of a cost, i.e. a cost driver is a factor that causes the cost of a certain process. A cost object can be a product, service, customer, contract, project or another unit for which cost measurement has been specially designed (Gulin et al., 2011, p. 483). The ABC method helps reduce distortions caused by cost allocation using traditional methods. It provides a clear picture of the impact of the company's production mix on long-term profits, i.e. its products, services, and activities. According to Blocher et. al. (2002, p. 113), the main benefits of activity-based costing methods are as follows:

1. They provide more precise and detailed information on production costs that allow for more precise calculations of product profitability and strategic decision-making regarding prices, production lines, target markets, and capital expenditures;
2. They provide more accurate measures for spending factors, thus assisting management in making better product design decisions, managing costs, promoting more value-added projects, thus adding value to products and processes;
3. They provide managers with easy access to costs relevant to decision-making, thus improving the company's competitive position.

Despite the fact that the ABC method allows for easier tracking of costs at the individual product level compared to traditional methods, management should be aware of the limitations of this method when using it. Authors Blocher et al. (2002, p. 113) state that although activity data are available in some situations, some costs may require allocation to departments and products due to specific activities that cause these costs to be incurred, which is not practical (facility maintenance costs, plant cleaning costs, and production process management costs). Furthermore, the ABC method does not consider some of the costs identified in specific products. Activities that cause such costs include marketing, advertising, research and development, and product engineering. Additional costs would be allocated to individual products and added to production costs to determine the total cost of production. Finally, the de-

velopment and implementation of activity-based costing are quite costly and time-consuming. Similar to most innovative management or accounting systems, it takes longer than a year for this method to be successfully developed and implemented.

### 3. COMPARATIVE ANALYSIS OF THROUGHPUT ACCOUNTING AND THE ABC METHOD

The proponents of both of these methods find that their application provides increased profits and facilitates cost control (Lockhart & Taylor, 2007, p. 14). There are a number of differences between the TA and the ABC method, the most important of which are listed in the text below.

#### FOCUS AND WAYS OF ACHIEVING GOALS

One of the major differences between TA and ABC is the focus. While the ABC method primarily focuses on costs, i.e. its goal is to increase profits by reducing costs through reducing complexity. By contrast, TA focuses on profit and seeks to maximize it while maintaining a defined level of throughput. According to Lockhart & Taylor (2007, p. 15), in order to maximize profit, this method only considers product complexity, while the process of cost allocation is ignored. To achieve the goal, i.e. successful cost control, the ABC method has several basic guidelines. Successful cost management requires a reduction in the number of activities. Enterprises often have a large number of activities that cause unnecessary costs, which could be greatly reduced by eliminating or simplifying them. Furthermore, reducing the production mix would, in turn, reduce the number of activities and simplify the production process. By contrast, TA seeks to maximize the use of constraint resources thereby maximizing the profit. This method is intended for eliminating activities that do not create value-added, thus enabling control of the production process (Lockhart & Taylor, 2007, p. 14). Integration of cost and production information provides managers with the basis for decision making, given that the functioning of the production system directly affects the costs, while the costs directly affect production decisions. The ABC method provides the basis for planning procurement decisions that take into account physical constraints in operational activities and costs associated with resources consumed by these activities. This method is

more efficient in the processing of information for procurement management, for planning decisions, and for making freeing up unused resources in some activities and redirecting them to other activities. Moreover, this method is very effective in identifying activities where savings can be made or costs eliminated. By contrast, it is recommended to use TA in systems with lower inventory levels and operating expenses, and a stable procurement level in accordance with the production plan (Kirche & Srivastava, 2005, p. 1707-1708).

### ASSUMPTIONS ABOUT COSTS

Due to some partially unfounded assumptions, there has been much discussion and disagreement among scholars and professionals in the field of accounting. The ABC method assumes that costs are largely variable in the long run and that recognizing their variability is of crucial importance for decision making. For decades, Cooper and Kaplan have evidenced the accelerated growth of fixed costs in specific companies, which is contradictory to the very nature of fixed costs. They argued that a dramatic increase in so-called fixed costs was not recognized because managers assumed that fixed costs were not subject to significant changes and that they need not be closely monitored and recorded. Lockhart & Taylor (2007, p. 15) point out that recognizing the true variability of these costs would encourage managers to monitor and limit their growth. By contrast, the assumptions of TA are completely different. Most production costs are largely fixed, while material costs are the only consistent variable costs. Numerous research studies on companies using TA prove that managers control the fixed costs even when faced with growing complexity. They have found a way to improve processes and reduce the number of activities that do not add value, thus maintaining the same level of fixed costs. The ABC method classifies variable costs into unit-level, batch-level, product-sustaining, and facility-level costs, while TA considers all variable costs as unit-level costs. The ABC method implies that all costs are variable, while TA identifies the part of the costs as fixed costs. Lockhart & Taylor (2007, p. 14) posit that fixed costs can only change at the end of production cycles. According to the ABC method, cost allocation represents the best cost management method for reducing unit-level costs. TA is not aimed at reducing unit-level costs, but at maximizing throughput. This is why it does not have a developed cost management method, but by considering the total amount of fixed costs and overall operating expenses, provides a less reliable basis for cost management. Furthermore, the ABC method

recognizes the majority of production costs when the unit is sold, while TA recognizes the majority of costs at the moment when they incur (Lockhart & Taylor, 2007, p. 14).

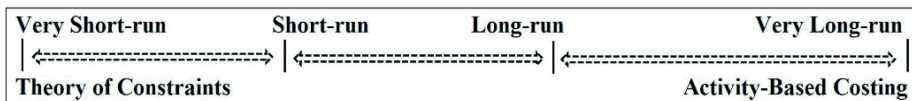
## CAPACITY

The ABC method enables identification of unused capacity if the number of activities carried out is practical, or if the capacity utilization is at about 85%. At this capacity utilization level, the ABC method allows for several possibilities. It is possible to determine the available capacity of each resource and unavailable capacity of bottleneck resources. According to Lockhart & Taylor (2007, p. 18), if the capacity is not fully utilized or cannot be determined, ABC is unable to identify unused capacity. By contrast, TA identifies the level of utilization of each resource and is able to determine whether the capacity of some resources is constrained. It focuses on internal constraints and is aimed at maximizing profit per constraint resource by ranking output per throughput per constraint resource.

## DECISION TIME HORIZON

TA and the ABC method differ in another important feature - the time horizon for making management decisions. TA is best suited for making short-term decisions because it classifies costs into a variable (material) and fixed. By contrast, the ABC method provides more reliable information for making long-term decisions because it monitors and reflects the causal relationships between activities, products, and costs (Perkins et. al., 2002, p. 2).

**Figure 1.** Utilization of costing methods depending on decision time horizon



**Source:** Fritzsche, R.B. (1998), Activity-Based Costing And The Theory of Constraints: Using Time Horizons To Resolve Two Alternative Concepts of Product Cost, *Journal of Applied Business Research*, 14(1), p. 88.

Since TA classifies the majority of costs as fixed, this method is most effective for making operational short-term decisions. These include, for example, decisions on scheduling, process, and reorganization of production, i.e. decisions that can be taken for shorter time horizons of less than six months. The ABC method considers all product costs as a variable. This suggests that it is appropriate for making long-term decisions, especially when introducing new products and production designs, and for developing long-term marketing strategies. Some researchers find that using these methods for making medium-term decisions is not appropriate, while a large number of them argue that a combination of the two methods can provide a reliable basis for decision-making (Fritzsich, 1998, p. 88).

#### ASSET SPECIFICITY OF THE PRODUCT MIX

The applications of TA and ABC depend on the specificity of the activities and resources used in the production of the product mix. The table below shows the combinations of specificity of resources/activities and the locations of constraints.

**Table 1.** Utilization of methods depending on the location of the constraint and the asset specificity of the product mix

	Constraint Location - Internal	Constraint Location - External
If the asset specificity of all the products in the mix is low	TA	TA
If the asset specificity of at least some products in a mix is high	TA-ABC integrated model	ABC

**Source:** Sridharan, V.; Krishnan, R.; Vergauwen, P. & Arthanari, T. (2009) The TOC-ABC Choice Debate for Product Mix Decisions: Introducing Asset Specificity as an Alternate Explanation, *The Journal of Global Business Issue*, Vol. 3, No. 1, p. 108.

There are situations when a company uses resources that are non-specific in nature, which makes it less likely that the activities relating to product mix will change. A low specificity implies that all the products in a product mix can be manufactured by different types of resources without significant variations. For example, assuming that product A can be made by machines X, Y or Z or by any employee group. Regardless of how it is manufactured, it is unlikely that

the activities relating to its production will change because there are several ways to produce it. In such circumstances, TA can be an appropriate decision tool since it considers only the relevant costs and ignores all other costs for activities that are less likely to change. Furthermore, TA provides useful ways to optimize the resource use to enhance the constraint's productivity, regardless of whether the constraints are located within or outside the company. TA can thus be a cost-efficient decision tool low asset specificity contexts (Sridharan et al., 2009, p. 107). By contrast, in a high asset specificity context, each product in a product mix may require a specific type of resource, e.g. a particular machine or uniquely skilled labor. This commonly occurs when products are produced for special orders. In such circumstances, scope exists for opportunistic problems if the company continues to apply TA. For example, an employee can hide behind or justify his/her inefficiency in resource usage since TA treats all operating expenses as fixed and hence ignores their changes. This issue can be resolved by using the ABC method because it systematically identifies the activity costs and prevents inefficient utilization of resources. According to Sridharan et al. (2009, p. 108), when there is an external constraint, such as a decline in market demand, the ABC method also enables the analysis and planning of unutilized capacity costs in different resources within the company.

Problems arise when the constraint exists within the company that seeks to evaluate high asset specific product mix. The ABC method does not recognize the existence of constraints within the company because the demand and supply of resources are likely to be equal. TA enables companies to manage internal constraints; however, it is not effective when the asset specificity of product mix is high. This is where an integrated TA-ABC model may be a more appropriate solution. The integrated model can identify product profitability by subtracting different activity costs from the throughput contribution per time of the constraining resource (Sridharan et al., 2009:108). The two methods are also helpful when allocating costs and making decisions on joint products, i.e. products whose share in the total market value of output with the same raw material input is greater than 5%. When used for joint products, TA focuses on maximizing the throughput subject to the company's bottleneck activities used in the production processes in order to maximize short-term profit. When determining short-term profit, it is necessary to consider all combinations of joint products and the ratio of profits they bring in. By contrast, the ABC model for joint products is used to trace resource costs to processes and then to products.

In the long run, when a company's management has complete control over its labor and overhead resources, the ABC method will obtain the highest long-term profit (Tsai et al., 2008, p. 219).

#### 4. COMPARATIVE ANALYSIS OF THROUGHPUT ACCOUNTING AND THE ABC METHOD USING A HYPOTHETICAL PRODUCTION COMPANY AS AN EXAMPLE

In order to provide a detailed comparison of TA against the ABC method, an example is given of a hypothetical manufacturing company making production decisions. The authors analyze whether it would be more cost-effective if the company were to manufacture the product internally or if it were to outsource a portion of manufacturing. The company XYZ produces two types of products (P and Q) and considers outsourcing part of product Q production. The text below contains calculations and decisions made following the traditional costing, TA and the ABC method (Sheu et. al., 2003, p. 439).

##### 4.1. TRADITIONAL COSTING METHOD

Table 2 shows the decision-making process following the traditional costing method.

**Table 2.** Decision making following the traditional costing method

Item	Product P	Product Q (Outsourcing)	Product Q (In-house manufacturing)
Material cost	40.00	60.00	45.00
Production length (in minutes)	60	50	65
Labour cost (10/h)	10.00	8.33	10.83
Operating expenses (20/h)	20.00	16.66	21.66
Unit cost	70.00	85.00	55.50
Selling price	180.00	200.00	200.00
Profit contribution	110.00	115.00	122.50

**Source:** Sheu, C.; Chen, M. and Kovar, S. (2003) Integrating ABC and TOC for better manufacturing decision making, *Integrated Manufacturing Systems*, 14(5), p. 440.



Under this method, profit contribution is the decision criteria. The production of product P requires 60 minutes, while the production of product Q requires 65 minutes. The company considers outsourcing part of product Q production that requires 15 minutes. The labor costs amount to 10 HRK/h while operating expenses amount to 20 HRK/h. For example, the entire production of product Q by the company XYZ requires 65 minutes, which means that labor costs will amount to HRK 10.83 while operating expenses will amount to HRK 21.66 as can be seen from the calculation below:

- Labour costs = 65 minutes x HRK 10/60 minutes = HRK 10.83;
- Operating expenses = 65 minutes x HRK 20/60 minutes = HRK 21.66.

Profit contribution is calculated by subtracting cost per unit, which is calculated as the sum of material costs, labor costs, and operating expenses, from the selling price, as shown in the calculation below:

- Cost per unit of product P = 40 + 10 + 20 = HRK 70;
- Profit contribution of product P = 180 – 70 = HRK 110.

Profit contribution to product P is HRK 110. Profit contribution for product Q is calculated by comparing amounts for in-house manufacturing vs. outsourcing a portion. If a company decided on outsourcing, the material costs would be higher than they would be if it decided to produce the entire product in-house, while labor costs and operating costs would be lower. If it decided to produce the entire product in-house, it would save HRK 15 on material cost when compared to outsourcing, while labor costs and variable costs would be higher due to the 15 minutes of additional work. The profit contribution per unit is higher when product Q is produced in-house, so the XYZ company will choose this option, taking into account the estimation made under the traditional costing method (Sheu et. al., 2003, p. 439).

#### 4.2. THROUGHPUT ACCOUNTING

What is lacking in this traditional costing analysis is the consideration of the constraint resource from a system perspective. If the production of product P requires the constraint resource machine B, TA would make the decision based on the usage of the constraint resource.



**Table 3.** Decision making following TA

	Product P	Product Q (Outsourcing)	Product Q (in-house manufacturing)
Selling price (HRK)	180.00	200.00	200.00
Material cost (HRK)	40.00	60.00	45.00
Contribution/unit (HRK)	140.00	140.00	155.00
Constraint time – machine B time (min)	10.00	15.00	30.00
Contribution /constraint minute (HRK/min)	14.00	9.33	5.17

**Source:** Sheu, C.; Chen, M. and Kovar, S. (2003) Integrating ABC and TOC for better manufacturing decision making, *Integrated Manufacturing Systems*, 14(5), p. 440.

Assuming that product Q consumes 30 minutes of machine B, while outsourcing would free up 15 minutes of machine time for other more profitable operations (in this case, product P manufacturing). The explanation for these statements can be found in the amount of contribution per constraint resource. The contribution is calculated by subtracting material costs from the selling price as illustrated by the calculation below:

- Product P contribution = HRK 180 – HRK 40 = HRK 140.

The result is divided by the minutes of machine B utilization to obtain contribution per constraint resource. The calculation below confirms the above statements:

- Throughput/constraint minutes of machine operation = HRK 140:10 minutes = 14 HRK/min.

Since the above indicator is higher in the case of outsourcing a portion of the manufacturing, the XYZ company will opt for outsourcing, thereby freeing up more minutes of machine B time for the production of product P (Sheu et. al., 2003, p. 439).

#### 4.3. ABC METHOD

The ABC method provides a much clearer picture of the costs, as it is able to allocate costs more accurately. The table below shows the weekly labor costs and overhead associated with machine operation.

**Table 4.** Information on the cost of machine operation

Machine	Labor cost	Overhead	Total
A	400	800	1,200
B	400	800	1,200
C	400	800	1,200
D	400	800	1,200
Total	1,600	3,200	4,800

**Source:** Sheu, C.; Chen, M. and Kovar, S. (2003) Integrating ABC and TOC for better manufacturing decision making, *Integrated Manufacturing Systems*, 14(5), p. 440.

Assuming that each machine operates 40 hours per week and labor cost is HRK 10 per hour, while overhead amounts to HRK 20 per hour. An example of the calculation of labor costs and overhead costs incurred by machine A operation is shown below:

- Labour costs = 40 hours of machine operation x HRK 10/h = HRK400 per week;
- Overhead = 40 hours of machine operation x HRK 20/h = HRK 800 per week.

The main difference between deciding on in-house manufacturing vs. outsourcing a portion of it lies in the use of machine B as shown in the table below:

**Table 5.** Allocation of costs incurred by machine operation

Machine	Product Q (outsourcing)				Product Q (in-house production)			
	Product P		Product Q		Product P		Product Q	
	Cost (HRK)	Machine time (min)	Cost (HRK)	Machine time (min)	Cost (HRK)	Machine time (min)	Cost (HRK)	Machine time (min)
A	480	10	720	15	480	10	720	15
B	480	10	720	15	300	10	900	30
C	900	20	300	10	900	20	300	10
D	900	20	300	10	900	20	300	10
Total	2,760	60	2,040	50	2,580	60	2,220	65

**Source:** Sheu, C.; Chen, M. and Kovar, S. (2003) Integrating ABC and TOC for better manufacturing decision making, *Integrated Manufacturing Systems*, 14(5), p. 440.

An example of the calculation of the cost of using machine A in the manufacturing of product P if XYZ were to opt for outsourcing a portion of product Q manufacturing is shown below:

- ♦ Production cost = 10 minutes of use (for product P): 25 minutes of use (for both products) x HRK 1,200 = HRK 480.

The cost of using other machines in the production of products P and Q is calculated in the same way. If a company were to decide to produce product Q in-house, machine B would be used 15 minutes longer, which would increase the cost of its use to more than HRK 900 and lead to the HRK 15 saving of material cost. On the other hand, outsourcing a portion of product Q manufacturing would free up machine capacity which could be used for manufacturing product P. Figure 6 shows the criteria for deciding between in-house manufacturing and outsourcing under the ABC method.

**Table 6.** Profitability analysis

	Product Q (Outsourcing)		Product Q (In-house manufacturing)	
	P	Q	P	Q
Product	P	Q	P	Q
Selling price	180.00	200.00	180.00	200.00
Material cost	40.00	60.00	40.00	45.00
Other costs	27.60	68.00	25.80	74.67
Profit margin per unit	112.40	72.00	114.20	80.33
Total product P and product Q profits	184.40		194.53	

**Source:** Sheu, C.; Chen, M. and Kovar, S. (2003) Integrating ABC and TOC for better manufacturing decision making, *Integrated Manufacturing Systems*, 14(5), p. 440.

Assuming that the XYZ company will produce 100 units of product P and 30 units of product Q, and the company decides to outsource part of the production, other product P costs are calculated as follows:

- ♦ Other costs = HRK 2,760 (total production costs for all P products)/100 units = HRK 27.60.

Other product Q costs are calculated in the same way, the only difference being that 30 units are produced, so it is necessary to divide total production costs for all Q products by 30:

- ♦ Other costs = HRK 2,040 (total production costs for all Q products)/30 units = HRK 68.00.

Profit per unit is calculated by subtracting the cost of materials and other costs from the selling price. For example, the profit per unit of product P in

the case of outsourcing a portion of product Q manufacturing is calculated as follows:

$$+ \text{ Profit per unit} = 180 - 40 - 27.60 = \text{HRK } 112.40.$$

After calculating individual profits, it is necessary to add product P and Q profits to make a decision between in-house manufacturing and outsourcing. In the above example, by applying the ABC method, the XYZ company would opt for in-house manufacturing of product Q, as the profit earned would be higher in this case (Sheu et. al., 2003, p. 440).

#### 4.4. COMPARISON OF TRADITIONAL AND CONTEMPORARY COSTING METHODS

The choice between in-house manufacturing and outsourcing is similar to the product mix decision. Table 7 shows a comparative overview of traditional and contemporary costing methods used in this example as well as the accompanying measures based on which the decisions have been made. The amounts of measures represent the sums of P and Q product profits.

**Table 7.** Decision-making criteria by methods

Method	Measure – decision criterion	Product Q (Outsourcing)	Product Q (In-house manufacturing)
Traditional method	Profit contribution	225.00	232.50
TA	Throughput/limited minutes	23.33	19.17
ABC method	Sum of profits	184.40	194.53

Source: Authors' work

In this example, the traditional costing method could fail to provide management with accurate information because it does not consider constraints in the production system. If machine B were the bottleneck resource, then the decision on outsourcing would result in more system throughput by freeing up some machine B capacity to produce more of product P, which is a more profitable operation. The focus of TA on revenue maximization for the entire system through monitoring of throughput per constraint resource makes it very useful in making short-term decisions. First, operating expenses, which are generally irrelevant when making these decisions, are not associated with the individual product, leaving only relevant information for the decision. Second, if a product's selling

price goes up or the price of raw materials goes down, throughput per constraint resource will reflect the changes that are relevant to decisions being made. The impact of deciding between in-house manufacturing and outsourcing should also be considered from a long-term perspective. If it is more cost-effective to manufacture products in-house, it is necessary to provide additional capacity of the constraint resource. Furthermore, there are other accompanying long-term costs associated with both decisions that are impossible to estimate with any precision in the short term. The ABC method can account for the extensive batch-related costs and thus prevent any cost-related uncertainty (Sheu et. al., 2003, p. 441). Consequently, managers should formulate these decisions first by utilizing TA in the short run and then review them regularly using the ABC method in the long run. The described example shows that these two methods lead to two completely different production decisions, which was expected given the differences between them. The management's ability to utilize both costing methods to manage the interplay between long-term and short-term decision making is vital. The goal is to maximize throughput per constraint resource in the short run, and then, by utilizing the ABC method, optimize the mix of activities performed in the long run (Sheu et. al., 2003, p. 441).

## 5. CONCLUSION

By observing, analyzing and comparing the features and characteristics of Throughput Accounting and the activity-based costing method, the authors have arrived at the conclusion that there are a number of major differences between them, the most important of which arise from their focus and decisions made by management. However, despite the fact that they have quite contradictory assumptions, the combined use of these two methods in certain segments can be extremely useful. By reconciling certain assumptions of the two methods, a more advanced decision-making tool could be created. TA is most effective when applied in making short-term decisions aimed at maximizing profit, while the ABC method focuses on long-term cost management. A combined approach would improve the cost management system, which can facilitate cost identification, allocation, and reporting as well as production mix decision making, and impact the length of the production cycles/activities. Finally, it may be concluded that in the future companies should definitely consider various methods for sustainable cost management that will increase their market com-

petitiveness. To achieve this, the described costing methods can be applied individually; however, in the segments where they would complement each other well, they can be applied together. Short-term decisions can be made on the basis of TA assumptions, and then reviewed regularly by using the ABC method in the long term. Considering their differences, it is obvious that using them separately will lead to contradictory production decisions. However, the possibility of the combined application of these two methods makes it an extremely valuable tool for managing short- and long-term changes. Despite the fact that these two methods have different approaches to cost management, their integration can be complementary and produce an advanced and sustainable cost management system, which warrants further investigation, in particular of the possibility and benefits of their integration.

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# GRUNDSÄTZE ORDNUNGSGEMÄSSER BUCHFÜHRUNG BEI EINSATZ VON INFORMATIONSTECHNOLOGIE, INSBESONDERE CLOUD- COMPUTING

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## **Abstract**

*Studies are showing that information technology (IT) became more and more important for companies, and still will become even more important in the future. This includes the accounting as well. IT is possible to support the company for example with automatical book entries. As well it is possible to use IT for the outsourcing of services, or the company can use clouds, for saving data or to provide software. There are a lot of possibilities. The implementation of IT in the accounting is not only a huge possibility for bigger companies to get more efficient. Nearly two thirds of all companies (Bitkom, 2018: 3). are already using clouds and realized the huge potential of them. The use of IT and especially clouds has not only advantages. There are still a lot of disadvantages, companies have to be careful with. One important point is, that the company need to ensure, that even with the use of IT, the German „principles of proper accounting” still have to be applied.*

**Keywords:** IT, cloud computing, accounting

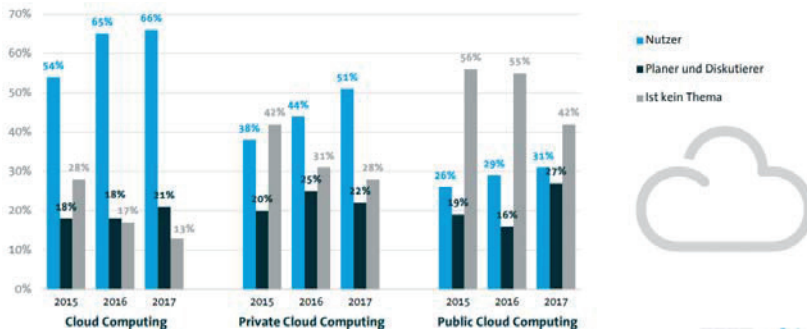
JEL Classification: M15, M41



## 1. VORBEMERKUNG

Mit der zunehmenden Digitalisierung hat auch der Einsatz von Informationstechnologie im Bereich der Buchführung bei Unternehmen stark zugenommen. Dies kann sowohl automatisierte Buchungen als auch der Einsatz von Cloud-Diensten zur Speicherung von Daten, oder der Bereitstellung von Software sein. Wichtig ist hierbei, dass dennoch die Ordnungsmäßigkeit der Buchführung eingehalten wird. Da dieses Thema seit Jahren an Wichtigkeit zunimmt, hat das Institut der Wirtschaftsprüfer (IDW) mit IDW RS FAIT 1 eine Stellungnahme zur Rechnungslegung veröffentlicht. Da Unternehmen zunehmend die Dienste von Cloud-Anbietern nutzen, wird durch die Thematik des Cloud-Computing, sowie dessen Vorteile und Nachteile beleuchtet. Die Aktualität des Themas zeigt eine Studie<sup>1</sup> von Bitkom Research im Auftrag der KPMG. Hierbei wurde festgestellt, dass zwei von drei Unternehmen bereits Cloud-Computing planen oder darüber diskutieren (Bitkom, 2018: 3).

Abbildung 1: Bitkom 2018: 3



Aus Sicht der Wirtschaftsprüfer sollte dieser Themenkomplex ebenfalls nicht vernachlässigt werden. Aufgrund dessen hat das Institut der Wirtschaftsprüfer mögliche Risiken bei der Einhaltung von Anforderungen der §§ 238, 239 und 257 HGB beim Einsatz von Informationstechnologie im Zusammenhang mit der Auslagerung von rechnungslegungsrelevanten Dienstleistungen diskutiert (IDW FAIT 5).

<sup>1</sup> Basis der Studie: Alle befragten Unternehmen (2017: n=557 | 2016: n=554 | 2015: n=457)

## 2. GRUNDSÄTZE ORDNUNGSGEMÄSSER BUCHFÜHRUNG

Dem Jahresabschluss wird gem. § 264 Abs. 2 HGB die Funktion zugeschrieben, den Adressaten ein „den tatsächlichen Verhältnissen entsprechendes Bild der Vermögens-, Finanz- und Ertragslage der Kapitalgesellschaft zu vermitteln“.<sup>2</sup> Dies hat unter Beachtung der Grundsätze ordnungsgemäßer Buchführung zu erfolgen.

Bei den Grundsätzen ordnungsgemäßer Buchführung, kurz GoB, handelt es sich um einen unbestimmten Rechtsbegriff, welcher sowohl durch Rechtsnormen als auch durch die Rechtsprechung geprägt ist. Die GoB sind von der Rechtsprechung und ebenfalls von der Verwaltung jeweils im Einzelfall auszulegen und anzuwenden: Die GoB sind einem ständigen Wandel unterworfen. Somit ist es möglich, dass die GoB sich beispielsweise durch gutachterliche Stellungnahmen, Handelsbrauch, organisatorische oder technische Änderungen weiterentwickeln. Aufgrund der zunehmenden Digitalisierung hat das Bundesministeriums der Finanzen (BMF) im Rahmen einer Meinungsäußerung, den GoBD<sup>3</sup>, deren Vorstellung einer zeitgemäßen IT-gestützten Rechnungslegung dargestellt. Seit dem 1.1.2015 gelten diese Grundsätze zur ordnungsmäßigen Führung und Aufbewahrung von Büchern, Aufzeichnungen sowie Unterlagen in elektronischer Form, ebenso wie zum Datenzugriff. Durch den schnellen Wandel im IT-Bereich enthält die GoBD keinerlei technischen Spezifikationen oder konkrete Bezügen zu markttypischen Softwareprodukten wie beispielsweise SAP oder Microsoft.<sup>4</sup>

An die Buchführung eines Unternehmens stellen die Grundsätze ordnungsgemäßer Buchführung sowohl materielle als auch formelle Anforderungen. Letztere ergeben sich aus den §§ 238ff HGB. Die materiellen Anforderungen stellen Bücher und Aufzeichnungen dar, welche es dem Unternehmen möglich machen, Geschäftsvorfälle hinsichtlich ihrer Vollständigkeit, Richtigkeit, Zeitgerechtigkeit sowie in ihrer Auswirkung zu ordnen. Somit sollen sowohl Geschäftsvorfälle nachvollziehbar dargestellt, als auch nachfolgend gebucht werden.<sup>5</sup>

<sup>2</sup> Paragraph 264 (2) HGB.

<sup>3</sup> Vgl. BMF IV A 4 – S 0316/13/10003, Rz. 17f.

<sup>4</sup> Vgl. Giebichenstein/Schirp (2016), S. 69

<sup>5</sup> Vgl. BMF IV A 4 – S 0316/13/10003, Rz. 19.

Die GoB sehen kein bestimmtes Buchführungsverfahren vor, weshalb auch der Einsatz von Informationstechnologie hierbei grundsätzlich möglich ist, sofern die Voraussetzungen des § 239 Abs. 4 HGB erfüllt werden.<sup>6</sup> Auch das Institut der Wirtschaftsprüfer hat hierzu mit IDW RS FAIT 1 Stellung genommen. Hierbei werden die Anforderungen an eine Buchführung unter Einsatz von Informationstechnologie durch die §§ 238, 239 und 257 HGB spezifiziert.<sup>7</sup>

Bei dem Einsatz von Informationstechnologie im Bereich der Rechnungslegung ist zu beachten, dass die GoB zur Führung von Handelsbüchern nur erfüllt sind, wenn gewährleistet ist, dass die Ordnungsmäßigkeitskriterien in den Bereichen der Erfassung, Verarbeitung sowie Ausgabe und Aufbewahrung der rechnungslegungsrelevanten Daten der Geschäftsvorfälle eingehalten werden. Diese sechs Kriterien umfassen:

- Vollständigkeit (§ 239 Abs. 2 HGB)
- Richtigkeit (§ 239 Abs. 2 HGB)
- Zeitgerechtigkeit (§ 239 Abs. 2 HGB)
- Ordnung (§ 239 Abs. 2 HGB)
- Nachvollziehbarkeit (§ 238 Abs. 1 Satz 2 HGB)
- Unveränderlichkeit (§ 239 Abs. 3 HGB)

Die Verantwortung der Einhaltung der Kriterien obliegt dem gesetzlichen Vertreter des bilanzierenden Unternehmens und kann auch nicht bei einer Auslagerung an ein Dienstleistungsunternehmen übertragen werden. Das Kriterium der Vollständigkeit hat für das Unternehmen zur Folge, dass alle buchführungspflichtigen Transaktionen und Geschäfte vollständig aufgezeichnet werden müssen und eine doppelte Erfassung eines Sachverhalts verhindert werden muss. Richtigkeit bedeutet, dass diese Transaktionen inhaltlich korrekt dargestellt werden müssen und auch im Einklang mit den gesetzlichen Vorschriften sind. Diese Kriterien werden um das Kriterium der Zeitgerechtigkeit ergänzt. Dies bedeutet, dass die Zuordnung des Geschäftsvorfalles in der richtigen Periode erfolgen muss. Ebenfalls wird hierunter auch die zeitnahe Buchung verstanden. Der Begriff der Ordnung umfasst die Darstellung eines Geschäftsvorfalles in zeitlicher Reihenfolge (Journalfunktion) und hinsichtlich der sachlichen Zuordnung (Kontenfunktion). Ebenso wird vorausgesetzt, dass gebuchte Transaktionen von deren Entstehung bis zur Abwicklung nachvollzogen und

<sup>6</sup> Vgl. IDW FAIT 1, Tz. 1.

<sup>7</sup> Vgl. IDW FAIT 1, Tz. 3.

die Buchungen reproduziert werden können. Nachträgliche Veränderungen von aufgezeichneten Geschäftsvorfällen sind zu verhindern. Dies wird durch das Kriterium der Unveränderlichkeit sichergestellt.<sup>8</sup>

Diese allgemeinen Anforderungen zur Ordnungsmäßigkeit werden in Unternehmen auf die entsprechende buchführende IT-Systeme übertragen. Zur Erfüllung der allgemeinen Anforderungen dienen die nachfolgenden Funktionen:

### Belegfunktion

§ 238 Abs.1 HGB setzt für die ordnungsgemäße Buchführung den Grundsatz der Nachvollziehbarkeit voraus.<sup>9</sup> Hierfür dient die Belegfunktion im Rechnungswesen. Die Existenz und die Berechtigung einer jeden Buchung müssen durch einen Beleg nachgewiesen werden, um im Zweifel dessen Richtigkeit beweisen zu können.<sup>10</sup> Die Funktion setzt somit voraus, dass vom Urbeleg bis zum Abschluss und vice versa die Buchung durch einen Beleg nachgewiesen werden kann. Es gilt der Grundsatz „Keine Buchung ohne Beleg“.<sup>11</sup> Beim Einsatz von Informationstechnologie im Unternehmen, kann diese Voraussetzung auch bei automatisierten Rechnungslegungsverfahren, wie beispielsweise bei der Buchung von Abschreibungen, eingehalten werden, auch wenn der Nachweis somit nicht durch konventionelle Belege erbracht wird.

Der Nachweis wird hierbei nach Meinung des IDW durch nachfolgende Funktionen erfüllt:

- ausreichende Dokumentation bezüglich programminterner Vorschriften zur Generierung der Buchung,
- Nachweis eines autorisierten Änderungsverfahrens, welchem die Vorschriften der Dokumentationen unterlegen haben (bspw. Zugriffsschutz),
- Nachweis der Anwendung des genehmigten Verfahrens, sowie
- Nachweis der tatsächlichen Durchführung einzelner Buchungen.

<sup>8</sup> Vgl. Tritschler/Lamm (2018), S.27.

<sup>9</sup> Vgl. IDW FAIT 1, Tz. 33.

<sup>10</sup> Vgl. Tritschler (2018), S. 14 i.V.m IDW FAIT 1, Tz. 33.

<sup>11</sup> Vgl. Tritschler/Lamm (2018), S.27f.

Wie die Einhaltung der Belegfunktion im Einzelfall realisiert wird, hängt jedoch vom Geschäftsprozess des zu bilanzierenden Unternehmens ab. Die Buchung eines Geschäftsvorfalles hat jedoch, um die Vorschriften zu erfüllen, mindestens eine ausreichende Erläuterung des Vorgangs zu enthalten. Des Weiteren muss sich aus der Buchung ein Buchungsbetrag, sowie Wert- und Mengenangaben, welche den zu buchenden Betrag ergeben, den Zeitpunkt des Geschäftsvorfalles, sowie die Bestätigung durch den Buchführungspflichtigen ergeben.<sup>12</sup>

### Journalfunktion

Im Vergleich zur Belegfunktion hat die Journalfunktion nicht die Aufgabe, die Existenz der Berechtigung einer Erfassung zu erfüllen, sondern dient dazu, den Nachweis der tatsächlichen und zeitgerechten Verarbeitung der Geschäftsvorfälle sicherzustellen.<sup>13</sup> Die buchführungspflichtigen Geschäftsvorfälle sind demzufolge vom bilanzierenden Unternehmen möglichst zeitnah nach deren Entstehung sowohl vollständig als auch verständlich und in zeitlicher Reihenfolge aufzuzeichnen (Journal).<sup>14</sup> Die Funktion ist jedoch nur erfüllt, sofern die Aufzeichnungen gegen Veränderung und Löschung geschützt sind.<sup>15</sup> Im Journal sind alle Angaben für einen Geschäftsvorfall, welcher für die Erfüllung der Belegfunktion vorausgesetzt ist, nachzuweisen. Weiterhin ist zu beachten, dass Belege in Zwischendateien, welche zur reinen Kontrolle für eine eventuelle Erfassungskorrektur dienen, nicht als Journal einzustufen sind, sondern lediglich als Erfassungsprotokolle dienen. Grund hierfür stellt die ausstehende abschließende Autorisierung des Geschäftsvorfalles dar.<sup>16</sup>

### Kontenfunktion

Die in zeitlicher Reihenfolge aufgezeichneten Geschäftsvorfälle müssen durch die Kontenfunktion auch in sachlicher Ordnung auf Konten abgebildet

<sup>12</sup> Vgl. IDW FAIT 1, Tz. 35f.

<sup>13</sup> Vgl. FAIT 1, Tz. 41 i.V.m. Tritschler/Lamm (2018), S. 28.

<sup>14</sup> Vgl. Tritschler (2018), S. 14.

<sup>15</sup> Vgl. IDW FAIT 1, Tz. 43.

<sup>16</sup> Vgl. Tritschler/Lamm (2018), S. 28.

werden.<sup>17</sup> Beim Einsatz von Informationstechnologie im Rahmen computergestützter Buchführungsverfahren werden Journal- und Kontenfunktion meist gemeinsam ausgeführt. Dies geschieht, indem bei der erstmaligen Erfassung eines Geschäftsvorfalles die Angaben für eine sachliche Zuordnung ebenfalls erfasst und beispielsweise durch maschinelle Kontenfindungsverfahren unterstützt werden.<sup>18</sup> Zu beachten ist, dass die Geschäftsvorfälle in Sach- und Personenkonten zu gliedern sind und zusätzlich mit den nachfolgenden Angaben abgebildet werden müssen:

- Kontenbezeichnung,
- Buchungsdatum,
- Belegdatum,
- Buchungstext bzw. dessen Verschlüsselung,
- Kennzeichnung der Buchung,
- Summen und Salden nach Soll und Haben,
- Gegenkonto,
- Belegverweis.<sup>19</sup>

## Dokumentation

Grundsätzlich gilt, dass gem. § 238 Abs. 1 S.2 HGB die Buchführung so auszugestalten ist, dass ein sachverständiger Dritter sich innerhalb angemessener Zeit ein Überblick über die Geschäftsvorfälle und die Lage des Unternehmens erhalten kann. Dieser Grundsatz bleibt auch bei einer IT-gestützten Rechnungslegung unverändert.<sup>20</sup> Für ein nachvollziehbares Buchführungsverfahren gilt eine ordnungsgemäße Verfahrensdokumentation i.S.d. § 238 Abs.1 S.3 HGB als Voraussetzung, welche die Beschreibung aller zum Verständnis der Rechnungslegung erforderlichen Verfahrensbestandteile zu enthalten hat.<sup>21</sup> Bei einer IT-gestützten Rechnungslegung besteht dies aus einer Anwenderdokumentation, der technischen Systemdokumentation sowie der Betriebsdokumentation.<sup>22</sup>

<sup>17</sup> Vgl. Tritschler (2018), S.14.

<sup>18</sup> Vgl. IDW FAIT 1, Tz. 52.

<sup>19</sup> Vgl. Tritschler/Lamm (2018), S. 29.

<sup>20</sup> Vgl. IDW FAIT 1, Tz. 52.

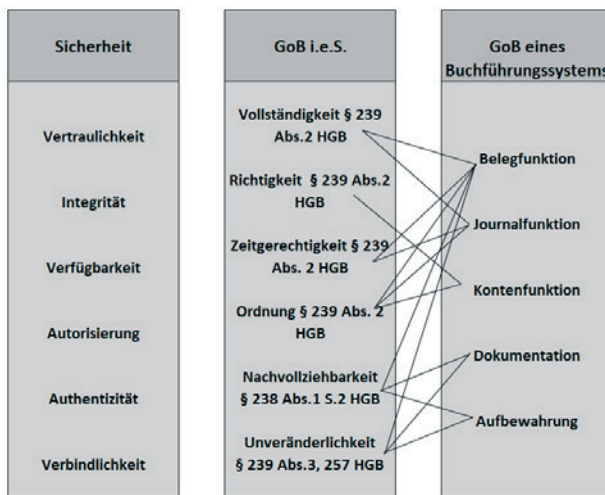
<sup>21</sup> Vgl. Tritschler (2018), S. 14.

<sup>22</sup> Vgl. Tritschler/Lamm (2018), S. 29.

## Aufbewahrung

Gemäß § 257 Abs. 4 HGB sind alle zum Verständnis der Buchführung erforderlichen Unterlagen über einen Zeitraum von 10 Jahren aufzubewahren.<sup>23</sup> Um dies zu gewährleisten, muss sowohl sichergestellt werden, dass die Art der Aufbewahrungsmedien dies erfüllen kann, als auch die technische Voraussetzung für die Gewährleistung der jederzeitigen Wiederherstellung und Lesbarkeit gem. §§ 257, 261 i.V.m. § 239 Abs. 4 S. 2 HGB erfüllt wird.<sup>24</sup>

**Abbildung 2:** Eigendarstellung in Anlehnung an Tritschler/Lamm (2018: 30)



Zu beachten ist zudem, dass neben den genannten Voraussetzungen ebenso die Sicherheit der rechnungslegungsrelevanten Daten durchgehend gewährleistet sein muss, für dessen Einhaltung die gesetzlichen Vertreter des Unternehmens verantwortlich sind. Somit ist vom Unternehmen ein Sicherheitskonzept zu entwickeln, das die Einhaltung der Informationssicherheit garantiert.<sup>25</sup> Die Sicherheitsanforderungen an ein IT-System stellen die nachfolgenden Kriterien dar:

<sup>23</sup> Paragraph 257 HGB

<sup>24</sup> Vgl. Tritschler/Lamm (2018), Seite 30.

<sup>25</sup> Vgl. IDW FAIT 1, Tz. 19ff.



**Tabelle 1:** Vgl. IDW FAIT 1 Tz. 23.

Sicherheitsanforderung	
Vertraulichkeit	Erlangte Daten von Dritten dürfen nicht unberechtigt weitergegeben, oder gar veröffentlicht werden.
IT-Integrität	Diese ist gegeben, wenn Daten und IT-Infrastruktur sowie IT-Anwendung vollständig und frei von Fehlern zur Verfügung stehen und zusätzlich vor Manipulation geschützt sind.
Verfügbarkeit	Setzt voraus, dass IT-Infrastruktur, IT-Anwendung und Daten ständig verfügbar sind. Ebenso müssen diese in angemessener Zeit funktionsfähig bereitstehen.
Autorisierung	Festgelegte Personen haben Zugriff auf Daten. Diese müssen im Voraus bestimmt worden sein. Autorisierte Personen dürfen nur die im System festgelegten Rechte wahrnehmen.
Authentizität	Ein Geschäftsvorfall muss dem Verursacher eindeutig zuordenbar sein.
Verbindlichkeit	IT-gestützte Verfahren können gewollte Rechtsfolgen bindend herbeiführen.

Hinsichtlich der Datensicherheit ist ein aktuelles und viel diskutiertes Thema die Datenschutz-Grundverordnung. Gemäß Artikel 17 Datenschutz-Grundverordnung (DSGVO) besteht grundsätzlich das Recht auf Löschung personenbezogener Daten. „Die betroffene Person hat das Recht, von dem Verantwortlichen zu verlangen, dass sie betreffende personenbezogene Daten unverzüglich gelöscht werden, und der Verantwortliche ist verpflichtet, personenbezogene Daten unverzüglich zu löschen [...]“<sup>26</sup>, sofern die Voraussetzungen zutreffen. Somit ist nachfolgend zu klären, ob Artikel 17 DSGVO im Widerspruch zu § 257 Abs. 4 HGB, der Aufbewahrung der Unterlagen über einen Zeitraum von 10 Jahren, stehen könnte.<sup>27</sup> § 35 des Datenschutzgesetzes (BDSG) konkretisiert diese Frage weiter. Gemäß § 35 Abs.2 S.1 BDSG dürfen Betroffene, deren personenbezogene Daten gespeichert wurden, ihren Anspruch auf Löschung der Daten jederzeit geltend machen. Falls dies nicht mit unverhältnismäßigem Aufwand in Verbindung steht, oder gar unmöglich ist, müssen die personenbezogenen Daten in der Regel gelöscht werden und es entsteht hieraus eine Löschungspflicht. § 35 Abs. 3 S.2 Nr.1 BDSG nennt jedoch Ausnahmen, für welche eine Löschungspflicht nicht zutrifft. Dies ist der Fall, wenn einer Löschung gesetzliche, satzungsmäßige oder vertragliche Aufbewahrungsfristen entgegenstehen, wie es bei § 257 Abs. 4 HGB zutreffen würde. Somit tritt anstelle einer Löschung eine Sperrung und die Regelungen der DSGVO stehen nicht im Widerspruch zu den GoB.<sup>28</sup>

<sup>26</sup> Art. 17 Abs.1 DSGVO

<sup>27</sup> Vgl. Artikel 17 DSGVO

<sup>28</sup> Vgl. Paragraph 35 BDSG



### 3. INFORMATIONSTECHNOLOGIE IM UNTERNEHMEN - DER EINSATZ VON IT SPEZIELL IN DER RECHNUNGSLEGUNG

Beim Einsatz von Informationstechnologie in der Rechnungslegung sind die gesetzlichen Vertreter dafür verantwortlich, dass geeignete Regelungen eingeführt werden, um das damit einhergehende Risiko zur Einhaltung der GoB bei dessen Einsatz auszuschließen.<sup>29</sup> Das IDW bezeichnet als Informationstechnologie im Rahmen der Rechnungslegung, die „Gesamtheit der im Unternehmen zur elektronischen Datenverarbeitung eingesetzten Hard- und Software“.<sup>30</sup> Der Einsatz von IT im Unternehmen erfolgt durch ein sogenanntes IT-System, welches die IT-gestützten Geschäftsprozesse, die IT-Anwendungen und die IT-Infrastruktur beinhalten. Diese werden vom IT-Kontrollsystem geprägt, welches wiederum vom IT-Umfeld und der IT-Organisation abhängig ist.<sup>31</sup> Die gesetzlichen Vertreter haben die Aufgabe, die IT-Strategie, welche von dem Schwierigkeitsgrad und Vielfalt des Unternehmens geprägt ist, mit der Unternehmensstrategie abzustimmen, um ein wirksames IT-Kontrollsystem einzurichten. Die IT-Strategie beinhaltet ebenfalls die Risikobewertung der IT-Risiken aus der Geschäftstätigkeit des Unternehmens, welche wesentliche Auswirkungen auf die Rechnungslegung haben könnten. Sie können für Unternehmen, welche eine IT-abhängige Unternehmenstätigkeit ausführen, zum bestandsgefährdendem Risiko werden, weshalb ein Risikofrüherkennungssystem für ein Unternehmen unabdingbar ist.<sup>32</sup> Errichtet ein Unternehmen ein IT-System, ist hierbei zu beachten, dass die Anforderungen der GoB an eine ordnungsgemäße IT-gestützte Rechnungslegung für alle Bereiche des IT-Systems sicherzustellen sind.<sup>33</sup>

### 4. DIE AUSLAGERUNG VON PROZESSEN UND FUNKTIONEN

Wenn rechnungslegungsbezogene Prozesse und Funktionen ausgelagert werden, die zur Speicherung oder Verarbeitung rechnungslegungsrelevanter

<sup>29</sup> Vgl. IDW FAIT 1, Tz. 6.

<sup>30</sup> Vgl. IDW FAIT 1, Tz 2.

<sup>31</sup> Vgl. IDW FAIT 1, Tz. 6-7.

<sup>32</sup> Vgl. IDW FAIT 1, Tz 76.

<sup>33</sup> Vgl. IDW FAIT 1 Tz. 76.

Daten dienen, haben sie auch für die Jahresabschlussprüfung Relevanz. Ausgelagerte Prozesse und Funktionen können beispielsweise Daten über Geschäftsvorfälle, Ereignisse oder betriebliche Aktivitäten speichern oder verarbeiten. Sie können hierbei sowohl direkt in die Rechnungslegung einfließen oder auch dem Rechnungslegungssystem als Grundlage für Buchungen dienen. Sofern dies zutrifft, werden die Prozesse und Funktionen ein Teil des IT-Systems und des IT-gestützten Rechnungslegungssystems des Unternehmens.<sup>34</sup>

Beispiele hierfür können sein:

- + Auslagerung von IT-Ressourcen;
- + IT-gestützte oder manuelle rechnungslegungsrelevante Geschäftsprozesse;
- + die Verarbeitung von rechnungslegungsrelevanten Geschäftsvorfällen;
- + die Bereitstellung von rechnungslegungsrelevanten Unterlagen in elektronischer oder anderer Form, welche für den Abschluss des Unternehmens dienen sowie zusätzlichen Informationen (z.B. Buchungsdaten, Buchungsbelege und Informationen zur Lageberichterstattung).<sup>35</sup>

Wenn betriebliche Prozesse und Funktionen teilweise auf ein Dienstleistungsunternehmen verlagert werden, wird von Outsourcing gesprochen. Gründe hierfür können Einsparungen der Kosten, sowie Risiko- und Compliance-Gründe sein. Ein Unternehmen kann neben den Kernprozessen ebenfalls den IT-Betrieb, die Applikationsbetreuung oder die Bereitstellung der erforderlichen Soft- und Hardware auslagern. In diesem Fall wird von IT-Outsourcing gesprochen. Ein Beispiel hierfür stellt der Rechenzentrumsbetrieb, auch Hosting, dar. Hierbei werden Server des Unternehmens beim Dienstleister untergebracht, welcher die dafür notwendige IT-Infrastruktur bietet. Werden genau definierte Lösungen von einem IT-Dienstleister an den Auftraggeber erbracht, wird von Managed Services gesprochen. Die Service-Leistung wird bei dieser Form bei Vertragschluss gemeinsam definiert. Hierbei können beispielsweise die Überwachung der Verfügbarkeit der eingesetzten Systeme, das Update- und Patchmanagement<sup>36</sup> sowie die System- und Softwareadministration ausgelagert werden. Managed Services lassen sich in drei Kategorien unterteilen:<sup>37</sup>

<sup>34</sup> Vgl. IDW Tritschler/Lamm (2018), S. 12.

<sup>35</sup> Vgl. IDW FAIT 5 Tz, 5 i.V.m. Tritschler/Lamm (2018), S. 12.

<sup>36</sup> Beispielsweise eine Systemverwaltung, bei der mehrere Codeänderungen auf einem verwalteten Computersystem installiert werden.

<sup>37</sup> Vgl. Tritschler/Lamm (2018), S. 13f.

- ♦ IT-Security Services - Betrieb von IT-Security-Lösungen
- ♦ Storage Services: - Services bezüglich des Storage-Systems<sup>38</sup>
- ♦ Application Services<sup>39</sup>- Bereitstellung, Konfiguration sowie Wartung von zentralen Server Applikationen

## 5. PRAXISBEISPIEL: CLOUD- COMPUTING (FAIT 5)

Werden beim IT-Outsourcing die IT-Infrastruktur und die IT-Dienstleistungen, Cloud-Services, bereitgestellt, handelt es sich um eine Sonderform des IT-Outsourcings, dem Cloud-Computing.<sup>40</sup> Nach Definition von Bitkom wird unter dem Begriff [...] eine Form der Bereitstellung von gemeinsam nutzbaren und flexibel skalierbaren IT-Leistungen durch nicht fest zugeordnete IT-Ressourcen über Netze [...]“ verstanden.<sup>41</sup> Hierbei werden beispielsweise Speicherplatz, Rechenleistung oder auch Anwendersoftware für einen kurzen Zeitraum über das Internet bereitgestellt. In der Zwischenzeit bestehen keinerlei signifikante leistungstechnische Unterschiede mehr zwischen Cloud-Services und IT-Inhouse-Lösungen, weshalb deren Nutzung immer beliebter wird.<sup>42</sup>

Im Jahr 2017 nutzten 66 %<sup>43</sup> aller Unternehmen Rechenleistungen aus einer Cloud. Dies ist ein Anstieg um ein Prozent im Vergleich zum Vorjahr. 83 % der Unternehmen erwägen den Einsatz einer Cloud. Lediglich für 13 Prozent der Unternehmen stellen Cloud-Dienste keine Alternative dar.<sup>44</sup>

Der Unterschied von Cloud-Computing und Outsourcing besteht darin, dass Hardware, Software oder andere Sicherheitseinstellungen mit anderen Nutzern in der Cloud geteilt werden. Daten und individuellere Konfigurationen der Software sind vom resource-pooling ausgenommen und sind nur für die eigene Verwendung bereitgestellt.<sup>45</sup> Cloud-Services haben typischerweise nachfolgende Merkmale:

<sup>38</sup> Definition: Ein Cloud-Speicherdienst, welcher die Daten seiner Kunden verwaltet und diese Daten über ein Netzwerk, in der Regel das Internet, zugänglich macht.

<sup>39</sup> Definition: Cloud-Anwendungen, welche nicht lokal gespeichert sind.

<sup>40</sup> Vgl. Tritschler/Lamm (2018), S. 15

<sup>41</sup> Vgl. Giebichenstein, (2011), S. 2218.

<sup>42</sup> Vgl. Tritschler/Lamm (2018), S. 16.

<sup>43</sup> Ergebnis einer repräsentativen Umfrage von Bitkom Research im Auftrag der KPMG AG unter 557 Unternehmen ab 20 Mitarbeitern in Deutschland.

<sup>44</sup> o.V. (2018), S. 1450.

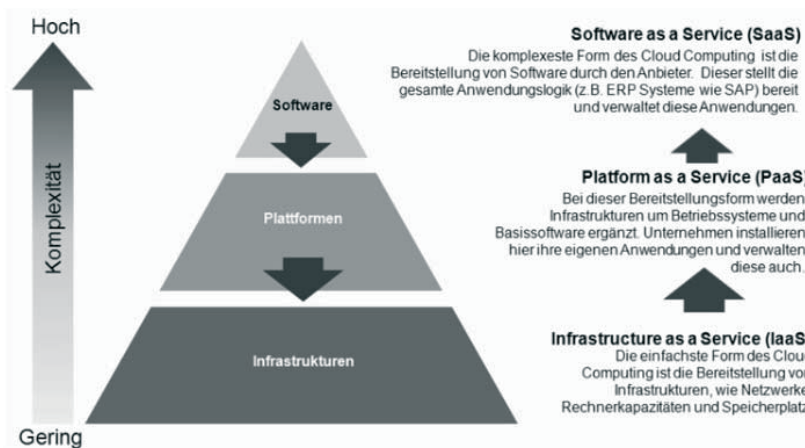
<sup>45</sup> Vgl. Tritschler/Lamm (2018), S. 16.

**Tabelle 2:** Vgl. Tritschler, Lamm (2018: 17)

Merkmal	
On-demand self-service	Selbstzuweisung von Leistungen aus der Cloud durch Nutzer, welche bei Bedarf des Unternehmens bereitstehen sollen.
Broad network access	Über Standardmechanismen in einem Netzwerk sind Leistungen aus der Cloud erreichbar.
Resource pooling	Ressourcen einer Cloud, wie beispielsweise Rechenleistungen oder Storage, werden unter unterschiedlichen Kunden der Cloud-Dienste geteilt.
Rapid elasticity	Virtuelle Ressourcen können schnell nahezu unbegrenzt aus der Sicht des Nutzers skaliert werden, ebenso wie automatisiert auf Laständerungen angepasst.
Measured service	Die Nutzung der Ressourcen kann gemessen und zusätzlich überwacht werden.

Das Cloud-Computing lässt sich in verschiedene Service-Modelle weiter untergliedern. Die Aufteilung erfolgt hierbei in die drei Schichten: Infrastruktur, Plattform und Anwendung, wie Abbildung 3 zu entnehmen ist.<sup>46</sup>

**Abbildung 3:** Giebichenstein, 2011: 2218



Neben den Servicemodellen lässt sich das Cloud-Computing ebenfalls in vier weitere Anwendungsmodelle untergliedern:

- „Public Cloud“  
Diese wird dem Unternehmen über das Internet von einem Anbieter bereitgestellt. Die Allgemeinheit oder eine große Gruppe, beispielsweise

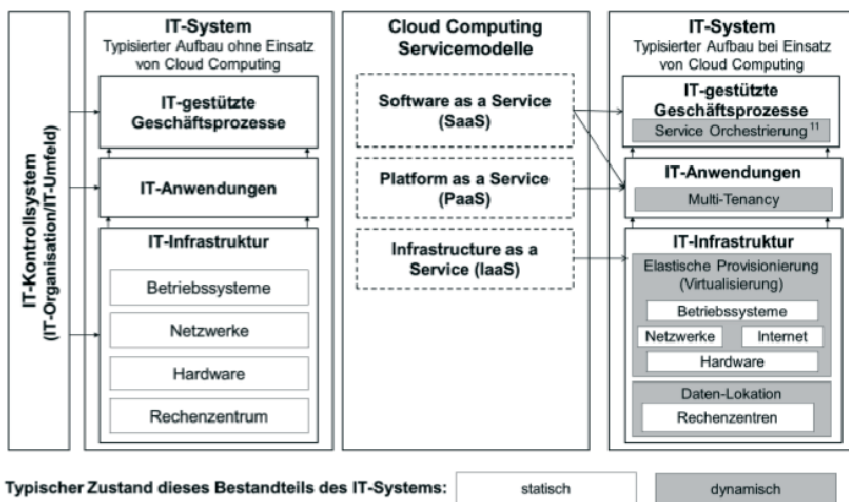
<sup>46</sup> Vgl. Giebichenstein (2011), S. 2218.

eine Industriebranche, kann die Services der Public External Cloud gegen ein Entgelt nutzen.<sup>47</sup>

- ✦ „Private Cloud“  
Hierbei wird ein geschlossenes Netzwerk von IT-Ressourcen einer Organisation bereitgestellt, wobei keine andere Organisation Zugriff hierauf hat.<sup>48</sup>
- ✦ „Community Cloud“  
Bei der Community Cloud wird die Infrastruktur von mehreren Institutionen mit ähnlichen Interessen geteilt und kann von einer der Institutionen oder auch einem Drittanbieter betrieben werden<sup>49</sup>
- ✦ „Hybrid Cloud“  
Hierbei werden mehrere für sich gesehen eigenständige Cloud-Infrastrukturen über standardisierte Schnittstellen verbunden und gemeinsam genutzt um somit Daten und IT-Anwendungen auszutauschen.<sup>50</sup>

Abbildung 4 veranschaulicht abschließend die Gemeinsamkeiten und Unterschiede zwischen klassischem Outsourcing einerseits und Cloud-Computing gem.

Abbildung 4: IDW RS FAIT 5, Tz.13.



<sup>47</sup> Vgl. Tritschler/Lamm (2018), S.19 i.V.m. Giebichenstein (2011), S. 2218.

<sup>48</sup> Vgl. Giebichenstein (2011), S. 2218.

<sup>49</sup> Vgl. Tritschler/Lamm (2018), S.19.

<sup>50</sup> Vgl. Tritschler/Lamm (2018), S.19.

Nichtsdestotrotz bringt die Auslagerung von Prozessen und Funktionen auch Risiken mit sich. Ein Grund hierfür ist, dass Unternehmen durch die Auslagerung in eine Cloud den direkten Einfluss auf den Schutz der Daten und die betrieblichen Systeme verlieren. Gleiches gilt für einen ordnungsmäßigen Betrieb der IT-Infrastruktur und die Verarbeitung rechnungslegungsrelevanter Sachverhalte. Zu beachten ist, dass die Verantwortung für die Einhaltung der Ordnungsmäßigkeits- und Sicherheitsanforderungen bei einer Auslagerung nicht an das Dienstleistungsunternehmen übertragen werden kann.

Exemplarische Risikokategorien können darstellen:

- + Sicherheits- und Ordnungsmäßigkeitsrisiken,
- + Fehlerrisiken in der Rechnungslegung bei einer Auslagerung von Prozessen sowie
- + Datenschutzrechtliche Risiken.<sup>51</sup>

Bezüglich datenschutzrechtlicher Risiken spielt auch die DSGVO für Unternehmen eine Rolle. Diese verlangt von Unternehmen, dass diese nachweisen können, welche Dienstleister sie für welche Daten im Auftrag auf personenbezogene Daten zugreifen lassen. Somit muss der gesetzliche Vertreter sicherstellen, dass beim Anbieter ausreichende Garantien für eine datenschutzkonforme Datenverarbeitung vorliegen. Zusätzlich ist ein Datenschutzvertrag mit dem entsprechenden Dienstleister zu schließen. Dieser muss die Mindestinhalte des Artikel 28 DSGVO aufweisen, deren Anforderungen nur durch eine systematisch geführte Liste kontrolliert werden können. Nach der DSGVO wird Cloud-Computing weiterhin als Auftragsverarbeitung eingestuft und ist deshalb nur zulässig, wenn die entsprechenden Voraussetzungen vorliegen.<sup>52</sup>

Dass die DSGVO bei vielen Unternehmen auch bei der Auswahl des Cloud-Anbieters keine nachrangige Bedeutung hat, zeigt die Studie von Bitkom Research im Auftrag von KPMG. Hierbei ist die Konformität des Cloud-Providers mit 97 %<sup>53</sup> das Top-Kriterium bei der Anbieterauswahl. Auf den nachfolgenden Plätzen stehen bei Unternehmen Themen wie transparente Sicherheitsarchitektur und –kontrollen sowie die im Vertrag regelbare Ausstiegsstrategie.<sup>54</sup>

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<sup>51</sup> Vgl. Tritschler/Lamm (2018), S. 20f.

<sup>52</sup> Vgl. Kramer (2018), S. 54-56.

<sup>53</sup> Basis für die Umfrage waren 521 Unternehmen, welche Cloud-Lösungen nutzen, planen oder darüber diskutieren. Mehrfachnennungen waren möglich.

<sup>54</sup> Bitkom (2018), S. 7.

## 6. KRITISCHE WÜRDIGUNG

Sowohl die Auslagerung von Prozessen und Funktionen als auch der Einsatz von Informationstechnologie im Rahmen der Buchhaltung bringen Unternehmen viele Vorteile. Dies können sowohl Kosteneinsparungen sein, als auch der vielseitige Einsatz von Cloud-Computing. Nichtsdestotrotz sind Unternehmen durch die Nutzung Risiken und auch Herausforderungen ausgesetzt, welche frühzeitig erkannt werden müssen.<sup>55</sup> Der Einsatz von Informationstechnologie kann sowohl Sicherheits- als auch Ordnungsmäßigkeitsrisiken mit sich bringen, welche sich indirekt auf die Rechnungslegung auswirken können. Bei ausgelagerten Prozessen, welche für die Rechnungslegung relevant sind, können sich auch direkte Fehlerrisiken für die Rechnungslegung ergeben. Dies ist meist auf unzureichende Kontrollen seitens des Dienstleisters zurückzuführen. Die Fehlerrisiken setzen sich aus inhärentem Risiko und Kontrollrisiken zusammen. Diese Risiken resultieren aus nicht angemessenen und/oder nicht wirksam ausgestalteten Kontrollen.<sup>56</sup> Um aus Sicht des Wirtschaftsprüfers wesentlich falsche Angaben in der Rechnungslegung ausreichend beurteilen zu können, müssen gem. IDW nachfolgende Aussagen abgedeckt sein. Bei Berücksichtigung aller nachfolgenden Aspekte ist es dem Abschlussprüfer möglich, Aussagen zu kombinieren, wie beispielsweise dass ein Geschäftsvorfall vollständig erfasst, verarbeitet und somit im Abschluss enthalten ist.<sup>57</sup>

- ✦ Aussagen über die Art der Geschäftsvorfälle und Ereignisse innerhalb des Prüfungszeitraums bezüglich:
  - ✦ Eintritt des Geschäftsvorfalles sowie Zurechnung zum Unternehmen
  - ✦ Vollständigkeit
  - ✦ Genauigkeit
  - ✦ Periodenabgrenzung
  - ✦ Kontenzuordnung
- ✦ Aussagen über die Kontensalden am Periodenende können sich beziehen auf folgende Aspekte:
  - ✦ Vorhandensein
  - ✦ Zurechnung

<sup>55</sup> Vgl. Giebichenstein (2011), S. 2219 i.V.m. Tritschler/ Lamm (2018), S. 20.

<sup>56</sup> Vgl. Tritschler/ Lamm (2018), S. 31.

<sup>57</sup> Vgl. Tritschler/ Lamm (2018), S. 35-36.



- ✦ Vollständigkeit
  - ✦ Bewertung und Zuordnung
- ✦ Aussagen über Abschlussinformationen können sich auf nachfolgende Kriterien beziehen
  - ✦ Eintritt des Geschäftsvorfalles und Zurechnung zum Unternehmen
  - ✦ Vollständigkeit
  - ✦ Ausweis und Verständlichkeit
  - ✦ Genauigkeit und Bewertung<sup>58</sup>

Wenn das Unternehmen den Einsatz von Cloud-Computing in Erwägung zieht, ist es vor dessen Einführung zu empfehlen, dass das entsprechende Unternehmen eine sorgfältige Analysen der Chancen und Risiken durchführt, um Fehlentscheidungen und Risiken für das Fortbestehen des Unternehmens zu vermeiden.<sup>59</sup>

## 7. QUELLEN

BDSG	Bundesdatenschutzgesetz, (URL): <a href="https://www.gesetze-im-internet.de/bdsg_2018">https://www.gesetze-im-internet.de/bdsg_2018</a> , zuletzt abgerufen am 19.03.2019.
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BMF	BMF-Schreiben v. 14.11.2014, BMF IV A 4 – S 0316/13/10003 - Grundsätze zur ordnungsmäßigen Führung und Aufbewahrung von Büchern, Aufzeichnungen und Unterlagen in elektronischer Form sowie zum Datenzugriff (GoBD), abrufbar unter <a href="http://www.bundesfinanzministerium.de">www.bundesfinanzministerium.de</a> .
DSGVO	Datenschutz-Grundverordnung (DSGVO), (URL): <a href="https://dsgvo-gesetz.de/">https://dsgvo-gesetz.de/</a> , zuletzt abgerufen am 23.03.2019.
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<sup>58</sup> Vgl. IDW PS 300, Tz.7.

<sup>59</sup> Vgl. Giebichenstein (2011), S. 2219 i.V.m. Tritschler/ Lamm (2018), S. 20.



IDW FAIT 5	Institut der Wirtschaftsprüfer, IDW Stellungnahme zur Rechnungslegung: Grundsätze ordnungsgemäßer Buchführung bei Auslagerung von rechnungslegungsrelevanten Prozessen und Funktionen einschließlich Cloud Computing (IDW RS FAIT 5), Stand: 04.11.2015)
IDW PS 300 n.F.	Institut der Wirtschaftsprüfer, IDW Prüfungsstandard: Prüfungsnachweise im Rahmen der Abschlussprüfung, Stand 14.06.2016.
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# POSSIBILITIES OF BUDGET OUTTURN AT THE LEVEL OF REGIONAL SELF-GOVERNMENT UNITS

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## **Abstract**

*Possibilities of meeting public needs at national and local level depend on budget outturn. The role of the state audit is to supervise budget outturns and expenditures. The aim of the paper is to examine the number of budget funds at the county level in the Republic of Croatia as well as to investigate and analyze the amount and trends in tax revenues in relation to all assets realized. A characteristic of tax revenues is that they have no statutory purpose, as opposed to most other local unit revenues. This paper gives an overview of the legislative framework governing the organization of local units, their financing, and supervision. The main sources of data are the data of the Ministry of Finance and the State Audit Office, legal regulations and scientific literature. The results show that tax revenues in 2017 decreased in all counties compared*

*to the previous year. A different share of tax revenues in total revenues in each county is also evident.*

**Keywords:** budget revenue, tax revenue, state audit, local and regional self-government units

JEL Classification: H20, H71

## 1. INTRODUCTION

The Act on the Financing of Local and Regional Self-Government Units determines the sources of funding and the way of financing the activities of self-governing entities like counties, municipalities and cities, i.e. local and regional self-government units. Revenues are received from their own sources and shared taxes as well as state and county budgets. The main sources of revenue for counties include revenue from their property, county taxes, fines, and other revenues determined by special acts. County taxes refer to the inheritance and gift taxes, the motor vehicle and boat taxes, and the coin-operated amusement machine tax. County taxes can be ceded in whole or in part to a city or municipality on whose territory a taxpayer is a resident. Municipalities or cities may introduce the following taxes: a local income tax, a consumption tax, a holiday home tax, a trading name tax, and a public land use tax. In January 2018, the new Act on the Financing of Local and Regional Self-Government Units came into force, which regulates differently the system of income tax revenue allocation, the fiscal equalization system of local and regional self-government units and the decentralized financial system. However, there is still the equalization fund because there is a difference in the economic, and consequently, the budgetary power of individual cities, counties, and municipalities. The role of the fund is to reduce the gap in the levels of economic development in order to enable all citizens to enjoy equal living conditions. All local and regional, i.e. regional self-government, units should be given an opportunity to deliver comparable public services.

The scope of operation of any county, city, and municipality is provided for by the provisions of the Act on Local and Regional Self-Government Units. The scope of operation of a county encompasses activities of regional importance, harmonization of interests aimed at a balanced development of municipalities and cities as its constituent units as well as of the county as a whole, and in particular the activities related to education, health, spatial and urban planning,

economic development, traffic and transport infrastructure, maintenance of public roads, planning and development of networks of educational, health, social and cultural institutions, the issuance of construction and location permits and other building and construction related acts, the implementation of urban planning and construction documents and other activities pursuant to special acts. The task of local units is to improve the quality of life of residents living in their respective areas. It is necessary to achieve this by collecting revenues through the existing system of financing. Revenues should enable uninterrupted operation within the jurisdiction of a local unit. Activities falling within the scope of operation of a city and a municipality refer to urban development and housing, spatial and urban planning, communal economy, child care, social welfare, primary health care, upbringing and primary education, culture, physical culture and sports, consumer protection, protection and improvement of the natural environment, fire protection and civil protection, and traffic in their respective areas, and large cities deal with public road maintenance, the issuance of construction and location permits and other building and construction related acts, as well as the implementation of urban planning and construction documents. Large cities are local self-government units, which are at the same time economic, financial, cultural, health, transport and scientific development centers of the wider environment with more than 35,000 inhabitants. According to the 2011 census, there are 17 cities in the Republic of Croatia with more than 35,000 inhabitants (together with the City of Zagreb with its 790,017 inhabitants).

This paper examines tax revenue trends at the level of local (regional) self-government units, i.e. at the county level. The structure of the Republic of Croatia is based on 20 regional self-government units, as well as cities and municipalities as local self-government units (126 cities and 428 municipalities, and the City of Zagreb with the special status of both a city and a county). This implies that there are 555 local self-government units in the Republic of Croatia and 576 local and regional self-government units. With respect to county-level revenues, this paper includes revenue outturn of all cities and municipalities that exist in the territory of a particular county.

## 2. BUDGET OUTTURN AT THE COUNTY LEVEL

An overview of budget outturn at the county level in the Republic of Croatia is given below. Public needs are financed by these resources, hence the ability

to meet the public needs in their jurisdiction depends on their availability. The revenue and receipt outturn data at the county level also include revenue and receipt outturn of cities and municipalities located in the territory of each county.

Revenue and receipt outturn can also be observed such that budget outturn of a city, a municipality or a county itself (excluding the revenues of the cities and municipalities in the territory of that county) is put in relation to the number of inhabitants. Year after year, budget outturn data referring to Croatian local self-government units point to the following:

- a decisive impact of a coastal location on the financial condition of cities and municipalities;
- frequent major oscillations in the local government unit revenues and expenditures observed year after year; and
- inadequate status determination criteria for municipalities and cities. (Ott et al., 2018, p. 3).

Table 1 gives an overview of revenues and receipts of each county. Indices showing total revenues at the level of each county in the period 2014-2017 are calculated (with the year 2014 as the basis for comparison). By using chain indices, budget outturn for 2017 is shown in relation to 2016. The total revenue outturn index calculated for 2017 in relation to 2016 shows an increase in total revenues of all counties by 2.4%. Compared to 2014, this indicates an increase of 1.5%. In the same way, one can analyze revenue trends of each county. In 2017, six counties recorded lower revenues than in 2016, while other counties had higher revenues in 2017 than in 2016.

Table 2 gives an overview of total revenues and receipts of all counties in the period 2014-2017, where the emphasis is placed on the type of revenues. Revenues are hence divided into business revenues, revenues from the sale of nonfinancial assets and receipts from financial assets and borrowing. If total revenue outturn is taken into account, it can be concluded that the largest share of tax revenues (52%, 48.9%, 49.5%, and 46.3%) is observed in all four years under consideration (i.e. 2014-2017) and that there is a tendency to a decrease in total revenue outturn. Revenues from the sale of nonfinancial assets in 2017 account for 3.1%, while the share of receipts from financial assets and borrowings is 4.2%, which is lower than in 2014 when receipts from financial assets and borrowings accounted for 7.1% of total revenues at the level of all local self-government units. This points to the need to review other budget revenues of local self-government units and the possibility for increasing them.

**Table 1 – Revenues and receipts by county in HRK**

County and the number of local units	Total revenues and receipts, in HRK					Index for 2015; 2014 = 100	Index for 2016; 2014 = 100	Index for 2017; 2014 = 100	Index 2017/ 2016
	2014	2015	2016	2017	2017				
1	2	3	4	5	6	7	8	9	
Zagreb, 35	1,357,503,140	1,436,866,134	1,459,500,932	1,558,295,890	105.8	107.5	114.8	106.8	
Krapina-Zagorje, 33	447,112,699	420,251,129	459,285,558	465,055,748	94.0	102.7	104.0	101.3	
Sisak-Moslavina 20	659,114,871	718,389,469	811,120,441	785,221,467	109.0	123.1	119.1	96.8	
Karlovac, 23	561,407,802	526,160,674	595,297,719	559,292,568	94.3	106.0	99.6	94.0	
Varazdin, 29	685,366,879	666,405,276	696,356,683	701,938,087	97.2	101.6	102.4	100.8	
Koprivnica-Krizevci, 26	523,847,052	496,417,376	507,771,754	508,193,714	94.8	96.9	97.0	100.1	
Bjelovar-Bilogora, 24	385,959,616	411,958,512	432,788,892	422,016,871	106.7	112.1	109.3	97.5	
Primorje-Gorski Kotar, 37	2,033,145,010	2,066,033,038	2,106,063,670	2,066,930,688	101.6	103.6	101.7	98.1	
Lika-Senj, 13	328,831,489	313,030,824	330,115,730	378,048,684	95.2	100.4	115.0	114.5	
Virovitica-Podravina, 17	350,059,899	346,320,439	348,941,789	340,883,698	98.9	99.7	97.4	97.7	
Pozega-Slavonia, 11	328,794,888	268,945,308	289,491,939	324,768,106	81.8	88.0	99.0	91.2	
Brod-Posavina, 29	449,560,815	456,189,910	495,869,583	534,854,170	101.5	110.3	119.0	107.9	
Zadar, 35	982,939,710	976,868,589	1,055,292,193	1,090,045,924	99.4	107.4	110.9	103.3	
Osijek-Baranja, 43	1,156,974,976	1,223,739,366	1,204,427,381	1,222,617,257	105.8	104.1	105.7	101.5	
Sibenik-Knin, 21	596,018,414	551,251,666	570,798,465	591,007,842	92.5	95.8	99.2	103.5	
Vukovar-Srijem, 32	647,809,268	614,864,013	712,373,043	724,564,501	94.9	110.0	111.8	101.7	
Split-Dalmatia, 56	2,263,564,439	2,152,852,350	2,348,314,140	2,472,650,372	95.1	103.7	109.2	105.3	
Istria, 42	1,680,944,376	1,618,510,013	1,722,463,512	1,820,652,335	96.3	102.5	108.3	105.7	
Dubrovnik-Neretva, 23	894,369,717	864,095,068	856,726,707	910,475,706	96.6	95.8	101.8	106.3	
Medimurje, 26	358,951,332	381,290,444	441,869,812	471,317,775	106.2	123.1	131.3	106.7	
City of Zagreb, 1	7,843,849,387	6,400,674,178	6,872,763,990	6,940,332,803	81.6	87.6	88.5	101.0	
Total - 576	24,533,308,213	22,911,113,776	24,317,633,933	24,889,164,206	93.4	99.1	101.5	102.4	

**Source:** Authors, according to the Ministry of Finance data available on <http://www.mfin.hr/hr/ostvarenje-proracuna-jlprs-za-period-2014-2017>

**Table 2 – Total revenues and receipts by the type of revenues at the level of all counties, cities and municipalities in HRK**

Revenues	2014	Share in % 2014	2015	Share in % 2015	2016	Share in % 2016	2017	Share in % 2017
1	2	3	4	5	6	7	8	9
A) business revenues	22,109,792,677	90.1	21,654,270,976	94.5	22,574,477,153	92.8	23,069,094,735	92.7
a) tax revenues	12,768,532,804	52.0	11,203,924,413	48.9	12,039,341,682	49.5	11,530,704,241	46.3
b) assistance from abroad and from entities within the general budget	3,386,852,307	13.8	4,258,212,785	18.6	4,444,544,705	18.3	5,404,724,840	21.7
c) property income	1,882,686,631	7.7	2,001,912,960	8.7	1,860,928,767	7.7	1,866,038,619	7.5
d) administrative revenue (administrative fees, fees under special regulations and charges)	3,718,281,706	15.2	3,897,000,734	17.0	3,953,889,509	16.3	4,016,190,493	16.1
e) revenues from the sale of goods and services and revenue from grants and donations	186,442,945	0.8	120,356,672	0.5	135,276,742	0.6	101,846,125	0.4
f) budget revenues	17,314,016	0.1	-	-	-	-	-	-
g) penalties, administrative measures and the like	149,682,268	0.6	172,863,412	0.8	140,495,748		149,590,417	0.6
B) revenues from the sale of nonfinancial assets	683,349,982	2.8	562,813,046	2.5	573,255,910	2.4	761,197,214	3.1
C) receipts from financial assets and borrowings	1,740,165,554	7.1	694,029,754	3.0	1,169,900,870	4.8	1,058,872,257	4.2
Total (A+B+C)	24,533,308,213	100	22,911,113,776	100	24,317,633,933	100	24,889,164,206	100

**Source:** Authors, according to the Ministry of Finance data available on <http://www.mfin.hr/hr/ostvarenje-proracuna-jlprs-za-period-2014-2017>

### 3. TAX REVENUE OUTTURN BY LOCAL GOVERNMENT UNITS

Tax revenues have a significant share in total revenues and receipts at the level of local self-government units. In 2004, 2005 and 2006, tax revenues and their share in total revenues and receipts by counties (in all counties, excluding the City of Zagreb) amounted to 52.88%, 51.97%, and 52.54%, respectively (Perić and Mahaček, 2009, pp. 104-109). Furthermore, the share of tax revenues at the level of all local self-government units (including the City of Zagreb) in 2007, 2008, 2009, 2010 and 2011 was 55.5%, 55.6%, 59.1%, 58.1% and 51.6%, respectively (Mahaček et al, 2015, pp. 376-380).

Trends in total revenues and receipts of local self-government units were monitored in the period from 2010 to 2012 in order to draw a conclusion on total revenues and receipts of municipalities, cities, and counties. In 2012, the City of Zagreb participated in total revenues and receipts with 29.1%, whereas cities, municipalities, and counties participated with 39.4%, 15.4%, and 16.1%, respectively (Mahaček and Včev 2016, p. 670). The hypothesis has been confirmed that city budgets have the most significant impact on the financing of public needs, followed by county budgets, while municipality budgets have fewer participation opportunities to engage in funding, although their number is significant.

Trends in revenues of local self-government units as well as the role of tax revenues as a source of budget funds can also be seen from the point of view of the share of individual counties in the overall outturn.

Based on the data, we can draw conclusions about the significance of tax revenues at the county level. When it comes to the overall budget outturn of all local self-government units in 2014, tax revenues accounted for 52.0%. We also conclude that in the context of income of each county, tax revenues participate with different shares, which is reflected in the possibilities of financing various needs (Mahaček, 2017, p. 612).

A budget outturn of municipalities, cities, and counties (excluding cities and municipalities in their territories) in relation to the number of inhabitants indicates that there are differences in per capita revenues. The authors give an overview of revenue and expenditure related data and state that the published data, as well as a number of other data in previous press releases published by



the Institute of Public Finance, point to the need for reform of the territorial and fiscal structure. (Ott et al., 2018, p. 4).

Table 3 gives an overview of the tax revenues of each county in the period from 2014 to 2017. Based on these data, it can be seen that each county has different amounts of tax revenues that are presented in absolute values. For each county, tax revenues are placed in relation to the total revenue outturn of that county. The results indicate that the share of tax revenues in the total revenue of a county varies. At the level of all counties, 2014, 2015 and 2016 tax revenues accounted for 52%, 48.9%, and 49.5%, respectively, while in 2017 this share was 46.3%. The largest share of tax revenues in 2014 was recorded by Zagreb County (66.4%), the City of Zagreb (64.1%) and Krapina-Zagorje County (53.3%). On the other hand, the smallest share was recorded in Virovitica-Podravina County (26.7%). The largest share of tax revenues in 2015 was recorded by the City of Zagreb (71%), Zagreb County (54.3%) and Krapina-Zagorje County (49.6%), whereas the smallest share was recorded in Virovitica-Podravina County (20.1%). The largest share of tax revenues in 2016 was recorded in the City of Zagreb (70.2%), Zagreb County (57.5%) and Krapina-Zagorje County (49.4%), whereas the smallest share was recorded in Virovitica-Podravina County (22.6%). The largest share of tax revenues in 2017 was recorded by the City of Zagreb (66.2%), Zagreb County (50.9%) and Krapina-Zagorje County (46.0%), while Virovitica-Podravina County recorded the smallest share (21.7%).

**Table 3 – Tax revenues and their share in the total revenues of each county**

in HRK

County	Tax revenues by county, in HRK					The share of tax revenues in the total revenue of a county				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
1	2	3	4	5	6	7	8	9		
Zagreb	899,692,645	779,516,189	838,734,665	793,176,752	66.4	54.3	57.5	50.9		
Krapina-Zagorje	238,160,466	208,241,541	226,965,461	214,051,078	53.3	49.6	49.4	46.0		
Sisak-Moslavina	295,836,914	223,553,615	238,079,369	218,307,881	44.9	31.1	29.4	27.8		
Karlovac	269,181,203	225,851,062	265,954,021	251,834,960	47.9	42.9	44.7	45.0		
Varazdin	344,878,011	304,340,055	327,585,973	317,618,471	50.3	45.7	47.0	45.2		
Koprivnica-Krizevci	176,088,369	151,360,142	162,750,967	158,117,557	33.6	30.5	32.1	31.1		
Bjelovar-Bilogora	165,913,917	138,889,053	155,097,144	140,566,023	43.0	33.7	35.8	33.3		
Primorje-Gorski Kotar	1,059,201,456	944,180,443	983,307,889	943,084,740	52.1	45.7	46.7	45.6		
Lika-Senj	114,457,070	83,756,311	91,515,082	90,182,830	34.8	26.8	27.7	23.9		
Virovitica-Podravina	93,487,520	69,727,610	78,906,828	73,806,650	26.7	20.1	22.6	21.7		
Pozega-Slavonia	100,103,549	74,897,302	85,147,800	77,625,598	30.4	27.8	29.4	23.9		
Brod-Posavina	192,814,931	159,773,860	176,771,232	151,921,910	42.9	35.0	35.6	28.4		
Zadar	411,882,437	353,492,027	392,355,595	389,786,882	41.9	36.2	37.2	35.8		
Osijek-Baranja	533,462,385	436,228,606	487,630,304	457,952,624	46.1	35.6	40.4	37.4		
Sibenik-Knin	229,887,967	202,874,454	213,023,411	203,703,782	38.6	36.8	37.3	34.5		
Vukovar-Srijem	212,180,559	158,102,575	167,134,690	144,494,754	32.8	25.7	23.5	19.9		
Split-Dalmatia	1,131,208,071	990,453,947	1,066,699,253	1,071,398,583	50.0	46.0	45.4	43.3		
Istria	719,341,050	682,353,461	727,681,343	726,415,458	42.8	42.2	42.2	40.0		
Dubrovnik-Neretva	370,764,201	319,805,017	349,723,343	334,199,208	41.5	37.0	40.8	36.7		
Medimurje	179,776,149	153,213,674	178,871,806	179,948,580	50.1	40.2	40.5	38.2		
City of Zagreb	5,030,213,934	4,543,313,469	4,825,405,506	4,592,509,920	64.1	71.0	70.2	66.2		
Total	12,768,532,804	11,203,924,413	12,039,341,682	11,530,704,241	52.0	48.9	49.5	46.3		

**Source:** Authors, according to the Ministry of Finance data available on <http://www.mfin.hr/hr/ostvarenje-proracuna-jlprs-za-period-2014-2017>

Based upon the aforementioned, it can be concluded that the list of counties with the highest share of tax revenues in the period under consideration (i.e. 2014-2017) does not change, and the same holds for counties with a low share of tax revenues. This points to the need to re-examine the reasons for this phenomenon, i.e. the need to balance these revenue sources.

Table 4 shows the share of tax revenues of individual counties in the total tax revenue outturn at the level of all counties in the period 2014-2017. A calculation basis for these shares were the data given in both Table 1, which shows total revenues and receipts by individual counties, and Table 3, which shows tax revenue outturn presented in absolute values. At the level of all counties, the City of Zagreb recorded the largest share in the total tax revenue outturn in the period 2014-2017, whereas, with the share of 0.6% in 2017, Virovitica-Podravina County and Požega-Slavonia County recorded the smallest share in the total tax revenue outturn of all counties.

**Table 4** – The share of county tax revenues in the total tax revenue outturn at the level of all counties in the period 2014-2017

County	Share in % for 2014	Share in % for 2015	Share in % for 2016	Share in % for 2017
1	2	3	4	5
Zagreb	7.1	7.0	7.0	6.9
Krapina-Zagorje	1.9	1.9	1.9	1.8
Sisak-Moslavina	2.3	2.0	2.0	1.9
Karlovac	2.1	2.0	2.2	2.2
Varazdin	2.7	2.7	2.7	2.7
Koprivnica-Krizevci	1.4	1.4	1.4	1.4
Bjelovar-Bilogora	1.3	1.2	1.3	1.2
Primorje-Gorski Kotar	8.3	8.4	8.2	8.2
Lika-Senj	0.9	0.7	0.8	0.8
Virovitica-Podravina	0.7	0.6	0.6	0.6
Pozega-Slavonia	0.8	0.7	0.7	0.6
Brod-Posavina	1.5	1.4	1.5	1.3
Zadar	3.2	3.2	3.3	3.4
Osijek-Baranja	4.2	3.9	4.1	4.0
Sibenik-Knin	1.8	1.8	1.8	1.8
Vukovar-Srijem	1.7	1.4	1.4	1.3
Split-Dalmatia	8.9	8.8	8.8	9.3
Istria	5.6	6.1	6.0	6.3
Dubrovnik-Neretva	2.9	2.8	2.9	2.9
Međimurje	1.4	1.4	1.4	1.6

City of Zagreb	39.3	40.6	40.0	39.8
Total tax revenues of all counties	100	100	100	100

**Source:** Authors, according to the Ministry of Finance data available on <http://www.mfin.hr/hr/ostvarenje-proracuna-jlprs-za-period-2014-2017>

The revenue and tax revenue analysis indicate that sources of local budget revenues are statutory and stable, but they differ across counties. It can, therefore, be concluded that within each county public needs are met depending on the resources available to them. This causes counties to develop differently. The new Act on the Financing of Local and Regional Self-Government Units came into force in January 2018, which provides for a different allocation of funds at the national level that should eliminate differences in economic development and create equal conditions for citizens in all counties.

#### 4. THE ROLE OF THE STATE AUDIT IN THE IMPLEMENTATION OF BUDGET OUTTURN AND EXPENDITURE SUPERVISION

The State Audit Office is the highest audit institution in the Republic of Croatia. According to the State Audit Office Act (2011), an audit includes the inspection or examination of documents, records, reports, internal control and internal auditing systems, accounting and financial procedures and other records to verify that the financial statements present a true financial position and the results of financial activities in line with the accepted accounting principles and standards. An audit is also a process of examining financial transactions in terms of legal utilization of funds. It also includes the assessment and evaluation of efficiency and effectiveness of activities, as well as the assessment and evaluation of how effectively the general objectives or the objectives of individual financial transactions, programs and projects are met (State Audit Office Act, Article 7). It primarily focuses on financial activities, but also includes activities aimed at verifying efficiency, cost-effectiveness, and effectiveness. The State Audit Office may carry out a financial audit, but also a performance audit, in an entity, which differs according to their objectives and methods of operation. However, conducting both financial and performance audits is equally important (Mahaček, 2016, p. 141). By supervising fund outturn of local self-government units, the state audit can detect and eliminate irregularities, The

State Audit Office issues orders and recommendations the entities are required to comply with.

Improved outturn and utilization of funds are influenced by monitoring the orders and recommendations issued to entities. According to the Report on the Activities of the State Audit Office for 2017 (2017, p. 6), in the reporting period from 1 October 2016 to 30 September 2017, the audit included financial statements and operation of 82 local self-government units, and 24 unconditional, 56 conditional and two unfavorable opinions were expressed. It is reported that the audit identified irregularities and omissions that, in addition to other irregularities, also refer to the execution of orders and recommendations from the previous audit, budget planning and execution, accounting and financial reporting, revenues and receivables, expenditures, public procurement, liabilities, and borrowing. If these irregularities are expressed numerically, a total of 575 irregularities and omissions were found in past revisions. It was established that 315 (54.8%) orders and recommendations were processed, 62 (10.8%) are being processed, and 198 (34.4%) have not been processed at all. The largest number of orders and recommendations that have not been dealt with relates to accounting, communal economy expenditures and collection of receivables. When performing the audit in the period that follows, the given orders and recommendations are checked.

## 5. CONCLUSION

This paper confirmed the hypothesis about a significant share of tax revenues in the total revenues at the level of total revenues and receipts of all counties (including outturn of all cities and municipalities), and within the framework of revenue outturn of each county. Taxation as an instrument of economic policy can be influenced by achieving certain goals at the national level, from revenue allocation, price stability, higher employment, etc. This paper studies tax revenue outturn by individual counties and respective trends in the period 2014-2017 and indicates the different possibilities of meeting public needs at the county level. No analysis was made in the paper on the type of taxes, but the emphasis was placed on the number of tax revenues within the budget. The hypothesis was confirmed that the share of tax revenues in total revenues at the level of all counties declined in the last year under consideration, and it can be concluded that there are still some funds in the budget for meeting needs for

which the sources of funding have not been legally defined. Local self-government unit budget funds meet public needs, most budget revenues are planned, and the share of such revenues increases, as confirmed in the paper. This indicates that it is necessary to manage available budgetary resources rationally and efficiently in order to better meet public needs.

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# THE AGROKOR GROUP'S ROLL-UP FINANCING: BUSINESS AS USUAL OR A DEVIATION FROM COMMON PRACTICE

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## Abstract

*In Q1 2017 Croatian policymakers prepared a legislative act that, over and above the ordinary pre-bankruptcy and bankruptcy procedures, envisaged a special reorganization regime for a distressed company of “systemic importance”. The Republic of Croatia Systemically Important Company Emergency Management Procedures Act stipulates that, during a one-year period, the systemically important company’s business operations must be stabilized and an agreement on claims settlement between creditors be reached, or standard bankruptcy procedures will be invoked. In case of an activated emergency management procedure, super-seniority post-petition debts may be incurred with the prior consent of the creditors’ council, if used to reduce systemic risk, maintain business continuity, retain assets or cover operational business cost payments. The trigger for the preparation and passage of the lex specialis was undoubtedly the situation in Agrokor, the financially troubled largest privately-owned company in Croatia and one of the leading regional companies, and indeed, immediately after the lex entered into force, this emergency management procedure was initiated in the Agrokor Group. In critical moments for the company i.e. mid-April 2017, the emergency management arranged a syndicated revolving facility of €80m, followed in June 2017 by a new debt deal in the amount of €1.06bn. The latter one, the (in)famous so-called roll-up financing, raised such a tide of public’s questions about its (un)suitability that just a few months later, when new debt creation was enabled in pre-bankruptcy procedures through the legislative amendment of the Bankruptcy Act, the Croatian lawmakers apparently shied away from the possibility of rolling up pre-petition debts. This paper provides insight into this type of financing and how it became*

*part of Agrokor's new debt, whereby distinctly underscoring that the existence of a systemic crisis management framework based on entirely transparent and well-argued processes is a necessity if public credibility of the process and its participants (stakeholders) is to be preserved.*

**Keywords:** *financial distress, emergency management, roll-up financing, transparency.*

JEL Classification: G32, G34

## 1. INTRODUCTION

On April 6, 2017, the Croatian Parliament passed the Republic of Croatia Systemically Important Company Emergency Management Procedures Act. The Lex instituted a special reorganization regime for any distressed company of “systemic importance” and was expeditiously published on the same date and became effective the next day. Immediately after the law entered into force, this emergency management procedure was initiated in the Agrokor Group, one of the leading regional companies with total revenues of €6.4bn and almost 60,000 employees. The larger the troubled company, the stronger the negative economic impact and social burden of its fall – accordingly, the greater the government’s courage to act (Eklund et al., 2018; Lee et al. 2011).

The distress of this Croatian-based conglomerate and its debt overhang was in public’s perception the obvious motive for the preparation and singular purpose of the legislation; therefore, the law is commonly referred to as “*Lex Agrokor*.” On the other hand, in his statement of reasons for the legislative proposal, the Croatian Prime Minister said in Parliament that: ... it is not ‘*Lex Agrokor*’, it is a bill whereby Croatia and the government are protecting the interests of the Croatian financial system, the economy, the workers and employees of Agrokor, family farms, suppliers and all stakeholders that are currently involved in the processes connected to that largest Croatian company (Government of the Republic of Croatia, 2017). Be that as it may, the stipulated purpose of the EMA is “to protect the business sustainability” of the systemically important company and hereinafter the Lex is referred to as the EMA (Emergency Management Act).

With the passing of the EMA, the Croatian legal framework was supplemented with some rather unique modes for protecting the viability of trou-



bled real economy firms of “systemic importance”.<sup>1</sup> Compared to the Croatian pre-bankruptcy or bankruptcy procedure, an important novelty in the EMA was that it would allow new debt creation, and through the legislative amendment of the Bankruptcy Act in November 2017 this option was also introduced in pre-bankruptcy proceedings. Under the EMA insolvency regime, the emergency management of Agrokor arranged and the creditors’ council approved two interim financing deals. Agrokor’s second new-debt deal from mid-2017 was a roll-up in a total of €1.06bn, half of which being pre-petition debts that were rolled up to super priority. However, the roll-up became so tarred and feathered by the public that the Croatian lawmakers practically shied away from this interim financing model just a few months later.<sup>2</sup>

With the rationales behind interim finance and its common practice as a framework, this paper deals with Agrokor’s roll-up financing. Generally, the aim is to see how they differ if at all. The article’s part two briefly underlines some whys and wherefores of interim financing and roll-ups. While the overview of Agrokor’s post-petition debt is given in chapter three, in this central part of the paper, special emphasis is placed on the bargaining environment and the leading post-petition lenders. Case-specific issues are discussed in part four, followed by concluding remarks.

## 2. INTERIM AND ROLL-UP FINANCING

When a company ends up in financial distress, financing its business operations becomes extremely difficult, even impossible as the creditors and suppliers

<sup>1</sup> That is, besides (ordinary) Croatian pre-bankruptcy and bankruptcy procedures (see Čuveljak & Rašić, 2017; Rubinić & Bodul, 2018). From international perspective the EMA is not so unique, as two Croatian members of the EU parliament pointed out in their question for a written response to Commission Rule 130 (European Parliament, 2017). The Croatian EMA resembles in terminology and content to the Italian special procedure for large insolvent companies and Chapter 11 of the US Bankruptcy Code. For insight into the Italian procedure see e.g. Belhocine et. al. (2018), Garrido (2016), Clifford Chance (2015, pp. 58-79), or Manganelli (2010) who compares the US Chapter 11 and the Italian extraordinary administration for large insolvent companies.

<sup>2</sup> While explaining the amendments to the bankruptcy law in parliament (27. October 2017), the Croatian Minister of justice explicitly ruled out the roll-up possibility for interim financing. He persistently emphasized that, if the bankruptcy process is invoked, seniority status is given with the exception of the first higher-ranking creditors to no more than the amount of provided interim financing. This argumentation, while true for bankruptcy, is flimsy regarding the pre-bankruptcy procedure. Despite the impression the Croatian lawmakers tried to make during parliamentary bickering, such limits were not foreseen for the latter i.e. roll-ups are nevertheless possible.

retreat to reserve positions, unwilling to extend their exposure to looming business failure. Pre-bankruptcy and bankruptcy regimes serve as frameworks for denouement (business turnaround or winding down) within a reasonable time. Placed between the hammer and the anvil, the stakeholders must decide about their best interest, and if their correction of expectation will be towards going concern i.e. business continuity, they mostly must accept that new financing<sup>3</sup> is a *sine qua non* for keeping the business alive during the corporate reorganization.

Depending on the distressed company's balance sheet as well as overall market conditions, lenders without a prior lending relationship with the debtor or those with pre-petition exposure can be approached. On the ordinary loan market, participants rarely seek for opportunities to provide financing to troubled businesses, no matter how appealing rates and/or fees they could charge. The more conservative, traditional lenders are restrained from borrowing to desperate, overindebted firms; their risk appetite is simply too small and often regulatory constrained. Therefore, interim financing is more often sought from the distressed company's existing lenders. Without outside competition, the existing lenders have the upper hand: they are in a position to insist on advancing the priority of their pre-petition claims in return for extended financing. Some categories of original debtholders will rather prefer not to extend their risk exposure and give way to "outsiders" that are willing to obtain a seat at the table.

By acquiring pre-petition claims from risk-averse creditors, investors seeking high-return enter the distressed company's capital structure.<sup>4</sup> These players do not enter the game in order to be passive bystanders, instead, they are most active in pursuing superior returns through a business turnaround or lend-to-own strategy.<sup>5</sup> In many situations, they are crucial for obtaining the needed financing and they determine the overall restructuring direction. Namely, interim/new financing and the restructuring process are often causally connected through loan provisions that force the distressed company to achieve certain milestones within a rather tight timeframe. The shortfall in achieving these ob-

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<sup>3</sup> New financing and new debt, as well as interim financing and post-petition debt(s) are in this paper used as synonymous terms. Under the US Bankruptcy code, the new financing is known as debtor-in-possession (DIP) financing.

<sup>4</sup> As emphasized by Levitin (2009), although claims trading is an actuality, the standard arguments about claims trading still focus on whether claims trading should or should not be allowed.

<sup>5</sup> See, generally, Jiang & Wang (2012), Baird & Rasmussen (2010), Harner (2008), Goldschmid (2005), Hotchkiss & Mooradian (1997).

jectives penalizes the company mainly through dramatically worsened financing conditions, thus weakening the already challenging financial situation. Since financing conditions combined with milestones are a power-shifting advantageous tool that can be prejudicial to other stakeholders, the court scrutinizes and carefully weighs them against the disruption they can cause.

Under the trustee's and court's supervision, creditors have to agree on the claims settlement and the reorganization plan whereby the new liquidity provides fuel for and serves as proof of operative (none)viability of the business engine. During this most challenging time in a company's life, it is of utmost importance that the stakeholders respect the rules of the game and do not overstep the line of fairness in a basically zero-sum game. Therefore, in most jurisdictions, the commercial or bankruptcy court has the final say about the appropriateness of new financing and/or restructuring for the troubled business. Debtors are rarely in condition to obtain post-petition unsecured financing. Their burdened balance sheet set them on the other side of the spectrum where first priority lien on the unencumbered assets, and/or second priority lien on remaining encumbered assets serve as minimum standard protection mechanisms. In many situations these options are also exhausted, so most jurisdictions foresee granting administrative priority/super-priority to post-petition debts, ranking them above or equal to all other secured debt. Basically, the "last in, first out" principle serves as lender's assurance that they are most likely to be repaid, even if the company ends up being liquidated. There is a diversity of approaches amongst insolvency regimes as the mechanisms of interim and/or restructuring financing are tailored according to the country's legal culture and norms.<sup>6</sup> Simply transplanting ideas that work well elsewhere could do more harm than good in other regimes (McCormack, 2017; Payne & Sara, 2017, p. 33), e.g. introducing priming that allows existing security interests to be overridden could potentially jeopardize the funding for distressed companies that existing lenders are currently prepared to provide.<sup>7</sup> Keeping that in mind, this paper looks at the roll-up financing, an option that is mostly found in the US and Canadian practice of corporate bankruptcy reorganization financing. In mid-2017 this option was applied in a large European insolvency case, under

<sup>6</sup> See e.g. ELI (2017, pp. 215-221) regarding the distressed business financing diversity in Europe.

<sup>7</sup> For discussion of interim financing and European union efforts to harmonise insolvency laws, see e.g. de Weijjs & Baltjes (2018) and Tollenaar (2017), McCormack (2017), Epeoglou (2017).

extraordinary circumstances of a speedily created “systemic importance regime” in Croatia.

A roll-up is a form of defensive interim financing i.e. provided by pre-petition lenders on the condition that, effectively, the pre-petition debts are bought out by the new credit facility. The debtor draws on the new loan to pay off part or all lender’s pre-petition claims.<sup>8</sup> Thus, the new lending arrangement directly improves the prospects for pre-petition debt repayment and enhances the lender’s influence over the process. In that regard, the roll-up is closely related to cross-collateralization, another extraordinary financing provision where the post-petition lender obtains a security interest that serves as collateral also for his pre-petition claims. Both provisions improve the post-petition lender’s recovery prospects for their pre-petition claims to the detriment of other creditors and are therefore questionable regarding the *pari passu* principle violation.

In general, the approval of post-petition financing depends on convincing the court that another form of financing is unavailable on better terms or at all and that the lender favoring package is in the best interest of the troubled business. In practice, the “aggressiveness” of the roll-up financing is somewhat alleviated by arranging the post-petition advances over time rather than in a lump sum, and/or by applying business cash receipts received post-filing to extinguish pre-filing indebtedness, while the (new) lender’s advances are used to pay post-filing working capital needs. This “creeping roll-up” is essentially less challengeable than the direct usage of new funds for the repayment of pre-petition claims. The discussion about the permissibility of roll-ups and other forms of new lenders protective facilities is far from being over in both North American jurisdictions, and the judicial consensus is not likely in the foreseeable future. Instead, cases in which roll-ups have been approved serve as “general guidance” for avoiding potential issues of overprotection and excessive creditors’ control.

Jurisdictions, where the roll-up (interim) financing has been practiced for decades, have the most valuable knowledge repository for countries that are rethinking its implementation into their insolvency regimes. Reforms should normally be preceded by an in-depth discussion of fundamental pros and cons,

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<sup>8</sup> An illustration that compares DIP loans with and without roll-up can be found in Tung (2018, p. 33). He provides empirical analysis of 292 large US public company bankruptcy filings from 2004-2012 and reveals that in 182 cases DIP loans are present, of which 98 contain roll-ups. Almost  $\frac{3}{4}$  of the roll-ups (43% of of the DIP loans in the sample) were 100% roll-ups i.e. all of the lender’s pre-petition claims were rolled-up.

challenges and potential implementation pitfalls. In the case of Croatia's insolvency regime intervention i.e. the EMA, any public or broader expert discussion was left out; due to the economic and political challenge looming from Agrokor's business failure, the government delivered a fast-tracked *ad hoc* response. The Lex was prepared under wraps, but whatever best intentions and measures may be adopted, secrecy can not pass publicly unchallenged. Despite great understanding for the Agrokor's case-specific urgency, the Croatian public is fully justified in expecting transparency - if not *ex-ante* then at least *ex-post*. When the dust settles, the general public's and experts' questions should be answered, leaving as little space as possible to speculative interpretations that undermine the confidence in the economic and legal ecosystem.

### 3. AGROKOR'S POST-PETITION DEBT

In critical moments for Agrokor i.e. mid-April 2017, the emergency management arranged a debt deal of €80m with four domestic banks, followed in June 2017 by a new deal in the amount of €1.06bn. The first financing, realized during the first days of the extraordinary administration, was emergency financing of, at the time, blocked company accounts. This super-senior revolving facility was initially planned in the amount of €150m, however, two (Russian) banks refrained from participation. The loan was arranged with a repayment period of 12-15 months and the interest rate of approx. 9.5%. However, the €80m was just an immediately necessary fire-fighting loan, not sufficient to satisfy the Group's liquidity needs. The trustee and his management identified that for long-term stability and viability of Agrokor's operations almost €0.5bn was needed, half of which were operating cash needs to normalize operations and fund seasonal cycles, €150m for payments of pre-petition trade claims of critical suppliers (ensuring supply continuation) and €80m for the refinancing of the above-mentioned revolving facility. Only two financing proposals were received, of which the "SPTFA lenders" proposal was accepted.

According to the emergency management, the following €1.06bn deal with super-seniority status (Super-Priority Term Facilities Agreement – SPTFA) served mainly to balance the liability and receivable maturity structure in anticipation of the summer season and to fully repay the previously arranged €80m loan. In practice, one half of the €1.06bn loan was foreseen to refinance the pre-petition debts of creditors who decided to participate in the new financial

agreement by rolling up their old claims to super-priority on a one-for-one basis, i.e. applying a 1:1 ratio between new money and old debt raised to super-seniority. The remaining part of the loan was to be used for liquidity, payments of pre-petition claims from suppliers with allocations to micro-suppliers, historic suppliers that will continue to supply goods on industry standard terms and a discretionary fund for other suppliers. The maturity was agreed at 15 months counting from the commencement of the EMA, with the option of earlier repayment as well as extension. During these 15 months period, the interest rate was in the area of about 4%. The facility was extendable, however with significantly rising costs of debt. The interest rate practically doubled for the remainder of 2018, and if not repaid by year-end, the effective interest rate would rise over 10%, with a monthly 0.5 percentage point increase.

According to Debtwire (2017), in the US during the 1H 2017, 76 interim financing deals were arranged, providing over USD 12bn of lending to 66 financially distressed companies. Out of that, almost USD 11bn was provided by pre-petition lenders and on aggregate, every third deal was a roll-up. Measured by the total and roll-up amounts, Agrokor's deal would be in the top three most substantial North American roll-ups of the first half of 2017. With one exception, the larger US deals i.e. with roll-up amounts above USD 100m and total amounts above USD 200m have rolled-up a larger percentage of the total amount than Agrokor's 50%. With its initial interest rate below 6%, Agrokor's financing is comparable with 10% of the best US debtor-in-possession financing arrangements. However, due to the facility extension, Agrokor's final, effective interest can be expected in the upper part of the 6%-12% range, where over 70% of US 1H2017 deals were situated. Of the 76 US market arrangements, there were only three with all-in costs below 5%, while 28 deals were between 5-10% and 20 between 10% and 15%. Under the assumption that Agrokor will refinance the SPTFA by mid-2019, its maturity would be in the rank of the longest US deals, whereby the largest among them had a maturity of at least twelve months.

The idea of the abovementioned roll-up financing structure was introduced by Agrokor's new key bondholders led by Knighthead Capital Management (KHCM), an employee owned hedge fund sponsor.<sup>9</sup> They were buyers of debt

<sup>9</sup> According to KHCM's co-founder Thomas Wagner, KHCM bought their first bonds in January 2017, at the price of 85 to 90, and they became Agrokor's largest bondholder during March 2017. He also stated that they would not buy Agrokor bonds if they had knowledge about inaccuracies in



notes that, due to the avalanche of negative news<sup>10</sup>, the initial holders sought to get rid off. After the EMA was activated for the Agrokor Group, KHCM became the representative of bondholders in the five-member interim creditor council.<sup>11</sup> The EMA stipulates that post-petition debts may be incurred only with the prior consent of the creditor council, and if used to reduce systemic risk, maintain business continuity, retain assets or cover operational business cost payments. Article 39 of the EMA defines new financing as debt with super-priority except for workers claims, while Article 40 opens the possibility for pre-petition financial claims to be paid during the extraordinary procedure if they are connected to debt claims which have super-priority. Principally, these are the essential legal prerequisites for the application of the roll-up financing model under the EMA regime.

At first glance, the buying of Agrokor's precipitously declining bonds in Q1 2017 seems to be an irrational move, but for investors that are specialized in making money out of distressed companies, that is exactly the right time for entering the game. This contrarian investing is known as distressed debt investing<sup>12</sup>, a form of event-driven deep value investing. Because these investors often seek opportunities in idiosyncratic business failure events, in the popular press they are sometimes disparagingly referred to as "vulture investors". However, although these market participants are indeed found around "sick or wounded" businesses, their role in the financial ecosystem is nevertheless opposite from the natural role of these birds of prey (Goldschmid, 2005; Hotchkiss & Mooradian, 1997). That is firstly because these market players are providers of liquidity on the secondary market when debt and equity instruments of troubled businesses have extremely low ratio of buyers to sellers and secondly, they provide liquidity and/or capital directly to the distressed firm in critical moments when the usual providers are restrained due to looming business failure. Investments in distressed debt and the activities of distressed investors are

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the financial statements (Wagner, 2017). However, this issue was redflagged already in mid February - see e.g. Smith (2017a, 2017b), Hafenden et. al. (2017) or Reuters (2017).

<sup>10</sup> See e.g. Moody's Investor Service (2017a, 2017b, 2017c); Garaca, M. (2017a, 2017b).

<sup>11</sup> According to the EMA, the creditors influence the process through a creditor council of up to nine members, each representing a group of creditors. In Agrokor's case, the trustee proposed, and the court initially appointed, an interim five-member creditor council representing groups of creditors (small and large suppliers, bondholders, unsecured and secured creditors). The interim council has all the powers of a permanent creditor council until the latter's establishment.

<sup>12</sup> For an overview of distressed debt investing from the alternative investor's perspective see Jain (2012).

often key to successful turnarounds of financially troubled firms, and these are undeniably high-risk investments. However, as the risk-return tradeoff states, if their engagement turns out well the investors are awarded the right high return. The distress-oriented investors' archetype investment target is the overleveraged business for which tenable arguments about its fundamental viability subsist. Therefore, it is not surprising that these specialists in search of "viable weakness" set their sights on the troubled Agrokor.

The published list of some thirty Agrokor's SPTFA "new money" suppliers (SeeNews, 2017) revealed two types of lenders: (a) distress-oriented investors and (b) financial institutions that were pre-petition creditors. While the banks participated in the roll-up financing to reduce the overt final loss from their pre-petition credit exposure, the distressed investor group's key motive was to lock-up their ROI. Except for few banks, the list represents a cross-section of players in the distressed securities market e.g. hedge and specialized debt funds, private equity firms, brokerage firms, and even private investors. The list also indicates that KHMC was the largest individual roll-up participant, and by far the largest creditor from the distressed investor group. From the cumulative initial creditor participation in the SPTFA (Agrokor, 2018a, p. 8) arrises that bondholders refinanced €223.4m, thus having an implied SPTFA participation of €446.8m, in which KHMC contributed about 45%.

In the bargaining environment of Agrokor's emergency management i.e. creditors' council, KHCM stands out in several ways. As a distress-focused investor, they are a "repeat player" in the field, with sophisticated analytical and negotiating skills, expertise, networks and legal background (Lim, 2010). In other words, they have lots of experience in clearing inefficiencies in financial distress situations, compared to little or no experience of other participants in this settlement process. In a simplified view of the bargaining arena, a deal is reached when the parties agree, formally or informally, on shared norms about who gets what and how much. Reaching the agreement is more likely to be accomplished with the existence of focal points i.e. someone that will provide an understanding of what form a recovery/restructuring plan should take (Baird & Rasmussen, 2010, p. 688). The distress investor representative seems to be the natural-rational pivot choice, especially if the demand for speedily bargaining facilitation is present. Other professionals with shaping influence on the



processes in Agrokor are the key restructuring turnaround and legal advisers.<sup>13</sup> From an adviser list of international and Croatian professionals, the latter were providers of local support to leading international firms that share a common global environment with distress investors.

The main operational role is assigned to the emergency management i.e. the trustee, who is the formal execution of the troubled business and runs it until the creditors come to an agreement. He is the shuttle diplomat who helps resolve eventual disputes and steers the process actively toward accord and operational sustainability. The Croatian legislators did not foresee any commercial court role regarding the suitability of post-petition financing, only the consent of the creditor council that decides by majority vote. The court's role under the EMA is indeed more passive, compared with the pre-bankruptcy and bankruptcy procedures, although being still a formal material factor, since important milestones in the process require a court decision.<sup>14</sup> After the High Commercial Court confirmed the settlement plan adopted by the creditors, the next step would be its implementation i.e. transfer of operations to the "New Group" and wind-down of Agrokor Group. The SPTFA will be refinanced into the Exit facility. However, the leverage implied by the total of the expected debt amounts outstanding indicates that Agrokor has no further debt capacity. The debt-market testing for a facility to refinance the SPTFA resulted with only 11 indicative bids out of 76 contacted financial institutions. Potential Exit facility creditors raised concerns about the Group's high leverage, EBITDA and cash flow forecasts, lack of a permanent management team; political and legal risks, uncertainties regarding the transfer of assets to the New Group and the perfection of

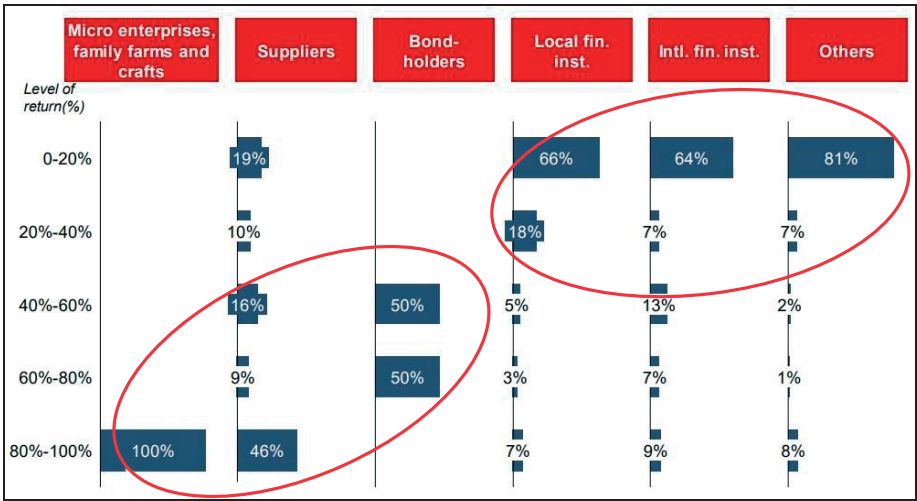
<sup>13</sup> Edward I. Altman remarks that the (viable) financial market demand and supply dynamics provided the incentive for „a special breed of investors“, that are experienced in distressed investing and able to attract capital. They provide to original investors the potential to monetize their troubled assets and are lasting throughout the duration of the bankruptcy process (Altman, 2013, p. 10). In Altman's opinion, the reasonably effective restructuring of defaulted debt comes from combined efforts of the bankruptcy law professionals and restructuring specialists, including investors, broker-dealers and turnaround management consultants (Altman, 2013, p. 5)

<sup>14</sup> The United Nations Commission on International Trade Law (UNCITRAL, 2004) as well as the World bank (2016) advise that the process is overseen by a court and emphasize the importance of active creditors participation in the insolvency procedure. The choice of a creditors committee as the principal vehicle for mediating the interests of the general creditors as a group may be due to the fact that settlement procedures guided by Croatian courts are in practice far from being efficient and effective. For insolvency proceedings time is very often of critical importance, and with limited capacity of the judiciary it seems reasonable to diminish some of the court's role and allocate the decision making to the creditors committee, while still respecting that the insolvency proceeding is a judicial proceeding (IMF, 1999).

security granted to secure the New Group’s obligations under the Exit facility, etc. These concerns made refinancing prior to the launch of the settlement plan unviable, and the emergency management decided to extend the SPTFA in anticipation that investors’ uneasiness would be soothed at a later date.

Moody’s assessed mid-2017 that corporate family recovery prospects may fall toward the lower end of the 35%-65% range and that the recovery prospects for the senior unsecured notes are likely to be less than 35% (Moody’s Investors Service, 2017d). A year later, the extraordinary administration presented that all small suppliers i.e. some 2,400 micro firms, family farms and crafts received repayment of all their claims and that approx. 4,850 suppliers recovered 60% on average (excl. of the SPTFA). Bondholders and suppliers suffered lower claim write-offs than financial institutions (Agrokor, 2018b, p. 9). The bondholders will also hold 25% ownership share in the New Group. Figure 1 indicates that no bondholder will recover less than 40% and half of them should recover between 60%-80%. Moreover, the group of three creditors in the left half of figure 1 seem to have fared better than the opposite side. In the five-membered creditor’s committee, they represent three votes.

**Figure 1:** Claims recovery by the level of return and number of companies (in %)

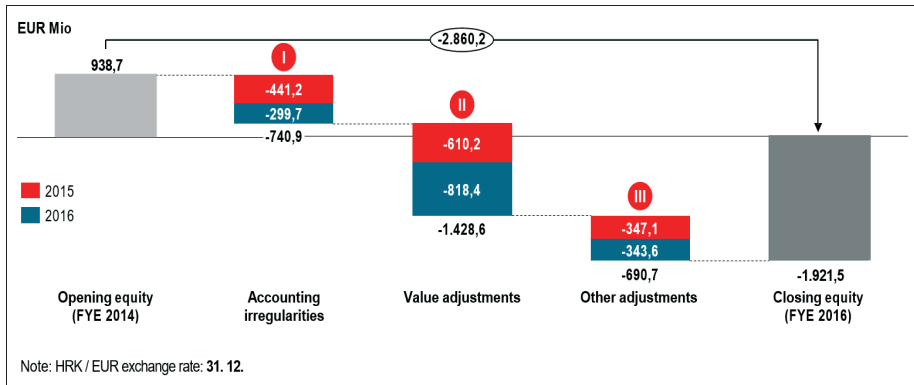


Source: Adapted from Agrokor (2018b, p.10).

The fact that the same key stakeholders were involved in the preparation of the EMA and in the implementation of the law was a fertile ground for criticism

that came primarily from stakeholders who were left out of the settlement process. The non-participation of equity holders at the bargaining table stemmed from the simple fact that Agrokor Group's equity was €1.9bn out-of-the-money at FYE 2016 (figure 2) and €2.7bn at FYE 2017 (Agrokor, 2018c, p. 11).

**Figure 2:** Agrokor Group's consolidated equity change from 2014 to 2016 (in €, year-end)



**Source:** Adapted from Agrokor (2017, p. 10).

Guided by the going concern principle, the EMA is a dynamic upgrade of the Croatian bankruptcy framework in which two important features for curing debt overhang are integrated, namely bankruptcy's automatic stay and post-petition financing (Ayotte & Skeel, 2010, pp. 476-477). Due to the automatic stay that puts a stop to creditor collections, the interim financing proceeds can be directed to business operations and not to the repayment of pre-bankruptcy creditors, thus crucially increasing the likelihood that private post-petition financing will be available. Roll-up financing, especially cross-collateralization, is in that sense controversial, although generally acceptable if proved that existing lenders are willing to provide better financing terms than other lenders, and that harmful or detrimental results for other creditors are likely small. Contrary to the practice applied in Agrokor's case, the evaluating role usually belongs to the court and not to the (interim) creditor counsel. Altogether, it seems that professional distress investors led the creditor coalition building process by successfully transforming their crucial advantage, namely professional experience, and knowledge, into a settlement plan that secured the buy-in of other key voting stakeholders. With the settlement reached, the EMA fulfilled its main purpose in Agrokor: the in-law rooted preference of business continuation. The

settlement implementation process will formally end with the transfer of Agrokor's business activities to the new Group, marking also the final milestone of completing the extraordinary administration procedure. At the same time, this is the beginning of the next crucial phase of unknown duration, from which a successful business restructuring, that will ensure the long-term stability and viability, is expected.

#### 4. CASE SPECIFIC CONSIDERATION(S)

Given the great public interest in this unprecedented case, the process itself was heavily scrutinized and criticized. In that regard, one stumbling brick proved to be impassable for two key people, namely Croatia's deputy prime minister (and minister of economy) and the extraordinary trustee. They resigned from their posts in first half of 2018 amid allegations of conflict of interest arising from the fact that the deputy PM prepared the EMA with a group of consultants in secrecy, that one of the workgroup members became the extraordinary trustee in Agrokor and that some of the informal group members indirectly received lucrative engagements as consultants in Agrokor during the extraordinary administration. The state attorney's office investigated and dismissed the allegations, while the Croatian Conflict of Interest Commission (CCIC) decided that the former deputy PM and the actual Minister of Finance<sup>15</sup> violated the principle of holding public office by failing to act transparently, credibly and responsibly (HINA, 2018). The CCIC's admonition to the two public officials reflects the standpoint that, unlike the usual understanding of the concept, conflict of interest, in general, does not refer to actual wrongdoing, but rather to the potential to become involved in improper acts (Speck, 2006). Lo & Field (2009, pp. 45-48) emphasize that the relevant primary interest in the making of professional decisions should not, in and of itself, be seen as outweighed by a secondary interest i.e. biased personal preference stemming from a previous collaboration. However, the fact that Agrokor's first extraordinary trustee indeed came from the group of experts that were involved in drafting the EMA and being that these connections were involuntarily revealed through the leaking of private e-mail correspondence created an appearance of impropriety that

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<sup>15</sup> Prior to his nomination as Croatia's Minister of Finance in February 2016, he was an employee of the Agrokor Group for four years as the executive director for strategy and capital markets, responsible for international financing, investor relations and M&A.

undermined confidence in the public officers and their professional activities (Callaghan, 2016). In other words, conflict of interest was present, but it was not a legal matter (Peters & Handschin, 2012, p. 20). In terms of political ethics, this case irresistibly recalls the basically utilitarian theory where actions and means of political agents that would otherwise be seen as wrong are “permitted for the sake of the public interest”. But unlike for instance national security issues, in economic matters concealment can hardly be justified by extraordinary conditions. Transparency, accountability and the rule of law are interconnected universal values that rest on a partnership between officials of the state and its citizens, and secrecy undoubtedly undermines that relationship (Johnston 2006, p. 3).

In bargaining situations, from a cooperative game theory perspective, focal points play an important role (Schelling, 1980). These “Schelling points” are stable norms or conventions in a form of common knowledge or understanding among a population of agents that, if followed, maximize their interest i.e. their joint welfare. For at least the past two decades, in insolvency cases where stockholders’ equity is negative, such “order without law” (Ellickson, 1991) is that the shareholders do not participate in the bargaining i.e. settlement process (Baird & Rasmussen, 2010, pp. 688). Consequently, the extraordinary trustee is relieved from the fiduciary duty to the equity holders and owes it to the troubled business creditors. Under the EMA, their interests are protected by the creditors’ committee, whose five members have a fiduciary responsibility to the class of creditors which they represent. Owing loyalty to their constituency, committee members may not use their status to further their own interests at the expense of other creditors (Krudys, 1994, p. 117). Although members of official creditors’ committees, as well as creditor steering committees, generally have no fiduciary duty to the debtor, due to the knowledge of material non-public information they have a duty of confidentiality and may be viewed as “temporary insiders” of the debtor. From that perspective, for distressed debt investors that are involved in debt trading, membership in creditors’ committees can be problematic (Neier & Schoch, 2013; Pearson, 2009; Groskaufmanis & Ochs, 2007; Sprayregen et al., 2004). On the other hand, distress investors like KHCM often assume the leading role in post-petition financing that is in most cases not only necessary in order to give the troubled business a chance of survival but is also beneficial in the process of negotiating a rehabilitation plan. From a trustee’s duty and main goal perspective, it is obviously rational to propose a seat

at the creditors' committee table to such a "buy side" investor that has expertise and experience in clearing inefficiencies in insolvency situations.<sup>16</sup>

Due to the size and complexity of Agrokor's case, the circumstances in which the previous and current trustee were fulfilling their duties were indeed difficult. The trustee's legal liability risk from potential duty violation was wisely mitigated by obtaining advance approval of the creditor's committee before making decisions with conflicting potential. However, the previous trustee did not escape the hail of robust public concerns and criticism, with conflict of interest objections being the common denominator. After assessing that his exposure to pressures could endanger the entire process and without a legally proven wrongdoing, the trustee decided to resign from his post. The failure to disclose pre-petition "connections" was a major tailwind boost for public objections about favoritism (cronyism). It is easily imaginable that these were asserted for other aspirations i.e. obtaining a perceived contest advantage by discrediting the key player(s) in the process but even so does not matter from the standpoint of compliance. Conflict of interests is damaging when revealed involuntarily or belatedly - actual, potential or perceived, direct or indirect, benign or material, with legal consequences or not.

Being that seemingly no constituency or party-of-interest in this process was spared of criticism raises inevitably the question of its foundations and about prevention of distortions with potential to mess-up or disrupt the reorganization processes. The (non)validity of concerns about Agrokor's post-petition financing as well as actual and potential conflicts of interests could have easily been determined under accurate and complete disclosure rules. The Croatian pre-bankruptcy and bankruptcy legal framework including the EMA does not contain any provisions that address conflict of interest. While being regulated in the public sector since 2011, the Croatian corporate sphere is still in need of at least soft-law guidelines and/or safe harbor procedures regarding conflict of interest issues. Although it will probably never be possible to list all the rules, fears of overregulation are just poor excuses for nonregulation. Even in circumstances with no specified local guidelines, international standards of business ethics and professional common sense do provide an aplenty guiding light for

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<sup>16</sup> What thereby must be considered is the necessity of effective "Chinese walls" that keep the confidentially obtained information by individuals on creditors committee separated from the distress investor firm's trading part.

individual conscience, be it managers, officials, trustees, council members, advisors or owners.

## 5. CONCLUSION

Agrokor's insolvency resolution process was conducted under the EMA, a special reorganization regime for a distressed "company of systemic importance". Such terminology implies the inherent presence of public interest in the form of preserving the national economy from problems at the unhealthy company that spread, like a contagion, to the entire system. Therefore, all constituencies, decision makers and/or stakeholders should in principle align their interests with the primary i.e. public interest objective. In general, the reaching of a settlement agreement in this exceptionally complicated case indicates that this main purpose of the law is fulfilled. Due to the unprecedented nature of the case in the Croatian context and even at a European scale, virtually all aspects of the procedure were heavily criticized by various concerned parties in the process. While some concerns lose meaning when compared with international practice e.g. Agrokor's post-petition financing compared with interim financing in North American jurisdictions, the objections generally regarding conflict of interest seem to be on firmer ground. *Ex post*, such criticism can hardly be dismissed, but it could still be mitigated by disclosing information that the public considers relevant. Due to the obvious lack of domestic experience and knowledge in addressing and clearing business inefficiencies of similar magnitude, the need for clarifications was even more pronounced. For example, regarding the roll-up financing, more complete and accurate information of the explored financing alternatives would have been soothing. In the absence of publicly available and more detailed evidence that the company was unable to obtain alternative financing on better terms than were offered by the SPTFA facility, its fairness, rationality, and adequacy under the circumstances will most probably remain questioned until proven otherwise. Overall in that regard, the Agrokor case does not show deviations from the usual practice, except that a neutral assessment on the above matters, usually provided by the courts, is not provided in the EMA. Therefore, even more, important seems the need for disclosure of analytically strong evidence that substantiates the decisionmakers actions and dispels the shadows of doubt about "tailor-made" law, processes and individual interest favoritism. Timely transparency has an appealing effect on the volatile nature of



public perception, in contrary to the lack of transparency which, when discovered, harms the stakeholders' and due process reputation. The absence of a legal basis, regulation or other heteronomous legal or 'soft' sources of duly practice does not mean that utmost transparency is redundant. In fact, it goes without saying that business ethics principles, as well as common moral rules that apply to everyday life, are quite suitable for self-assessment before undertaking action. The thoughts of Peter Drucker (1981, p. 36) about society's rightful expectations that managers, executives, and professionals shun behavior they would not respect in others can serve as a reminder to ask ourselves the right questions at the right time. Indeed, the Agrokor case demonstrates that questioning just the legality of possible, alternative actions are not sufficient.

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ECONOMIC  
DEVELOPMENT,  
TECHNOLOGICAL  
CHANGE, AND GROWTH





# IMPORTANCE OF AN INVESTMENT ATTRACTION PLAN AND COMMUNICATION STRATEGY FOR THE ENTREPRENEURIAL ZONES OF SMALL CITIES

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## **Abstract**

*The primary goal of this paper is to define measures for attracting the investments and to develop a communication strategy for entrepreneurial zones of small towns and municipalities with a population of up to 15.000 inhabitants. The cities which develop an investment attraction plan have a key role in creating enticing entrepreneurial zones. This paper describes the most successful entrepreneurial zones in Croatia that are located in different regions. The comparison of Croatian cities with the best measures and communication strategies is presented. There are several significant factors for investors to make a decision about the entrepreneurial zone selection. Research on investors from different sectors has been conducted with the aim of improving the quality of incentive measures. Based on the results of the research, a case study of entrepreneurial zones in the town of Slatina was created. Slatina is located in Virovitica-Podravina County and it does not have well-developed incentive measures nor communication strategy. The case study includes current state analysis of entrepreneurial zones, a problem analysis, and SWOT analysis. A comparative view of entrepreneurial zones in Slatina and entrepreneurial zones in other, more developed cities, as examples of best practices, is made. An*



*investment attraction plan and communication strategy for entrepreneurial zones in cities and municipalities of up to 15.000 inhabitants have been developed, with measures, cost-effectiveness, their impact on employment growth and the impact on the annual budget of the city. Research results show the importance of planning and establishing quality measures, as well as a communication strategy that leads to potential investors. Successful investment attraction plan has a strong impact on the economic growth of the cities as well as the social impact driven by employment growth.*

**Keywords:** *entrepreneurial zones, investment attraction plan, communication strategy, small towns*

JEL Classification: M30, O16

## 1. INTRODUCTION

The impact of entrepreneurial zones and incentive measures is of great importance for local, regional and national development. With the aim of creating the value of infrastructure-equipped entrepreneurial areas and high level of location competitiveness, giving investors a number of incentive measures and benefits for the business of a particular environment recognize the importance and invest in them. The status of entrepreneurial zones in the Republic of Croatia will be best seen through an overview of incentive measures and facilitators for investors and the level of equipment for entrepreneurial zones.

The paper deals with the description and comparison of prominent entrepreneurial zones (Bakar Industrial Zone, PODI, Ivanec Industrial Zone, EIZ Nematina, Economic Zone Antunovac), which are the most successful in the Republic of Croatia. By investigating the main holders of attractiveness in the entrepreneurial zone, an analysis of the comparison of the most successful categories was conducted. The detailed presentation of the entrepreneurial zone in the town of Slatina rounds off the concept where an appropriate communication strategy can be applied which will provide current and future investors with the necessary information and guide them to the many advantages it provides.

The paper gives an insight into the description and comparison of entrepreneurial zones in the Republic of Croatia, which defines and clarifies the basic elements for an easier understanding of the investment process, entrepreneurial activities and incentive programs. The second part of the paper deals with a com-

parison of the main factors of the attractiveness of investment in entrepreneurial zones, which is defined as the most important for successful growth and entrepreneurship. Along with defining and comparing the main factors, the proposed Case Study presents the advantages and disadvantages of this entrepreneurial zone and gives suggestions for a communication strategy and improving the conditions for attracting new investors. Finally, conclusions are drawn on the basis of collected data that categorize and define the success of a particular entrepreneurial zone.

## 2. COMPARISON OF THE MOST SUCCESSFUL ENTERPRISE ZONES IN THE REPUBLIC OF CROATIA

In previous research authors Kadlec, Hetrih, and Bedeković (2018) defined that the task of small cities is to develop their strategies for attracting investment, also they have indicated the most attractive measures and incentives for inciting the investment environment in the entrepreneurial zones of small cities. Based on previous research, this paper conducted a case study on investment attraction plan and communication strategy. The Law on the Promotion of Entrepreneurial Infrastructure contains priorities and objectives that provide the need to encourage innovations and knowledge as well as to improve entrepreneurial infrastructure in entrepreneurial zones and encourage entrepreneurship and new employment (Narodne novine 2018). According to the Revised Audit Report on the efficiency of establishing and investing in equipping and developing entrepreneurial zones, investments in the development of entrepreneurial zones reached to approximately 3.5 billion Croatian kunas, mainly invested in documentation, land, as well as in infrastructure and the promotion of zones. Despite all of this, investments have not achieved the desired level of development and efficacy of most of the entrepreneurial zones in Croatia. The audit has provided recommendations for improving the development of entrepreneurial zones. The feasibility study for building a zone and researching investors' interest are some of the audit recommendations. The audit also provided recommendations for exemptions for entrepreneurs (communal fees and contributions etc.) and promotion of entrepreneurial zones (websites, brochures, attending fairs, etc.) (Državni ured za reviziju, 2014).

By comparing programs and measures to encourage entrepreneurship in the zones of a large number of Croatian cities, great similarities can be observed.

They are precisely reflected in the quality implementation and monitoring of the success of the measures and their adaptation depending on the specifics of each entrepreneurial zone. Some measures are aimed at empowering already existing entrepreneurs in the areas while others are more focused on attracting new investors. The paper presents measures to encourage entrepreneurship in five entrepreneurial zones that are located in different cities and different Croatian regions. Their programs include measures adopted by other Croatian cities, but the proactivity of local administration in implementing these measures and a quality communication strategy has brought these entrepreneurial zones to be one of the most successful in Croatia. The aim and purpose of entrepreneurial infrastructure and business environment and their improvement are "the creation of fully infrastructured entrepreneurial areas, high level of location competitiveness that includes the high quality traffic connections of these areas with major traffic routes, and the incentive measures and benefits system for these areas in the local, (regional) and national level within the Republic of Croatia (Narodne novine, 2018). "The selected entrepreneurial zones analyzed in this paper will be described precisely through the above-mentioned aspects as well as the incentive measures and benefits system proposed in the example of entrepreneurial zones in the town of Slatina. Defining Entrepreneurial Infrastructure as an Infrastructure, Incorporating Energy, Utility, Traffic and Communication Infrastructure, it is important to mention the available area of a zone that is defined by law as "a surface obtained by removing the area of land from the total area of a plot that is not intended for entrepreneurs but apply for example to roads, green areas, all types of pipelines, and the like." (Narodne novine, 2018).

Unlike available zones of an active entrepreneurial zone or its area, refers to the area where entrepreneurship has been initiated by an entrepreneur or to start construction work on it. Accordingly, in terms of the Law on Promotion of Entrepreneurial Infrastructure, Entrepreneurial Zones, according to the intensity of activation of available areas, is defined as follows:

1. Inactive entrepreneurial zones - where the degree of activation (occupancy for active entrepreneurs) of the available area of the zone is 0% (0 ha of the activated area of the entrepreneurial zone), after the first year of establishment of the entrepreneurial zone

2. Initial activation zones - where the degree of activation of the zone is <33% of the available area of the zone, expressed in hectares of the area of the entrepreneurial zone
3. Medium active zones - where the degree of activation of the zone is 33% <66% of the available area of the zone, expressed in hectares of the area of the entrepreneurial zone
4. Fully active zones - where the degree of activation of the zone is  $\geq 66\%$  of the available area of the zone, expressed in hectares of the area of the entrepreneurial zone (Narodne novine, 2018).

The Bakar Industrial Zone is located in the hinterland of Bakar, 10 km away from the town of Rijeka. The first activities on the construction of the zone started in 1975. One of the main advantages of this zone is its location and an exceptionally favorable geostrategic position, making it one of the best entrepreneurial zones in Croatia. The area has a high-quality road connection and is located on an extremely favorable geostrategic route that connects Central Europe with the Mediterranean (located on the Rijeka-Zagreb motorway and the planned Rijeka-Split motorway, as well as the motorway connecting Rijeka and Trieste). The Bakar zone is only 3 km away from the harbor-traffic knot in Bakar. The railway station Škrljevo is in the immediate vicinity of the zone and connects the zone with the main cities of Slovenia and Croatia, ie Ljubljana and Zagreb. The airport of Krk is 10 kilometers away from the zone.

In the immediate vicinity of the zone is also a land transport network for connection to the LNG terminal in Krk, which will provide additional gas supply (Industrijska zona Bakar, 2019). The industrial zone Bakar on Kukuljanova became the central zone of Primorsko-goranska county and is considered as the most advanced Croatian zone. More than HRK 120 million has been invested in the development of the area, and new investments are also underway in the area's roads and other supporting infrastructure with the aim of faster development of entrepreneurship (Glojnarić, 2016).

The area was built on a total area of 500 ha, of which 225 ha of the free area is currently available. The number of employees in the zone is 3,500 to a total of 150 entrepreneurs, or user zones. The zone is infrastructurally equipped with a water supply system for sanitary water, high voltage network, modern TT network, gas and a split sewage system of rainwater and fecal water. In the brochure of the entrepreneurial zone as one of the most important advantages

for investors, the possibility of repurchase or establishment of building rights, land repayment up to 24 equal monthly installments, the possibility to operate in the free zone regime, the release of utility contributions, compensations and benefits for entrepreneurs engaged in manufacturing activities. There are three types of activity in the zone: production (28%), trade (22%) and service (50%) (Katalog industries zone Bakar, 2019).

The price of the land for sale is determined by the price list of services and is determined by the multiplication of the cost with the coefficient of the type of activity, which for production activities is 1,00 and for the services 1,20. The basic price of land ranges from 66 € / m<sup>2</sup> and is determined depending on the level of equipment of the land, which is divided into two groups. According to the price list, it is possible to determine additional price differences based on demand and market opportunities, and estimates for the management of the industrial zone. The lowest starting price of the fee for establishing the right of the building and land tenure is 0.35 € / m<sup>2</sup> and is determined based on the price of the cost and the coefficient based on the degree of equipment (Cijenik za 2019. godinu, 2018).

Entrepreneurial zone Podi is the largest in Croatia by its surface and is considered the most promising zone due to its location close to the motorway, the seaport and the railway, but also because of the strong support of the local community. Entrepreneurial promotion measures in this zone include the release of municipal contributions, a reduced land price of EUR 5 per sqm, as well as obtaining permission from investors for local self-government. The area includes investors from Croatia, Slovenia, Germany, Austria, Italy and the Netherlands (Glojnarić, 2016). The planned area of the zone is 550 hectares, 130 hectares have been built and 100 hectares are available in the zone. All the parcels in the zone are fully equipped with infrastructures, and the most important advantages of the zone are the traffic connections, ie the connection of the motorway zone over the 4 km long local road and the connection to the state road D-58. Near the same area, there are two airports, Trogir, 50 km away and Zemunik 45 km away. Water supply and drainage system have been set up, and the availability of electricity is extremely important for investors investing in production plants. Currently, 5 MW is available in Podi Zone, and an extension of 30 MW is planned. There is also an optical telecommunication cable available in the zone, which is a very important factor in the attractiveness of the zone. The port

and railway terminal are 5 km away from the industrial zone (PODI - Industrijska zona Šibenik, 2019).

**The Ivanec Industrial Zone** is located along the main roads of the state road D35 and between the Macelj-Zagreb and Varaždin-Zagreb motorways. In the immediate vicinity of the railway line, one of the advantages of the zone is the proximity of the border with Slovenia. The location advantage of this zone is its geographic position in one of the most economically developed counties of Croatia, 22 km away from Varaždin and about 80 km from Zagreb. The surface area of the industrial zone is 30 ha and the maximum surface area is 18.5 ha. So far, 3 ha has been bought by private investors. The main advantages of this zone are its geostrategic position, exemptions, and privileges for investors, competitive land prices and the possibility of expansion. The area is equipped with drainage and sewerage system, gas connection, electricity connection, DTK and telephone installations, and within the zone are asphalted roads.

The Town of Ivanec and the Ivanec Industrial Zone defined the greenfield and brownfield investment facilities. Land price ranges from 10 to 17 € / m<sup>2</sup> and additional reductions for new jobs are possible. This industrial zone for greenfield investment offers the service of buying land for a well-known investor and fixing of property rights, which significantly accelerates the investment realization process. When obtaining building permits, entrepreneurs are relieved of the costs of land conversion in their entirety. The area is also offered permanent disbursement of municipal contribution payments for greenfield investments, which is a significant exemption for investors investing in larger production facilities. In the case of investments, entrepreneurs are exempt from payment of communal fees in their entirety for the first 5 years of business, which makes this zone more attractive than most other because the other zones have been released in a way that they are released in 100% only in the first year, while in other for years of lower rates of liberation. For brownfield investments, entrepreneurs can also obtain exemptions from paying utility fees in full for a period of 5 years, and a 15% communal contribution, with the option of an hourly repayment. The exemptions for brownfield investments relate exclusively to investments in the manufacturing industry (Poslovna zona Ivanec, 2019). Although entrepreneurial zones in the town of Ivanec are not large, their advantage over other zones in Croatia, but also widespread is a good entrepreneurial climate, local government efficiency, and an excellent communication strategy. In addition to this, the acknowledgment that this city gained in contributing to

entrepreneurship and communication with investors, among which one should be ranked first in the list of top 10 small European cities with the best foreign investment attracting strategies awarded to one of the most authoritative world magazines of specialized for business, Financial Times. Several times, the town of Ivanec was awarded the BFC SEE (Business Friendly Certificate in South East Europe) certificate (Grad Ivanec, 2019). Ivanec is a good example of how cities with fewer than 15,000 people can establish quality measures to encourage entrepreneurship despite small budgets.

The administrative services offered by this entrepreneurial zone and the town of Ivanec further multiply the impact of measures to encourage entrepreneurship. Investors in the area offer expert assistance in realizing investments, privileged pricing and EU project implementation, and free education, counseling and promotion organizations. Entrepreneurs in the zone also offer membership in the “Ivanec Business Club”, which offers them the possibility of joint participation with EU institutions, banks, ministries, and interest groups.

Eco-Industrial Zone Nemetin is the first green economic zone in Croatia and is located close to the town of Osijek. The total area of the zone is 101 ha and the parcels are from 2,500 to 50,000 m<sup>2</sup>. Entrepreneurs have in EIZ Nemetin electric and thermal energy from renewable energy sources, ie biogas plants available. EIZ Nemetin has a great traffic connection, and the advantage of the zone is also the proximity of the border with Hungary and Serbia (Industrijska zona Nemetin, 2019). The corridor VC is 26 km from the zone, the airport is 8,4 km away, the river port Osijek is 2.4 km away and the railway passes through the area (Industrijska zona Nemetin – pogodnosti, 2019). The area is fully equipped, the land is offered at reduced retail prices, and it is possible to realize the right of construction with an annual fee of 1.00 kn / m<sup>2</sup> up to 36 months after the construction contract has been concluded. It is also possible to realize the benefit of a flat-rate repayment of municipal contributions (Glojnarčić, 2017). The reduction of land prices is realized by priority activities or by NKD groups that are preferable to enter the industrial zone. The allowances range from 30% for the first group, 10% for the second and 5% for the third group. Additional price reductions can be made by export-oriented entrepreneurs, investors who open up new jobs, and between 70% and 90%, the price of land for entrepreneurs investing over € 1m can be lowered. The price of the land will be reduced only by employees residing in Osijek on the basis of job openings (Industrijska zona Nemetin – program olakšica i poticaja (2019).



The economic zone of Antunovac is decorated and equipped with private capital resources, and in it, there are 7 business facilities built on 14 hectares of land, and another ten new ones are planned (Glojnarić, 2017). The economic zone has a favorable geotraffical location and is located along the southern border of Osijek, near the A5 motorway and the future corridor of the expressway Varaždin-Ilok, which will be connected to the corridor VC (Budapest - Sarajevo - Ploče). The Osijek-Vinkovci railway line and state road D 518 are located along the same area. The size of the plot ranges from 1,500 to 10,000 m<sup>2</sup>, and all the parcels are completely equipped with energy, traffic, communal and internet, and telecommunication infrastructure. Gas is available from other infrastructure in the zone, access roads and traffic infrastructure are built within the zone, water supply installations, rainfall drainage, and industrial sewage are installed. Entrepreneurs in this Economic Zone offer a reduction of the communal contribution ranging from 0 to 15 kn / m<sup>3</sup>. The water contribution for the production activity is 1.90 kn / m<sup>3</sup>, and 15.75 / m<sup>3</sup> for the business activity. In the Economic Zone, entrepreneurs are provided with credit lines for financing land, buildings, documentation, and utilities, and offers the possibility of co-operation on a “turnkey” basis (Gospodarska zona Antunovac, 2019).

### 3. ZONE ATTRACTIVENESS FACTOR WITH SUCCESSFUL EXAMPLES

For the purpose of defining key factors and incentives for entrepreneurship, surveys were conducted through questionnaires on the representatives of cities that manage entrepreneurial zones and entrepreneurs operating in these zones in order to obtain an overall analysis of the zones’ status and the attractiveness of each zone.

#### 3.1. ANALYSIS OF LOCAL SELF-GOVERNMENT UNITS

The first part of the survey refers to managers in entrepreneurial zones from the cities of Ivanec, Bakar, Osijek, Šibenik and Slatina and from the municipality of Antunovac. Based on the key advantages that stand out in their entrepreneurial zones, all respondents except the town of Slatina have highlighted the most important traffic infrastructure. All cities highlighted the availability of energy and professional staff and communal equipment as the main advantages



of communicating to potential investors. As the two most important factors for which investors select their entrepreneurial zone, all cities have chosen the equipment of the entrepreneurial zone and the assistance (proactivity) of local self-government and support institutions. The second most important factor that all respondents have chosen is the availability of energy in the zone. It is interesting to note that the traffic infrastructure factor at Slatina and Ivanec is at the last place, while in contrast to other respondents (Osijek, Bakar, Antunovac and Šibenik have put the traffic infrastructure in the high place by importance). In the second part of the survey, it was examined which incentive measures were introduced in their entrepreneurial zones, in Table 1, a comparison of the use of individual measures in 6 local self-government units.

**Table 1.** Incentive measures and exemptions in entrepreneurial zones

	Antunovac	Ivanec	Bakar	Osijek	Šibenik	Slatina
Reduction in land sale prices	YES	YES	YES	YES	YES	NO
Communal rates exemption	YES	YES	YES	NO	YES	YES
Communal rates exemption	NO	YES	YES	NO	YES	YES
Reduction of Fees for Construction rights	NO	NO	YES	YES	YES	NO
Incentives for recruiting new workers	YES	NO	YES	YES	YES	NO
Grants for the purchase of new equipment	NO	NO	YES	NO	YES	NO

**Source:** Author's work

Table 1 shows that measures to encourage incentives are generally reduced to purchase price and exemption from communal fees and contributions. These measures are most commonly used by other cities in Croatia, and one of the reasons is that these exemptions do not require additional budget expenditures, but cities in this way give up part of their income by selling land or collecting fees.

The last part of the survey deals with exploring ways in which local self-government units come to potential investors. The first in the marketing toolkit is the Internet, or websites, social networks, and other channels. The second most important tool is the brochure of entrepreneurial zones. All JLS, except Slatina, use advertising campaigns and videos as a promotion, while other tools such as fairs, conferences, and performances on TV and radio stations are used occasionally.

### 3.2. ANALYSIS OF ENTREPRENEURS OPERATING IN ENTREPRENEURIAL ZONES

The second part of the survey was conducted on a sample of 37 entrepreneurs operating in entrepreneurial zones in six local self-government units (cities Ivanec, Bakar, Osijek, Šibenik and Slatina, and Antunovac municipalities). The research was conducted on entrepreneurs from the manufacturing and processing industry, IT sectors, transport and logistics, and other service activities. According to the number of employees 72.9% of entrepreneurs belong to micro enterprises (0-9 employees), while 13.5% of entrepreneurs belong to small enterprises (10-49 employees), and the same percentage 13.5% belong to medium-sized enterprises (50-249 employees). The first part of the analysis concerned the entrepreneur's satisfaction with the location of the entrepreneurial zone in which they are located. The current location encompassing all the important factors, entrepreneurs from all zones rated the average rating of 4.05 out of 5. The lowest rating of their location was estimated by entrepreneurs in entrepreneurial zones in Slatina and 3.82 out of 5. The respondents are most satisfied with the level of availability of energy in their zone, while the second factor with which the most comfortable communal equipment of entrepreneurial zones is, which means that the zones have quality infrastructure. When comparing the results of an entrepreneurial survey with the results obtained on the basis of research on JLS representatives, it is clear that the results are similar, which means that zone managers are well aware of the needs of entrepreneurs located in those zones. As the most important factors in making a decision, the respondents point out the three most important ones: zone availability (4.3), availability of energy (4.49) and availability of professional staff (4.3), ie workforce. The last part of the survey referred to the analysis of the most important incentive measures for entrepreneurs. As the two most important stimulus measures, respondents pointed out incentives for recruiting new workers and grants for the purchase of new equipment (4.95), and secondly, they were exempted from utility contributions (4.24) and communal fees (4.30).

What can be deduced from the conducted research is that the results that speak of the key factor of the location and the most important incentive measures for entrepreneurs largely coincide with both groups of respondents. Such results are evidence that these entrepreneurial zones are among the most successful in Croatia because they have recognized the needs of potential investors and based on these needs developed a high-quality set of measures that affect a

favorable entrepreneurial climate. The only disadvantage in most of the entrepreneurial zones is that there is no support for investment in equipment and facilities, which the contractors point out as one of the most important measures, but one of the reasons is significant budget outlays required by this measure. When looking at the satisfaction rating of the location of entrepreneurs located in entrepreneurial zones in Slatina, it is evident that it is lower than the other respondents, positively correlating with the fact that the entrepreneurial zones in Slatina do not have a clear program of incentives for entrepreneurship and communication strategy.

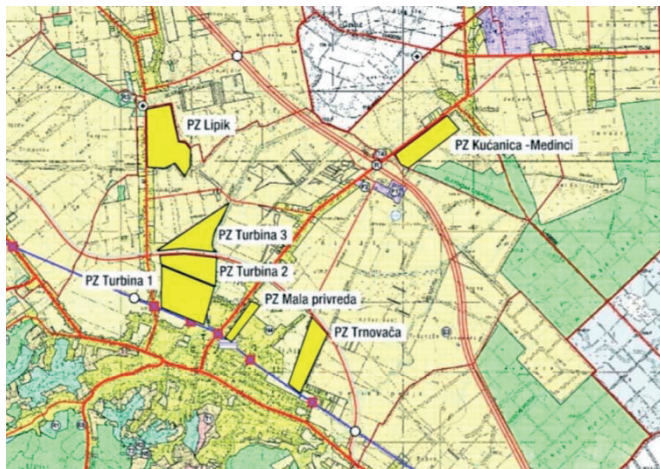
#### **4. CASE STUDY - ENTREPRENEUR ZONE IN THE TOWN OF SLATINA**

For the purpose of producing a good case study, an interview with representatives of the town of Slatina was conducted on the basis of which the authors received all the key information about entrepreneurial zones and entrepreneurship promotion measures. The town of Slatina does not have a well-developed communication strategy that would attract potential investors, which is one of the reasons for the weakness of the zone. At the moment of writing this paper, measures to promote entrepreneurship in Slatina were not developed, but there is a proposal for measures that are in the public consultation process. The Case Study is based on the activities that need to be undertaken with the aim of developing quality measures and communication strategies for small local self-government bodies that do not have high budgets. According to the Town Development Strategy of Slatina, Slatina has 7 entrepreneurial zones, of which the Small Economy Zone is completely filled, while all other areas are partially completed or are only in the construction phase. Of the activities in the zones, the largest share includes the manufacturing industry which accounts for 18.37% of the total number of entrepreneurs and 50.55% of the total employment. Agriculture is also significant activity in the town of Slatina, and according to data obtained on the basis of interviews with representatives of the Town of Slatina, 467 OPGs are currently in the area of the town. In 2018, the number of companies is 210, out of which 16 are new. The number of crafts in 2010 was 327, of which 45 were newly founded (Strategija razvoja grada Slatine, 2016).

#### 4.1. ANALYSIS OF THE STATUS OF ENTREPRENEURIAL ZONES IN SLATINA (EQUIPMENT, OCCUPANCY, OWNERSHIP RELATIONS, INVESTMENT INCENTIVES MEASURES)

According to the data of the representative of the city of 7 entrepreneurial zones 5 are in operation, and 2 zones are inactive, ie in preparation for construction (Turbina 3 and Lipik). The problem that occurs in the zones is the weak entrepreneurial activity and the small area of the fully-equipped zones. The two entrepreneurial zones in Slatina, according to the Law on Promotion of Entrepreneurial Infrastructure, can be considered fully active, namely PZ Small Economy and PZ Turbina 1. Zone Turbina 2, and Kućanica-Medinci are in the middle active, while Trnovača zone in initial activation. Figure 1 shows the plan and arrangement of entrepreneurial zones in the town of Slatina.

**Figure 1.** The plan of the business zones in the town of Slatina



Source: [www.slatina.hr](http://www.slatina.hr) (28.12.2018.)

From the table below in the business zones that are in operation, it is apparent that most of the particle has already been sold, but the problem is that on a small number of particles entrepreneurship has been launched.

**Table 2.** Infrastructure Equipment of Entrepreneurial Zones in Slatina

	PZ Trnovača	PZ Turbina 1	PZ Turbina 2	PZ Turbina 3	PZ Mala Privreda	PZ Kućanica-Medinci	PZ Lipik
Total area (ha)	24,60	25,00	23,90	23,00	10,00	25,00	45,00
For sale (ha)	3,10	0,00	1,40	19,00	0,00	3,50	25,00

**Source:** Author's work

According to data from Table 2, the total area of all 7 zones, including the areas under preparation, is 176.50 ha, and available for sale is 52.00 ha. In areas currently in operation, only 7 hectares are available for sale, while the remaining area available for sale is available in zones that are in the construction phase.

**Table 3.** Infrastructure Equipment of Entrepreneurial Zones in Slatina

	PZ Trnovača	PZ Turbina 1	PZ Turbina 2	PZ Turbina 3	PZ Mala Privreda	PZ Kućanica-Medinci	PZ Lipik
Drainage system	○	●	◉	○	◉	○	○
Gas	○	●	●	○	○	◉	○
Telecomm. infrastructure	○	●	◉	○	◉	○	○
Internet	○	●	◉	○	◉	○	○
El. energy	●	●	●	●	●	●	●

Legend:

- Fully equipped
- ◉ Partially equipped
- Not equipped

**Source:** Author's work

Along with all the other areas that are not fully equipped, the gas pipeline and telecommunication infrastructure pass through. According to the Town Development Strategy of Slatina, the weak construction of the sewerage network is a limiting factor for economic development in entrepreneurial zones due to the lack of connecting collectors over which the sewage network could expand into economic zones (Strategija razvoja grada Slatine, 2016). According to the data obtained from the representative of the city of Slatina, this problem will be resolved within the framework of the agglomeration project being implemented. The energy system in the town of Slatina is well developed and the main substations are in a good position with respect to the entrepreneurial

zones, and also the investors who have opened the plants to renewable energy sources in the zones. The greatest advantage of entrepreneurial zones in Slatina is the availability of energy, especially those obtained from renewable sources. Electricity capacity in Slatina is 80 MW, and all energy facilities have been renewed and provide secure supply and delivery of energy (Strategija razvoja grada Slatine, 2016).

In the entrepreneurial zone of Kućanica-Medinci, there are two energy obtaining plants from renewable sources and one in Trnovača's entrepreneurial zone. The Biogas plant of Biointegra Slatina is located in the Kućanica-Medinci area with a power plant capacity of 2.4 MWh, or about 20 GWh per year (Biointegra, 2019). In the same zone, there is also a solar power plant with an annual capacity of 565,000 kWh (Sunčana elektrana Sinerot, 2015). The Cogeneration timber felling plant Energy 9 is located in Trnovača's entrepreneurial zone, and the capacity of the plant is 5 MWh or 40 GWh per year (Resalta, 2019). Biomass plants have a production capacity of about 25 MW of heat, of which part is consumed in their own production, and some may be used for the operation of other plants. In addition, in Slatina, there are potential sources of geothermal water with recorded water temperature up to 190 ° C. The energy capacities available to entrepreneurs in Slatina with a quality communication strategy can be extremely attractive to new investors.

The traffic connections between Slatina and Virovitica-Podravina County with motorways and expressways are one of the biggest drawbacks to the attraction of their zones. According to the Development Strategy of the Town of Slatina (2016), three state roads pass through Slatina: Varaždin-Osijek (D-2), Daruvar-Donji Miholjac-Josipovac (D-34) and state road Slatina-Požega-Pleternica (D-69). The problem of traffic connections in the local sense has been successfully resolved by building a 10.2 km long bypass and one 1.1 km long mini bypass. Along the edge of the entrepreneurial zones, Trnovača and Turbina 1 passes the Varaždin-Koprivnica-Virovitica-Osijek-Dalj railway line, which provides a direct link to the most important economic centers in Croatia. Airports are considerably distant from the entrepreneurial zones in Slatina, and the closest airport within the borders of Croatia is that of Osijek, 96 km away. The nearest international airport is located 75 km from the entrepreneurial zone in Slatina and is located in Pécs (strategija razvoja grada Slatine, 2016).

#### 4.2. A SWOT ANALYSIS OF ENTREPRENEURIAL ZONES IN THE TOWN OF SLATINA

In the SWOT analysis (Table 4) of the entrepreneurial zones as a substrate, the data from the Town Development Strategy of Slatina and the data from the conducted interviews with the representatives of the city were used. The main weaknesses of entrepreneurial zones are reflected in poorer communal facilities and the lack of communication strategies, while the most important strengths and opportunities relate to the natural potentials of entrepreneurial zones in Slatina and the availability of energy.

**Table 4. A SWOT analysis of entrepreneurial zones in Slatina**

STRENGTH	WEAKNESS
<ul style="list-style-type: none"> <li>• The tradition of Manufacturing, Textile and Wood Industry</li> <li>• Availability of free surfaces gospodarskih zona</li> <li>• The ability to use existing business facilities (brownfield investments)</li> <li>• High-quality energy grid for acceptance and extra energy production</li> <li>• Availability of renewable energy sources</li> <li>• Preserved environment (soil, water, air)</li> <li>• Pre-qualification in the function of the economy – harmonization of the program of the Public University with the labor market</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient number of startups</li> <li>• Low entrepreneurial activity and insufficient equipment of entrepreneurial zones for attracting entrepreneurs</li> <li>• A small number of innovative entrepreneurs and initiatives</li> <li>• Low competitiveness of entrepreneurs</li> <li>• Insufficient construction of sewage and sewage treatment systems in entrepreneurial zones</li> <li>• Lack of communication strategy</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>• Possibilities for investing EU funds in the infrastructure of entrepreneurial zones</li> <li>• Providing incentives for youth employment</li> <li>• Connecting with cities in the environment to enhance competitiveness Construction of an entrepreneurial incubator</li> <li>• Establishment of a program of measures to encourage entrepreneurship</li> <li>• Investing in energy self-sustainability and renewable energy sources</li> </ul>	<ul style="list-style-type: none"> <li>• Emigration of young people</li> <li>• Traffic isolation due to insufficient involvement in fast roads and motorways</li> <li>• Close to cities with a competitive industry and better transport links</li> <li>• Frequent changes to legal regulations</li> </ul>

**Source:** Authors work



### 4.3. DEVELOPMENT OF INCENTIVE MEASURES AND COMMUNICATION STRATEGY

At the time of writing this paper, the web site [www.slatina.hr](http://www.slatina.hr) announced a public consultation on the development of entrepreneurship promotion measures in the town of Slatina. Measures to promote entrepreneurship in entrepreneurial zones in the town of Slatina will include, in one part, the measures that are on public consultation, but the focus of these measures is only on the activities that are to be stimulated in entrepreneurial zones. In order to achieve a better impact of the measures, it is necessary to establish a list of priority activities to be promoted in entrepreneurial zones, which will be divided into 3 groups (no specific activity list will be included in this paper). A list of priority activities should be applied to all exemptions defined by the program, and where applicable. The reduction in land prices and the exemption of utility contributions and remuneration can only be achieved by entrepreneurs who open new facilities in entrepreneurial zones or existing entrepreneurs only in the case of release for new employment.

*Measure 1. Reduction of the price of communally-equipped land* - The lowest land price can be at least 1 kn / m<sup>2</sup>, and the exemption from payment of part of the land price will be defined in three groups of exemption: by priority activity groups, for the employment of new employees residing in the area of Slatina and towards export orientation.

*Measure 2. Exemption from payment of communal fees* - Exemptions from payment of communal fees can be made by entrepreneurs based on the list of priority activities, for new employment and for launching brownfield investments, namely:

1. For the 1st priority activity group 100% for the first 5 years, for the 2nd and 3rd priority activities 100% in the first year and 50% for the second and third year of business

2. For entrepreneurs employing 10 or more employees residing in the area of the town of Slatina 100% in the first year, 50% in the second and third

3. 100% in the first 5 years for brownfield investments in the first 3 groups of priority activities



*Measure 3. The release of payment of municipal contribution* - Exemption of payment of utility contributions can be achieved according to the list of priority activities and for new employment.

*Measure 4. Procurement subsidy and installation of new machinery and equipment* - The measure of subsidies for machinery and equipment has been shown to be the most attractive measure among the entrepreneurs, due to the small number of sources available for funding such projects. The grant intensity may be up to 50% of the eligible activities, up to 50.000,00 kn per year for manufacturing activities, while the highest amount for the service and other activities is up to 10.000,00 kn per year.

*Measure 5. Subsidizing the start-up of entrepreneurial activity of beginner entrepreneurs* - This measure may be used by entrepreneurs in the first three years from the beginning of the business, provided that at least one employee is employed for an indefinite period by the applicant. The grant intensity may be up to 50% of the eligible activities, up to 30.000,00 kn per year for manufacturing activities, while the service and other activities are awarded the highest amount up to 10.000,00 kn per year (one entrepreneur can only use this measure once).

*Measure 6. Subsidizing* The Croatian Institute for Health Insurance and Croatian Pension Insurance Institute obligations to employees in the first year of activity or after a larger investment employing at least 10 workers residing in the area of the town of Slatina - The costs of pension and health insurance can be subsidized in the amount of 50% of the cost with the obligation to retain the minimum number of employees at the time of granting the aid throughout the subsidized year.

*Measure 7. Administrative Aid to Investors in Realization of Investments* - This measure encompasses assistance to investors in resolving property rights, obtaining building permits, releasing land conversion costs in full if it is converted for the purpose of carrying out the activity on the established priority list. Entrepreneurs in the area will also offer more favorable preparation and implementation of EU projects. These measures are key to accelerating investment and boosting activity in entrepreneurial zones.

In the town budget of Slatina in 2019, HRK 1.495.000,00 was provided for measures to encourage entrepreneurship. This amount is intended to implement measures 4, 5 and 6 from the incentive program, and the creation of a score list should give priority to projects that will generate new employment.

The plan of revenues from utility contributions and compensation in 2019 amounts to 6,906,588.00 kn. In 2018 there were no exemptions from the payment of utility contributions, and from the payment of the communal fee was exempted from 5 business entities, with a total of 98,453.06 kn. The implementation of these measures is expected to have a significant effect on the increase in employment, with the emphasis on employment of employees residing in the area of the town of Slatina. By implementing measures 5 and 6 of the incentive program it is expected that 20 new jobs will be generated annually. The estimate was based on the number of newly established companies (trades and companies) in 2018, of which were 61, and estimates were taken into account that only one-third of newly established companies generate one new job. Due to weaker entrepreneurial activities in entrepreneurial zones and on the basis of data on the exemptions from the payment of communal fees in 2018 it is expected that as part of Measures 1, 2 and 3 to generate 30 new jobs per year, which would be based on the existing number of open enterprises in the town of Slatina, 0.5 new jobs per entrepreneur per year. The estimated employment impact assessment was determined by the conservative method given the incentive measures only at the start-up stage (Grad Slatina, 2019).

#### 4.4. COMMUNICATION STRATEGY

Based on the results of the research carried out within this paper, the most important factors for making a decision on investing in the zone are equipment of the zone and availability of electricity and professional staff. In the SWOT analysis of entrepreneurial zones in Slatina, as well as the availability of renewable energy sources and the alignment of educational programs with the labor market, in Virovitica-Podravina county there is a high school with programs that monitor the labor market and develop high-quality human resources. According to the Town of Slatina Development Strategy, the vision for the urban area of Slatina is "Slatina is an energy-efficient city with a developed business climate, preserved natural heritage and cultural content to the satisfaction of its citizens". It is precisely on energy sustainability and the development of the entrepreneurial climate that it is necessary to build a communication strategy. The main tools to be used to implement the communication strategy are the website of the entrepreneurial zones and brochures that proved to be the best communication tools for targeted investors in Croatia's most successful cities. Since Slatina does not have an entrepreneurial zone website where it will provide all

important information to entrepreneurs, it needs to be created. Publicly available entrepreneurial brochures have not been updated for years and the data is out of date. The activities planned to be implemented as part of the improvement of the communication strategy will be listed below, while the development of the activities takes into account the city budget which is limited in capacity as the units of local self-government are up to 15,000. Based on the results of the research and vision of the city itself, all communication activities will be aimed at promoting communally-equipped zones, the availability of renewable energy sources and the availability of professional staff.

**Activities:**

1. Creating an entrepreneurial zone website in Slatina with all important information for investors
2. Creating a map of entrepreneurial zones in the GIS system that will be on the website and will contain all the information on the urban plan, zone regulation planned projects and the state of the communal infrastructure (drainage, telecommunication infrastructure, transport infrastructure ...)
3. Creating brochures for entrepreneurial zones for investors that include all exemptions for entrepreneurs, investment guides and the main advantages of entrepreneurial zones
4. Entry of all zones into the database of the Single Business Register of Entrepreneurial Infrastructure (JRPI)
5. Performances at trade fairs and crafts The aim of these activities is to promote entrepreneurial zones in the town of Slatina as high quality communally equipped and energy-self-sustainable zones with a focus on the availability of renewable resources and professional staff.

## 5. CONCLUSION

Investing in a communal building of entrepreneurial zones starts the cycle of attracting investments and creating a favorable entrepreneurial environment in cities and municipalities. There is a large number of entrepreneurial zones in Croatia, which is a real challenge and seeks competition between local self-government for the best investors. Entrepreneurial zones imply a certain level of communal and infrastructure equipment to start the entrepreneurial activity,

and precisely the programs of measures and exemptions play a major role at the level of entrepreneurial activity within the zone.

The paper included a comparison of 5 cities and one municipality whose incentive measures and liberation among the best in Croatia. When selecting the most successful zones, their regional distribution was also taken into account in order to cover all the Croatian regions. Measures and programs to promote entrepreneurship with a large number of local self-government are similar, but the proactivity of local self-government is what separates them from those who are less successful. Among the most successful cities and municipalities, a sample of respondents was selected, covering two surveys on one sample of 6 representatives of local self-government and entrepreneurial zones and 37 entrepreneurs operating in these areas. Research has revealed key factors for investor decision making, which largely relate to communal equipment, availability of energy, and availability of skilled labor. Research has shown that the most successful entrepreneurial zones are well aware of the needs of entrepreneurs in their business and, on that basis, elaborate quality measures and exemptions.

After defining the status of entrepreneurial zones in Slatina and developing a SWOT analysis defining the starting points for the elaboration of measures and exemptions in entrepreneurial zones, they started to elaborate on them. Through 7 measures, the exemptions are defined based on the list of priority activities that are to be encouraged in the zones and the granting of grants for subsidies for workers' obligations. A quality set of measures has been rounded up by the communication strategy and by defining key activities to achieve a more favorable investment environment by promoting the main advantages of entrepreneurial zones in Slatina. This paper provides an example of approaches to the development of incentive measures and communication strategies that are made from fundamental analysis through the definition of key forces and opportunities to implement concrete activities. Emphasis is placed on cities and municipalities of up to 15,000 inhabitants due to limited budget resources that could be put into the function of developing entrepreneurial measures. Each strategic process and document begin with an analysis at the planning stage and ends with setting the mechanisms for monitoring the implementation. In this paper an extensive fundamental analysis was conducted, the investor's interest was examined and based on the results, incentive measures and communication strategy were adopted. The results of the Revised Audit Report on the efficiency of entrepreneurial zones have shown that significant resources have

been invested in the established entrepreneurial zones, but many of them didn't achieve the desired effects, and therefore high-quality mechanisms should be established to improve the efficiency of their implementation. Further research should focus on the development of mechanisms to monitor the implementation of established incentive measures and communication strategy, with the aim to achieve the desired level of efficacy and development of entrepreneurial zones.

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## ENTREPRENEURIAL AND INNOVATIVE POTENTIAL OF THE CREATIVE INDUSTRY

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### **Abstract**

*The cultural and creative sectors have always played an important role in the creative economy generating economic growth, employment opportunities, and innovation capacities. In order to strengthen European identity, culture, and values, the creative industry has a significant role in enhancing entrepreneurial and innovative potential. Although the cultural and creative sector is characterized by a predominance of small enterprises, the majority of enterprises are one-person-enterprises. In comparison to other sectors, due to their generally smaller size, they are knowledge-intensive, generators of innovation and in a position to foster spill-over effects to other sectors. With regard to their specific characteristics, a high share of intangible assets, specificity of their business models or uncertain demand for their products and services, they also face*

*various challenges, limiting them from improving their full potential. The European Commission has recognized and undertaken a variety of initiatives and actions in order to provide support to the creative industry. Specifically, one of four priority area in Work Plan for Culture (2015-2018) concerns the cultural and creative sectors, the creative economy and innovation. This paper highlights the prominent role of creative industry and its still scarcely explored entrepreneurial and innovative potential contributions to the on-going debate on the creative industry as indispensable part for almost every new product and service.*

**Keywords:** *creative industry, entrepreneurship, innovation, business models*

JEL Classification: L26, O30

## 1. INTRODUCTION

Culture and creativity are important factors for economic development. Due to the broad range of impacts that they can generate, they promote creative entrepreneurship, show above-average growth and create new employment opportunities, while stimulating economic growth and strengthening social cohesion (EC, 2018). As such, the creative industry has been one of the successes of the UK economy in recent times. Over the past 20 years, the contribution made by companies within these industry has increased from 3.96% to 5.20% of the total UK economy, while the number of employees working in this industry has also increased by 94%, from 1997 to 2014 (Oliver, 2017). Further, 13% of all start-ups in Germany occurred in creative industries in 2010, whilst, the self-employment rate in creative industries was 24%, compared to 11% in the total economy in Germany in 2013 (Kohn and Wewel, 2018). Furthermore, between 2011 and 2017, European Union cultural employment increased up to 8.7 million employees, accounting for 3.8% of total employment. In 2017, the percentage of self-employed in cultural employment in the EU was at least a double of that observed in total employment (Eurostat, 2018). According to Eurostat, there was 8.7 billion Euros trade surplus in cultural goods, and cultural and creative sectors are estimated to contribute with 4.2% to EU gross domestic product in 2016 (EC, 2018a). In Croatia, culture and creative industries represent 2.3% of Croatian GDP, 3.0% of the total number of employees, and makeup to 5.7% of the total number of business entities in Croatia (EIZ, 2015).



“Cultural and creative industries are at the heart of the creative economy: knowledge-intensive, based on individual creativity and talent, they generate huge economic wealth and preserve European identity, culture, and values. Moreover, they include a number of subsectors, such as architecture, archives, and libraries, artistic crafts, cultural heritage, design, fashion, film, high, end, music, performing and virtual arts, publishing, radio, television, and video-games”(EC, 2018b).

There is no unifying European or global classification of the creative industry sector. In UNESCO’s analysis (UNESCO, 2013), different models of division of the sector and their relevance to the creative industry were set out, from which the researchers highlight four basic models of the creative industry: DCMS Model, Symbolic Texts Model, Concentric Circles Model, and WIPO Copyright Model. Analyzing European approaches in defining the creative industry, KEA (KEA, 2006) outlines three European approaches: UK approach - “creative industries”, The French approach - “cultural industries” and The Nordic approach - “the experience economy”. UNCTAD defines the “creative economy” as a “growing convergence on a core group of creative industries and their overall interactions both in individual countries and at the international level” (UNCTAD 2010, 9). In defining creative industry Horvat et. al. (2018) emphasize that the creative industry implies copyrighted production covered by the projects generating non-material products and services intended for market exchange.

According to the European Commission, cultural and creative sectors include all sectors whose activities are based on cultural values or artistic and other individual or collective creative expressions. On the other hand, the cultural and creative industries, focus more on the further stages of the value chain, including the production and dissemination stages of industrial and manufacturing operations (EC, 2018c).

Whatever we addressed them, they are at the forefront of innovation and create spillover effects to other sectors and industries, as well as contributing to the entire society. Hence, with the emergence of more complex and networked business models, the cultural and creative sectors are becoming a decisive component in the value chain of almost every product and service (EC, 2018c). There is a binding role of the European Commission in strengthening the sense of European Identity and awareness of cultural heritage. In the Communica-

tion of the European Commission “Promoting cultural and creative sectors for growth and jobs in the EU” (EC, 2012), the European Commission stated that cultural and creative sectors are a largely untapped resource for the EU 2020 strategy because they are high growth sectors, catalysts for innovation as well as a key element in global competition (EC, 2016). In 2014, EC adopted the Work Plan for Culture (2015-2018) in which set out four main priorities for European cooperation in cultural policy-making. One of them concerned the Cultural and creative sectors, the creative economy and innovation (Priority area C: Cultural and creative sectors: Creative Economy and Innovation). These are complemented through a variety of actions and initiatives, the Creative Europe Programme and funding from other Commission sources. In 2018, EC adopted the New Agenda for Culture in order to achieve the full potential of culture, supporting innovation, creativity and sustainable jobs and growth. Although, the New Agenda has three strategic objectives, comprises social, economic and external dimensions, many actions will serve as cross-cutting actions.

Despite all efforts, still, 36% of Europeans do not participate in any of cultural activities (Eurostat, 2017). Market fragmentation, insufficient access to finance and uncertainty in contractual conditions and incomes are still the most common challenges faced in the creative industry (EC, 2018a).

This paper is aiming at providing recent data on creative industry among EU Member States enterprises, focusses on its entrepreneurial and innovative potential. Further, this paper is closely linked to the survey of the European Commission and Austrian Institute for the SME research and their initiatives to a better understanding of the cultural and creative industries. The purpose of this paper is to provide a better grasp of the creative industry by identifying differences between individual sub-industries and determining its standing on the EU level measured by employment and presence of companies. By analysis of existing information, this paper will give insight into the level of regional development of cultural and creative industries on the EU level.

The paper is organized as follows. After the introduction, the next section provides key findings from the literature on objectives and challenges faced by the creative industry. The third section analyses recent trends in the creative industry followed by concluding remarks.

## 2. STRATEGIC OBJECTIVES AND CHALLENGES FACED BY CREATIVE INDUSTRY – KEY FINDING FROM LITERATURE REVIEW

Cultural and creative enterprises do not fit well in traditional business models due to an asymmetry of information between banks and creative enterprises and whereas a lack of specialists in evaluating cultural and creative business models. Although creative enterprises are of high economic importance and show inviable financial results, their **access to finance** is difficult. Moreover, small and micro size of such enterprises, high share of intangible assets, complexity of their business models, uncertainty regarding the demand for their products and services and uncertainty in income are just some of challenges creative enterprises are facing in accessing finance and preventing them from exploiting their full potential (EC, 2016).

Most of the **employee in the creative industry** is characterized by a high share of educated people and by a high share of flexibility and mobility within working time (Benhamou, 2003). Further, the cultural and creative sectors are an important contributor to youth employment. According to Lhermitte et al. (2014), in 2013, almost one-fifth of employed was between 15 and 29 years old. Furthermore, another important characteristic of the creative industry is the high percentage of self-employment, so called, “One-Person-Enterprises” (OPEs) and freelancers (Rammer et al., 2008). Because of the specificity of business models characterized in the creative industry (development of creative goods and services that are complex and hard to standardize), these models do not fit well in traditional working time (Falk et al., 2011). As of uncertainty in demand for products and services and incomes, most of the employee have irregular forms of employment such as part-time jobs or temporary form of employment. Many of creative workers combine freelance or part-time jobs with a permanent job in order to provide financial stability to maintain their creative activities (Kooyman, 2010). Those specific forms of creative employment directly influence the innovativeness of the creative industry. Creative workers are often engaged in frequently changing project team, allow a free flow of information and fresh ideas, facilitating interactive learning and innovation processes (Falk et al., 2011).

Business-to-business (B2B) is the main form of relationship between **clients and customers** in the creative industry. Austrian’s Report on Creative Industries Recent shows that sales to other creative enterprises (either in the same

creative sector or in culture creative industries cross-sector alliances) account for almost one-third of total sales in the sector (EC, 2016). Another study from the UK showed high importance of purchases of creative products by creative industries themselves (Bakhshi et al., 2008). Creative alliances across different creative sectors and integration in creative networks results with better business performance and higher success rates in attracting customers and interesting projects (Voithofer et al., 2010). The client's benefits from the creative industry include high professional competence, flexibility in delivering a product or services to clients' specific needs and bringing in innovative ideas. This innovative process also includes client's own innovative efforts in order to improve business processes, develop new products and to gain competitive advantages (Gassler et al., 2015; Voithofer et al., 2010).

**The market** of the creative industry is characterized by specific market conditions in which creative enterprises or persons across different creative sectors operate. Many of creative enterprises operate successfully on domestic markets and abroad. For others, because of language barriers and specific market demand, but and due to their small size, the market is limited only within the national market. In addition, the market demand for creative products and services is often highly uncertain. There is always uncertainty about how the market will react to new innovative products or services (Dörflinger et al., 2014). Another reason is the high share of intangible assets (Intellectual Property Rights) as part of product or services are made of, the value which is often inappreciable or uncertain. Hence, the fragmentation of the markets not only hampers opportunities to access foreign markets and to grow but also increases distribution and marketing costs (EC, 2013).

Another feature characterized by creative industry is **collaboration and business networks** among enterprises. Due to their generally small or micro-sized enterprises (including a large share of one-person-companies and freelancers) and because of their high level of specialization, business relationships with other creative companies become necessary to combine competencies for the purpose providing more complex and more integrated creative products. Especially for large orders and large deals. Hence, the creative sector depends on mutual cooperation and networking, gathering in places a high concentration of creative enterprises, talented individuals and institutions, pooling knowledge and resources such as creative eco-systems, creative hubs, and clusters which are of particular importance to the creative industry (EC, 2016). Therefore, this industry can be called

project industry, as companies, one-person-companies and freelancers occasionally or permanently associate within projects that result with creative products.

Moreover, the creative industry is among the most **innovative industries** in the economy. Their business models are developed through new innovative ideas and the transformation of these ideas into commercial products for their customers. Innovation and new creative products in the creative industry are usually a result of collaboration, flexible business networks, and project co-operation between enterprises (EC, 2016). The specific structure of the "creative" market, is characterized by co-operation between business competitors, business networks and clusters, directly affects the sector's innovation and innovation processes. The so-called Functional Networks allow creative enterprises to continuously produce and absorb fresh ideas (Falk et al., 2011). Furthermore, the innovation of the creative sector is also influenced by the fluid labor market and the high level of worker mobility (networking of creative professionals around the world). Business-to-business (B2B) is another important wheel in knowledge transfer and spill-over to other sectors (Bakhshi et al., 2008). As well, it was found that cultural and creative industries were shown as industries resistant to the changes caused by economic crisis and, in even in recession showed growth trends (Bestvina Bukvić et. al., 2017). One of the reasons for this advantage of these industries could be new forms of innovation processes, such as design thinking, open design, and open innovation are characterized by creative industry. The design is not used in the innovation process just to create new products and services, but design-thinking methods can also be applied in the process of creating new business models and organizational innovations (EC, 2013a). They also encourage innovations and cause spill-over effects across the entire value chain: encourage innovation in client companies ("forward linkage effects"), but they also require more innovative products and services from their suppliers ("backward linkage effects"). Creative enterprises also help their clients to introduce innovations by finding new ideas, supporting entry into new markets and the implementation of new products, or designing new products (Rammer et al., 2008). According to European Commission (EC, 2018d), the innovative potential of "the cultural and creative sectors is essential for the European economies and societies, because it generates well-being and cohesion, shapes the public space used by millions of Europeans, modernises industries and business sectors with new creative input and methods, provides meaning and a feeling of belonging, upgrades urban and rural areas, designs our products and services, produces and digitises content,

enriches our visual experiences and provides content for debates”. In the addition to spill-over effects of creative innovation, the main focus of **cross-sectoral innovation** is how to better use the innovation potential of the cultural and creative sectors for other parts of the economy and society as a whole. These sectors are able to generate a positive influence on other economic sectors by connecting industries. Further, **user-driven innovation** bases its innovation on existing technologies or develop new business models or services driven by users or suppliers. So-called, co-creation is the process by which groups of people with different backgrounds getting together with the same goal to create value through improving or developing services, processes, and products. The aim of the user-driven innovation process is to create value for users and to increase the chances of product and market success. Furthermore, the effects of innovation in the cultural and creative sectors that take place in defined geographical areas like cities or regions are known as **place-bound innovation**. Innovation provided by art galleries, museums or cultural festivals boosts the attractiveness of societies and places. At the same time providing economic growth in and around such cultural and creative locations.

The creative industry is perceived as the “forerunner of the new digital society” as they are the ones often the first users of new services and technology. Cultural and creative sectors were among the industries where transformation processes were caused by digitalization - influencing the business, consumption patterns and production processes (Lhermitte et al. 2014). Through the digitalization creative sector benefit from lower production costs, new distribution channels, new business models and the development of new markets, products or services (Tera Consultants, 2010). Further, adaption to rapid changes in consumer expectations driven by new technological opportunities and loss of revenue due to piracy in digital form is another challenge creative sector is faced with (Tera Consultants, 2010).

**Internationalization and exports** are key elements of the successful creative industry. According to Horvat et. al. (2018), **the creative industry** contributes to economic development in general, has an export potential and is based on knowledge, science, technological and artistic innovation, development of talents and preservation of national cultural heritage through its implementation into contemporary products and services. Small and medium enterprises are essential in requiring support in order to expand on international markets. Therefore, smart internationalization and export promotion policies are needed. As far as



exports to third countries are concerned, numerous tariffs and non-tariff barriers prevent the presence of European creative enterprises on the markets of third countries. The export intensity differs among the creative sectors: cultural goods account for 1.6% of total EU exports, fashion-related products account for 12.3%, and high-end industries account for 18% of total EU exports (EC, 2016).

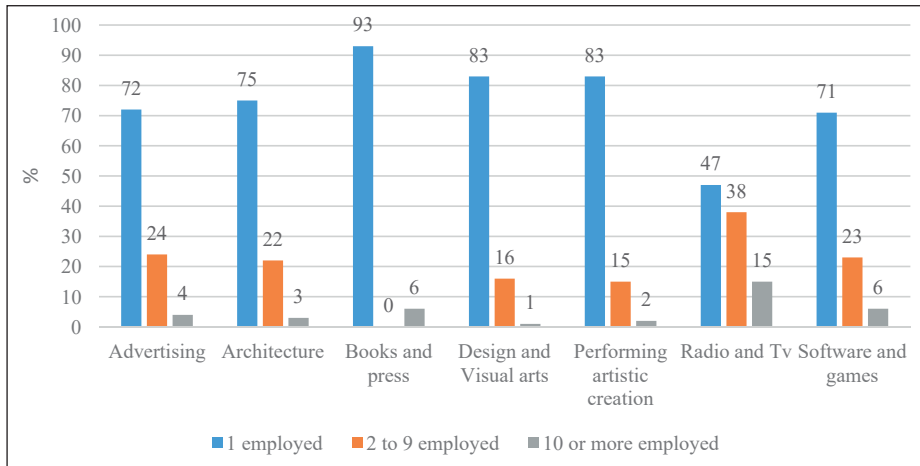
Due to their form of intangible assets, **Intellectual Property Rights (IPR)** represent a major challenge in the creative industry, particularly in the modern era of digitalization and internet. (EC, 2016). Intellectual property rights promote innovation and creativity, which in turn generates jobs and improves competitiveness. Intellectual property rights enable authors, artists, designers, inventors, and other IPR users to benefit when others use their creations and inventions (EC, The Protection of Intellectual Property). According to The Innovation Policy Platform, “innovations in creative industries are often a collective process involving many heterogeneous individuals and informal knowledge communities that have very specific IP needs. These actors often combine different types of intellectual property rights, including copyrights, patents, and trademarks”. Overall, “IPR-intensive sectors account for around 42% of EU GDP (worth some EUR 5.7 trillion annually), generate 38% of all jobs, and contribute to as much as 90% of EU exports. As companies increasingly compete on innovation, creativity, and quality in the global economy, the protection of IPR is essential for them, particularly for SMEs who do not have the same level of resource” for protection of Intellectual rights as large enterprises (EC, 2017).

### 3. ANALYSIS OF ENTREPRENEURIAL AND INNOVATIVE POTENTIAL OF CREATIVE INDUSTRY

According to the European Commission, cultural and creative business is characterized by the predominance of small and micro enterprise size (EC, 2012). In general, the vast majority of enterprises in the creative sector (96%) are micro-enterprises with less than 10 employees. Though, the structure of the enterprise size differs between the sectors: the proportion of One-Person –Enterprises (OPEs) is highest in design and visual arts as well as performing arts and artistic creation (83% each), followed by architecture (75%), advertising (72%) as well as software and games (71%). In the sectors radio and TV (15%), books and press and software and games (6% each), the proportion of

larger enterprises employing 10 persons or more is particularly high. Further, high-end industries are characterized by large companies and multi-national brand groups on the one hand, as well as small scale manufacturers as part of the supply chain (Figure 1).

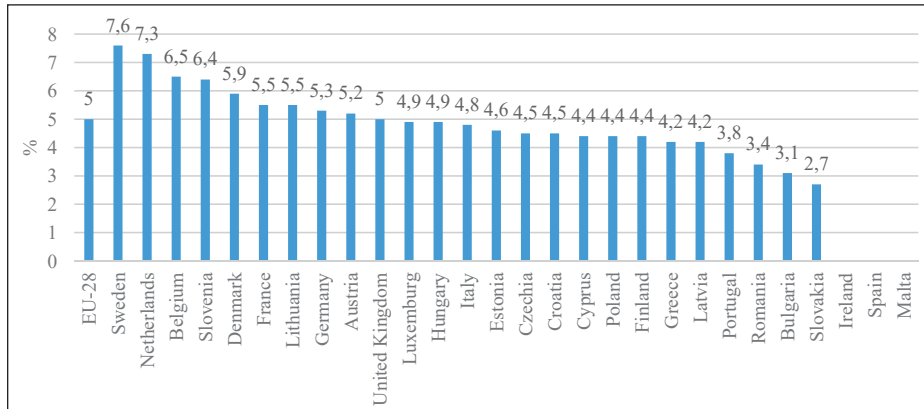
**Figure 1.** Enterprises by size class for selected sectors in %, 2013.



Source: EC, 2016.

According to Eurostat (2018a), in 2015, there were 1.2 million cultural enterprises in the EU, representing 5% of all enterprises in the non-financial business economy. Cultural businesses accounted for 2.8% of total value added in the EU, generating 200 billion Euros of value added and 80% of people employed in the cultural sector in the EU worked in small or medium-sized enterprises. The cultural sector's turnover (the total value of market sales of goods and services) was around EUR 475 billion, which represented 1.7% of the total turnover of the non-financial business economy. Further, the only Member States with over 150 000 cultural enterprises in 2015 were France and Italy, accounting for around 15% of all cultural enterprises in the EU, each. Along with Germany (with around 130 000 enterprises) and the United Kingdom (100 000), represented nearly half of the total number of cultural enterprises in the EU. All those countries, with the exception of Italy, were above the 5% EU average of cultural enterprises in the total economy. But the Member States with the most share of cultural enterprises Sweden with 7.6%, followed by the Netherlands with 7.3%, Belgium with 6.5%, and Slovenia with 6.4% (Figure 2).



**Figure 2.** Number of cultural enterprises as % of the total business economy, EU-28, 2015

**Source:** Eurostat, 2018.

**Note:** Confidential data for Ireland; Unreliable data for Spain and Malta.

In 2017 around 8.7 million people in the EU were working in a cultural sector or occupation, accounting for 3.8 % of the total number of employment (Table 1).

**Table 1.** Cultural employment, 2011-2017 (% of total employment)

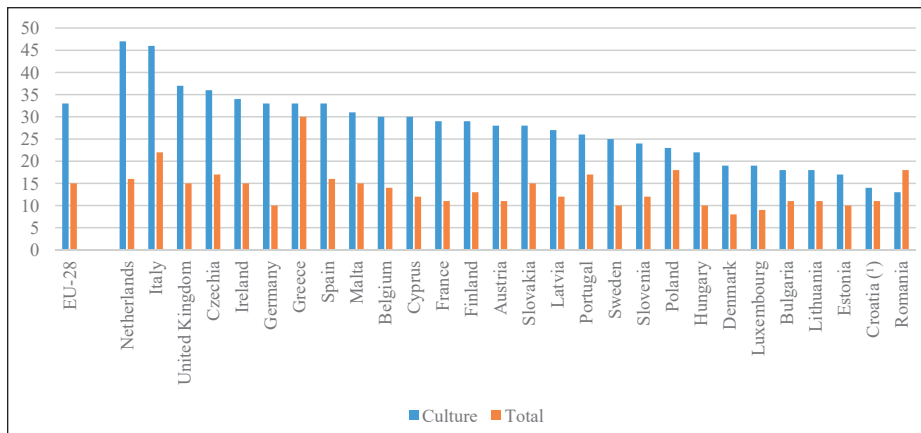
	2011	2012	2013	2014	2015	2016	2017
European Union - 28	3,6	3,8	3,8	3,7	3,7	3,7	3,8
Belgium	3,8	4	3,8	4	4	3,9	4,3
Bulgaria	2,5	2,6	2,7	2,6	2,8	2,8	2,7
Czechia	3,6	3,8	3,9	3,8	3,7	4,1	3,9
Denmark	4,6	4,7	4,7	4,5	4,6	4,4	4,3
Germany	4,1	4,3	4,2	4,1	4,1	4	4
Estonia	5,1	5,8	5,6	4,6	5,3	5,3	5,5
Ireland	3,5	3,5	3,7	3,8	3,6	3,7	3,5
Greece	3,1	3,5	3,5	3,2	2,9	3,2	3,2
Spain	3,1	3,1	3,2	3,4	3,4	3,5	3,6
France	3,4	3,3	3,5	3,4	3,2	3,3	3,5
Croatia	3,6	3,7	3,4	3,8	3,4	3,1	3,5
Italy	3,5	3,6	3,5	3,5	3,5	3,4	3,6
Cyprus	2,9	3	3,3	3,1	3,4	3,5	3,5
Latvia	3,4	3,6	3,9	3,9	4	4,5	4
Lithuania	3,6	3,7	3,8	4	4	3,6	3,7
Luxembourg	5,2	5,3	5,2	6	5	5,1	4,6
Hungary	3,7	3,7	3,9	3,7	3,7	3,6	3,3

Malta	3,9	3,9	4,2	4,4	4,3	4,2	4,7
Netherlands	4,4	4,5	4,7	4,6	4,6	4,5	4,5
Austria	3,8	4	4,2	4	4	4,1	4,1
Poland	3,2	3,2	3,2	3,2	3,3	3,4	3,5
Portugal	2,8	2,8	2,9	3	3,1	3	3,1
Romania	1,4	1,5	1,4	1,5	1,5	1,6	1,6
Slovenia	4,3	4,6	5	4,7	4,5	4,6	4,7
Slovakia	2,6	2,6	2,2	2,6	2,5	2,5	2,9
Finland	5,2	5	4,8	4,8	5,1	4,8	4,7
Sweden	4,7	4,8	4,8	4,7	4,7	5	4,8
United Kingdom	4,3	4,5	4,5	4,5	4,6	4,6	4,7

**Source:** Eurostat, 2018.

According to Eurostat (2018), analyzing each Member State, the percentage of people employed in culture in 2017 varied from 1.6% in Romania to more than 5% in Estonia (Figure 3). The share of cultural employment in the total employment between 2012 and 2017 varied among the EU Member States. In the majority of countries, there was a slight increase or stagnation of cultural employment, while in some other countries (Luxembourg, Denmark, Germany, Estonia, Greece, Hungary and Finland) a slight decrease was observed. Further, with around 155 000 more cultural jobs in 2017 than in 2012, the United Kingdom accounted for almost 30% of the total increase in cultural employment in the EU, followed by Spain with 22%. Spain was observed as a country with the largest relative increase in the share of cultural employment, from 3.1% in 2011 to 3.6% of total employment in 2017. Regarding Croatia, the percentage of employed people in culture varied from 3.6% in 2011 to 3.8% in 2014 and then decreased to 3.1% in 2016. Compared to surrounding countries, such as Slovakia, the percentage is much higher, but compared to Slovenia, Croatia is just around the EU average with no significant increase, like Slovenia. This could indicate a lack of developing economic measures on the state level encouraging small and medium-sized businesses, especially in cultural and creative industries. As well, it could also be an indicator of unfavorable economic environment for entrepreneurship development in the countries shown at the bottom of the list (Figure 3).

**Figure 3.** Self-employment in cultural employment and in total employment (%), 2017



**Source,** Eurostat, 2018

Note:(\*) Low reliability for cultural employment

Moreover, among the labor characteristics available for analysis, self-employment take a significant part of cultural employment (Figure 3). At EU level in 2017, one-third of cultural workers were self-employed (33%), against 15% observed for total employment. In other words: the percentage of self-employed in cultural employment is over twice as much then in the total employment.

#### 4. CONCLUDING REMARKS

Cultural and creative sector trough sub-industries of creative industry contributes directly to employment, economic growth and social cohesion. This paper is aimed to provide recent data on creative industry among EU Member States enterprises, focusses on its entrepreneurial and innovative potential. Despite the lack of data, the analyzed research, however, proves that this industry is fast growing along with its entrepreneurial and innovative potential. On the other hand, the lack of secondary data resulted in reduced scientific interests and open space that allowed uneven interpretation of available data as well as multidisciplinary analyses and interpretations. This can be justified by the fact that this industry is in the process of institutionalization, but also and due to the absence of a unified model by which the creative industry and its sub-industries would be defined. Although the interest in the creative industry is growing as well as a number of scientists and scientific research in this field, it is necessary to highlight its multidisciplinary

narity and existence of collaboration between different scientific fields. The study found that there is a strong imbalance in the development of cultural and creative industries in different EU countries. In order to reduce the negative effects of these differences, it is necessary to create development measures at the level of the Member States but also on the regional level that would reduce the inequalities in development of cultural and creative industries and as well, the economies of the Member States as a whole. The Recommendations for future research are arising from the data limitations of the research, hence it is necessary to conduct more comprehensive primary research by analyzing creative employment, both for the creative industry and its sub-industries in order to identify key similarities and differences in this heterogeneous industry.

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# ROMANIA`S ENERGY POLICY: CHANGES IN THE APPROACH OF THE NEW RENEWABLE ENERGY STRATEGY FOR 2030

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### **Abstract**

*Romania has recently made significant changes to its energy policy through new legislative tools aimed to promote the use of renewable energy and energy efficiency. Programs and support schemes, especially those that target domestic use, were revised, restarted, but also some completely new ones were open: the most important, the so-called „prosumer” law that enables consumers to also produce energy and balance their electricity expenses. This new approach of the 2030 strategic horizon for renewable energy concentrates on including individuals in the efforts to comply with targets set for Romania by the National Renewable Energy Action Plan. This paper will also try to capture a glimpse of the overall assessment of Romania`s progress on pursuing the current targets, with 2020 around the corner. For now, we are on the final laps for the 2020*

*targets; Romania is well on track on its share of renewable energy in total energy consumption thanks to hydro, solar and wind, but could do better in energy efficiency and climate change mitigation.*

**Keywords:** *renewable energy policy strategy*

JEL Classification: O13, Q48

## 1. INTRODUCTION

When Directive 2009/28/CE was enforced, all EU member states were required by June 2010 to adopt a National Renewable Energy Action Plan as a strategic tool for implementing EU's Energy Policy for 2020.

Romania was fairly well placed statistically from this point of view, with a quota of renewable energy in gross final energy consumption of 23,4%, very near of its final target of 24% for 2020 (Pirvu, 2015), but strongly dependent on hydro and the old infrastructure used for harvesting water's energy. Regarding other renewable energy technologies, deployment and investment were low or inexistent.

This paper intends to follow Romania's status in reaching the objectives set for 2020, but also the very important extension of perspective to 2030, starting from the moment before the adoption of the NREAP, analysis on legal framework and other tools aimed at accelerating the transition to a green energy-intensive economy, and the local specifics.

## 2. NATURAL POTENTIAL REGARDING RENEWABLE ENERGY

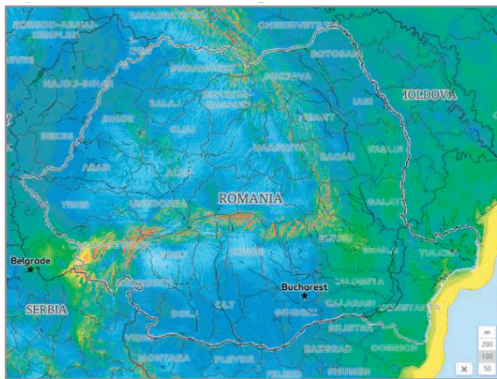
Geographical factors are crucial in assessing the natural potential for renewable energy, and it is quite easy to identify the fact that in Romania's case, solar energy has more potential than wind energy. Annual solar radiation of 1.700 or even over 1.700 kWh/m<sup>2</sup> are being measured along the Danube river, in the region of Dobrogea and the Grand Isle of Brăila, but also levels near or over 1.500 kWh/m<sup>2</sup> in the rest of the country. Regarding wind energy, the situation is a bit different: bigger potential (450 W/m<sup>2</sup> and over) in the mountain areas which are inaccessible and thus hard to harness, but on the other hand, vast accessible areas in the counties of Brăila, Buzău, Tulcea or Constanța, all of them



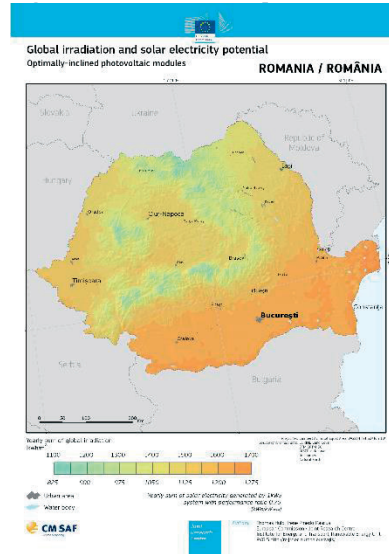
with circa 350 W/m<sup>2</sup> potential wind energy. The rest of the country's areas have low potential. It is worth mentioning the offshore areas that have great potential but are currently impossible to access due to lack of legislation and also high costs of deployment and exploitation of offshore wind farms in the Black Sea. (Figure 1 and Figure 2).

Another specific element is the hydro energy potential, from its rich hydrographic basin, especially from the Danube river, but also other rivers and fast creeks. There are important hydro facilities deployed all over Romania's territory; this makes hydro the main electricity producer in the country and also offers an explanation on how Romania managed to achieve its 2020 targets as early as 2014 (Pîrvu, 2015).

**Figure 1.** Romania's wind potential



**Figure 2** Romania's solar potential



Source: <https://www.globalwindatlas.info>

Source: <http://re.jrc.ec.europa.eu/pvgis/>

### 3. THE IMPORTANCE OF RENEWABLE ENERGY IN THE ENERGY MIX

Energy is the central element of the economic and political life of the third millennium, both an indispensable resource of the modern-day economy, but also a powerful instrument of geopolitical negotiation often used to set relations between states and even generate military conflicts.

Even though abundant energy can be found in the universe, in different forms (kinetic energy, chemical, electric, nuclear, etc.), the way we harness it, under the law of conservation of energy, is made by processes of transformation of different kinds of energy, processes that are not efficient; some of the energy is lost during transformation. On top of that, we must take into consideration the fact that natural energy resources are scarce, and continuously diminishing because of ever-increasing thirst of energy that the human society developed in the last two centuries. Actually, the level of influence that mankind has gotten to apply on the whole planet since the industrial revolution, but especially after World War II, has also led anthropologists to start adopting the term *Anthropocene* to define the age of man (Zalasiewicz et. al, 2010). We are also observing that remarkable ability of fundamentally transforming their environmental conditions that humankind as a species has developed, and we find the term appropriate.

Given the fact that, traditionally, for obtaining useful energy, primary sources like coal, gas and liquid fossil fuels are burned, thus emitting greenhouse gas, man-driven climate change is an important characteristic of this Anthropocene era. The ever-growing need for energy that human society has been experiencing in the search for economic growth has determined an exponential rise in energy demand and with that in carbon emissions (over 40% more than in the pre-industrial age), methane (150% increase), nitrous oxide (20% increase), increases with no precedent in the last 800.000 years (IPCC, 2014).

Most forecasts regarding greenhouse gas emissions show that they will probably keep their growth trend, determining increases in average temperature of at least 0,4-1,6 °C by mid-century (IPCC, 2014). All predictive scenarios show a higher degree of warming onshore than offshore, except for the Arctic area, but also Collins estimates that increases of average temperature will be double over there compared to global levels (Collins et al., 2013).

Negative human 'footprint' on the quality of air is not the only form of pollution. Water, soil, ecosystems, in general, are also disturbed, especially in the extreme cases of ecological disasters; from nuclear power plants failures (with well-known cases of Chernoble and Fukushima), oil spills (Gulf war oil spills or BP's spill in the Gulf of Mexico), chemical industry spills, all of these produce drastic changes of the environment, sometimes irreversible.

Damaging the environment through irresponsible human action puts human society's own future in jeopardy. Security of humankind is highly depen-

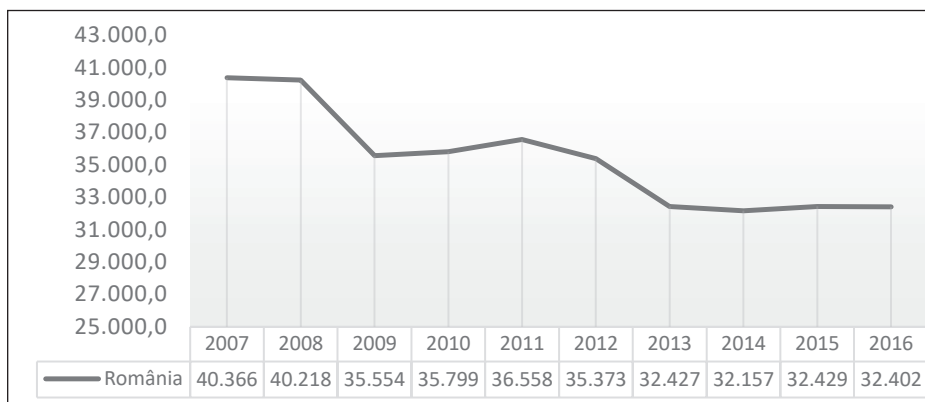
dent on its energy supply security. The problem of energy security is intensely studied and debated at world level, with a broad series of authors specialized in the field, but the essence of this notion has yet to be fully defined because of it being “polysemantic” and “slippery”, as Chester describes (Chester, 2010).

The shift from the use of conventional sources of energy to renewable ones could not only improve global climate problems, but it also has the potential to generate economic benefits on the long term, emphasizing the sustainable nature of renewable energy sources. But renewable energy technologies and markets are at an incipient maturity level, so external incentives are to be used to diminish investment risk. These forms of support are financed through public budgets and are being elaborated according to numerous international agreements. The most complex legal framework for supporting the development of the renewable energy sector is active in the European Union, and Romania as a member state contributes to the achievement of EU’s renewable energy strategy targets.

### 3.1 EVOLUTIONS IN ENERGY CONSUMPTION

Romania’s gross inland consumption follows a general decreasing trend in the interval considered (2007-2016), with an obvious negative evolution of circa -12% from 2008 to 2009, and a slightly milder descent for 2012/2013. Actually, the negative trend is quite clear only for the first part of the interval, but then after 2013, the values gravitate around 32.400 ktoe.

**Figure 3** Evolution of gross inland consumption of energy in Romania between 2007-2016 (ktoe)

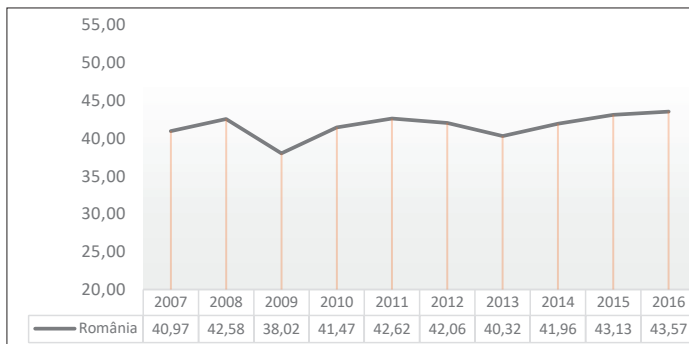


Source: own calculations after Eurostat database

We think that these descending values in consumption come from the efforts of increasing energy efficiency, as an element of a qualitative side of development instead of a quantitative one. European societies are characterized by a relative maturity and thus tend to favor the quality of life (awareness of climate change and with it climate change mitigation, limitation of waste through rationality of consumption, etc), and not only the quantitative increases in consumption, wealth and immediate satisfaction.

The period between 2013 and 2016 has positive evolutions in Romania's macroeconomic indicators, especially GDP and GDP per capita, and that has also triggered an increase in consumption. Given the market needs, this consumption was made up of electronics and house appliances that either replaced old ones or were completely new. Of course, some of them contributed to the decrease in energy consumption, thanks to the energy efficiency standards of new products, but we are also talking about a change in the kind of energy they use: electrical heaters replaced gas ones, electrical ovens as well, sometimes even electric vehicles replaced those with internal combustion engines. This way, electricity became a more important energy source in the consumption pattern, and therefore the only common element between the trends of gross inland energy consumption and electricity generation is that abrupt descent from 2008 to 2009. Consumption follows a general downward trend after that, but electricity generation is slightly going up. The fact that the residential sector is Romania's largest consumer of energy, with a share of 33,28% of consumption (Eurostat, accessed in February 2019), makes this shift of consumer behavior towards electricity to have the effect shown in Figure 4.

**Figure 4** Evolution of electricity generation in Romania between 2007-2016 (TWh)



Source: own calculations after Eurostat database

### 3.2 THE IMPORTANCE OF RENEWABLES IN THE ENERGY MIX

Renewable energy has been in the last decades in the center of a lot of discussions and public debates regarding energy policy, and real integration of green energy sources in world energy infrastructure is one of the great challenges of the 21<sup>st</sup> century.

The technology needed to harness renewable energy is, like many other newly arrived products, obliged to compete with well established conventional technologies, thus being in an unfavorable position. When they appear on the market, new technologies have not yet achieved their full performance potential, lacking reliability and efficiency. Those can be obtained only after prolonged processes of research and development, that need important investments of time and money. In other words, as Arthur claims, new technologies are not used because they are efficient, but they become efficient once they are being used (Arthur, 1989).

The importance of renewables in Romania's energy mix is quite high, statistically; it has reached its objective for 2020 (24% of the total consumption) long before the deadline, in 2014, and since now even surpassed it. Realistically speaking, this important share of renewable energy in energy comes from hydro; Romania's electrical system is highly dependent on electricity produced alongside the Danube river, especially at the Porțile de Fier hydro plant. Efforts in innovation and new investments are necessary for also developing other renewable energy sources and technologies: we are talking about solar, wind and even geothermal, bearing in mind the great geographical potential.

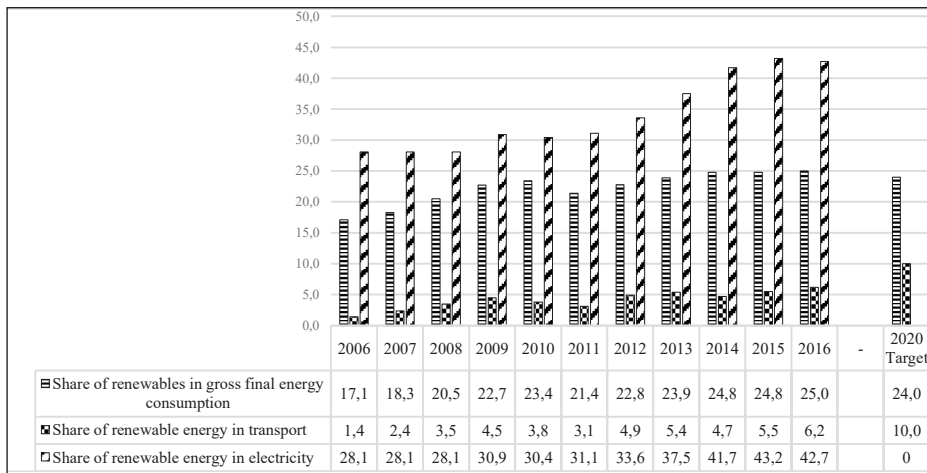
**Table 1** Electricity production from renewable sources in Romania (ktoe)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Total (all sources)</b>	<b>5.123,2</b>	<b>5.219,9</b>	<b>4.767,5</b>	<b>5.016,8</b>	<b>5.167,1</b>	<b>5.075,4</b>	<b>4.859,8</b>	<b>4.993,6</b>	<b>5.089,8</b>	<b>5.122,8</b>
<b>Total from renewables</b>	<b>1.440,0</b>	<b>1.465,5</b>	<b>1.472,9</b>	<b>1.524,0</b>	<b>1.608,6</b>	<b>1.703,7</b>	<b>1.823,2</b>	<b>2.081,3</b>	<b>2.196,8</b>	<b>2.188,0</b>
Hydro	1.436,8	1.463,1	1.471,1	1.488,9	1.479,8	1.457,3	1.385,1	1.386,6	1.416,8	1.435,0
Wind	0,1	0,4	0,8	25,6	111,7	227,4	380,4	512,3	564,6	550,9
Solar	0,0	0,0	0,0	0,0	0,1	0,7	36,1	139,0	170,4	156,5
Biofuels	2,9	2,0	0,9	9,4	16,2	16,5	17,3	39,0	39,7	40,1
Others	0,2	0,1	0,0	0,1	0,7	1,7	4,3	4,4	5,2	5,6

**Source:** Eurostat

Regarding renewable energy used in transportation, results are not as good. The mandatory target for 2020 will be difficult to reach, as an increase of 80% is needed in order to make it. A more realistic assumption will be that maybe 8% of the energy used in transportation will come from renewable sources. Transportation is one of the most energy-consuming sectors, therefore there are dedicated efforts and targets for 2020 and the trend is also kept onwards to 2030, with stimulative programs across EU member states regarding the acquisition of electric vehicles: cars, vans, trucks, but also alternative transport like bikes and scooters.

**Figure 5** Share of renewables in Romania between 2006-2016 (% in total)



**Source:** Eurostat

From this point of view, Romania is witnessing a phenomenon that will further burden the efforts of reaching the desired targets for transportation: the import of second-hand automobiles from western-European countries, vehicles that are –obviously– less efficient and more pollutant than new ones, due to the elimination of some fiscal barriers (especially the automobile environmental tax – registration tax).

## 4. LEGAL FRAMEWORK AND SUPPORT PROGRAMS

Support, promotion and stimulation policies for research and development of technology, and also an investment in production facilities and infrastructure are also necessary for renewable energy to reach its potential, other than being a niche market, but a broadly used resource, integrated into the world economic circuit.

Successful integration of renewables in world energy systems can be done only by surpassing certain difficulties and barriers. In order for them to be overcome, the existence of a set of measures in instruments is needed, to determine an efficient exploitation of the renewable sources of energy: financial, fiscal or of any kind, put in a coherent legal framework, and also support policies for investments in technology, research and development (Lee & Zhong, 2014). This section of the paper intends to emphasize policies and instruments, with their according to legal framework currently (or past) in force in Romania, and how they can affect the reaching of 2020 targets and the further ones going to 2030 and beyond.

Romania's National Renewable Energy Action Plan was preceded by *law no. 220/2008* regarding the promotion and production of energy from renewable sources that, along with others normative acts that modified and consolidated it, establish methods by which ANRE (National Agency for Management of the Energy sector) can support producers of green energy. Complementary, in the same year, *Government Ordinance no. 22/2008* regarding energy efficiency and the promotion of the use of renewable energy by final consumers was also adopted. Actually, according to ANRE's transparency reports, as many as 12 normative acts modified, consolidated or introduced exceptions from law 220/2008 and this has generated a lack of predictability that, among with bureaucratic difficulties faced by investors, but also the diminishing of the support for the green certificates are the main reasons why Romania is no longer present in the Renewable Energy Country Attractiveness Index's top 40. Last time Romania was included was in 2015, on 34<sup>th</sup> place (EY, 2015), with similar previous performances, in the last quarter of the ranking.

Romania's support programs and schemes for renewables are:



Astfel, programe de sprijin și sistemele de stimulente active în România sunt:

- *Quota obligations*, under the form of *green certificates*, which are being offered to producers of energy from renewable sources, and they can sell them on the free market; conventional energy producers have the obligation to purchase a certain number of certificates, based on their production; according to ANRE's transparency reports, in 2018, a number of 189 producers had the obligation to buy a total number of 3,85 million green certificates (ANRE website reports). We have to mention the fact that only renewable energy production facilities built before January 1<sup>st</sup>, 2017 are eligible to receive green certificates, and in 2017 the total installed power that benefited from green certificate government support was of 4.787 MW, and the annual quota of electricity from renewables was 8,3%, following *Government Ordinance 1014/2016* directives;
- *Subsidies* offered especially through *Rural Development National Programme, Measure 4: Investment in physical assets*, where production of energy from renewable sources is not financed as a business activity, but the applicant can buy energy production equipment to assist the main business activity; also, through *Government Decision no. 216/2017*, new subsidies were put in place for investing in energy production capacities from lesser known and used renewable energy sources like biogas, geothermal or biomass;
- The possibility of authenticating in the energy system as a *prosumer*, which constitutes a specific type of a *feed-in tariff* scheme mixed with a *net metering* scheme. It consists of the right of household producers of energy, with an installed capacity of under 27 kW, to get a guaranteed tariff for their excess quantities of electricity. Electricity operators have the obligation to connect them to the grid (for a fee, of course), and with no bureaucratic barriers. To avoid further unnecessary bureaucracy, there is no cash involved, as for the financial obligations owed by the electricity company to the household is being subtracted from the next electricity invoice and that's where the net metering instrument comes into place;
- *Fiscal incentives* – small household producers, with a producing capacity of maximum 27 kW, are exempt from fiscal obligations for products destined for autoconsumption but also for the one sold to the network;



- *Quota obligations* – of biofuels in total fuels sold on the market;
- *Rabla (old car) Plus programme* individuals based in Romania can receive a voucher for buying a hybrid-electric car (20.000 lei ~ 4000 €), or a fully electric car (45.000 lei ~ 10.000 €).

One of the widely known programs for stimulating investment in renewables, *Casa Verde (The Green House)*, is not active at the moment of elaboration of this paper; in late 2018 some changes and plans for the future of the program were in public debate, but the failure of the Government to produce a state budget for 2019 did not help in re-starting *Casa Verde*. The most discussed proposal was that the subsidy should stimulate the acquisition of solar photovoltaics used for producing electricity instead of solar panels used for heating water as the initial versions of the programme did. This way, it would stimulate more high-tech and more performant investments in household renewables.

There is an intense debate at the moment of this paper's writing on *Government Ordinance no. 114/2019*, from different stakeholders, especially the banking system, telecommunications, and energy. In its initial form, the document enforced price caps on energy sold on the market, that threatened to bankrupt a lot of energy actors, and generating an increase in energy imports, especially from Russia.

## 5. SPECIFIC LOCAL ISSUES

During the implementation of the Renewable Energy Strategy assumed through the National Renewable Energy Action Plan, the Romanian market was characterized by numerous legislative inconsistencies. One of the eloquent examples is that whilst law 220/2008 stated the possibility of small-size producers of electricity to sell their excess production to the grid, the fiscal legislation forced them to issue invoices for this activity. Bearing in mind that the vast majority of small-sized producers are households (families or individuals), they were not able to issue any invoices, so selling electricity into the grid was virtually impossible. More than that, even if some small-sized producers were to have the possibility to issue invoices, they were supposed to pay VAT, taxes, and excises for this activity, which made the net incomes from domestic electricity production go down to almost zero. Further, than that, administrative and bureaucratic barriers like difficult authorization, expensive connection to the grid as a producer and other obstacles blocked the implementation to a

standstill. Law no. 220/2008 defined the prosumer, but it did not support the development of that network of prosumers that would feed the grid; to better stimulate prosumers, it was modified and amended by law no. 184/2018, that gave a clearer path for their aim of making the most of the excess electricity they produce.

Analyzing the support schemes for renewables active now, we can observe that the intensity of support for large-scale producers has dropped with the new law no. 184/2018 as opposed to law no. 220/2008. Support from green certificates was already decreasing in the last period (2015-2017), and it finally ceased for production facilities built after January 1<sup>st</sup> 2017. This period coincided with that decrease in attractiveness for investors mentioned earlier.

Market actors had a say about this situation, especially those that were involved in wind energy; Romania's Wind Energy Association expressed their concerns regarding the future of their investments in Romania, proposing the establishment of higher objectives together with stronger support schemes for wind energy, according to Romania's important natural potential (RWEA, 2018). Public debate, discussions with these market actors can only be beneficial for the whole society, so we think that they should take place more often, especially in the early stages of legislation drafts writing; this will normally bring coherence and extra relevance to the legal framework to be adopted nation-wide.

Speaking of natural potential, another element of specificity for Romania is its geographical positioning. As mentioned earlier in this paper, both solar and wind energy have relevant potential, and hydro is not only hypothetical potential, it's now producing an important share of Romania's electricity. Also, neighboring countries like Hungary, Bulgaria, and Serbia don't have a comparable potential of producing energy and a good interconnection with national power grids can make Romania an important regional energy supplier.

In achieving this goal, investments in energy and renewable energy in Romania are supported through different instruments, European funds is one of the most important. For 2014-2020, Cohesion policy had reserved 1.5bn € for investments in increasing energy efficiency of buildings, construction of renewable energy production capacities, but also implementing intelligent energy infrastructures. For the innovation component and increasing SMEs competitiveness, there are still over 15 million € available until 2020, according to Energy Union Factsheet – Romania 2017, Romania's third report on the State of the

Energy Union<sup>1</sup>. The same document mentions a total sum of 3,745 bn € destined for transport.

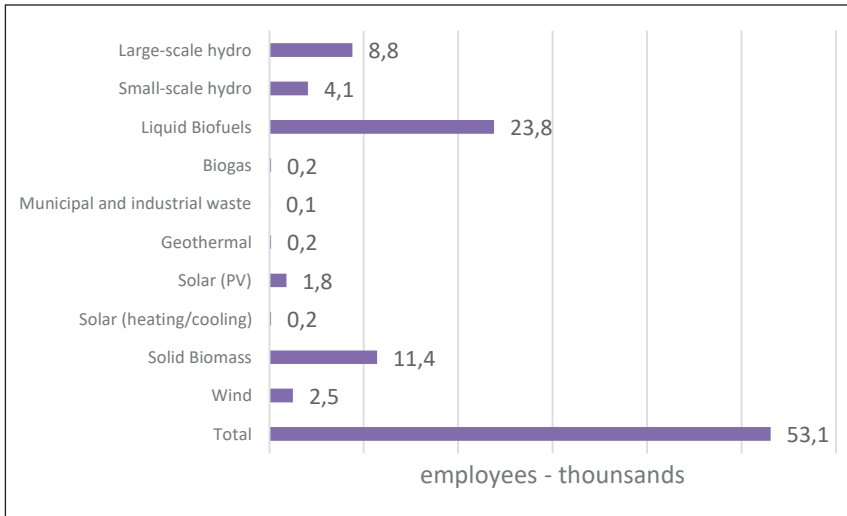
Through ERDF numerous energy efficiency projects for thermal isolation of old buildings were financed, in the total value of over 75 million €. Also, centralized heating infrastructure in cities like Timișoara and Oradea were rehabilitated, reducing fuel consumption by 30.000 toe in 2017 (Romanian Government, 2018). Also, through Connecting Europe Facility, 20 financing deals were signed, totaling over 1.2 bn €, especially in developing intelligent transport systems and alternative fuels.

Investors in renewables in Romania accessed, according to IRENA Renewable Energy Public Investment Database, investment credits of a total value of 1.25 bn €, mainly from EBRD (550 million € for 7 wind parks, 63 million € for the EDPR Solar Project and 77 million € for the rehabilitation of Stejarul Hydro-plant), but also EIB (around 200 million € for Fântânele wind park, 350 MW capacity, and another 200 million for a wind park of 260 MW capacity, also in the Dobrogea region, called ENEL Green Power Romania). International Finance Corporation, the member of the World Bank Group, credited Cernavodă wind park with cca. 100 million €. In 2013, a total of 53 investment projects in renewables were finished, with a total installed running power of 225 MW (Romanian Government, 2018), so investments made in the present period have drastically grown Romania's energy-producing capacity from renewable sources.

Developed projects in the renewable energy field have supported more than 53.000 jobs directly, along with other indirect jobs. Their distribution is shown in Figure 5 and is liquid biofuels (over 23.800 jobs), solid biomass (approximately 11.400 jobs), big hydro (cca. 8.800 jobs). We observe once again that these are not the technology-intensive renewables, but mostly the "traditional" component of renewables, with a stronger environment footprint. We believe that labor productivity in renewables in Romania is suffering because of that. Total market turnover was of only 1.6 bn € in 2016.

<sup>1</sup> Available at [https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-romania\\_en.pdf](https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-romania_en.pdf)

**Figure 5** Number of employees in renewables in Romania, by technology, in the year 2016

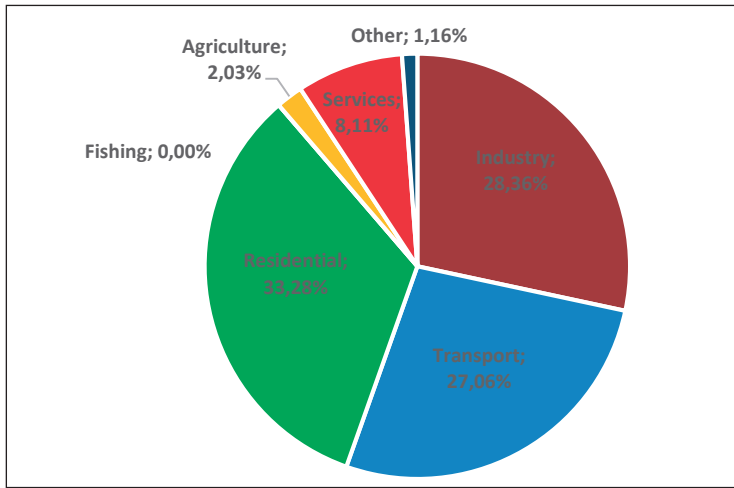


**Sursa:** own calculations after Eurostat database

Greenhouse gas emissions in Romania have a general decreasing trend in the last 10 years, in 2016 it totaled approximately 113 million tonnes of CO<sub>2</sub> equivalent, compared to over 153 million tonnes in 2007, a 27% decrease. Emissions per capita are also relatively good for Romania compared to Europe, at fewer than 6 t of emissions per capita, thanks to confinement of industrial activity.

From the GPD point of view, evolutions are characterized by a general increase in the last 10 years, but if we are considering GDP/capita, Romania still needs serious improvements to be done to reach at least half of the EU average GDP/capita. In order for that objective to be met, energy policy instruments directed to energy efficiency and stimulating individuals to produce their own energy needs from renewables can be a successful approach. Individual users, but also SMEs, can increase their energy efficiency by thermal isolation of their homes and offices, intelligent design, and can limit energy waste with the use of electric and electronic tools and appliances that run on electricity locally produced. This generates a surplus, and that could generate more investment in the long-run. But, it can be at the cost of a not-so-free market, ruled by subsidies and support schemes.

**Figure 6** Romania's final energy consumption in 2016, by sector



**Sursa:** own calculations after Eurostat database

As Figure 6 shows us, residential use of energy is the main energy consumer of the country, with 33,28%, followed by industry and transport that are approximately equal in share (27-28%). Services and other activities of the economy account for a little more than 10%.

## 6. CONCLUSIONS

Romania's path to achieving 2020 targets is almost a done deal, with a few exceptions regarding transport. From the share of renewables in total energy consumption, the 24% target was already surpassed and is expected to increase as more and more projects are being finished and ready for operation.

With industrial activity decreasing, support schemes enforced through recent legislative changes (law 184/2018) target especially residential and small enterprise energy users, as we were showing in the paper, so it is expected to generate positive effects in terms of energy savings and the volume of renewable energy consumed in total consumed energy.

Through European funding, continued after 2020 with 2020-2026 multi-annual budgeting, Romania has the chance to also secure 2030 targets ahead of time. Unfortunately, legislative turbulences like the Government Ordinance

114/2019 introduces unpredictability, sometimes chaos in the internal market, and of course that is not very appealing for investors.

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## CORPORATE SOCIAL RESPONSIBILITY – THEORETICAL ASSUMPTIONS AND THE CONSUMER EXPERIENCE SURVEY

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### **Abstract**

*Corporate Social Responsibility (CSR) is a concept that represents the commitment of business and civil society to the promotion of lifelong learning on sustainable development that will contribute to the safe and healthy lifestyle of individuals and employees, their families, the local community and society as a whole. The implementation of the concept of CSR into the business of a company implies assuming responsibility for the employees within a company, as well as for the environment which the company is affecting. By applying the concept of CSR, the company raises its activities to a higher level of business through which people inside and outside of the company become aware of the importance of influencing the social community and of the way they contribute to long-term sustainability. Also, CSR affects the company's competitiveness and creates a positive corporate image.*

*In this paper, a survey was conducted, in which consumer attitudes about socially responsible business and the purchase of products of socially responsible companies were examined. The survey found that consumers are familiar with CSR and recognize its importance and prefer to buy products from socially responsible companies.*

*As an example of good practice, the authors reviewed the company Coca-Cola HBC Croatia and applied the concept of socially responsible business operations of the enterprise mentioned above and the activities that the mentioned concept implements. Coca-Cola HBC Croatia is a pioneer of CSR in the Republic of Croatia, which published its first Business Sustainability report as early as 2003. Coca-Cola HBC Croatia carries out the following activities of CSR: health care and safety at work, health care and safety of consumers, care for employees, environmental protection and sustainable use of natural resources, wastewater management, energy savings and climate protection, production management and packaging waste management, as well as its support for young people.*

**Keywords:** CSR, society, environment, consumer experience

JEL Classification: D23, M14

## 1. INTRODUCTION

Corporate Social Responsibility (CSR) is one of the most important and most urgent issues that business people are facing today. As Pavić-Rogošić (2010: 2) states, “Investing in our not environmentally hazardous technologies can contribute to corporate competitiveness. In the social sphere, investing in education, working conditions and adopting good relationships with employees can also contribute to productivity.” For that reason, the authors decided to observe the situation in the Republic of Croatia in more detail, precisely because “Corporate Social Responsibility is the concept in which companies integrate taking care of society and the environment into their business and their associations, on a voluntary basis. Being socially responsible does not mean only fulfilling legal obligations, but also investing in human capital, environment, and stakeholder relations” (Pavić-Rogošić, 2010: 2).

This paper studies Corporate Social Responsibility and what is necessary to make the company socially responsible. Today, Corporate Social Responsibility has become one of the standards in business, and all companies are trying, apart



from making a profit, to do something positive for the social community and to behave ecologically responsible. This means incorporating social, ecological and ethical principles into the strategy of doing business. According to Pavić-Rogošić (2010: 2), there are internal and external dimensions of socially Corporate Social Responsibility. The internal dimension refers to investment in human capital, health, and safety as well as change management, while the external dimension refers to those activities outside of the enterprise itself and includes cooperation between the local community and various stakeholders. The importance of Corporate Social Responsibility lies in the fact that companies must be the ones who will materialize a better and more sustainable future. Enterprises can serve as drivers of sustainable development in order to improve the living conditions of people, the local community and society in general. According to Šušnjar (2018: 4), the concept of Corporate Social Responsibility is most often applied to large companies simply because their influence on society and the environment is the largest and most visible, their power is the greatest. Regardless of this fact, small and medium-sized enterprises also have significance in the concept.

This paper consists of six parts. Except for the introduction and the conclusion, in the second chapter, the authors provide a theoretical review which includes the historical development of the term and concept of CSR, types of corporate responsibility, the description of the CSR index and specific activities involving CSR. The third chapter refers to a methodology of work that includes one hypothesis, and apart from that, a description of how the consumer experience survey was conducted by the method of univariate statistical analysis (descriptive statistics). The fourth chapter consists of research carried out in 2019, in which consumer attitudes towards CSR, as well as consumer preferences towards products of socially responsible enterprises were explored. The chapter contains the results of the conducted research, as well as the analysis of the hypothesis. In the fifth chapter, the authors highlighted Coca-Cola HBC Croatia as an example of good practice that works in accordance with the principles of CSR and described the core tasks the company conducts to achieve a high level of sustainability. In the last chapter, the authors made general conclusions, but also specific conclusions, based on the above-mentioned survey.

## 2. THEORETICAL REVIEW

The business of each company can be divided into many parts and perspectives, which can be separated into those relating to the whole business and those

relating to certain parts of the business, and Glavaš et. Al. (2018) state that all the functions of an enterprise must be interconnected, i.e. integrated so that the companies can achieve a competitive advantage. Jalšenjak and Krkač (2016: 169) state that the “Green Paper: Promoting Corporate Social Responsibility” is about three aspects that can be measured by CSR: financial success, the friendly mood for the environment and social responsibility. In every part of the company or business entity, as well as in its entirety, it is required to fulfill all three criteria, i.e. to be financially successful but at the same time ecologically and socially responsible. According to Jalšenjak and Krkač (2016: 184), there are also three core interests of each company, for which all stakeholder groups can also be divided into three groups that ensure the long-term success of the company. The stated interests are social responsibility, business success, and environmental responsibility. Social responsibility refers to a real, positive and measurable attitude towards society (within itself, such as employees; at the company’s frontiers and society like consumers; and outside companies such as local communities, laws by the state and respect the rules of the free market). The business success includes financial success and many other parts, such as successful production, management, marketing, etc. and finally, environmental responsibility refers to an environmental relation that can be social and environmental. This relationship is often represented by three diagrams that overlap each other, and are found in the following figure.

**Figure 1.** Types of business interests and responsibilities in order to achieve full business success



**Source:** Jalšenjak, B., Krkač, K., (2016.) Poslovna etika, korporacijska društvena odgovornost i održivost, p. 184 - 185

Figure 1. shows that complete success (the goal of every successful business) is achieved only in the area of overlapping of all three previously stated responsibilities (in area 1). Jalšenjak and Krkač (2016: 184-5) state that the goal is less achievable in case of overlapping two of the three areas (areas 2, 3 and 4) and that it is least achievable if it is beyond the overlap of the area. Of course, there are business entities that are oriented solely to one of the stated aspects of responsibility. The above authors further mention a concrete example: “Unions take care of workers and their attitude towards work, towards employers and the state, or there are associations and agencies that want only to protect the environment, and so on. In the case of companies, if the company were in area 2, it would mean that it lacks profitability and has two possible directions: either to seek profitability or to become a non-profit organization. Areas 3 and 4 are connected. They mean that the company is successful in business, even if it is not socially or environmentally responsible (Jalšenjak and Krkač, 2016: 185).

The concept of CSR arises from the long-standing work of experts and the study of the business cycle itself and the business processes. Also, it stems from the needs of both consumers and producers, as well as the environment itself - in the context of sustainable development. Therefore, it can be said that there are many definitions for the Corporate Social Responsibility of the company. Regardless of how many different definitions exist, each of these definitions revolves around several critical factors that include community contribution, ethical behavior and sustainability, and not just making profits, as long considered. According to Carroll (2008, Agudelo, 2019), Corporate Social Responsibility was rarely mentioned until the period of World War II, when several authors began to mention the activities of CSR, the awareness of CSR started to develop, corporate behavior began changing, and the term of CSR was formed. Since the authors have been discussing the topic of CSR for 80 years and are continually developing the term of CSR, the literature is rather ‘broad’, which can be seen in the following chapters of this paper.

Agudelo et al. (2019), along with other authors in the previous years, made a detailed overview of academic literature on the development of the concept of CSR. According to these authors, the Corporate Social Responsibility concept has been developing since 1953, when Bowen points to the responsibility of employers in business that contributes to the values of society. Ten years later, McGuire points out that every corporation, apart from financial and legal obligations, is obliged to fulfill those social responsibilities. Shortly after,

in 1962, Friedman defines CSR as the concept in which companies use their resources and participate in profit maximization activities as long as the listed activities respect the rules of open and free competition (Fox, 2012), and in 1963 McGuire considers the welfare of employees and community, as well as educational and political needs of the society. In 1973, Davis mentioned the realization of the company's social benefits, in 1975, Sethi introduced corporate behavior in line with social norms, values, and expectations (Zheng, 2006), and Davis and Blomstrom speak about the managerial obligation to take actions that, together with their interests, protect and enhance the well-being of society. In 1979, Carroll said that companies that act responsibly must meet the economic, legal, ethical and discretionary expectations of society, Donaldson in 1983 says that companies are moral agents that must fulfill social expectations (Kashyap, 2004: 52). In 1994, Reder said that social responsibility relates to the way the company implements its internal business, including the way it treats its workforce and the company's impact on the world around it. Moreover, in 1999 Woodward-Clyde defines CSR as a "contract" between the society and the company in which the community gives the company a license to operate and in return fulfills certain obligations and behaves in an acceptable manner (Dahlsrud, 2008: 10).

According to the official CSR Europe website, in 1995, two years after European Commission President Jacques Delors called on companies to fight against social exclusion and unemployment, 20 business leaders adopted the European Business Declaration against Social Exclusion, while the European Business Network for Social Cohesion (later renamed CSR Europe) was formed in 1996 to create a space for men and women in the business world in which they can share experiences, develop solutions and engage in smart political dialogue with the EU; with the goal of improving socially responsible business within their organizations and wider..

The European Commission (2019) adopted a revised CSR strategy in 2011, combining horizontal approaches to CSR promotion with more specific approaches to individual sectors and policy areas. Adding on their strategy, in March 2019, the Commission published a working document giving an overview of the progress made by the Commission and the European External Action Service (EEAS) in the implementation of CSR and on labor and human rights.

As can be seen from the previous, many authors and institutions (through the years) in a variety of ways define and uphold the concept of CSR. Thus, Kotler and Lee (2011: 14-15) define social responsibility as a “commitment of the company to improve community well-being through discretionary-voluntary business practices and contribute to the account of their resources.” The most essential element of this definition, by Kotler and Lee, is the expression ‘volunteering’, which includes legally required business activities, as well as activities that are expected due to their ethical nature, but also the voluntary commitment of the company to exceed its usual level of application of business practice or giving various contributions.

For Vrdoljak Raguž and Hazdovac (2014: 40) “Corporate Social Responsibility (CSR) represents a unique concept of business whereby companies voluntarily and without any legal coercion endeavor to align their business with the needs of society in the widest possible sense. Therefore, the concept and practice of Corporate Social Responsibility are related to the entire range of activities. What does a company produce, how it produces, which resources it uses, how it buys, sells, how it affects the environment, how it employs, how it relates to employees, how it enables them to work, what are working their conditions, how to invest in the social community and if it respects human and labor rights are just some of the issues that determine the overall impact of that kind of enterprise on society.”

Poljak et al. (2013: 181) state the same definition of CSR as Kotler and Lee in 2009, while Hopkins defines socially responsible business as “the attention to which we relate to ethically and socially responsible behavior to interest-influential groups that are beyond, but and within the organization. The goal of social responsibility is to ensure the creation of a high standard of living for interest-influential groups outside and within the enterprise while preserving profitability (2006: 299).”

According to the official website of Corporate Social Responsibility in the Republic of Croatia (2019), it represents “a growing conviction that modern companies have more and more responsibility for their role in society. (...) According to this concept, companies in their activities and relationships with various stakeholders such as owners, shareholders, employees, consumers, suppliers, governments, media, local communities, and the general public, on a voluntary basis, integrate social affairs and protection environment with economic

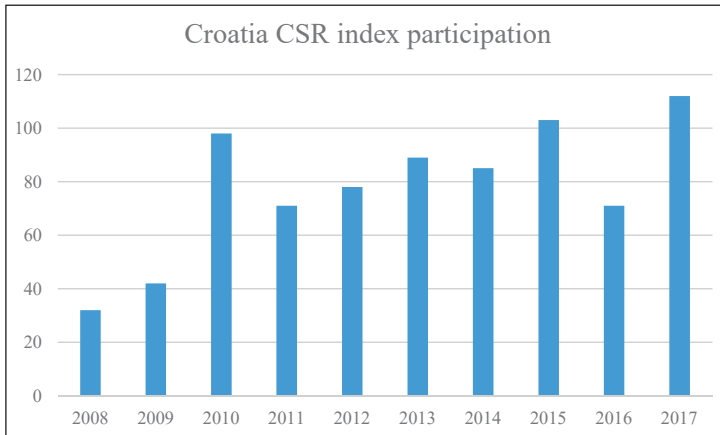
indicators of the business. This is a practice that goes beyond legal requirements, and each company decides on which areas to pay more attention, following their own strategic goals, sources of risk and business opportunities. It contributes to the enhancement of its competitiveness by increasing its reputation, reducing its operating costs, tracking industrial trends, meeting customer needs, motivating and attracting the best employees, reducing risk of prosecution, access to cheaper capital, and risk management. "Also, according to CSR in Croatia, corporate social responsibility applies to companies of all sizes, though the most significant impact of large companies is being investigated because their impact is most noticeable and their power is the greatest. However, that does not mean that small and medium enterprises cannot be socially responsible.

The Croatian Chamber of Economy (in future text: CCE) held the first Conference on Corporate Social Responsibility in Croatia in 2004 and then launched the CSR Index Project. According to the Croatian Chamber of Economy, the CSR Index is a methodology for evaluating responsible practices in the business of Croatian companies. CSR Index was formed on similar world-known methodologies, such as the Business in the Community CR Index. The methodology defines several criteria for an evaluation in the primary seven areas:

- ♦ Economic sustainability,
- ♦ The involvement of socially responsible business in a business strategy,
- ♦ Working environment,
- ♦ Environmental Protection,
- ♦ Market relations,
- ♦ Relations with the community,
- ♦ Responsible Policies on Diversity and Human Rights Protection (CCE, 2010a).

All the companies that are considered to be the most successful in the Republic of Croatia according to the Gold Kuna criteria can participate in the assessment of socially responsible practices. The project aims to popularise corporate social responsibility in the Republic of Croatia in the sense of strengthening the market position of the company and building a good reputation through all segments of the business. This means the responsibility of board and management through all business processes while ensuring profitability, environmental and community management, including fundamental stakeholder interests (CCE, 2010a).

**Graph 1.** An overview of the number of CSR survey respondents for the period 2008 - 2017



**Source:** made by authors from CCE, 2019a.

Each year (beginning in 2008), the Croatian Chamber of Economy sends a call for participation in the participation of the CSR Index Questionnaire to 2,000 small and medium-sized and large enterprises (as well as public) whose business have been financially positive in the previous financial period. Filling out the questionnaire is not mandatory, but is conducted voluntarily, and only interested economic entities fill out the questionnaire. According to Graph 1, it is evident that the smallest number of respondents for the CSR index was at the very beginning, i.e. in 2008, when the survey was conducted for the first time in the Republic of Croatia. The first significant increase in the number of companies that completed the questionnaire replication of the CSR Indexes occurred in 2010 (98 companies) with a growth of over 130% over the previous year (42 companies). After several years, after including public companies in the possibility of completing the questionnaire, in 2012 the number of participants has surpassed the number of participants in 2010 from 103 companies. According to the latest available report on the number of participants in 2017, the result was increased to the 112 surveyed companies. However, despite the increase in the number of participants, there are still a small number of companies participating in this survey (only 5.6% of the total number of invited companies), but an increase is expected over the years, precisely because of increasing awareness of people and businesses about the importance of socially responsible business and behavior.



As commonly known, the most crucial goal of every business is to make a profit. Bearing that in mind, in the whole concept of social business one can ask several key questions: Where is profit? What benefit enterprises have from the business that, at first glance, brings only cost? It is hard to believe that today's businesses are socially responsible only from their own volition. The explanation of corporate socially responsible benefits has been stated by "Business for Social Responsibility", one of the leading non-profit organizations in the world that provides company information, tools, services, and consulting services related to social connectivity responsibility, important business, and strategy. Based on research and experience, it can be concluded that the companies achieve several benefits such as:

- ♦ Increase in sales and market share,
- ♦ Strengthening the position of the inside,
- ♦ Strengthening corporate image and influence,
- ♦ Strengthening the ability to attract, motivate and retain employees,
- ♦ Reduction of operating costs,
- ♦ Increasing attractiveness for investors and financial analysts "(Kotler & Lee, 2009).

Apart from those mentioned earlier, the authors consider it necessary to point out that Corporate Social Responsibility has its hierarchy where it is at the lowest level responsible for profit, followed by compliance with laws, followed by ethics in business and ultimately a contribution to the enterprise. These responsibilities are arranged from bottom to top, depending on their size and frequency with which the manager approaches. "It consists of economic responsibility (at the bottom), which includes profitability, then legal responsibility (compliance with the law), ethical responsibility involving ethical behaviour, and discretionary responsibility at the top, which implies a contribution to community and quality of life (Jakovčević, 2016: 14, from Buble, 2006).

### 3. METHODOLOGY

In April 2019, authors conducted online research through the Google Forms Toolkit to examine Consumer Experience and opinions of socially responsible companies in the Republic of Croatia. The research consisted of a questionnaire divided into three units. The first part contained a question about the familiarisation of respondents with the concept of CSR; the second set consisted of 14



questions that questioned the opinion of the respondents towards CSR business operations, while the last one was composed of 5 questions that examined the demographic characteristics of respondents. The question from the first unit related to familiarity with the concept of CSR was a closed type question. Other questions about the respondents' opinion about CSR were closed type (14 questions) and open (1 question) type questions. Questions related to the demographic characteristics of the respondents were closed type questions. The data collected were analyzed using the MS Office Excel program package, and the method of univariate statistical analysis (descriptive statistics) was used. In the frequency distribution tables, the modality of the observed characteristic is recorded, as well as the percentage and total value data. The questionnaire via Google Forms Toolkit was available for seven days in April.

Before conducting the research, the authors put forward a hypothesis that will be explored through consumer experience survey on socially responsible companies in the Republic of Croatia. The hypothesis is set as follows:

*H1: Consumers are willing to pay a higher price for a particular product in case the manufacturer behaves responsibly.*

#### 4. RESEARCH OF CONSUMERS' PERCEPTIONS ON CSR IN THE REPUBLIC OF CROATIA

In the online survey conducted through the Google Forms Tool for the purpose of writing this paper, 111 respondents participated, 74.7% of them are women, while only 25.3% are male. According to the age structure, the most significant number of respondents belong to the category of 21 to 30 years of age, while the lowest number of respondents are represented in the category of 41 to 60 years of age. According to the working status, 72.1% of respondents are students, 23.4% of respondents are employed and 0.9% of respondents are unemployed. Respondents also differed according to monthly household incomes, 24.3% of them belong to households with monthly income between HRK 6,000.00 and HRK 9,001.00, similarly, (25.2%) of respondents said that their monthly household income is higher than HRK 9,001.00 but lower than 12,001.00 HRK. The smallest number of respondents, 11.7% of them, answered that their monthly household income was less than HRK 3,000.00 per month.

Out of the total number of respondents, 83.8% are familiar with the concept of corporate social responsibility, while the remaining 16.2% of respondents are not familiar with the term. To the question “What does the concept of socially responsible business mean to you?”, respondents could choose more than one response: Respect the law, Care for society, community and people, Care for the Environment/Natural resources, Honor, morality and prudence, Ethical behavior, Compliance with legal procedures, Good/Successful Business, Profit making. The most common response was “Care for society, community and people”, selected by 104 respondents (93.7%), or “Care for the Environment/Natural Resources” selected by 87 respondents (78.4 %). The least commonly selected answer was “Profit Making” with 10.8% (12 respondents) and “Compliance with legal procedures” with 28 responses (25.2%).

When asked “Do you feel that you are socially responsible?”, respondents could respond with grades 1 through to 5, where grade 1 meant “I completely disagree” and grade 5 meant “I completely agree” with that statement. The highest number of respondents answered grade 4 (“I agree”), 63 of the respondents, or 56.8%, while none of the 111 respondents said that they completely disagree with the statement. Only 14 respondents considered themselves to be fully socially responsible and rated 5 (12.6%). In the context of participating in the improvement of the environment, the authors asked the question “Do you believe that you can contribute to the improvement of society or the environment in which you live?” To which one of the three offered responses was possible: “Yes”, “No” or “Maybe.” The largest number of respondents, 70 (63.1%) answered “Yes”, 38 respondents answered “Maybe” (34.2%), while only three (2.7%) answered “No”, indicating the participants’ awareness of the importance of participating in improving his/her environment through socially responsible behavior and business.

In relation to the question “How important is it for companies that produce certain products, that you personally consume, to carry out certain activities?” respondents had to respond to each response offered (Respect the law, Care for society, community and people, Care for the Environment/Natural resources, Honor, morality and prudence, Ethical behaviour, Compliance with legal procedures, Good/Successful Business, Profit making) and choose the degree to which each response is important (1 to 5, from “Not important at all” to “Completely Important”).

The answer to “Respect the law” is identified as “Important” by 42 (37.84%) respondents, 3 (2.7%) responded with “Not important at all”, and 39 (35.14%) responded with “Completely important”. “Compliance with legal procedures” was not important at all for 14 respondents (12.61%). The response for “Care for society, community and people” is identified by 44 respondents (39.64%) as “Important”, with a very low number, only 3 (2.7%), selecting “Not important at all”, and 42 (37.84 %) respondents selecting “Completely important”. “Care for the environment/natural resources” is important and is of utmost importance for the same number of respondents, 42 (37.84%), while it is not important at all for 14 (12.61%) respondents. The response “Honor, morality and prudence” is considered to be of utmost importance by 43 respondents (38.74%), 37 (33.33%) respondents consider it important, and 13 (11.71%) respondents consider it completely unimportant. “Ethical Behaviour” in the business operations of the company is considered to be of utmost importance by 43 (38.74%) respondents, 39 of whom consider it important, 2 consider it irrelevant and 12 (10.81%) consider it not important at all, which can be said to be rather worrying. “Compliance with legal procedures” is completely important for 28 (25.23%) respondents, important for 45 (40.54%) respondents, and not important at all for 13 (11.71%) respondents. “Good/successful business” is considered by 17 (15.32%) respondents to be completely important, for 40 (38.74%) respondents it is considered important, 17 (15.32%) consider it irrelevant and 14 (12.61%) not important at all, while “Profit-making” is completely important for 12 (10.81%) respondents, 24 (21.62%) think that it is important, 23 (20.72%) that it is irrelevant and 18 (16.22%) that it is not important at all.

Respondents were asked the following question: “Can you remember how you chose a product of a manufacturer that was either a socially responsible/irresponsible company?” to which they were able to choose one answer (the company’s social responsibility was important to your choice, the company’s social irresponsibility was important to your choice, both elements were important, none of the elements were important, I do not remember). Almost half of the respondents (55, or 49.5%) answered that they did not remember and 19 (17.1%) of them, answered that both elements were important.

Most respondents, 72 (64.9%), are willing to pay a higher product price if the manufacturer takes care of environmental protection, 11(9.9%) of respondents are not interested in paying more in this case, while 28 (25.2%) respondents do not know.

The most significant number of respondents learned about socially responsible activities of a company through TV channels (37), rather than on the official web-pages of a particular company (28, or 24.3%) and Facebook (27, or 24.3%). Information on socially responsible activities in newspapers was encountered by only eight respondents (7.2%), while 11 of them (9.9%) did not encounter the socially responsible activities of an enterprise in any of the ways mentioned above.

When asked, "Did any media have an influence on your opinion on the company after you read, heard or saw the company's socially responsible activities?": Eighty-three respondents answered, "Yes" (74.8%), 16 answered, "No" (14.41%) and 12 answered that "I have not read, heard or seen anything about the company's socially responsible activities" (10.21%).

Regarding corporate social responsibility in the Republic of Croatia, 64 respondents answered "No" (57.66%), 35 respondents answered, "I do not know" and only 12 respondents answered "Yes".

Many respondents (77, or 69.37%) answered negatively when they were asked: "Do you know about a company that operates in the Republic of Croatia (domestic or foreign) and is considered socially responsible?". Only 34 respondents answered positively. Those respondents who answered positively on the previous question could state any company operating in the Republic of Croatia and acting socially responsible. This question was answered by 31 respondents (not 34). Most respondents, 12 (38.71%), know that DM-drogerie market is socially responsible in Croatia. Two respondents (6.45%) knew that Zara Croatia, Saponia d.d., Rimac Automobili and Avon Croatia were socially responsible. The following companies had one answer: Atlantic Grupa d.d., bio & bio (Biovega d.o.o, Zagreb), Ikea Croatia, Coca-Cola HBC, Cekin (Vindija d.d.), Domaći med O.P.G. Grgic, Good brand, Lidl Croatia, Podravka d.d., Maybel-line, Žito d.o.o. Osijek, Heineken, Konzum, Zagrebačka Banka d.d. Also, one respondent stated the answer "I cannot remember now, but I am sure they deal with the meat industry".

The most significant number of respondents stated "The improvement of the company's image" as the main reason why companies apply socially responsible business (65 of them), and 36 consider that this is due to "Attracting customers" and "Increase of income" (7), 2 respondents chose the "Attracting Employees", while one respondent chose "All Allocated".

63 (56.76%) respondents think that corporate social responsibility positively influences a company's image, 13 of them think that corporate social responsibility is not influencing a company's image positively or negatively, and only one respondent thinks it influences a company negatively.

## 5. EXAMPLE OF GOOD PRACTICE

As an example of good practice, the authors point to Coca Cola HBC. This is because the company carries out activities of socially responsible behavior at a global level and because it is a good example of doing business in this way, in the Republic of Croatia. Coca-Cola has been publishing its own Corporate Social Responsibility Report since 2003 and has actively participated in the DOP Index Assessment. Since 2008, the company has actively participated in the Dow-Jones Sustainability Index (Coca-Cola, 2018a: 2), where they are the leading beverage producer based on results in the area of sustainable development. In 2014, 2015 and 2016, the company occupied the highest position among representatives of the beverage industry in Europe and globally (Coca-Cola, 2019b).

Coca-Cola HBC is a socially responsible business that is aligned in all the countries in which it operates (28 countries) and is one of the largest Coca Cola Company wholesalers (Coca-Cola 2019). In addition to profit realization, Coca-Cola HBC seeks to fulfill its values by doing business differently and inspirationally. Key values of Coca-Cola HBC are authenticity, excellence, learning, concern for people, acting as a team and success with consumers (Coca-Cola, 2016: 11).

According to Coca-Cola's Sustainable Business Report 2018 (Coca-Cola, 2018), people have a fundamental role in sustainable business growth, and for that reason, Coca-Cola has a great deal of commitment to new employment, development and attracting young talents, and encouraging an effective way of thinking across the company.

The main strategic priorities in the report are:

- acquiring community trust,
- increase in market offer,
- responding to customer needs,
- cost leadership (Coca-Cola, 2018a: 5).

According to the Report on Sustainable Business in Croatia in 2018 (2018a: 5), Coca-Cola HBC is actively working on incorporating sustainability and CSR in every aspect of their business. The sustainability mission is the development of business in a responsible, sustainable and cost-effective manner with risk and opportunity assessment, decision-making and investment in which it generates social value. In order to analyze the level of company sustainability, key economic, social and environmental issues have been identified, including quality and credibility of products; health and nutrition; the well-being and employee involvement; corporate governance, business ethics and anti-corruption measures; human rights and diversity; packaging, recovery and disposal of waste; promotion of water protection; community investment and inclusion; sustainable procurement; carbon dioxide and energy.

Coca-Cola HBC Croatia has been one of the most desirable employers in Croatia in recent years, attracting employees, motivating and retaining gifted people by giving them recognition for their work by offering rewards in terms of variable salaries in terms of their performance. A part of the salaries is determined for achieving strategic business goals, as well as for increasing the company's value and improving sustainability performance (Coca-Cola, 2018a).

In addition to this, Coca-Cola HBC Croatia emphasizes the role and importance of sustainability, respect for human rights, community investment and the principles of CSR. According to the Report (2018a), from 2012 to 2016, Coca-Cola HBC Croatia has invested more than HRK 9 million in projects supporting the local community. Between 2015 and 2017, investments in extensive projects amounted to approximately 4 million and 781 thousand kunas. In the three years, two great projects have been supported: "Our Beautiful Sava" and "The Movement for Joy", while in 2017 two new projects were supported: the Coca-Cola Youth Support and the project of lighting the pedestrian bridge in Osijek.

For nearly a decade, the company's policy has shifted away from a large number of small donations with a noble purpose and has focused on long-term partnership investments for social value. Support is focused on four broad areas:

- ♦ encouraging youth development,
- ♦ environmental protection and promotion of water protection,
- ♦ community development and support in crises,
- ♦ community welfare (Coca-Cola, 2018a: 46).



In Coca-Cola's 2018 Sustainable Business Report (2018a: 50), Coca-Cola has set the 12 new goals it aims to achieve by 2020, which would mean that they still intend to continue with significant investments in CSR. The goals include the increase of spent energy from renewable and pure energy sources by 40%, recovery for use of about 40% of total packaging placed on Croatian market, collection of 20% of total used packaging from used plastic packaging and / or plastic packaging of renewable materials, certificate more than 95% of the key ingredients of agricultural origin in relation to the Coca-Cola system of sustainable farming principles, 2% annual profit before taxation in the community, doubling the number of employees participating in volunteering initiatives, reducing direct emissions of carbon dioxide by 50% in 2010, the reduction of 25% of carbon dioxide emissions in the value chain by 2010, a decrease in the use of water in plants by 30% compared to 2010, the goal is to obtain a certificate according to the EWS standard that was awarded to Coca-Cola in 2016 and in 2017 to support the European Union's goals in the area of the conservation of water resources and 10% reduction in added sugar per 100 ml of carbonated beverages in the European Union and Switzerland.

According to the CSR Index, the company Coca-Cola HBC Croatia participated in the research in 2008, 2010, 2011, 2012, 2013 and 2014 and won 2008, 2010, 2011 and 2012 prizes (CCE, 2019b).

## 6. CONCLUSION

Corporate Social Responsibility has become an unavoidable mode of operation for every modern enterprise, and the benefits of it are multiple. The Coca-Cola HBC, which is observed in this paper, can serve as an example and motivation for all other companies operating in the Republic of Croatia to use CSR activities, as it performs activities for sustainable economic growth and development. In the Republic of Croatia, still only a small number of companies participate in the Survey for the Social Responsibility Index, but the awareness of the importance of CSR is increasing.

The hypothesis set by the authors has been confirmed by 72 (64.9%) respondents; that respondents are willing to pay a higher price for the product if the manufacturer takes care of, for example, environmental protection and is socially responsible. Authors recommend continuing this research in the years to come and expanding (time and number of respondents) and detailing the research.

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# DO WE NEED MORE IMMIGRATION? SOCIO-CULTURAL DIVERSITY AND EXPORT SOPHISTICATION IN EU 28 COUNTRIES

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## **Abstract**

*One of the main concerns for policymakers is the ability of their nations to grow and to provide their citizens with a better standard of living. In a globalized world, this ability is increasingly being linked with the ability to export and structure of exported products. It is widely held that sophisticated knowledge and technology-intensive products offer higher prospects for growth than standardized price competitive goods. Ever since the work of Schumpeter migrations have been considered as an important driver of entrepreneurship, innovation, and technological progress. The social and professional networks of foreign-born individuals mobilize information, know-how, skills and capital to start new firms. They also provide valuable contacts and resources for both resident and newly arrived immigrants. Yet, the existing literature notes that the impact of immigration on innovations in the EU is smaller than that in the*

*USA due to the greater cultural and institutional barriers in the former entity. The understanding of the immigrant role in the economic performance of the EU is particularly important since the growth of the foreign-born population in the EU has been faster than anywhere else in the world. Recent waves of EU enlargement and immigration pressures from other parts of the world have further facilitated this trend. Bearing above said in mind this paper explores the relationship between export sophistication and immigration in EU28 countries over the 2006-2015 period. A dynamic panel estimator is used to discern between short and long-run effects of immigration on the international competitiveness of EU economies. Our results suggest that greater socio-economic diversity increases the sophistication of exports in both the short and long run. The long-run effects are about twice as large than short-run ones.*

**Keywords:** migration, export sophistication, European Union, panel analysis

JEL Classification: F22, O15

## 1. INTRODUCTION

Two features have marked the modern globalization process, a cross-country migration of population and the rise in international movement of capital, goods, and services. The effects of the former process on host country have received much attention from both academics and policymakers. Those against immigration often base their arguments on a thesis about the inability of integration into society and economic flows due to the lack of social capital. Arguments in favor of migrations emphasize the beneficial effect of migrants and socio-cultural diversity on creativity and innovations. Immigrants are in this framework portrayed as carriers of ideas and knowledge pivotal to the development of entrepreneurship and innovations (Bodvarsson and van der Berg, 2009). It was noted already by Schumpeter (1934) that lower attachment to the traditions of the society makes the population of recent immigrants less reluctant to innovate. Empirical evidence from some countries (Saxenian, 1999; 2002) points to the important role of social and professional networks of foreign-born individuals on the mobilization of information, know-how, skills and capital for new business ventures.

The growth of modern economies is closely linked to the second feature of globalization, a rise in the international movement of capital, goods, and services. The ability to export provides countries with the ability to pay for imports

of goods and services they would otherwise be in shortage of but also brings an inflow of capital that can be used to provide their citizens with a better standard of living. More recently and building on the premises of endogenous growth models the economists have started to argue that the prosperity of nations is determined with the structure or sophistication of their exports. The essence of such reasoning is that the productivity and potential for knowledge spillovers to upstream, downstream, and rival firms are not equally embodied in all goods and that specialization in highly productive, sophisticated goods bears much higher growth potential than price-competitive standardized products. The above reasoning has spawned interest of policymakers across the globe into the structural transformation of their countries' exports and factors and forces that can facilitate movement of national export structure towards more sophisticated products. Understanding of export patterns and their drivers is among key contemporary economic questions for unleashing of growth potential in the globalized world.

The relationship between migrations and export sophistication has so far been investigated mostly indirectly through the impact of former on innovations. Yet, it is well established that human capital presents important determinant of structural transformation of exports. The recent upsurge of interest among European policymakers into the building of most competitive global exporter of knowledge-driven goods as well as raising concerns within EU member states over immigration policy make it worth examining the relationship between these two processes. In addition, the intra-EU movement of workers over the past two decades makes it further interesting to examine whether greater socio-cultural diversity caused by migration leads to higher export sophistication. To address this issue, an index of export sophistication is constructed, and the dynamic panel analysis is employed to determine short and long-run effects of migration on export sophistication. The rest of the paper is structured as follows. Next section addresses the importance of migrations for the upgrading of national production and exports structure from the theoretical and empirical point of view. Descriptive analysis of export sophistication and migration patterns in EU28 member states over the 2006-2013 period is provided in section three. Section four discusses the methodological approach while findings are presented in section five. Section six concludes.

## 2. MIGRATIONS, INNOVATIONS AND EXPORT UPGRADING

Immigration is one of the most controversial and politically charged processes. Allen et al. (2018) note that the migrations are central to the development of modern nation states. Yet, international public opinion polls repeatedly show that while the public is more open to international trade and financial integration, skepticism exists towards expanding the inflow of immigration. In European countries such as France, Austria, and Switzerland, far-right parties have successfully rallied voters by explicitly embracing anti-immigrant messages. Moreover, due to the political instability and war in Syria, immigration has recently become a key political and security issue in the EU, which raises key economic questions as well. It is obvious when national economies combat with declining economic trends, immigration into one's country is faced with reduced support for open immigration policies. Sectoral inflows are not characterized by these unsatisfactory effects when national economies are doing comparatively better and confidence is on a higher level. Similarly, employment growth in one's sector tends to be associated with more liberal immigration preferences.

In a globalized economy, the cross-border movement of goods, capital, and labor can come with substantial distributive consequences. For example, David Card (2009) explains US immigration's impact on wages, rents, taxes, internal migration, skill composition, population growth and the ethnic and income composition of neighborhoods and schools. Level of countries' development may affect the relationship between immigrant flows and the level of wages of natives. Immigrants often move to boom economies, in which case natives are confronted with a decline in their wages (Dancygier and Donnelly, 2012). Studies examining gateway cities indeed often fail to find wage effects following increases in the supply of local labor. In the face of locally segmented labor markets and limited worker mobility in the short term, the increased demand that accompanies the arrival of large numbers of migrants can mitigate downward wage pressures (Card 1990, 2001). Moreover, if immigrant-working force seeks employment in economies that are growing, they may provide the necessary reinforcement to meet rising demand (Massey 2008). Thus, native workers may not be fired, and any negative effect on their wages may be disguised by the offsetting increase in wages since the higher wages that would have arrived in the absence of migration are never observed.

National economic conditions could have a significant impact on the relationship (or/and perception) between immigrant-workforce and a native workforce of the observed economy. According to Dancygier and Donnelly (2012), during times of economy's expansion, native-workforce may feel less locked into their current sector of employment as job opportunities abound and help offset mobility costs. During a recession, the native workforce may consider the inflow of immigrants into their sectors as an economic threat. In other word, in the economic downturn of the country, immigrant workers are often the first ones to be laid off, ahead of their native co-workers. During recessions, joblessness among immigrants typically rises faster than among native labor, and net migration rates decline. The statistical proof can be found in the 2007–2008 downturn when the increase in the immigrant unemployment rate in the EU-15 was twice that of natives (OECD 2011a, 74). The justification of the previous thesis can be identified within the research of Peri (2010) who confirms that the labor market impacts of immigration are worse for natives during downturns than during expansions.

Literature investigates the relationship between natives and immigrants in detail. The empirical evidence of Borjas (1994, 1995) concludes that more recent immigrant waves will remain economically disadvantaged throughout their working lives; that this disadvantage may be partially transmitted to their future generations; that recent immigrants are more likely to participate in welfare programs than native workforce; and that immigration may have contributed to the increase in wage inequality observed during the 1980s. Within the research of Borjas (1995), it has been discussed that natives do benefit from immigration mainly because of production complementarities between immigrant workers and other factors of production and that these benefits are larger when immigrants are sufficiently “different” from the stock of native productive inputs.

Historical evidence, however, suggests that immigrants may have adverse effects on economic outcomes of host areas over long periods of time. Von Berlepsch, Rodriguez-Pose and Lee (2019) observe a positive effect of migration on income per capita levels of US counties in the short run and with the time span of even 100 or 130 years after the arrival of immigrants. Immigrants have a long-lasting impact on local economic development through cross-generational transmission of the ethnic capital and mentality. Yet, the positive effects of migration, according to these authors depend on the ability of immigrants to better integrate into host country society. The greatest effects come from children born to foreign-origin mothers and domestically-born fathers who were able to integrate them into society.

Besides above-mentioned effects existing literature analyses the impact of skilled immigration on innovation as a driver of technological progress, productivity growth, and consequently economic growth. According to Hunt and Gauthier-Loiselle (2010), if immigrants in the USA increase patents per capita, they may increase output per capita and make natives better off. Authors discuss that one-way skilled immigrants could boost patenting per capita is through a higher level of concentration than natives in science and engineering occupations. Immigrants are likely to be over-represented in such occupations. Scientific and engineering knowledge transfers easily across countries since it does not rely on institutional or cultural knowledge, is not associated with occupations with strict licensing requirements like medicine and does not require the sophisticated language skills of a field like law (Hunt and Gauthier-Loiselle (2010); Chiswick and Sarinda, 2007).

Skilled immigrants could also boost the patenting process per capita if a mixture of immigration policies and immigrant self-selection leads them to be more educated or of higher unobserved inventive ability. Immigrant inventors may, in turn, transform natives in the more inventive workforce. Even immigrant-workforce who do not patent themselves may increase patenting by providing complementary skills to inventors, such as entrepreneurship. Conversely, negative spillovers could offset immigrant inventors' contributions, for example, if their presence discourages natives from working in science and engineering law (Hunt and Gauthier-Loiselle (2010); Brojas, 2007). On the other side, Hunt and Gauthier-Loiselle (2010) discuss the faster increase in unskilled immigration than skilled immigration in the European low- and middle-income source countries since the Immigration Act of 1965. Studies in developed countries that have a high level of immigration and a highly skilled foreign-born population, such as some EU countries and the USA, have identified a positive relationship between the presence of immigrants and the level of innovation in firms.

Using a 1940-2000 state panel, Hunt and Gauthier Loiselle (2010) measured the impact of immigration on innovation and the individual innovation factors and regional determinants of innovation in the USA. Their empirical analysis indicates that immigrants account for 24 percent of patents, twice their share in the population. They concluded that the 1.3 percentage point increase in the share of the population composed of immigrant college graduates, and the 0.7 percentage point increase in the share of post-college immigrants, each increased patenting per capita by about 12 percent based on least squares 19



and 21 percent based on instrumental variables. The 0.45 percentage point increase in immigrant scientists and engineers increased patenting per capita by about 13 percent based on least squares 20 and 32 percent based on instrumental variables. Matloff (2013) concluded that the US technology industry, which not only employs foreign workforce to reduce labor costs but uses native employees to promote research and development as well.

The evidence of the importance of the education of migrants has been confirmed elsewhere as well. Fassio, Montobbio, and Venturini (2019) show on samples from the United Kingdom, Germany and France that highly educated migrants facilitate innovation with the effect being particularly high in industries with greater openness to trade, high inflows of foreign investment and greater ethnic diversity. At the same time this paper signals that the selection of migrants in a way that suits the needs of individual industries creates greater effects on the innovativeness of analyzed economies.

Using regional data for Germany, Niebuhl (2012) proved that differences in knowledge and capabilities of the workforce from diverse cultural backgrounds boost R&D activities. Moreover, Simonen and McCann (2008) examined the link between innovations of Finnish firms and the proportion of their foreign workforces. They have found a positive impact on innovation from hiring foreign workers who have worked in the same industry elsewhere. Downie (2010) examines different aspects of innovation across areas such as business, research, the culture sector, and global commerce in Canada. They didn't exclude effects on the individual immigrant, the firm, and the national and international economy. At every level of analysis, the author confirmed that immigrants have a beneficial impact on innovation. According to the literature, it could be concluded that a number of empirical studies explained the advantages and disadvantages of immigration. Theoretical background of this paper confirmed the economic and social roles of immigrant workers within immigrant-receiving economies.

The above findings have important implication for the understanding of export structural transformation towards more sophisticated products as such goods are characterized by a high degree of innovativeness. Rauch and Triade (2002) point to the positive effect of migrants in establishing connections among producers in the host country and home country market. Similarly, Peri and Requena-Silvente (2010) observe the export-creating effect in Spain caused by immigrants. This effect manifests itself through the establishment of



business and social networks and reduced costs of doing business with foreign markets. Most importantly, the study obtains evidence of beneficial effect of immigrants on exports of sophisticated manufacturing goods. Similar findings have been observed in other EU member states as well. Hatzigeorgiou and Lodefalk (2016) observe a positive impact on the export performance of Swedish firms from skilled migrants.

### 3. EXPORT SOPHISTICATION AND MIGRATION IN EU MEMBER STATES

The sophistication of exports from a given country is commonly determined on the basis of technological or knowledge intensity bounded in its goods and services. One of the most widely used such classifications is the one provided by OECD (2011b) where goods are classified into four categories based on R&D intensity and R&D embodied in intermediate and investment goods. However, such classification is relative as industries produce a wide range of products with different technological intensity. Furthermore, such classification is not directly applicable to services. Another approach to the determination of export sophistication has been recently proposed by Hausmann, Hwang, and Rodrik (2007). The starting premise here is that goods differ by their levels of productivity. Once the productivity level of a particular good is determined the sophistication of export baskets of individual countries can be revealed on the basis of the proportion of particular goods in the overall structure of their exports. Supposing that the overall exports of country  $j$  consist of  $n$  goods the total export  $X$  of country  $j$  can be written as:

$$X_j = \sum_{i=1}^n x_{ij} \tag{1}$$

The productivity level associated with given good  $i$  produced by  $n$  countries can be constructed as:

$$PRODY_i = \sum_{j=1}^n \frac{x_{ij}}{X_j} * GDPpc_j \tag{2}$$

In (2) the numerator reflects the share of each individual good in total exports of each country. The denominator is aggregate of these shares across all countries exporting particular good. Hence, this part of expression presents a revealed comparative advantage of each country in good  $i$ . The revealed com-

parative advantage is multiplied with GDP per capita of each country exporting given well. The overall index of productivity embodied in good  $i$  is then constructed as an aggregate of weighted GDP per capita across countries where revealed comparative advantages are used as weights. Hausmann, Hwang, and Rodrik (2007) note that such construction of index eliminates the effect of country size as it weights the country's income more heavily for those countries exporting larger proportions of each given well.

The above-defined method has been applied to the data taken from United Nations Comtrade database of traded goods classified according to Harmonized System (HS) 6-digit classification for the 2006-2015 period. The information on trade value is available for about 6000 goods at this level and for 170 countries. As can be seen from Table 1 the smallest levels of productivity are found among primary commodities whose share of exports is highest among the least developed countries. On the other hand, highest productivity levels are observed among groups of goods whose share of exports is relatively high among developed countries such as the United States, Germany or Luxembourg.

**Table 1:** Productivity of traded goods 2006-2015

	Product code	Product name	Mean value
Smallest	130214	Saps and extracts of pyrethrum	453
	230220	Bran, sharps and other residuals	571
	530410	Sisal and agave, raw	588
	261590	Ores, slag and ash	666
	90700	Cloves	742
Largest	590290	Tire cord fabric of viscose rayon	98241
	730110	Sheet piling of iron/steel	96039
	721069	Flat-rolled products of iron	91612
	721633	Angles, shapes, and sections of iron/non-alloy steel	91131
	441139	Fiberboard of wood and other non-ligneous materials	83089

**Source:** Authors' calculations

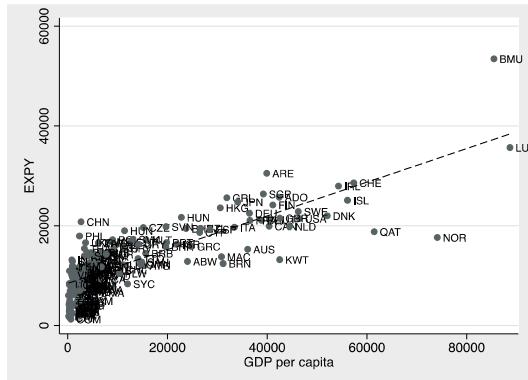
As noted previously, the productivity embodied in particular goods can be used to construct a country-wide index of export sophistication. Let export basket of country  $j$  consist of  $n$  goods. From there the export sophistication index can be calculated as:

$$EXPY_j = \sum_{i=1}^n \frac{x_{ij}}{x_j} PRODY_i \quad (3)$$

In equation (3) export sophistication index is a weighted sum of productivity embodied in each exported product where shares of individual products in

the total export basket of country  $j$  are used as weights. The plot of EXPY index against GDP per capita on the world sample (Figure 1) reveals that highest values of EXPY are found in the most developed countries, a finding consistent with earlier discussion.

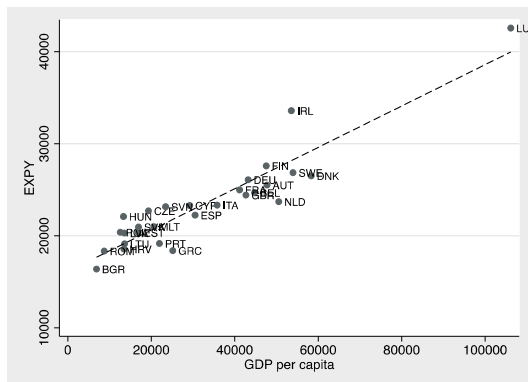
**Figure 1:** Export sophistication and GDP per capita 2006-2015



**Source:** Authors' calculations

The same finding holds when one reduces sample to the European Union member states. As can be seen from Figure 2 highest export sophistication values are found among member states with the highest level of GDP. It is also worth noting that practically all new EU member states from Central and Eastern Europe fall on the lower end of export sophistication.

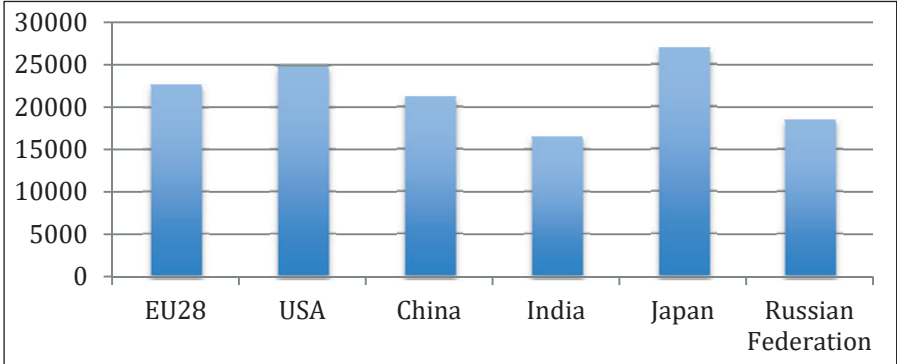
**Figure 2:** Export sophistication and GDP per capita in EU member states



**Source:** Authors' calculations

A comparison of EU member states with their main global rivals in terms of export sophistication, United States, Japan, India, China, and Russia in Figure 3 reveals that the EU28 as a whole was outperformed by both Japan and United States over this period. The EXPY value was close to that of China and above both India and the Russian Federation.

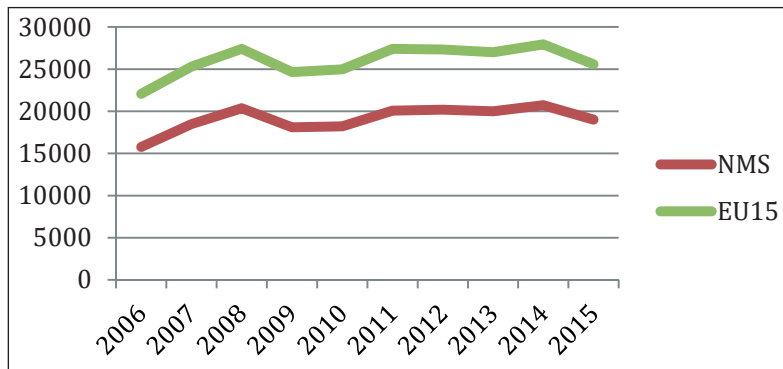
**Figure 3:** Export sophistication (EXPY): EU vs main global rivals 2006-2015



Source: Authors' calculations

One of the motives for transition and entrance into the European Union among Central and East European countries was the possibility of penetration to new markets. Through much of the past two decades, CEECs were known as producers of standardized price competitive products which can be labeled as less sophisticated goods. To explore whether such a trend has been reversed and these countries moved towards more sophisticated goods a comparison is made between EU15 countries and new member states (NMS) from Central and Eastern Europe in Figure 4. As it can be seen there, the difference in export sophistication between two groups of countries has largely remained stable and the two have followed a similar trend.

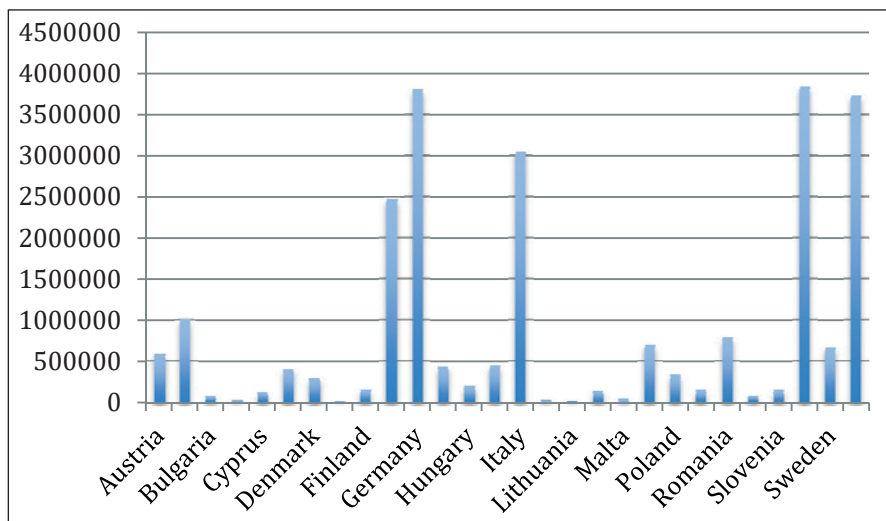
**Figure 4:** Export sophistication (EXPY): EU15 vs NMS



**Source:** Authors' calculations

A prominent feature of European economies over the past two decades has been a movement of population between EU member states and immigration from countries outside of EU. United Nations Migration data for the 2006-2013 period, the most recent period for which data are available in Figure 5 to reveal that the bulk of immigrants was concentrated in only a few European countries which happen to be among those with highest GDP per capita, namely France, Germany, Italy, Spain, and the United Kingdom.

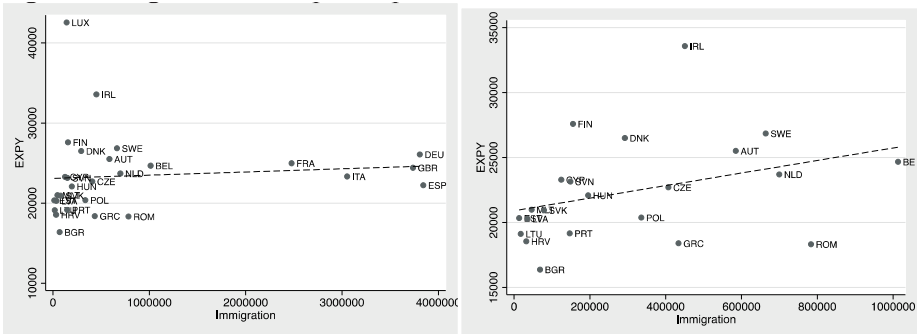
**Figure 5:** Migration patterns in EU member states 2006-2013



**Source:** Authors' calculations

As noted previously, there are several channels through which immigrants can contribute to the prosperity of host economy and the competitiveness of its firms and industries ranging from the networks of foreign entrepreneurs, facilitating of creativity and increased innovation activities. Data from Figure 6 provide some support to such argumentation. From Figure 6a the highest proportion of migrants is in countries with the highest values of EXPY. The connection between two holds even after one control for potential outliers in terms of both EXPY (Luxembourg and Ireland) and a number of migrants (Germany, United Kingdom, Spain, Italy, and France) (Figure 6b). Overall, these findings suggest that immigrants could be a potential channel for the improvement of export sophistication. The continuation of the paper explores such possibility in more detail.

**Figure 6:** Migration and export sophistication in EU member states 2006-2013



Source: Authors' calculations

#### 4. MODEL AND METHODOLOGY OF INVESTIGATION

The roots of export sophistication can be looked for in several areas. On the one hand, the building of export competitiveness is a lengthy process that requires the continuous building of own competitive advantages. In such a process, current results will be closely related to their past realizations. Previous studies have associated this index with several variables recognized in the literature as general determinants of export upgrading. Ever since the endogenous growth models, it has been argued that innovations offer higher potential for differentiation and achievement of above-average returns. Analogously, higher

productivity of exports or its sophistication can be expected in the presence of higher innovation activity. For this reason, the proportion of GDP invested in research and development is included among regressors. The quality of human capital is another important prerequisite for export sophistication upgrading as it presents the potential for a greater range of discoverable goods. To this end, a percentage of the population with tertiary education also enters the model. Size of the population is included as a control for the potential of the labor force. Hausmann, Hwang, and Rodrik (2007) associate greater labor force with potential for lower costs. We also control for the difference between EU15 countries and new EU member states with a categorical variable. Finally, the migrations enter model with variable measuring the number of foreign immigrants in each of the analyzed countries in a given year.

The analysis is undertaken with the means of two-step dynamic system panel estimator (Arellano and Bover, 1995; Blundell and Bond, 1998). The used methodology enables us to control for dynamics of export sophistication index as well as its correlation with unobserved time-invariant components of disturbance. It is also capable of distinguishing between short and long-run effects of individual variables on the export sophistication. In order to control for universal cross-sectional shocks, the estimation also includes annual time dummy variables. As system estimator tends to produce downward biased standard errors Windmeijer correction was applied. Bearing in mind that migration data are available only for a period up to 2013 this part of the analysis was limited to the 2006-2013 period. Finally, all variables for which such transformation is possible to enter a model in logarithmic form.

## 5. DISCUSSION OF FINDINGS

The estimation is undertaken on a model that takes the following form:

$$\begin{aligned}
 \ln EXPY_{it} = & \\
 c_0 + \beta_1 \ln EXPY_{it-1} + \beta_2 \ln Migration_{it} + \beta_3 \ln R\&D_{it} + \beta_4 \ln HCapital_{it} + \\
 \beta_5 \ln Population_{it} + \beta_6 NMS_i + \sum_{i=2007}^{2013} year_t + u_i + v_{it} & \quad (4)
 \end{aligned}$$

The validity of the model specification was examined through the number of diagnostic tests. As can be seen from Table A1 in Appendix all relevant diagnostics provide support to our model. Hence, there is an insufficient amount of

evidence to reject the null hypothesis of no autocorrelation of the second order, the Hansen test suggests that overidentifying restrictions are valid thus giving support to the chosen instruments. Similarly, difference-in-difference Sargan tests for levels equation and lagged dependent variable signal that system estimator should be preferred over differenced one and that lagged dependent variable does not follow a random walk. Finally, the number of instruments is lower than the number of cross-sectional units (groups). Overall, these diagnostics provide support to the chosen model and enable us to proceed with the interpretation of results.

**Table 2.** Results of estimation

Variable	Short run	Long run
Lagged dependent variable	0.47***	-
Migrations	0.03**	0.06**
R&D investment	0.02**	0.14**
Human capital	0.001	0.001
Population size	-0.05**	-0.10**
Control variable – NMS	-0.03	-0.06
Constant	5.87***	-

**Source:** Authors calculations

Note: \*\*\*, \*\*, \* denote statistical significance at 1%, 5%, and 10% level respectively; p-values estimated with two-step dynamic panel estimator with Windmeijer robust standard errors corrections. Annual time dummies included.

The coefficient on the lagged dependent variable is statistically significant and positive suggesting that the current sophistication of exports is the outcome of processes that take place over time. The effect of migrations on export sophistication is positive and about two times higher in the long run than in the short run. It is therefore likely that previously mentioned effects such as business networks of immigrants, their impact on creativity and on innovations all together lead to the upgrading of country's exports. Among other variables, the positive impact is observed on R&D investment and a negative one on the size of the population. While the former is expected the latter finding is somewhat surprising. A likely explanation is that this finding is driven with few outliers in our samples such as Luxembourg or Ireland.



## 6. CONCLUSION

Two pressing issues have marked recent EU policy, the pressure to meet ambitious objectives set in Europe 2020 strategy and the rising negative attitudes towards immigration. Despite significant efforts invested in the building of the knowledge-driven economy the lagging of EU behind its main rivals continues. This is also evident, as noted by our paper among others, in the competitiveness of EU exports whose sophistication is lower than that of main rivals such as the USA and Japan. Differences are even more pronounced if one looks new EU member states whose export structure is dominated with standardized price-competitive products. Diminishing of such differences is a challenge for future EU policy.

The improvements in export sophistication require the building of innovation-driven society. The drivers of this process were looked for in numerous areas. One area relatively omitted from such considerations is the role of migrants. Evidence from many countries points to the important role of this group in their economic life from networks of migrant entrepreneurs to establishing of links with their home countries and most importantly their role as drivers of creativity and innovation. Our findings support such reasoning as they indicate that migrants contribute to the sophistication of EU exports.

The impact of migration on export sophistication is confirmed in the short and long run. In the long run, the contribution of migration will be more vital for the sophistication of EU exports. Workforce, the especially high-skilled workforce in developed economies increases productivity which leads to more competitive companies on the international (export) market. However, export sophistication from the previous year has the most significant impact on the export sophistication from the current year. R&D expenditure plays a minor role in export sophistication in the short run but more relevant significance in the long run (because of the transformation of R&D to innovations). We concluded that human capital has the smallest impact on the sophistication of EU exports.

Due to the political tensions and negative conflict repercussions, the European Union has received migrants from Middle-East countries. EU developed countries were prone to receive migrants with various level of skills. Therefore, after the incubation stage, which can last for years, the productivity will record increase, as well as the sophistication of EU exports.

Overall, our findings offer several interesting policy implications. They reveal the existence of gaps between the EU and its main rivals as well as between EU member states. The latter is particularly evident when it comes to EU15 and new EU member states. Addressing these challenges should be a matter of interest for both cohesion and trade policymakers. Another finding is the positive impact of immigrants on improvements in export sophistication. It remains a challenge then for EU policymakers to define mechanisms for deeper integration and exploiting of innovation potential of immigrants.

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## 8. APPENDIX

**Table A1:** Model diagnostics

Diagnostics	Value
Number of observations	224
Number of groups	28
Number of instruments	20
Wald test	4031***
Hansen <i>J</i> test ( $p > \chi^2$ )	10.47 (0.23)
Arellano-Bond test first order ( $p > \chi^2$ )	-2.84 (0.00)***
Arellano-Bond test second order ( $p > \chi^2$ )	-1.12 (0.26)

**Source:** Authors calculations

\*\*\*, \*\* and \* denote statistical significance at 1%, 5% and 10% level respectively

**Acknowledgments:** This research has been fully supported by the University of Rijeka under the project code uniri-drustv-18-1611431 and uniri-drustv-18-2816862.

# THE SIGNIFICANCE OF EUROPEAN STRUCTURAL AND INVESTMENT FUNDS FOR THE REPUBLIC OF CROATIA IN THE AREA OF INFORMATION AND COMMUNICATIONS TECHNOLOGIES

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## **Abstract**

*Information and Communication Technologies (ICT) have the leading role in the transformation of business, government services, lifestyles of citizens, and thus society. They are the foundation of the digital society as well as the knowledge society, which are systematically promoted and gradually built by the EU with the aim of encouraging innovation, creativity, and competitiveness of the European industry and the rest of the world.*

*Digitalization implies wider use of the Internet and greater involvement of people, government and companies that are engaged in it and regularly use it. Higher quality broadens the availability and intensive use of ICT infrastructure are the main priorities for the investment of ESI funds, particularly from ERDF. Allocation for that priority within Croatian Operational Programmed Competitiveness and Cohesion is EUR 307.95 million out of 6,881 billion.*

*This allocation must be directed towards the development of the innovative e-services of modern public administration by the “smart government” principles, including providing full services, digitizing business and administrative processes, and opening public administration information through various channels available at any time, anywhere and through different devices. The main purpose is to improve the lives of Croatian citizens and to boost the competitiveness of the economy by supporting the development of the digital economy to include the unique EU digital market.*

*The paper gives results of comparative analysis of key indicators of the digital economy and society level (DESI) of Croatia and EU 28 countries and measures to be taken to reach the level of EU development.*

**Keywords:** ICT, competitiveness, digitalization, e-services, broadband

JEL Classification: M15, L96

## 1. INTRODUCTION

EU has recognized the importance of the development of ICT which is vital for EU competitiveness in today's increasingly digital global economy. Furthermore, the EU has decided, and it is very eager to create a Digital Single Market<sup>1</sup> that is recognized as a generator of economic growth and was set up as one of EC priorities<sup>2</sup>. Also, enhancing access to, and use and quality of ICT is one of the objectives/priorities within Cohesion Policy<sup>3</sup>. It is the EU's main investment policy, which targets all regions and cities in the EU in order to support job creation, business competitiveness, economic growth, sustainable development, and improve citizens' quality of life.

In European statistics, there are several criteria used to assess the level reached as well as the potential for ICT growth and development. This data is used for comparison between the Member States and provides the basis for creating a development policy aimed at equalizing development on the one hand and defining the development priorities for the competitiveness of the EU and individual member states of the world ICT market on the other.

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<sup>1</sup> Digital Single Market, <https://ec.europa.eu/digital-single-market/>

<sup>2</sup> The European Commission's priorities, [https://ec.europa.eu/commission/index\\_en](https://ec.europa.eu/commission/index_en)

<sup>3</sup> Economic, social and territorial cohesion, [http://ec.europa.eu/budget/financialreport/2014/expenditure/cohesion/index\\_en.html](http://ec.europa.eu/budget/financialreport/2014/expenditure/cohesion/index_en.html)

By accession to the EU, for the Republic of Croatia was enabled to use funds within Cohesion Policy. Also, Croatia has recognized the importance of the development of ICT and in line with that Croatia has prepared Operational Program Competitiveness and Cohesion 2014-2020 (OPCC)<sup>4</sup>. OPCC is focused to achieve the overall aim of the Digital Agenda for Europe (DAE)<sup>5</sup> which is to deliver sustainable economic and social benefits from a digital single market based on fast and ultra-fast internet and interoperable applications.

The aim of this paper is to evaluate the achieved level of development and the directions of the future development of the digital economy and society in the Republic of Croatia in the context of this development in the EU28, based on the comparative analysis of the DESI index. The paper will present Croatia's activities and progress through the years for reaching the OPCC objectives regarding the ICT development, especially in terms of adopting the and implementing national strategies, as well as the future steps for achieving OPCC's objectives.

## 2. AN OVERVIEW OF PREVIOUS RESEARCH

The subject of this paper is the development of information society in Croatia in the context of EU and Croatian strategic documents and sources of funding. Numerous researches preceded the formulation of strategic documents, development policies and the implementation of measures and programs for their realization. They are focused on different aspects of socio-economic development (economy, social relations and individuals, government institutions and population, environmental impacts, etc.) and are implemented in order to achieve different goals related to different spatial-temporal domains. Below we will give a brief overview of those researches that preceded the design of key strategic documents for the development of European society as an information society and consequently the development of society in the Republic of Croatia as an information society. We will also give a brief overview of methodological solutions for measuring the level of development of some social aspects of ICT.

<sup>4</sup> Operational Programme Competitiveness and Cohesion 2014 - 2020 2014HR16M1OP001 - 1.2“, <https://strukturnifondovi.hr/vazni-dokumenti-operativni-program-konkurentnost-i-kohezija/>

<sup>5</sup> Digital Agenda for Europe, <http://www.europarl.europa.eu/factsheets/en/sheet/64/digital-agenda-for-europe>

## 2.1. RESEARCH AND DOCUMENTS RELEVANT TO THE DEVELOPMENT OF AN INFORMATION SOCIETY IN THE EU

### 2.1.1. The Digital Agenda for Europe

The Digital Agenda for Europe (DAE) is one of the seven flagship initiatives of the Europe 2020 Strategy<sup>6</sup>, set out to define the key enabling role that the use of ICT will have to play if EU wants to succeed in its ambitions for 2020. The overall aim of the DAE is to deliver sustainable economic and social benefits from a digital single market based on fast and ultra-fast internet and interoperable applications (EC, A Digital Agenda for Europe, 2010, p. 3.).

The objective of the DAE is to chart a course to maximize the social and economic potential of ICT, most notably the internet, a vital medium of economic and societal activity: for doing business, working, playing, communicating and expressing ourselves freely. Successful delivery of the DAE will spur innovation, economic growth and improvements in daily life for both citizens and businesses. Wider deployment and more effective use of digital technologies will thus enable EU to address its key challenges and will provide Europeans with a better quality of life through, for example, better health care, safer and more efficient transport solutions, cleaner environment, new media opportunities and easier access to public services and cultural content (EC, A Digital Agenda for Europe, 2010, p. 3.).

EC has identified the seven most significant obstacles that seriously undermine efforts to exploit ICT (EC, A Digital Agenda for Europe, 2010, p. 5-6.):

- a) Fragmented digital markets;
- b) Lack of interoperability;
- c) Rising cybercrime and risk of low trust in networks;
- d) Lack of investment in networks;
- e) Insufficient research and innovation efforts;
- f) Lack of digital literacy and skills;
- g) Missed opportunities in addressing societal challenges.

The DAE's action areas to tackle these seven obstacles (EC, A Digital Agenda for Europe, 2010, p. 7-27.):

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<sup>6</sup> Seven pillars of the Europe 2020 Strategy: Innovation Union, Youth on the move, A digital agenda for Europe, Resource efficient Europe, An industrial policy for the globalization era, An agenda for new skills and jobs, European platform against poverty.



- a) A vibrant digital single market (It is time for a new single market to deliver the benefits of the digital era);
- b) Interoperability and standards (We need effective interoperability between IT products and services to build a truly digital society);
- c) Trust and security (Europeans will not embrace technology they do not trust - the digital age is neither “big brother” nor “cyber wild west”);
- d) Fast and ultra-fast internet access (We need the very fast Internet for the economy to grow strongly and to create jobs and prosperity, and to ensure citizens can access the content and services they want);
- e) Research and innovation (Europe must invest more in R&D and ensure our best ideas reach the market);
- f) Enhancing digital literacy, skills, and inclusion (The digital era should be about empowerment and emancipation; background or skills should not be a barrier to accessing this potential);
- g) ICT-enabled benefits for EU society (Smart use of technology and exploitation of information will help us to address the challenges facing society like climate change and the aging population).

### **2.1.2. Information and communication technologies (ICT) as one of the cohesion policy priority for 2014-2020**

Cohesion Policy is the EU's main investment policy, which targets all regions and cities in the EU in order to support job creation, business competitiveness, economic growth, sustainable development, and improve citizens' quality of life. By 2020 the EU aims to meet five concrete objectives – high employment rate, innovation, education, social inclusion, and climate/energy adaptation/improvement. Each Member State adopts its own national targets in these areas. In order to reach these goals and address the diverse development needs in all EU regions, EUR 351.8 billion has been set aside for Cohesion Policy for 2014-2020 which is almost a third of the total EU budget (European Commission (EC), An introduction to EU Cohesion Policy 2014-2020, 2014).

Funding of the Cohesion Policy goes through three main funds: European Regional Development Fund (ERDF), European Social Fund (ESF) and Cohesion Fund (CF). Together with the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF), they make up the European Structural and Investment (ESI) Funds (EC, An introduction to EU Cohesion Policy 2014-2020, 2014).

There are 11 thematic objectives/priorities<sup>7</sup> for the investment within Cohesion Policy and Enhancing access to and use and quality of ICT is one of them. Aforementioned priority is supported via ERDF (EC, An introduction to EU Cohesion Policy 2014-2020, 2014).

The ERDF aims to strengthen economic and social cohesion in the EU by correcting imbalances between its regions. Particular attention is paid to regions, which suffer from severe and permanent natural or demographic handicaps, such as the regions with very low population density as well as islands, cross-border, and mountain regions. As the ERDF contributes to the Europe 2020 Strategy<sup>8</sup> for smart, sustainable and inclusive growth, it has to focus on the priorities specified in this strategy. The main priorities known as “thematic concentration” are (European Parliament and Council, Regulation (EU) No 1301/2013, 2013):

- a) Research and innovation;
- b) Information and Communication Technologies (ICT);
- c) Small and medium-sized enterprises (SMEs);
- d) Promotion of a low-carbon economy.

Within enhancing access to, and use and quality of ICT the ERDF supports investments for the (European Parliament and Council, Regulation (EU) No 1301/2013, 2013):

- a) extending broadband deployment and the roll-out of high-speed networks and supporting the adoption of emerging technologies and networks for the digital economy;
- b) developing ICT products and services, e-commerce, and enhancing demand for ICT;

<sup>7</sup> 11 Thematic objectives/priorities for the investment within Cohesion Policy: strengthening research, technological development and innovation; enhancing access to, and use and quality of information and communication technologies (ICT); enhancing the competitiveness of small and medium-sized enterprises (SMEs); supporting the shift towards a low-carbon economy; promoting climate change adaptation, risk prevention and management; preserving and protecting the environment and promoting resource efficiency; promoting sustainable transport and improving network infrastructures; promoting sustainable and quality employment and supporting labour mobility; promoting social inclusion, combating poverty and any discrimination; investing in education, training and lifelong learning; improving the efficiency of public administration.

<sup>8</sup> The Europe 2020 strategy is the EU’s 10-year agenda for growth and jobs. It emphasises smart, sustainable and inclusive growth as a way to overcome the structural weaknesses in Europe’s economy, improve its competitiveness and productivity and underpin a sustainable social market economy.

- c) strengthening ICT applications for e-government, e-learning, e-inclusion, e-culture, and e-health.

The level of concentration required varies according to the category of regions being supported. More developed regions have to allocate at least 80% of their ERDF resources to at least two of these priorities and at least 20% to the low-carbon economy. Transition regions have to allocate at least 60% of their ERDF resources to at least two of these priorities and at least 15% to the low-carbon economy. Less developed regions have to allocate at least 50% of their ERDF resources to at least two of these priorities and at least 12% to the low-carbon economy (European Parliament and Council, Regulation (EU) No 1301/2013, 2013).

The development of ICT is vital for EU competitiveness in today's increasingly digital global economy. Over EUR 20 billion from the ERDF and CF is available for ICT investments during the 2014-2020 funding period. These investments support EC's action to create a Digital Single Market, which has the potential to generate up to EUR 250 billion of additional growth<sup>9</sup>.

## **2.2. RESEARCH AND DOCUMENTS RELEVANT TO THE DEVELOPMENT OF AN INFORMATION SOCIETY IN CROATIA**

The design of strategic documents related to the development of different aspects of ICT is preceded by numerous research and analysis. The key documents, i.e. a set of documents relevant to the European context of ICT development in the Republic of Croatia are the e-Croatia 2020 Strategy, and the Operational Program Competitiveness and Cohesion 2014-2020 (Programming Axis 2), where key resources for the implementation of the strategic goals are foreseen.

### **2.2.1. e-Croatia 2020 Strategy**

e-Croatia 2020 Strategy was published in May 2017<sup>10</sup>. Although the strategy has been implemented almost three years after the Operational Program Competitiveness and Cohesion has started, it should be noted that other stra-

<sup>9</sup> Source: EC, available at: [https://ec.europa.eu/regional\\_policy/en/policy/themes/ict/](https://ec.europa.eu/regional_policy/en/policy/themes/ict/), accessed January 22, 2019.

<sup>10</sup> <https://uprava.gov.hr/dokumenti/10?page=1&tag=-1&tip2=1&Datumod=&Datumdo=&pojam=Strategija> e-Hrvatska 2020, pristupljeno 03.02.2019

tegic documents have been realized before or during the implementation of the operational plans, including the implementation of ICT support in many areas of social and economic development. Some of them are:<sup>11</sup>

- ♦ National Strategy for Health Care Development 2012 - 2020.
- ♦ Strategy for the Protection, Conservation and Sustainable Economic Use of Cultural Heritage of the Republic of Croatia for the period 2011-2015
- ♦ Education, Science and Technology Strategy 2014
- ♦ Strategy for broadband access development in the Republic of Croatia in the period from 2016 to 2020 and the Implementation Program of the Strategy 2012-2013.
- ♦ The Strategy of Spatial Planning of the Republic of Croatia from 1997 and the Decision on Amendments to the Spatial Planning Strategy of the Republic of Croatia.
- ♦ Judicial Development Strategy, for the period from 2013 to 2018.
- ♦ Strategy for the Development of Electronic Business in the Republic of Croatia for the period 2007 – 2010.
- ♦ Other documents are relevant to the development of particular socio-economic sectors.

e-Strategy is a strategic document written with the intention of improving the quality of life of citizens in the Republic of Croatia by raising the competitiveness of the economy through ICT and providing high quality electronic public services to society. The purpose of the e-Strategy is to create a strategic framework for a coherent, logical and efficient information system of the state by providing high quality and economical electronic services at both national and European level. Ensuring interoperability between existing and new ICT systems in public administration, while eliminating duplication of their functionality, is also in the focus of the e-Strategy. The achievement of its objectives will be measured based on the percentage of citizens and companies using public e-services, as well as the level of customer satisfaction (Ministry of Public Administration, e-Strategy, 2017, p. 2.).

### **2.2.2. Operational programme competitiveness and cohesion 2014-2020**

The basis of the OPCC is the analysis of socio-economic circumstances, identified obstacles to growth and development needs in Croatia, in the context

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<sup>11</sup> Detalji se mogu naći u dokumentu Strategija e-Hrvatska 2020, str.16-19

of the Partnership Agreement (PA)<sup>12</sup>, relevant EU and national strategies, their related targets and fundamental strategic provisions (OPCC, 2014, p. 1.).

OPCC identified that one of the main problems of Croatia in the ICT sector is broadband penetration and NGN (Next Generation Networks) coverage levels, both lagging the EU average levels. Fixed broadband penetration was 21.7% in January 2014 (the EU average was 29.8% in 2013). In 2013, 63.6% of households in Croatia had Internet access (the EU average was 76% in 2013). Although Croatia has already achieved good basic broadband coverage (97% of the population in 2013), total NGA (Next Generation Access) network coverage in Croatia amounted to only 33% in 2013, which positioned Croatia far behind EU's average NGA coverage of 62% in the same year. The current level of NGA coverage is concentrated on few densely populated areas of Croatia. Considering this, significant number of households, public administration sites, educational and health care institutions, as well as small and medium enterprises is unable to access the high-speed broadband and use advanced IT services, thus hindering uniform regional development in Croatia and exploiting of socioeconomic benefits related to the availability of NGA broadband networks (OPCC, 2014, p. 4.).

Furthermore, OPCC's detailed analysis of the Croatian public ICT sector has detected deficiencies which mostly concern inadequate and inefficient cost and investment management in the ICT public sector. Public ICT projects are mainly implemented by individual state administrative bodies, without systematic coordination or possibility to use common resources while concurrently many systems have small utilization percentages of the available ICT infrastructure. Majority of central state bodies use their own software and application solutions and data that are not accessible to other state bodies (unavailability of data). There are no common solutions for the same business processes or a system for the integration of existing applications and databases. Also, OPCC's analysis states that public e-services in Croatia are to a greater extent provided to companies than to citizens. Citizens have fully available 50% of basic public services via the Internet (in 2010), but compared to EU-27, Croatia is below average (EU27 81%). Only 30.8% of citizens communicated with public au-

<sup>12</sup> Each EU member state is obliged to submit a Partnership Agreement which defines a national strategy for ESI Funds. The Partnership Agreement is a comprehensive and coherent strategy of the Republic of Croatia, which fulfils common EU goals for the growth and jobs, transposed into a specific national context.

thorities through online applications in 2013 (EU-27: 50%). The level of provision and use of e-government and e-public services presently in Croatia is insufficient ("online accessibility" indicator for Croatia in 2013 amounted 57% while the average for EU27 was 74%). Institutions within public administration (particularly educational sector, land management, health care, justice, culture, and tourism sector) and other public services are lacking digital data and possibility to exchange the information. ICT equipment and infrastructure necessary for networking and provision of e-services to the public is outdated and inadequate and needs to be further supported. Additional efforts for adaptation of e-services to special needs of different population groups and adjustment of e-content to ensure accessibility of services to everyone (including distant and remote locations, especially on the islands) are necessary (OPCC, 2014, p. 4-5).

Within the scope of the OPCC's Priority axis 2 (PA2): Use of Information and Communication Technologies, ERDF funding will be used to (OPCC, 2014, p. 5.):

- a) address insufficient NGN broadband coverage of Croatian territory;
- b) improve insufficiently managed public ICT infrastructure;
- c) to tackle the lack of data and policy delivery together with the low availability of e-services.

One of the OPCC's PA2 objectives is to develop NGN broadband infrastructure in areas without enough commercial interest for investments in NGN broadband infrastructure, for a maximum increase of social and economic benefits. The objective will be achieved through actions implemented aiming at developing of aggregation (backhaul) NGN network in white and grey NGN areas<sup>13</sup>, and at developing of access networks (NGA with at least 30 Mbps–100 Mbps throughput) in white NGA areas (full market failure) for households, enterprises and public institutions. Investments under this objective will be focused on ensuring access to most public institutions. Considering their social and economic role, priority will be given to ensure connections for administration offices, educational, health, judicial and cultural institutions. Naturally, this means the geographical concentration of investment in regional and municipal administrative centers where the concentration of targeted public institutions

<sup>13</sup> In white areas no provider of broadband access services currently is operating and there is no such provider to be expected in the coming three years either. In grey areas there is one (infrastructure-based) provider already active, however, another network is unlikely to be developed in the next three years.

tends to be highest. Second priority will be given to ensure connections for business zones, business support institutions and enterprises (OPCC, 2014, p. 72.).

The main expected result to be achieved with the use of ERDF funding and national funding (public and private) under this objective is to increase NGN national broadband coverage through three key components until 2023 (OPCC, 2014, p. 72-73.):

- a) Covering of at least 350 central administrative settlements in municipalities located in white and grey NGN areas with aggregation (backhaul) NGN networks, is the prerequisite for further development of NGN (NGA) access networks;
- b) Ensuring connections to all targeted public institutions in white and grey NGN areas;
- c) The increase of national NGA network coverage by 20%, by supporting the deployment of NGA connections for households, business zones, business support institutions and enterprises (at least 30 Mbps-100 Mbps) in settlements located in white NGA areas, with highest leverage effect on business activity in these settlements.

Other expected benefits include stimulation of the demand for broadband connectivity, supporting the development of digital economy (as a consequence of an increase in number of households and public institutions, being covered by NGN network) and in more broad economic perspective also an increase in investment opportunities for local SMEs and external companies (OPCC, 2014, p. 73.).

Second OPCC's PA2 objective is to increase the use of ICT in communication between the citizens and public administration through the establishment of ICT coordination structure and software solutions. That objective will be achieved through two complementary actions. One is to create the Shared Service Center (SSC) which will coordinate and manage the use of ICT applications and e-services provided to the citizens by various governmental institutions. SSC will enable a rational and cost-efficient development of an interconnected and interoperable ICT system within the government administration. The management from one center will impose standards in developing e-services and thereby make them easy to use. The second action for achieving the aforementioned objective and to enhance the transparency, accountability, and efficiency of public administration, is developing of the applications that



will be used for the functioning of public institutions and communication with citizens. It would be developed e-applications in areas crucial for the economic growth prospects and social cohesion like e- Construction, e-Land Management, e-Justice, e-Health, e-Tourism, e-Culture and e-Inclusion (OPCC, 2014, p. 83-84.).

Within OPCC's PA2 for the achieving of the aforementioned objectives, development of the NGN broadband infrastructure and increasing of the use of ICT in communication between the citizens and public administration, it is allocated EUR 307 million (Summary of the priorities and specific objectives of the OPCC, p. 5.).

### **2.2.3. Key documents for the implementation of activities within Priority axis 2**

Activities for achieving the PA2 objectives will be implemented through relevant Croatian national strategies. These national strategies where ex-ante conditionalities for using the ESI Funds, and they represent the existence of the necessary conditions for effective and efficient use of ESI Funds. These conditions are linked to (EC, Internal Guidance on Ex Ante Conditionalities – part 1, 2014, p. 4.):

- a) policy and strategic frameworks, to ensure that the strategic documents at the national and regional level which underpin ESI Fund's investments are of high quality and in line with standards commonly agreed by the Member States at EU level;
- b) regulatory frameworks, to ensure that implementation of operations co-financed by ESI Funds complies with the EU acquis;
- c) sufficient administrative and institutional capacity of public administration and stakeholders implementing the ESI Funds.

Regarding the development of the NGN broadband infrastructure Croatian Government has adopted the following strategies:

- a) Broadband Development Strategy in the Republic of Croatia 2016-2020 (Croatian Broadband Development Strategy);
- b) National Programme for Backhaul Broadband Infrastructure for aggregation (backhaul) networks (NP-BBI);



- c) National Framework Programme for the Development of Broadband Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments (NFP).

Croatian Broadband Development Strategy and NFP were adopted by the Croatian Government on July 13, 2016. Adoption of the Croatian Broadband Development Strategy with 13 focused measures which defines the areas of activity and clear definition and obligation of the public authorities in achieving the strategic goals, it was enabled the necessary continuation and acceleration of activities in the field of development of broadband electronic communications infrastructure in order to create preconditions for accelerated economic growth and new employment in order to develop a digital economy that can achieve competitive advantages in the single digital market of the EU.<sup>14</sup>

NFP is one of the Croatian Broadband Development Strategy measure and it is focused on the development of NGA networks. Also, it is expected that NFP will cover up to 70% of the population of the Republic of Croatia living in the NGA white areas, mostly in rural and suburban areas (Ministry of the Sea, Transport and Infrastructure, 2016, p. 4.).

NP-BBI was adopted by the Croatian Government on April 19, 2018. NP-BBI is focused on the development of broadband backhaul infrastructure in areas lacking sufficient commercial interest for investment, as a precondition for the development of NGA networks, which will cover 540 suburban and rural communities.<sup>15</sup>

Although OPCC states that actions for developing NGN broadband infrastructure within OPCC's PA2 must be carried out in the correct order where first must be implemented backhaul network and then NGA networks (OPCC, 2014, p. 76-77.), Croatian government first adopted NFP and then NP-BBI with a two-year delay.

<sup>14</sup> Source: Government of the Republic of Croatia [available at: <https://vlada.gov.hr/vijesti/vlada-donijela-strategiju-razvoja-sirokopojasnog-pristupa-u-republici-hrvatskoj-u-razdoblju-od-2016-do-2020-godine/19255>, accessed February 2, 2019].

<sup>15</sup> Source: Government of the Republic of Croatia [available at: <https://vlada.gov.hr/news/government-programme-for-broadband-infrastructure-adopted/23740>, accessed February 2, 2019].

### 3. METHODS FOR MEASURING DIGITAL DEVELOPMENT OF SOCIETY AND ECONOMY

Information and communication technology is used in all areas of human activity at the personal, social and economic level. It enables the collection, processing, storage and dissemination of a huge amount of data as well as communication among data users. The creation and use of ICT provide significantly faster socio-economic growth and development than the one based on the availability of natural resources and classical manufacturing and service activities. It is the foundation of the so-called. Fourth Industrial Revolution (Barr, 2018) which exploits the full potential of IT and cybernetics while simultaneously developing and applying them in all areas of human practice. The development and application of ICT within a society are today synonymous with the achieved level and the potential of socio-economic development and growth of countries and regions. For this reason, they gather numerous data and create individual and composite indices that show the state and dynamics of society's development as an information society. Below is a shorter representation of two composite indices. The first is the IDI (ICT development index) created by International Telephone Union (ITU)<sup>16</sup> and the second is Digital Economy and Society Index (DESI) used to assess the state of the information society development in the EU.

IDI is published since 2009 and is composed of 11 indicators of ICT level of development of countries and is grouped in 3 sets:

- ICT readiness – reflecting the level of networked infrastructure and access to ICTs;
- ICT intensity – reflecting the level of use of ICTs in the society; and
- ICT impact – reflecting the results/outcomes of more efficient and effective ICT use

The first group (ICT access) contains 5 indicators, the second (ICT use) 3 and the third group (ICT skills) also contains 3 indicators. The first group in the composite index is weighted with a factor of 0.4, the second being also 0.4 and the third with 0.2.

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<sup>16</sup> ICT Development Index, <http://www.itu.int/net4/itu-d/idi/2017/index.html#idi2017economy-card-tab&HRV>

In the European Statistics, a number of indicators of the information society development are also collected and compiled into the composite DESI (Digital Economy and Society Index)<sup>17</sup> Since 2014 over 30 indicators in 5 dimensions are collected:

1. Connectivity (DESI\_1\_CONN Definition: DESI Connectivity Dimension calculated as the weighted average of the five sub-dimensions: 1a Fixed Broadband (20%), 1b Mobile Broadband (30%), 1c Fast broadband (20%), 1d Ultrafast broadband (20%) and 1e Broadband price index (10%))
2. Human Capital (DESI\_3\_UI, Definition: DESI Use of Internet Dimension calculated as the weighted average of the three sub-dimensions: 3a Content (33%), 3b Communication (33%), 3c Transactions (33%))
3. Use of Internet Services (Notation: DESI\_3\_UI Definition: DESI Use of Internet Dimension calculated as the weighted average of the three sub-dimensions: 3a Content (33%), 3b Communication (33%), 3c Transactions (33%))
4. Integration of Digital Technology, (Notation: DESI\_4\_IDT, Definition: DESI Integration of Digital Technology Dimension calculated as the weighted average of the two sub-dimensions: 4a Business digitization (60%), 4b eCommerce (40%))
5. Digital Public Services (Notation: DESI\_5\_DPS, Definition: DESI Digital Public Services Dimension comprising of e-Government (100%))

DESI overall index, calculated as the weighted average of the five main DESI dimensions: 1 Connectivity (25%), 2 Human Capital (25%), 3 Use of Internet (15%), 4 Integration of Digital Technology (20%) and 5 Digital Public Services (15%).

## 4. RESULTS AND DISCUSSION

### 4.1. THE DIGITAL ECONOMY AND SOCIETY INDEX (DESI) FOR CROATIA

Since the EC has approved the OPCC at the end of 2014 and since the DESI report mostly covers the period of the calendar year that is preceding the report, the DESI reports for 2016, 2017 and 2018 could be used for the pur-

<sup>17</sup> EC, Digital single market, Digital Economy and Society Index, <https://digital-agenda-data.eu/datasets/desi/indicators#desi-overall-index>

pose of this paper.<sup>18</sup> However, due to an overview of the dynamics of the entire period, data for the years 2014 to 2018 will be presented. Special attention should be paid to the DESI dimensions *Connectivity* and *Digital Public Service*, according to which Croatia is the worst ranked.

Table 1 shows data for 5 dimensions and DESI Indicators for Croatia and the mean value of the same indicator for EU28, and the rank of Croatia according to the particular indicator.

**Table 1.** DESI dimensions and rank of Croatia in EU28 countries

Indicator	2014			2015			2016			2017			2018		
	HR	EU	Rank	HR	EU	Rank	HR	EU	Rank	HR	EU	Rank	HR	EU	Rank
Connectivity	6,35	11	28	8,11	12,4	28	9,71	13,5	27	11,1	14,6	27	12,4	15,6	27
Human Capital	10,1	12,3	20	10,4	12,9	20	10,7	13,2	22	11,5	13,7	19	12,5	14,1	18
Use of Internet	5,59	6,01	20	5,65	6,47	24	6,88	6,8	13	7,53	7,13	14	8,11	7,57	11
Integration of Digital Technology	6,94	5,5	8	7,44	6,16	8	6,85	6,91	16	6,92	7,34	17	7,09	8,02	21
Digital Public Service	4,04	6,72	27	4,38	7,03	26	5,67	7,47	23	6,27	8,06	25	6,65	8,62	24
Overall DESI	33	41,5	22	36	45	24	39,81	47,88	23	43,32	50,83	22	46,75	53,91	22

**Source:** authors, according to data collected from <https://digital-agenda-data.eu>

Graphs in Figures 1-5 show the progress of certain dimensions of the DESI for the Republic of Croatia, the average EU value as well as the value of the country which had for the given dimension the best indices in the analyzed period.

Although RH shows the growth of all DESI dimensions in the analyzed period, it is not enough to get closer to the EU average and especially to the level of leading EU countries.

Regarding the *Connectivity* (Figure 1) DESI report, 2016 states that Croatia performs worse than all the other EU countries. Even though fixed broadband is available to most households, 30% of them do not yet subscribe to it. Moreover, NGA is available to 52% of homes, which is below the EU average (71%) and only 2.8% of households subscribe to it, compared to 30% EU average (EC, DESI report 2016 – Croatia, 2016).

Furthermore, Croatia faces several challenges concerning Connectivity. Although fixed broadband is available to 97% of homes (in line with the EU), NGA capable of providing high-speed internet (at least 30 Mbps) is available

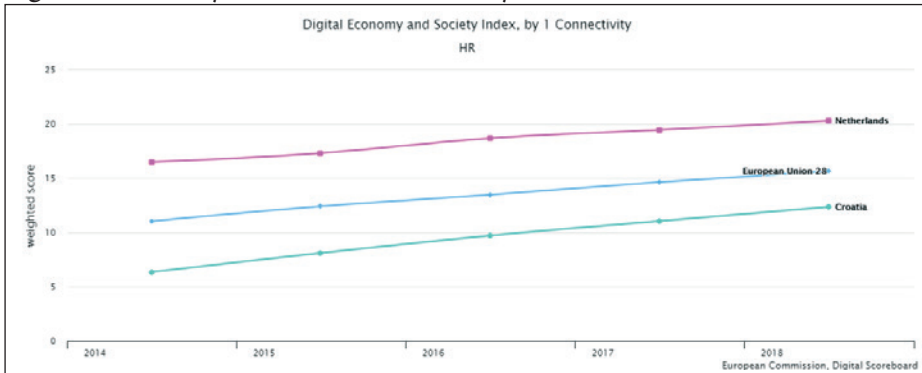
<sup>18</sup> DESI report for 2019 is not published so far.

to only 52% of homes. 70% of the households have a broadband subscription, a significant improvement compared to 61% in 2015. However, only 2.8% of the fixed Internet subscriptions are to high-speed connections (30% in the EU), the lowest in Europe. One of the possible reasons for the low take-up (subscriptions) might be affordability since the standalone fixed broadband subscription in Croatia costs as much as 2.5% of the average gross income, more than the overall EU average of 1.3% (EC, DESI report 2016 – Croatia, 2016).

Regarding the Connectivity DESI report, 2017 states that Croatia is progressing slowly. Fast broadband coverage and subscriptions have increased but they were still below the EU average. Prices for fixed broadband remained very high. There was progress in the take-up of mobile broadband, and 4G coverage could be improved (EC, DESI report 2017 – Croatia, 2017).

Regarding the Connectivity DESI report, 2018 states that Croatia did not make significant progress in this area compared to 2017, although it improved its overall score (Croatia scored 49,4 compared to EU score 62,6). On fixed broadband coverage of households (99%), Croatia performs above the EU average (97%) which is the category where the highest improvement over the last year was achieved. However, fast and ultrafast broadband coverage remained very weak. Broadband services were available throughout the country but the take-up of fast broadband was low (14 %) despite fairly wide availability (67 %). Factors contributing to the low take-up include low internet use and relatively high prices for (fast) broadband (63 on the Broadband Price Index, EU average 87). In 2018 Croatia has maintained its rank or dropped back in most of the connectivity subcategories, with exception of the fixed broadband and fast broadband coverage. The coverage of ultrafast broadband of 100 Mbps and above was also low (34.1%), and the take-up extremely low (1.4%). Croatia must put the focus on its connectivity to achieve DAE goals and to mitigate risks of losing EU Funds and to prevent even further behind in the creation of a digital economy and society (EC, DESI report 2018 – Croatia, 2018, p. 3-4.).

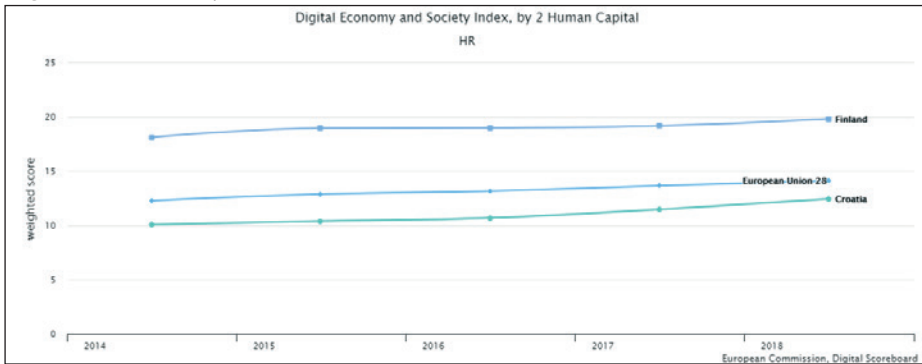
**Figure 1.** DESI by dimension Connectivity



**Source:** <https://digital-agenda-data.eu/charts/desi-see-the-evolution-of-two-indicators-and-compare-countries#chart>

Concerning the *Human Capital* dimension, the last two years show an intense increase in the ability to use ICT (Figure 2).

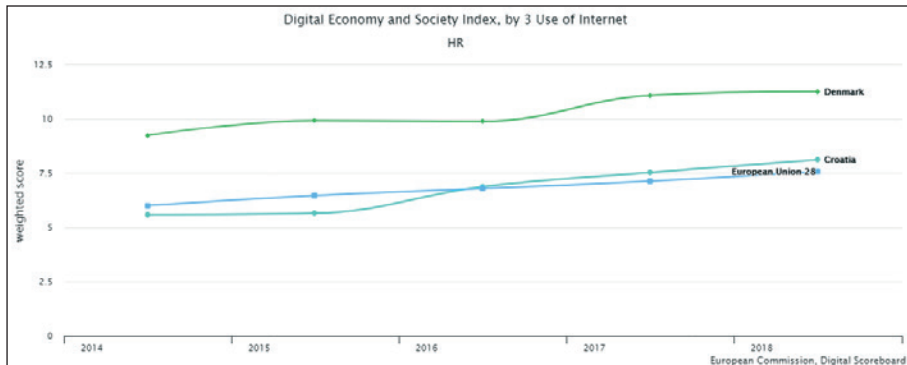
**Figure 2.** DESI by dimension Human Capital



**Source:** <https://digital-agenda-data.eu/charts/desi-see-the-evolution-of-two-indicators-and-compare-countries#chart>

In the *Use of Internet Services*, Croatia has reached, and over the last two years has overtaken the European average (Figure 3).

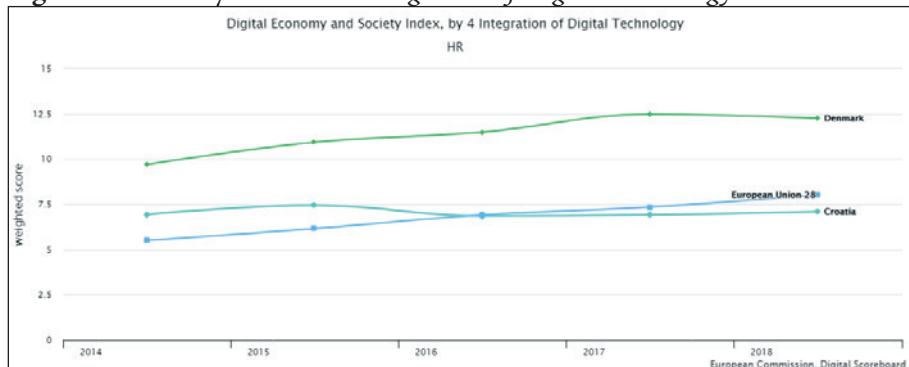
**Figure 3.** DESI by dimension Use of Internet Services



**Source:** <https://digital-agenda-data.eu/charts/desi-see-the-evolution-of-two-indicators-and-compare-countries#chart>

*Integration of Digital Technology* through digitalization of business and electronic commerce in the initial period was above the European average, but growth over the European average has slowed in the last two years. (Figure 4)

**Figure 4.** DESI by dimension *Integration of Digital Technology*



**Source:** <https://digital-agenda-data.eu/charts/desi-see-the-evolution-of-two-indicators-and-compare-countries#chart>

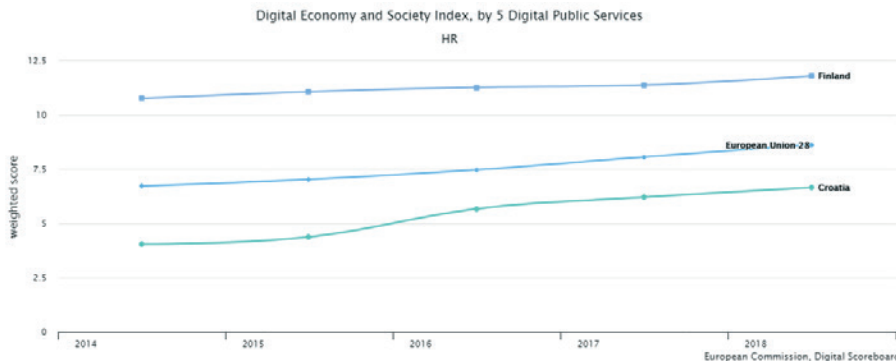
Croatia's overall score for the *Digital Public Services* Croatia has made significant progress since 2015 (Figure 5). This might be partly due to the e-citizens web portal, introduced back in 2014 to tackle the very low online interaction between the public administration and citizens. An e-business module has only recently been introduced and is still being supplemented by additional features. Provision of pre-filled forms and Online Service Completion are still below the EU average but increased over the last year. On the other hand, Open Data

nearly doubled and Croatia improved its position from rank 27 last year to rank 14, now exceeding the EU average. Better online public services will likely further improve Croatia's percentage of eGovernment users: only 21% of Internet users (against 32% in the EU average) interact online and send filled-in forms to public authorities (EC, DESI report 2016 – Croatia, 2016).

Croatia ranks 24<sup>th</sup> in DESI report 2017 with an overall score of 0.43 (EU score 0,52)<sup>19</sup>. The report states that Croatian citizens are above average users of the Internet and their digital skills are steadily progressing. The use of digital technologies by enterprises is close to average. Digital Public Services are slowly improving.

Regarding the Digital Public Services dimension with a score of 44,4 (EU score 57,5), Croatia ranks 25<sup>th</sup> among EU countries. In terms of eGovernment, Croatia is progressing and remains at rank 25 in the DESI 2018. At 66%, the number of eGovernment users is above the EU average. However, there has been no progress with the delivery of services and services for businesses. On Open Data, Croatia continued to make considerable progress over the last year and still scores slightly above the European average. As to eHealth Services, Croatia is performing well and ranks 10<sup>th</sup> among the EU Member States when it comes to people who used health and care services provided online without having to go to the hospital or doctor's surgery (for example, by getting a prescription or a consultation online) (EC, DESI report 2018 – Croatia, 2018, p. 9).

**Figure 5.** DESI by dimension Digital Public Services



**Source:** <https://digital-agenda-data.eu/charts/desi-see-the-evolution-of-two-indicators-and-compare-countries#chart>

<sup>19</sup> DESI 2016 was re-calculated for all countries to reflect slight changes in the choice of indicators and corrections to the underlying indicator data. As a result, country scores and rankings may have changed from the previous publication.



#### 4.2. CURRENT STATUS AND FUTURE STEPS FOR ACHIEVING OBJECTIVES WITHIN PRIORITY AXIS2

Ministry of Regional Development and EU Funds (MRDEUF) is Managing authority which is in charge of the general implementation of the OPCC, and also the body responsible for the implementation of the activities within OPCC PA2.

Activities regarding the development of the NGN broadband infrastructure are not implemented as it was planned. During 2019 MRDEUF is planning to implement two complementary activities of total value EUR 246.1 million<sup>20</sup>. One activity will be implemented like a Major project<sup>21</sup> “Development of national aggregation (backhaul) NGN network and linkage of public institutions to NGN network in NGN white and grey areas” of total value EUR 101.4 million. It is estimated that EC will approve Major project by the end of 2019, and a significant risk that implementation of the project won't be finished by the end of the current multiannual financial framework (end of 2023) exists. Second activity for the development of the NGA networks will be implemented within Call for project proposals for grants (CfP) of total value EUR 144,7 million. It is estimated that first grant contracts will not be signed before the 2Q 2020.

Only one activity regarding the increase of the use of ICT in communication between the citizens and public administration was implemented so far. For the development of the e-services, MRDEUF has implemented the CfP of total value EUR 82.3 million. Within aforementioned CfP has been signed 9 grant contracts of total value EUR 30.9 million, and 11 projects of total value EUR 50.8 is in the evaluation phase (it is estimated that contracts would be signed by the end of 2Q 2019). Establishment of Shared Service Centre (central management and consolidation of the state's information infrastructure – state cloud) is the second and the last activity within that PA2 objective which is in the final stage of the preparation. That activity would be implemented as a strategic project of a total value of EUR 47.6 million. It is estimated that the grant contract would be signed by the end of 2Q 2019.

<sup>20</sup> 85% is financed from the ERDF and 15% is national contribution.

<sup>21</sup> Major Projects are usually large-scale infrastructure projects in transport, environment and other sectors such as culture, education, energy or ICT. As they receive more than EUR 50 million in support through the ERDF and/or Cohesion Fund, they are subject to an assessment and a specific decision by the EC.

## 5. CONCLUSION AND SUGGESTION FOR FURTHER RESEARCH

EU secured over EUR 20 billion from the ERDF and CF for ICT investments during the 2014-2020 funding period which is confirmation that EU strives to create the digital society as well as the knowledge society, which are systematically promoted and gradually built by the EU with the ultimate aim of encouraging innovation, creativity, and competitiveness of the European industry and the rest of the world. Guided with these principles Croatia has prepared OPCC and decided to invest EUR 307 million in the development of the NGN broadband infrastructure and to increase of the use of ICT in communication between the citizens and public administration.

Based on the OPCC objectives Croatia has adopted all relevant national strategies which represent the existence of the necessary conditions for effective and efficient use of ESI Funds. Although Croatia has adopted all relevant national strategies, it can be said that they were not implemented. Within e-Strategy, only a small number of the projects were implemented for developing e-applications in areas crucial for the economic growth prospects and social cohesion, and for the communication of public institutions with citizens. Furthermore, based on the overall score in the DESI reports for 2016, 2017 and 2018 Croatia is on the EU's bottom, especially regarding the deployment of broadband infrastructure and its quality, and the digitization of public services. Croatia had a slight improvement over the years but still not enough to reach the EU's average.

Croatia must start to implement activities within national strategies to achieve DAE goals and to mitigate risks of losing EU Funds and to prevent even further behind in the creation of a digital economy and society. Priorities regarding the deployment of broadband infrastructure are i) implementation of a Major project for the development of the national aggregation (backhaul) NGN network of total value EUR 101.4 million; ii) implementation of the CfP for the development of the NGA networks of total value EUR 144.7 million. Also, regarding the digitization of public services, it is important to implement strategic project "Establishment of Shared Service Centre" of total value EUR 47.6 million.

Future research needs to be focused on a more detailed study of reasons why ICT growth in different aspects is not going at a steep pace. Research should

also address the barriers to the availability of broadband services to which telecommunications companies are predominantly responsible and detailed barriers to the slow introduction of public digital services.

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# ANALYSIS OF THE CORRELATION BETWEEN ECONOMIC DEVELOPMENT INDICATORS AND ECONOMY SECTORS AND VALUE ADDED IN CROATIA

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## Abstract

*Croatian economy has been trying to recover from the crisis in 2008 when GDP per capita in Croatia was at the top. This crisis caused severe damage to Croatia, to its economy, employment rate, investments, GDP per capita et. Afterwards, there was a constant drop in GDP per capita until 2015 after which a GDP per capita was two years in a row in the constant rise. From 2015 to 2017 there was a value-added growth and this research will carry out results to see which economic development indicators, by economy sectors, have the positive correlation with value added i.e. indirectly with GDP per capita growth in Croatia and which indicators, by economy sectors, don't have that impact. Furthermore, as economy is divided into economy sectors, so it is easier to invest and measure which activities give the best results and which activities support value added the most, it can be seen in which sectors to invest that the impact on value added is the biggest and what economic development indicators can possibly be the best predictors of the economic growth, i.e. value added growth.*

**Keywords:** Croatian economy, crisis, value added, economic indicators

JEL Classification: H12, O10

## 1. INTRODUCTION

Nowadays, most of the big investors that have more than the three third of the world's wealth, predict that there will be a big global crisis in the following

two-three years. Most of them claim that the cause for this possible big global crisis will be bad managing of the top management, that the problem is thinking short term instead of the long term. To achieve set goals and targets they make short term decisions and present/cover up results for the short-term success forgetting the long-term path and vision. When there is a drop in the GDP per capita i.e. value added, a government has to implement an investment plan or action plan. This plan aims certain economy sectors and takes certain actions in order to make value added grow.

This paper will present a correlation between economy sectors which shows which of the economy sectors in Croatia have the biggest impact on value added growth and which indicators can be the best predictors of the economy growth, i.e. economy drop or crisis. There are many economic development indicators but for the convenience of the research, only five economic development indicators have been taken into consideration while calculating correlation and regression analysis.

## 2. METHODOLOGY AND PURPOSE

This paper will take into consideration the following indicator: revenue by economy sector and total revenue per year, export by economy sector and total export per year, net export by economy sector and total net export per year, net salary by economy sector and average net salary per year and gross salary by economy sector and average gross salary per year in Croatia.

Economy sectors in Croatia taken into consideration in this paper are: agriculture, forestry and fisheries, mining and quarrying, manufacturing, electricity, gas, steam and air conditioning supply, water supply, sewage disposal, waste management, construction, wholesale and retail trade, repair of motor vehicles and motorcycles, transportation and storage, providing accommodation and preparation and serving of food, information and communication, financial activities and insurance activities, real estate business, professional, scientific and technical activities, administrative and auxiliary service activities, public administration and defense, compulsory social security, education, health care and social care, art, entertainment and recreation, other service activities and activities of households as employers.

Research is made by 20 economy sectors in Croatia and 5 economic development indicators in correlation with GDP per capita for Croatia in the period 2015 – 2017. The hypothesis is that revenue and export have a positive correlation with value added in Croatia and that revenue and export can predict value added growth in Croatia. Revenue is calculated as a total sum of the revenues from all the companies in all 20 economy sectors that have been taken into consideration in this research. Revenue presents the product of the quantity of product multiplied by the price of the products or services that the company is selling or providing.

Export presents the value of the goods and services that are sold to the entity from another country. Export in this research is the value of goods and services that companies in every of the 20 economy sectors have sold provided to the companies or entities outside the borders of the Republic of Croatia.

Value added is a result of the work that all the companies in a country put into a material production over a certain period, usually, that period is one year. Value added in this research presents effort and work from companies in all 20 economy sectors in Croatia as a difference between input and output value of the products or services. That is the value of the work and it is also called “clean/net domestic product”.

### 3. RESEARCH

In tables 1-3. it can be which economy sectors and economic indicators in Croatia are taken into consideration in this research.

**Table 1.** Economy sectors and economic indicators in Croatia for 2015

Sector Year/ GDP pp	Revenue	Export	Net export	Net salary	Value added	Gross salary
Agriculture, Forestry and Fisheries	19,599,926,485	2,251,004,929	689,126,147	4,705	3,662,395,159	6,287
Mining and quarrying	4,043,688,544	1,148,550,710	610,650,820	7,409	964,074,051	10,560
Manufacturing	164,891,219,344	63,374,703,615	19,408,096,518	4,979	33,837,217,153	6,849
Electricity, gas, steam and air conditioning supply	36,579,345,991	3,714,415,898	-1,579,123,091	7,281	6,507,102,728	10,307
Water supply, sewage disposal, waste management...	9,199,678,883	1,130,400,624	938,261,322	5,280	2,971,248,683	7,126
Construction	42,335,814,880	1,780,604,197	338,420,090	4,147	9,914,771,636	5,578
Wholesale and retail trade; repair of motor vehicles and motorcycles	219,484,819,294	15,813,331,088	-26,725,448,108	4,624	25,681,767,277	6,393
Transportation and storage	32,916,931,987	9,306,891,515	8,054,647,309	5,785	9,757,427,004	7,955
Providing accommodation and preparation and serving of food	22,014,705,078	5,407,600,688	4,995,059,835	4,321	7,673,494,423	5,871
Information and communication	28,776,066,113	3,460,421,692	-744,534,567	7,073	8,845,487,850	10,478
Financial activities and insurance activities	6,487,365,809	46,207,445	-58,263,125	6,341	1,992,057,926	9,234
Real estate business	10,377,162,100	131,903,869	-111,946,529	5,939	2,969,171,839	8,216
Professional, scientific and technical activities	29,738,339,585	4,066,773,545	2,770,774,645	5,531	12,781,846,126	7,967
Administrative and auxiliary service activities	11,473,371,122	2,727,514,458	2,339,173,889	3,951	3,673,953,781	5,191
Public administration and defense; compulsory social security	100,108,691	379,296	379,296	5,713	57,811,658	7,772
Education	1,288,171,640	14,167,312	3,721,854	4,088	674,186,023	5,570
Health care and social care	2,789,774,418	55,302,921	34,899,977	4,869	1,371,982,757	6,846
Art, Entertainment and Recreation	4,060,028,172	466,410,763	310,859,435	4,419	1,473,452,998	5,979
Other service activities	3,118,453,156	309,788,583	125,371,510	3,642	890,579,746	5,028
Activities of households as employers	2,117,907	0	0	2,373	1,291,722	3,008
<b>Croatia total 2015.</b>	<b>\$11,757</b>	<b>115,206,373,148</b>	<b>11,400,127,227</b>	<b>5,123</b>	<b>135,701,320,540</b>	<b>7,111</b>

Source: made by author, data: The World Bank; Financial Agency



**Table 2.** Economy sectors and economic indicators in Croatia for 2016

Sector/ Year/ GDP pp	Revenue	Export	Net export	Net salary	Value added	Gross salary
Agriculture, Forestry and Fisheries	17,661,083,705	2,155,348,824	627,507,385	4,452	3,581,468,830	5,953
Mining and quarrying	3,069,394,011	571,229,360	257,010,837	7,291	919,788,366	10,381
Manufacturing	162,051,825,283	61,349,178,091	20,278,885,132	5,172	35,834,203,727	7,101
Electricity, gas, steam and air conditioning supply	34,949,879,461	3,457,979,742	-3,107,266,288	7,433	6,555,900,393	10,554
Water supply, sewage disposal, waste management...	9,318,250,429	1,109,136,454	890,964,854	5,325	3,052,546,241	7,195
Construction	44,921,824,093	2,159,305,859	1,072,518,045	4,371	10,620,832,786	5,851
Wholesale and retail trade; repair of motor vehicles and motorcycles	229,885,371,419	18,195,843,313	-21,475,122,839	4,775	27,532,356,317	6,592
Transportation and storage	33,737,571,293	10,000,311,578	9,040,812,545	5,799	10,475,431,632	7,966
Providing accommodation and preparation and serving of food	24,321,579,657	5,621,462,883	5,175,470,422	4,249	8,782,051,432	5,781
Information and communication	30,225,660,317	3,993,572,763	21,075,827	7,336	9,525,010,082	10,815
Financial activities and insurance activities	6,027,216,019	27,641,744	-61,144,642	6,807	1,939,721,616	9,854
Real estate business	11,417,986,098	157,827,968	58,591,191	6,152	3,339,520,432	8,665
Professional, scientific and technical activities	30,376,820,636	5,577,641,186	3,464,997,616	5,731	16,840,296,807	8,246
Administrative and auxiliary service activities	12,849,857,550	2,783,075,181	2,421,675,342	4,159	4,085,240,074	5,474
Public administration and defense; compulsory social security	97,708,014	128,322	118,921	5,768	58,730,441	7,904
Education	1,455,846,160	29,865,425	17,619,774	4,222	755,296,867	5,784
Health care and social care	3,133,577,630	53,105,433	22,195,617	4,931	1,494,748,313	6,926
Art, Entertainment and Recreation	4,822,860,616	454,232,788	256,321,891	4,522	1,715,244,242	6,092
Other service activities	2,638,698,149	281,960,687	-16,739,488	3,634	1,015,418,491	5,021
Activities of households as employers	1,680,983	0	0	2,324	1,248,072	2,932
<b>Croatia total 2016</b>	<b>\$12,298</b>	<b>117,978,847,601</b>	<b>18,945,492,142</b>	<b>5,223</b>	<b>148,125,055,161</b>	<b>7,254</b>

Source: made by author, data: The World Bank; Financial Agency

**Table 3. Economy sectors and economic indicators in Croatia for 2017**

Sector Year/ GDP pp	Revenue	Export	Net export	Net salary	Value added	Gross salary
Agriculture, Forestry and Fisheries	18,737,368,259	2,631,847,240	721,526,748	5,010	3,752,429,641	6,614
Mining and quarrying	3,222,756,738	604,893,328	367,580,063	7,596	832,400,224	10,595
Manufacturing	167,140,993,709	67,847,049,495	20,069,846,545	5,388	37,279,687,266	7,293
Electricity, gas, steam and air conditioning supply	40,326,007,249	8,409,393,936	3,016,502,571	7,649	5,661,539,247	10,706
Water supply; sewage disposal, waste management...	10,256,508,524	1,412,006,470	1,202,058,551	5,605	3,335,591,871	7,506
Construction	45,753,218,085	2,560,988,120	1,311,377,975	4,713	11,260,148,600	6,221
Wholesale and retail trade; repair of motor vehicles and motorcycles	227,565,084,164	19,980,227,333	-30,903,217,912	5,159	29,018,561,967	7,034
Transportation and storage	35,390,207,857	10,969,146,408	9,630,102,502	6,015	10,656,394,767	8,132
Providing accommodation and preparation and serving of food	26,016,853,607	6,412,255,131	5,910,807,980	4,670	9,455,236,328	6,311
Information and communication	31,900,631,425	5,251,547,941	1,233,188,253	7,601	9,979,597,911	11,029
Financial activities and insurance activities	4,219,849,989	50,440,762	-35,452,094	6,402	1,953,389,242	8,866
Real estate business	10,914,779,140	208,895,481	95,844,650	6,180	3,069,706,855	8,569
Professional, scientific and technical activities	31,822,464,956	6,841,394,261	4,710,430,204	6,141	12,189,744,156	8,660
Administrative and auxiliary service activities	13,675,785,298	3,433,781,495	2,916,739,513	4,127	4,286,762,699	5,446
Public administration and defense; compulsory social security	99,929,364	174,638	167,616	5,959	60,250,964	8,132
Education	1,500,765,193	45,627,191	35,723,970	4,390	791,262,133	5,935
Health care and social care	3,350,392,220	47,178,317	13,579,487	5,151	1,590,294,414	7,135
Art, Entertainment and Recreation	5,724,223,416	539,238,674	377,759,935	4,914	2,112,040,774	6,515
Other service activities	2,824,272,698	302,475,474	13,271,367	4,048	1,015,174,058	5,478
Activities of households as employers	1,737,104	0	0	2,334	1,277,985	2,890
Croatia total 2017.	\$13,294	137,548,561,695	20,687,837,924	5,453	148,301,491,102	7,453

**Source:** made by author, data: The World Bank; Financial Agency

In Table 4 it can be seen that correlation between revenue and value added is significant correlation and the coefficient is 0.881, also a correlation between revenue and value added is significant correlation and the coefficient is 0,920. It means that revenue and export are closely connected to value added which represents the difference between the amount of sold goods and services and the cost of production of those goods and services.

As value added is greater it means that the economy is making more profit, creating higher value for organizations and that GDP per capita could be higher as greater value is created, and it means that organizations can have a better competitive advantage on the market as they succeed in producing goods and services at lower costs or achieving a higher price of sold goods and services.

**Table 4.** Correlations between five economic indicators and value added.

Correlations							
		Value added	Revenue	Export	Net export	Net salary	Gross salary
Value added	Pearson Correlation	1	,920**	,881**	.055	.055	.057
	Sig. (2-tailed)		.000	.000	.817	.816	.813
	N	20	20	20	20	20	20
Revenue	Pearson Correlation	,920**	1	,741**	-.297	.003	.001
	Sig. (2-tailed)	.000		.000	.203	.989	.995
	N	20	20	20	20	20	20
Export	Pearson Correlation	,881**	,741**	1	.391	.016	.009
	Sig. (2-tailed)	.000	.000		.088	.946	.971
	N	20	20	20	20	20	20
Net export	Pearson Correlation	.055	-.297	.391	1	.038	.027
	Sig. (2-tailed)	.817	.203	.088		.874	.910
	N	20	20	20	20	20	20
Net salary	Pearson Correlation	.055	.003	.016	.038	1	,997**
	Sig. (2-tailed)	.816	.989	.946	.874		.000
	N	20	20	20	20	20	20
Gross salary	Pearson Correlation	.057	.001	.009	.027	,997**	1
	Sig. (2-tailed)	.813	.995	.971	.910	.000	
	N	20	20	20	20	20	20

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source:** made by the author

A hierarchical regression analysis was performed to determine the possibility of prediction. The Durbin-Watson test showed that it is justified to use this statistical procedure. In the first block, revenue is included and in the second block export is included

**Table 5.** Regression analysis.

Value added			
1 <sup>st</sup> step	B	R	R <sup>2</sup>
Revenue	.92**	.92	.85**
2 <sup>nd</sup> step			
Revenue	.59**	.97	.93**
Export	.44**		

**Source:** made by the author

From table 5 both predictors are significant, meaning that the higher the revenue, the higher the possibility that added value will be increased, and the higher the export, the greater the possibility of added value growth.

Revenue explains 85% of variance while export explains an additional 8%, and this model explains 93% of added value variation.

The growth of revenue and exports, i.e. higher revenue and exports, will predict higher added value, i.e. it means that possibility for added value growth is higher, which means that the companies will have more competitive advantages, have higher revenue and realize greater exports of their products or services. The more goods or services are exported, and more revenue is realized, the higher GDP per capita can also be achieved.

#### 4. CONCLUSION

As this research carries out results, it can be seen that the correlation between revenue and value added and export and value added is positive and significant. Therefore, as revenue grows there will be an increase in value added, also as export grows there will be an increase in value added.

The global economy is nowadays becoming “global and local” and economies have to support their companies to catch up with the global trending becoming more flexible and have faster reactions when it comes to export and revenue in the case to preserve employment and avoid a crisis.

As in the past, work couldn't be evaluated and presented with numbers and amounts, today with value added it clearly calculated how much work is worth in companies, countries, economy sectors etc. It can be an implication for further research to seek for correlation between investment in human capital and value added in companies or organizations to see if the value added correctly presents the value of work. Also, it can be an implication for the research based on the national value added and HDI in a country, which present level of the development of the human capital.

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# IS MILITARY EXPENDITURE A STRATEGIC TARGET TO MAINTAIN ROMANIAN ECONOMIC GROWTH?

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## **Abstract**

*This research aims to analyze the impact of military expenditure on economic growth, based on a set of secondary objectives that highlight the characteristics of the defense budget, the Euro-Atlantic integration framework of Romania, and the interdependence between military expenditure and economic growth, but also other economic indicators and public debt. The dataset is consisting of annual values for the following indicators, over the period 2000-2016: mili-*

tary expenditure, GDP, public debt, budget deficit, unemployment rate, and inflation rate. The correlation and causality analysis prove that military expenditure has a relationship to all the indicators previously mentioned, especially over the long term. An increase in these expenditures would lead to an increase in GDP and a reduction in the unemployment and inflation rate. This research is relevant, mainly due to the fact that the Romanian case has not been previously studied individually on this matter. Moreover, its conclusions may be useful in establishing budgets for national ministries, as long as an increase in military expenditure may act as a financial instrument for both, economic growth and reduction of economic imbalances.

**Keywords:** military expenditure, economic growth, public debt, unemployment, inflation, Romania

JEL Classification: O40, O47

## 1. INTRODUCTION

Recently, there have been more tensions between the big actors in politics, economics and military system. Moreover, the impact of military expenditure on economic growth is one of the most controversial issues in economics. Due to these contexts, the topic is considered to be of major importance and will commence by analyzing the relationships presented by other researchers. Starting from the latest 20<sup>th</sup> century and continuing with the 21<sup>st</sup> century, an important number of scientific papers related to this subject. Nevertheless, as long as there is no exact description of the military expenditure and economic growth causal relationship, we consider that the research on this subject should continue. In order to identify the reasons behind, increasing or decreasing the level of military expenditure in Romania, the effects of these changes will be related to the growth of the national economy.

Nowadays, the impact of military expenditure on economic growth is one of the most discussed topics. According to most theories underpinning the economy, since Adam Smith, many economists supported the free market. This resides in an idea that the free market is the best mechanism to provide economic growth. Although the government should not intervene in the economy in a free market, it is required to meet some basic obligations, one of them being related to national security. Therefore, as long as the defense spending rate changes from one time to another, depending on the conflicts with neighbor-

ing countries, national security may become one of the most important duties of the government. An increase in military expenditure may delay economic growth. This argument is based on the hypothesis that higher military expenditure involves a lower level of private investment and domestic savings, along with a lower consumption due to low aggregate demand. It can be presumed that higher military spending, leading to an increase in interest rates, hindering private investments (Korkmaz, 2015). However, Keynesian Economics argues in the *Military Keynesianism* that an increase in the military spending stimulates demand, increasing purchasing power parity and national production, and thus, generating positive outsourcing.

The evolution of the military concept reveals that nowadays, a country's defense capability is based not only on its military strength, but also on a multitude of other factors, the most important ones being the economic factors and the economic resources of a country, but also the human potential. In order to evaluate these resources, several variables can be considered, such as the economic degree of modernisation and complexity, the quality of human resources, labour productivity and economic efficiency, the quantity and quality of natural resources, the quality of governance, the open economy character, the production factors and their level of development, the level of education, etc.

## 2. LITERATURE REVIEW

### 2.1. EURO-ATLANTIC INTEGRATION FRAMEWORK: THE ROMANIAN CASE

The recent decades have been important for Romania, bringing a great evolution of the Romanian military system, as Romania joined the North Atlantic Treaty Organisation (NATO) and due to its integration in the European Union. With the accession process to NATO, Romania has assumed a set of obligations imposed by NATO on the financial and accounting management of resources, so that the final control of expenditures lies with the state that bears the costs of certain activities. According to the Report "Romania in NATO" (2017), this is a "statement to encourage strategic partnership by focusing on seven priority areas: combating hybrid threats including strengthening resilience of Member States; full cooperation at operational level, including the maritime and migration areas; cybersecurity and defence; defence capability



areas; defence industry and research; exercises; building capacity in third countries, especially in the Eastern and Southern neighbourhood.

The dynamics of the terrorist actions in 2016 raised concerns and became an element of instability, determining Romania to become a stable, credible player with a clearer and irreversible strategy. At the international level, the hybrid war escalated and became a priority for international security organizations. At the national level, a rise in cyber threats has been observed, developing a need for defensive measures in this area. Therefore, in 2016, Romania started to increase its combat capabilities, based on the principles of defense promoted by NATO, developing a force structure and optimizing decision-making on the basis of a program of transformation, development, and endowment of the Romanian Army. The program has specific instructions to ensure the combat capability of the Romanian Armed Forces, being applied until 2026.

Through the implementation of the acquisition of goods and services plan, the military equipment and weapons were provided, being funded by the national defense economy and of its own reserves. Although there was an overall increase of the defense stocks, the optimal stock level for some categories of military equipment has not been reached. The documents confirming the mobilization of the national defense economy are used to achieve the appropriate level of products and services needed by military units in various areas such as health, agriculture, transport, communication, and information technology. But the lack of orders for technology and equipment in times of peace lead to preservation, reduction, or disposal of production capacities for the economic operators, diminishing the optimum level of industrial products and services. In order to overcome these gaps, a series of requests were formulated in 2016, to provide the deficient sectors with military products and services. This process was included in the documents for mobilization of the national defense economy, ensuring a series of operations related to maintenance and repair of technical systems and military equipment, continuing the process acquiring reserves of products that cannot be provided by the national economy. There were 107 *procurement programs* in total, and four *essential military endowment programs*. The implementation of programs related to NATO obligations, or those required by on-going or technically prepared contracts, initiated during the allocation of financial resources, represented the top-priorities.

Strategic partnerships created facilities to build beneficial relationships with states sharing the same interests of peace. Cooperation with strategic partners aimed at providing the necessary capabilities to adapt to the new security context, under the implementation of the NATO action plan, regarding the enhancement of the operational capacity, development of partnerships between military forces and military education institutions, programs cooperation, and projects and development initiatives ensured by NATO and EU.

## **2.2. THE RELATIONSHIP BETWEEN MILITARY EXPENDITURES AND ECONOMIC GROWTH**

Evidence of a long-term relationship between military expenditure and economic growth was presented in multiple studies in the literature. However, the question of whether military expenditure contributes to or constrains economic growth is still disputed, especially in countries where this expense is an important component of the public budget. Pieroni (2007) argued on the fact that public expenditures have a strong impact on the long-term economic growth rate. Accordingly, the size of the growth rate depends on the level of government intervention and the various components of public spending. In addition, different types of government expenditures have heterogeneous effects on economic growth. For example, public infrastructures, research, development, and public education are often considered as public goods with a positive impact on economic growth. Nevertheless, an increase in government expenditures, mainly based on non-productive expenses will be accompanied by a reduction of the revenues growth, leading to the hypothesis that the larger the size of government intervention, the higher the negative impact will be. Empirical studies presented different results, as the effect of military expenditure on economic growth has remained a controversial subject among economists. Although difficult to predict the net effect of military expenditure on economic growth, an empirical analysis on this relationship has vital implications for the national defense policies.

According to Sandino (2017), over the period 1990-2014, the United States spent yearly from \$3 billion up to \$6 billion on foreign military aid, with a slight decline between 1990 and 2002. This indicates that foreign aid is largely independent of military conflicts in beneficiary countries. The military position of the US and the increase in its presence abroad led to a change in foreign aid

decisions. While the foreign military assistance has risen far beyond its 1990 levels and peaked in 2008, external economic aid increased starting from 2003 but continued on a general trend of decrease. In fact, many countries receiving large economic aid are not classified as low-income countries. This suggests that the assistance offered is not based on conflict needs or on budget issues. There is, however, the following policy metric for the aid allocation in the US: the military aid is relatively higher for countries with political relationships with the US; low-income countries receive an aid every year, even though they generally face more conflicts and have smaller military budgets. The gap between these amounts is based on income groups and suggests that the gross amount of foreign aid granted is rather linked to the GDP and the country's military budget, than to an existing conflict or a needs for financial assistance. While countries with above-average incomes appear to align with high-income countries in terms of population and GDP growth rates, there is a significant difference between the two groups: only 3% of high-income countries have an internal conflict, whereas countries with above-average incomes have a much higher rate of about 15%.

An increase in military expenditure may have a series of benefits if the country produces military equipment and research and development within its borders, positively influencing the infrastructure and employment, by creating a demand for industrialization. In developing countries, fragile institutions and domestic violence may induce a need for military expansion, aimed not to improve economic growth by increasing industrialization, but rather to suppress riots in the detriment of civil and economic freedom (Maizels and Nissanke, 1986; Sandino, 2017). Consequently, there is an opportunity cost for the allocation of funds to military programs, instead of investing in governance programs promoting country development as the main objective. The net effect of the possible consequences of military expenditure varies greatly depending on the country, due to the large differences in government regimes, infrastructure, natural resources, or geographical location.

Endogenous development theory provides a basis for the relationship between the level of military expenditure and economic growth over long-term, predicting an inverted U-shape (Shieh et al., 2002). Theoretical arguments result from comparing the direct and indirect costs of military activities with their indirect benefits. Accordingly, if the weight of military spending is low in relation to the overall economy, it is very possible to yield higher benefits than

costs, having a positive impact on the growth rate. This assumption would not be confirmed by early studies in the literature when results emphasized the opposite: countries with a high level of defense spending tend to have the fastest growth rate, while countries with reduced military expenditure often have the slowest growth rate (Benoit, 1973; Biswas și Ram, 1986).

More recently, the Granger cause approach started to be implemented for the analysis of the relationship between economic growth and military expenditure. Chang et al. (2001) found evidence of bidirectional causality between military expenditure and real revenue in Taiwan, and one-way causality between real revenues and military expenditure in China. In developing countries, a causal relationship between military expenditure and real incomes was highlighted by studies analyzing multiple countries at once (Joerding, 1986; Dakurah, 2001). Dunne and Perlo-Freeman (2003) indicated a unidirectional relationship between economic growth and military expenditure for Southern European countries (Greece, Portugal and Spain). Researchers also targeted countries with frequent or imminent political conflicts and armed conflicts. For example, Pan et al. (2014) studied the relationship between military spending and economic growth in ten Middle Eastern countries. Their results indicate a unidirectional causal link between Turkey's military spending and economic growth, a unidirectional link between economic growth and military spending for Egypt, Kuwait, Lebanon and Syria, and a bidirectional causal relationship for Israel. Middle Eastern countries were also analyzed by Chang et al. (2011) along with countries from South Asia and Europe. Their regression analysis indicated in this case that military spending affects growth in low-income countries. Out of the four different regional groups observed, a negative and strong relationship between military spending and economic growth was found.

The relationship between military expenditure and economic growth can also be observed through other indicators, such as investments. For example, Cohen (1996) indicated that military expenditure has an indirect positive effect on economic growth through investments. Although military expenditure can lead to the development of new technologies, it can also create inflationary pressures by reducing the level of resources employed by other economic sectors (Yakovlev, 2007). A more recent analysis of three relatively homogeneous subgroups of countries reveals that military expenditure has, in general, a negative effect on investments. In this case, the mathematical model revealed as a net effect the fact that military expenditure has a negative influence on economic

growth for both, the whole sample of countries and the subgroups (Korkmaz, 2015). Gokmenoglu et al. (2015) also evidenced the indirect negative effect of military expenditure as it leads to a reduction in investment, but also in exports, constraining economic growth.

The wide range of sample sizes and countries analyzed in the literature suggests different results, implying that a certain influence of military spending on economic growth cannot be established. It needs to be further studied, taking into consideration that homogeneous datasets are necessary for relevant results.

### 3. METHODOLOGY AND DATA

This paper aims to analyze the impact of military expenditures on economic growth in Romania, from a macroeconomic point of view. Considering the overall period of 2000-2016, this may be divided into three sub-periods, namely: pre-crisis period (2000-2008), crisis period (2008-2012), and the post-crisis period (2012-2016). Based on these sub-periods, significant trend differences are expected in the variables observed, which will be evidenced through the statistical analysis.

The research methodology will be consisting of four stages. First, a number of economic indicators will be identified in order to carry out an economic and financial analysis at the national level. The next step is to analyze the parameters of macroeconomic indicators in order to perceive both, the type of distribution and the trend of indicators throughout the period observed. The following step is to present the relationships between economic indicators and military expenditure through graphics and correlation coefficients, and the final step is to apply Granger causality on all the variables, in order to observe whether the military expenditure are a cause of the Romanian economic growth or on the contrary, they induce economic growth.

In order to determine the impact of military expenditures on economic growth, a series of financial and monetary indicators will be employed. These are indicators of economic imbalances, as well as indicators of economic growth: GDP, unemployment rate, inflation rate, budget deficit, and public debt. The first indicator relates to economic growth, the following two indicators reflect economic imbalances, while the last two are considered financial and monetary indicators.

For the collection of reliable data, international databases were consulted. Considering the variety of the indicators, these were collected from several sources, as follows: GDP, inflation rate and unemployment rate from World Bank, budget deficit and public debt from Eurostat, and the military expenditure from Sipri database.

## 4. RESULTS AND DISCUSSIONS

### 4.1. DESCRIPTIVE ANALYSIS

Figure 1 presents the military expenditure trend, which had a relatively constant increase over the period analyzed. The absolute values increased from 2.03 bn. lei in 2000 up to 11.23 bn. lei in 2016, which in relative size represents an increase of 553%. Small deviations can be observed during the crisis period, when the indicator tends to decrease, from 7.56 bn. lei in 2008 to 6.63 bn. lei in 2010, but it continues its ascending trend over the post-crisis period.

**Figure 1.** Military expenditure dynamics over the period 2000-2016

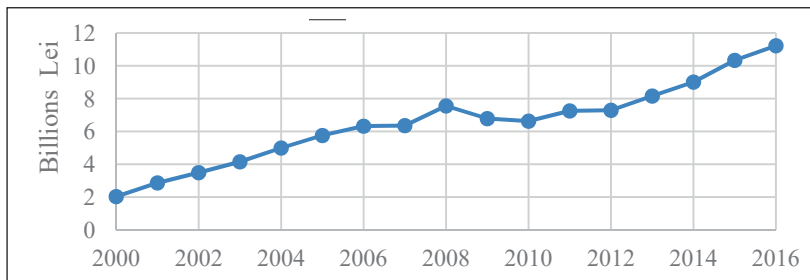


Table 1 encloses the descriptive statistics for the indicators employed in this analysis. Regarding the military expenditure in Romania, the average is of 6.48 bn. lei/year, over the period 2000-2016. For this period, the indicator records a total value of 110.235 bn.lei. Its maximum value is recorded in 2016, and the minimum value in 2000. The median analysis indicates that in 50% of cases the military budget has been less than 6.63 bn.lei, while the other half exceed this limit. The amplitude of the indicator reveals that the difference between the maximum value and the minimum one is above 9 bn.lei.

**Table 1.** Descriptive statistics for the variables over the period 2000-2016

	<b>Military exp. (bn.lei)</b>	<b>GDP (bn.lei)</b>	<b>Public debt (bn.lei)</b>	<b>Budget deficit (bn. lei)</b>	<b>Unempl.rate (%)</b>	<b>Inf. rate (%)</b>
Mean	6.484	433.205	125.838	-15.019	6.92	10.69
Median	6.630	510.523	69.020	-9.121	7.00	6.09
Standard deviation	2.490	219.321	99.117	14.093	0.56	12.63
Kurtosis	-0.2	-1.31	-1.56	0.24	0.96	3.10
Amplitude	9.199	680.198	268.118	45.934	2.30	47.20
Minimum	2.031	81.275	18.186	-48.305	5.80	-1.54
Maximum	11.230	761.47	286.304	-2.371	8.10	45.67
Sum	110.236	7364.48	2139.250	-255.326	117.60	181.81
Relative amplitude (%)	141.863	157.015	213.066	-305.837	33.248	441.395

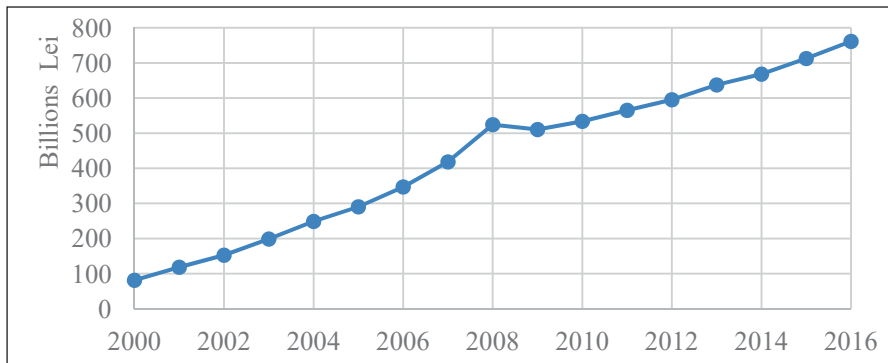
For a better comparison of the magnitude of macroeconomic indicators, the relative amplitude calculation formula, according to Andrei et al. (2002, p.103), the relative amplitude is calculated according to the following formula:

$$Ar = \frac{(X_{max} - X_{min})}{X_{mean}} * 100$$

The relative amplitude of military expenditure is 141.86%. It is worth mentioning that this value is significantly lower than the relative magnitude of the other macroeconomic indicators. The Kurtosis coefficient has a negative value (-0.20), and the distribution is considered to be platykurtic (less than 3, which is the case for a normal distribution), as it continues to increase over the post-crisis period.

As it can be observed in Figure 2, the evolution of the GDP is similar to the military expenditure, having a higher level of increase, from 81.27 bn. lei in 2000 to 761 bn. lei in 2016. In relative sizes, this represents 937%. Small variations are highlighted over the crisis, as the indicator has a slight tendency to decrease from 524.39 bn. lei in 2008 to 510.52 bn. lei in 2009.

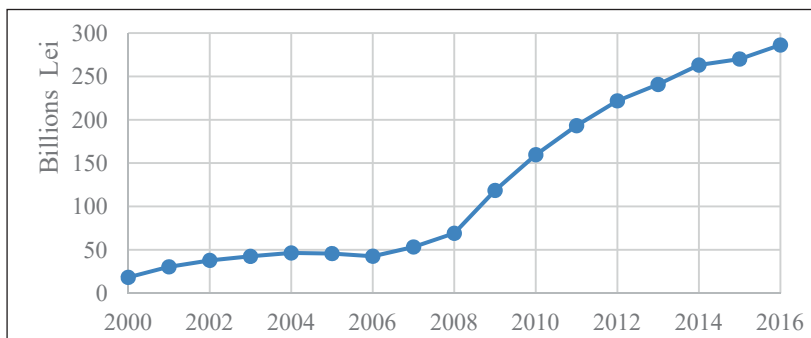
**Figure 2.** GDP dynamics over the period 2000-2016



Based on the descriptive statistics, GDP records a total amount of 7,364 bn. lei and an average of 433.2 bn. lei, with a deviation of 219.32 bn. lei. The maximum value was registered in 2016 and the minimum in 2000. From the amplitude analysis, it can be noticed that the GDP spread is relatively small, with an absolute value of 680.2 bn. lei, and relative amplitude of 157%. From the median analysis, it can be observed that in 50% of cases the GDP was under 510,5 bn. lei, while in the other half of the cases the values were higher than this figure. With a negative Kurtosis coefficient, the distribution is a platykurtic one.

According to figure 3, public debt presents a slight increase in the pre-crisis period, from 18.185 bn. lei in 2000, up to 53.26 bn. lei in 2007. As a result of the global economic crisis, public debt increases to 221.87 bn. lei in 2012, and up to 286.3 bn. lei in 2016. This variation represents a percentage increase of 1574% in its relative size.

**Figure 3.** Dynamics of public debt over the period 2000-2016

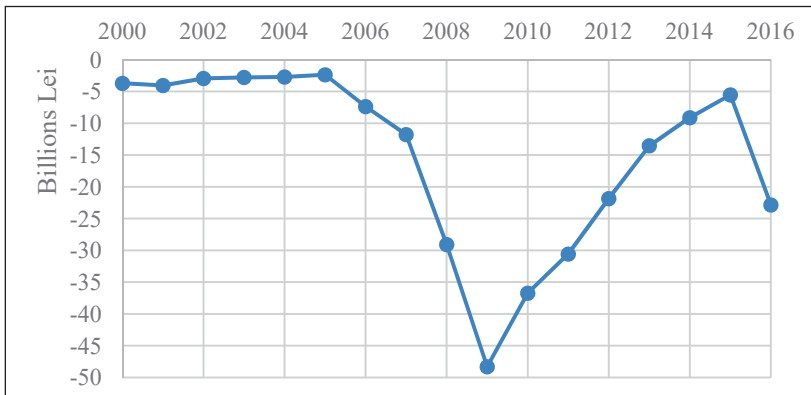




The public debt statistics indicate an average of 125.84 bn. lei, and a deviation from the average of 99.116 bn. lei. The total public debt raises up 2,139 bn. lei over the 17 years period. The analysis of the average of the indicator reveals that in 50% of the cases the public debt registered values below 69 bn. lei and the other half of the cases exceed this value. With the maximum value of public debt registered in 2016 and the minimum in 2000, the amplitude of public debt reveals an important spread level (absolute value of 268.12 bn. lei; the relative amplitude of 213.06%). With a negative Kurtosis coefficient, this distribution is also considered to be platykurtic.

The trend of the budget deficit is presented in figure 4. With a slight relief in the pre-crisis period, from -3.716 bn. lei in 2000 to -2.371 bn. lei in 2005, during the economic crisis the deficit enlarged heavily. While in 2008, the deviation of the budget deficit ratio was 683%, by 2009 the same index almost doubled and reached a value of 1200%, registering a figure of - 48.305 bn. lei. Over the post-crisis period, the indicator recovered up to -5.537 bn. lei in 2015, but continued to grow in 2016, registering a 515% deviation, for a value of -22.847 bn. lei.

**Figure 4.** Dynamics of budget deficit over the period 2000-2016

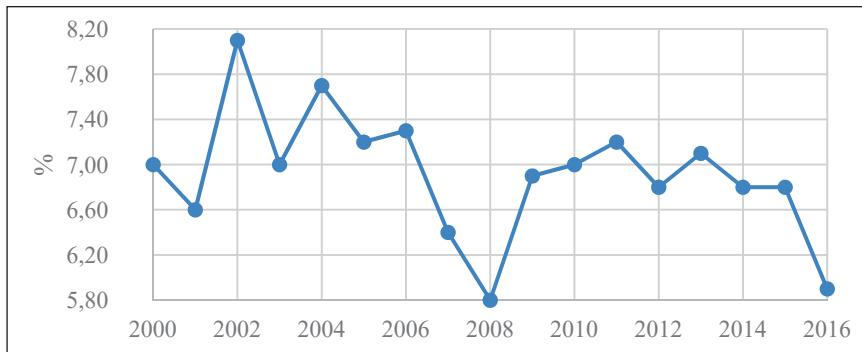


From table 1, the statistics indicate an average budget deficit of -15,019 bn. lei, and a deviation by 14.09 bn. Overall, in the 17 years, the deficit registered the amount of -255,326 bn. lei. The maximum value was recorded in 2009, and the minimum one in 2005. From the analysis of the average, it results that in 50% of the cases the budget deficit is below -9,120 bn., while for the other half the indicator exceeds this figure. The amplitude of the indicator reveals that an

extremely high spread value, the difference between the maximum value and the minimum value being -45,934 bn. lei (or -305,8%). The Kurtosis coefficient has a positive value and therefore the distribution is considered to be high or leptokurtic.

The dynamics of the unemployment rate (illustrated in figure 5) registered small fluctuations over the period, with an average of 6.9%. It recorded a peak in 2002 (8.1%) and a minimum in 2008 (5.8%). Reporting the indicator's weights at the beginning of the period, an increase of 116% was achieved in 2002, and a decrease of 83% in 2008. The deviation of this index was 16% during the maximum period of the indicator, and -17% in the period of the minimum.

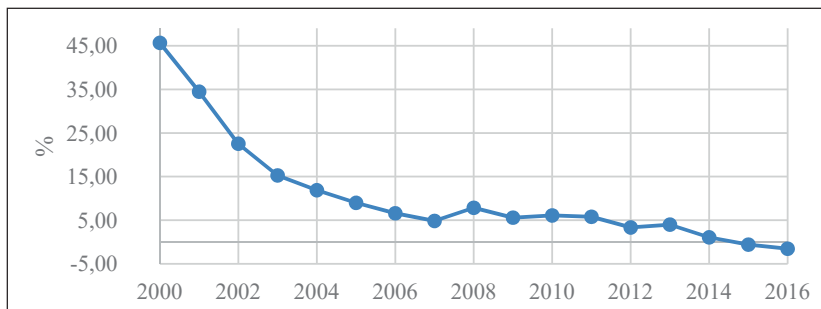
**Figure 5.** Dynamics of the unemployment rate over the period 2000-2016



The descriptive statistics from Table 1, indicate an average value of 6.92% over the 17 years, with a deviation of 0.56%. In 50% of the cases, the values of the indicator were below 7%, and the other half marked values higher than 7. The spread is very small compared to the indicators previously examined (absolute value of 2.30% / relative amplitude is 33.24%). The Kurtosis coefficient a positive value (0.96), and thus the distribution is considered leptokurtic.

The evolution of the inflation rate is presented in figure 6. The indicator is continuously decreasing from the pre-crisis to the post-crisis period. It presented small deviations at the beginning of the economic crisis (in 2008) but continued its downsizing trend. The maximum value of the indicator was 45.7% at the beginning of the pre-crisis period, falling to -1.54% in 2016. The calculation of the inflation rate deviation has a significant change over the three sub-periods, but overall it is reduced with 103%.

**Figure 6.** Dynamics of inflation rate over the period 2000-2016



The descriptive statistics express an average of 10.69% inflation rate, with a standard deviation of 12.63%. In 50% of the cases, the values are below 6.09% and the rest exceeds this limit. The maximum value of 45.67% was recorded in 2000, and the minimum value in 2016, at -1.54%. The amplitude of the indicator returns the highest spread from all the indicators analyzed, of 47,20% (a relative amplitude of 441,39%). Considering the Kurtosis coefficient, it has the highest value, namely 3.1, therefore having a high distribution.

In order to emphasize the differences, it is considered necessary to present the evolution of the six macroeconomic indicators in contrast. Figure 7 reveals the trend of military expenditure, GDP, public debt, and the budget deficit for the overall period, in comparison to 2000 (the base year). A major increase can be observed in public debt and budget deficit. The first maintains its steady level in the pre-crisis period but starts rising in 2008 with an increase of over 1000% in 2012 compared to 2000. Regardless of the end of the economic collapse, it continues the upward trend until 2016. A smaller but relatively steady increase can be observed in military expenditure and gross domestic product, even though the increase is less obvious. These two indicators do not highlight significant signs of sensitivity to the economic and financial crisis.

**Figure 7.** The percentage fluctuation of the indicators, with a fixed base in 2000

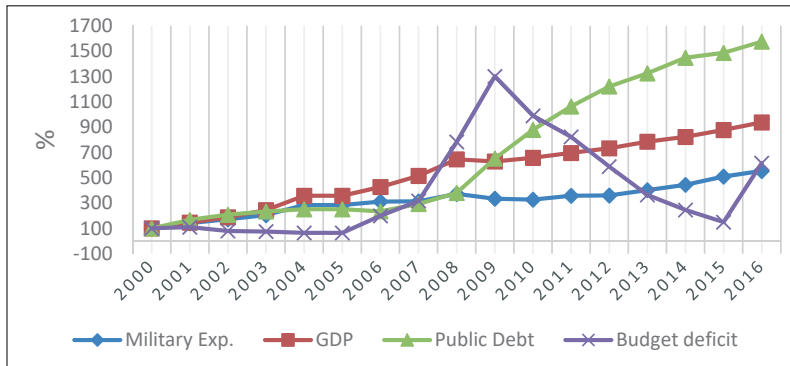
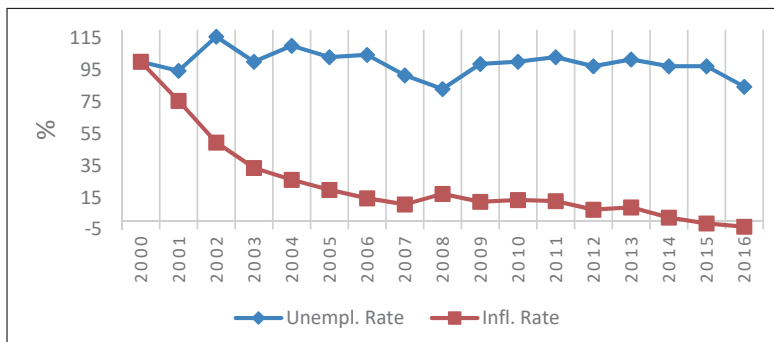


Figure 8 indicates major fluctuations for the unemployment and inflation rate over the 17 years analyzed. Compared to the inflation rate trend, it may be stated that the unemployment rate does not suffer major changes, regardless of the sub-period analyzed. Nevertheless, in the case of the latter indicator provided as a proxy for economic imbalances, a relatively constant decrease can be observed.

**Figure 8.** The percentage fluctuation of the indicators, with a fixed base in 2000



#### 4.2. CORRELATION ANALYSIS

The correlation coefficients between every pair of variables are presented in Table 2. For the description of the relationship between military expenditures and the chosen indicators, we will proceed with the construction of diagrams. The correlations between military expenditure and every economic indicator are comprised in Figure 9. For the most relevant exposure of the relationship, a cloud of points was constructed between every pair of variables. Such a chart reveals the information on the common aspects of both variables. If there is a

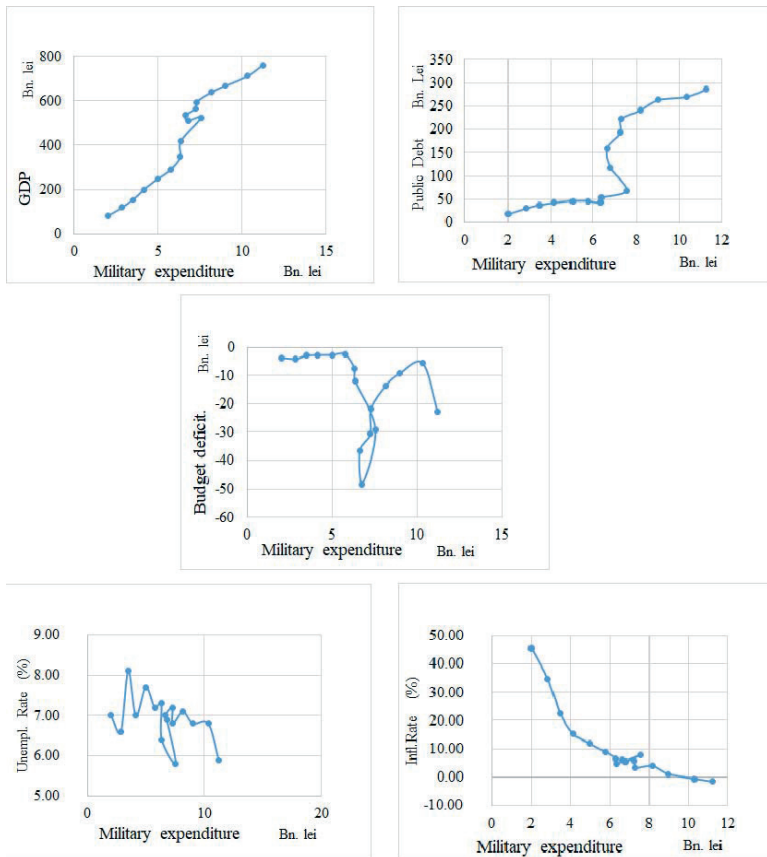
linear relation between them, then it is necessary to calculate the degree or intensity of the relationship through the correlation coefficient.

**Table 2.** Correlation coefficients

	Military exp.	GDP	Public debt	Budget deficit	Unempl. rate	Infl. rate
Military exp.	1					
GDP	0.9645***	1				
Public debt	0.8638***	0.9126***	1			
Budget deficit	-0.3791	-0.5237**	-0.3362	1		
Unempl. rate	-0.4755*	-0.468*	-0.3025	0.351	1	
Infl. rate	-0.8726***	-0.8455**	-0.665***	0.4059	0.2433	1

\*\*\*, \*\*, \* statistically significant at 1%, 5%, and 10%, respectively

**Figure 9.** Correlations between military expenditure and the economic indicators



From the correlations graphics and coefficient values, it can be noticed that the strongest relationships are between military expenditure and GDP (0.96) and public debt (0.86), respectively. With a value close to 1 it means that there is a strong linear nexus between these variables, and they vary in the same direction. The inflation rate is also in a strong linear relationship with military expenditure (-0.87), but in this case, the expense would vary in the opposite direction. The correlation coefficients for the unemployment rate and budget deficit also present negative values but their influence on military expenditure is not statistically significant considering the value of the coefficients and p-values associated. However, their relationship with military expense could be a non-linear one, as the correlation graphics above indicate.

#### 4.3. GRANGER CAUSALITY ANALYSIS

In order to include all the economic variables in regressions, data should be transformed to a similar level. This also represents a mean of correcting issues related to stationarity and normal distribution. In addition, in their current form, except for the unemployment and inflation rate, the variables observed in the analysis are not stationary. As long as the database is consisting of variables with large values (expressed in billions), while other variables are expressed in percentages (such as unemployment and inflation rate), the first difference order of the variable is employed, computing its percentage change from one year to the previous ("ch" will be added to the name of each new variable). Therefore, all the variables included in regressions will have a similar level and the unit-root tests confirm the stationarity of the variables in their new form.

Following the correlation analysis, the Granger causality may be further employed in order to observe whether the level of military expenditure causes the economic growth and the level of government debt and deficit, or on the contrary, the economic indicators cause the level of military expenditure.

The results of the Granger causality analysis are included in Table 3. They were employed based on a vector autoregressive model (VAR) with two lags. Considering the limited period analyzed, only two lags were considered in the analysis, but the results statistics prove that these were sufficient to observe the Granger-cause between every pair of variables. Based on the probability of the results, all the economic indicators, except for the inflation rate, Granger causes the military expenditure. In addition, the lagged values of public debt cause

military expenditure at a p-value of 0.058, which means that we can reject the null hypothesis that “the lagged values of public debt do not cause military expenditure” for 90% of the cases. Based on the chi-squared values, between the variables included in the analysis, the strongest cause comes from the budget deficit, followed by GDP, unemployment rate, and finally, the public debt.

Furthermore, the other Granger causality results will be presented, as they are important to reveal whether or not the military expenditure is a cause for the rest of the variables. In fact, the probability values confirm that for 99% of the cases, the lagged values of military expenditure cause GDP, public debt, budget deficit, and the inflation rate. Moreover, for 90% of the cases, the lagged values of military expenditure also cause the unemployment rate. This means that there is a bidirectional Granger causality between military expenditure and GDP, public debt, budget deficit, and the unemployment rate, respectively, and that military expenditure is a Granger cause for the inflation rate.

In addition to the cause and effects related to military expenditure, results prove that there is a bidirectional Granger causality between GDP and budget deficit, GDP and inflation rate, public debt and budget deficit, public debt and inflation rate, budget deficit, and the unemployment rate, and budget deficit and inflation rate. Moreover, the lagged values of public debt Granger cause the budget deficit and the inflation rate, while the lagged values of unemployment rate Granger cause the level of GDP, public debt, and the inflation rate.

**Table 3.** Granger causality results

Equation	Excluded	chi2	df	Prob > chi2
chmilexp	chgdp	21.156	2	0.000
chmilexp	chpublicdebt	5.6956	2	0.058
chmilexp	chbudgetdef	58.054	2	0.000
chmilexp	unemplrate	18.023	2	0.000
chmilexp	inflrate	1.2095	2	0.546
chmilexp	ALL	417.17	10	0.000
chgdp	chmilexp	75.258	2	0.000
chgdp	chpublicdebt	1.2422	2	0.537
chgdp	chbudgetdef	436.72	2	0.000
chgdp	unemplrate	119.81	2	0.000
chgdp	inflrate	45.306	2	0.000
chgdp	ALL	3576.7	10	0.000
chpublicdebt	chmilexp	24.242	2	0.000
chpublicdebt	chgdp	12.101	2	0.002
chpublicdebt	chbudgetdef	112.79	2	0.000
chpublicdebt	unemplrate	188.94	2	0.000
chpublicdebt	inflrate	58.237	2	0.000
chpublicdebt	ALL	2900.8	10	0.000
chbudgetdef	chmilexp	15.897	2	0.000
chbudgetdef	chgdp	9.4169	2	0.009
chbudgetdef	chpublicdebt	12.572	2	0.002
chbudgetdef	unemplrate	12.92	2	0.002
chbudgetdef	inflrate	20.39	2	0.000
chbudgetdef	ALL	50.915	10	0.000
unemplrate	chmilexp	4.9783	2	0.083
unemplrate	chgdp	1.3007	2	0.522
unemplrate	chpublicdebt	4.3557	2	0.113
unemplrate	chbudgetdef	22.397	2	0.000
unemplrate	inflrate	.55596	2	0.757
unemplrate	ALL	183.45	10	0.000
inflrate	chmilexp	146.34	2	0.000
inflrate	chgdp	85.045	2	0.000
inflrate	chpublicdebt	9.3669	2	0.009
inflrate	chbudgetdef	15.315	2	0.000
inflrate	unemplrate	23.915	2	0.000
inflrate	ALL	1437.6	10	0.000

Applying Granger causality in this research was relevant as the lags of the variables analyzed to improve the simple linear regression model, having a predictive power on the rest of the variables to which they are linked to.



## 5. CONCLUSIONS

Although the literature on the topic is very broad, studies provide various results. In the case of Romania, the statistics and correlation results suggested that even though the military expenditure has a significant impact on all the economic indicators considered, the previous levels of economic growth, government debt, and unemployment also cause the military expenditure. Essentially, the economic growth will induce an increase in military expenditure, but the relationship confirms the other way around as well, especially over the long term. Therefore, while GDP has a direct impact on military expenditure, an opposite influence comes from public debt, budget deficit, and unemployment rate. Therefore, a reduced level of government debt and unemployment would induce an increase in the level of military expenditure. In addition, the autoregressive model indicates that an increase in military expenditure may also reduce the inflation rate.

In this specific case, the research faced several barriers, one of them being the lack of literature on Romanian studies. Few sources of information presented only the theoretical and management aspects of the topic. Another problem encountered in the elaboration of this specific research was the absence of statistical data on the economic indicators in Romania. Limited data are available on the National Institute of Statistics and therefore, the European and international databases were consulted.

From the economic and social point of view, the analysis of the impact of military expenditure on Romanian economic growth is considered to be important due to the fact that, at the national level, there is no recent literature on the interdependence between these two. In addition, research findings may be useful for the budgets of national ministries and public institutions, as an increase of military expenditure could become one of the financial instruments for sustaining economic growth, inflation rate stagnation and reduction of unemployment.

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HEATH,  
EDUCATION AND  
WELFARE



# CITIZEN EXPECTATIONS REGARDING HEALTH PROMOTION AND DISEASE PREVENTION

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## **Abstract**

*The aim of this paper is to use a questionnaire to gather subjective information regarding health promotion and disease prevention in the Republic of Croatia.*

*The research was conducted on a sample of 980 participants from the entire Republic of Croatia. A written questionnaire was used for the purpose of gathering information. Descriptive and inferential statistical methods were used for data analysis. Descriptive statistical indicators were determined for all research variables, based on participants' responses, which were measured on a 5-point scale. Differences considered statistically significant were confirmed on the significance level of  $p < 0.05$ .*

*Participants largely agree that they need additional information regarding health promotion and disease prevention. Approximately 81% of participants expect to be informed at family physician offices about activities related to health promotion and disease prevention, while almost 84% of participants mostly or completely agree that they are willing to receive magazines issued by a health institution. Furthermore, there is also a significant number of participants who would respond to an invitation by a health institution into Health promotion counseling or disease prevention counseling and participate in public discussions on health promotion and disease prevention. Approximately 57% of participants agree with the statement that there is a form in which they can write their compliments, suggestion, complaints or remarks regarding health promotion and disease prevention, while slightly more than a fifth of participants fully or mostly disagree with that statement.*

*The concept of health assumes a completely new dimension with citizen active participation. It emphasizes the positive potential abilities of individual and community too, via active creation of health policy, state their needs regarding health promotion, on whose path the health is quarantined as a basic human right.*

**Keywords:** health care, citizens, promotion, prevention

JEL Classification: I12, P46

## 1. INTRODUCTION

If the concept of health is to be defined, it is primarily necessary to define the concept of health. According to the World Health Organization (WHO): "Health is a state of complete physical, mental and social well-being and not merely the absence of disease and exhaustion. Health is the level at which an individual can, on the one hand, achieve the aspirations and to meet the needs, on the other hand, to change or to face the problems of the environment. Health is therefore considered as a resource of everyday life, not the object of life; it is a positive concept that includes social and personal resources as well as physical components." (WHO, 1990). Due to the breadth of the definition of health, i.e. not binding the concept of health only to curative medical procedures, Croatia and the world will remember Dr. Andrija Štampar for contributing to the health care primary trough prevention programs, availability and foresight of physicians' and nursing profession, education as a key tool for the starting point of modern health care.

Principles of Dr. Andrija Štampar, which remain the foundation of public health and social medicine (Teaching Institute for Public Health):

- Informing people is more important than the law.
- The most important thing is to prepare the field in a certain environment and to appropriately understand health issues.
- The question of public health and working on its improvement should all be addressed by all, without distinction.
- Social therapy is more significant than individual therapy.
- The physician should not be economically dependent on the patient.
- There must be no difference between the economically strong and weak (egalitarianism).

- ✦ In a healthcare organization, a doctor should seek patients, not vice versa, to cover all those who need protection.
- ✦ The physician should be a folk teacher.
- ✦ The issue of public health is of a greater economic rather than humanitarian importance.
- ✦ The main place of medical treatment is where people live, not the clinic.
- ✦ Health is the greatest asset and condition for living the individual and society as a whole.

## 2. PUBLIC HEALTH IN THE FUNCTION OF PRESERVATION AND IMPROVEMENT OF HEALTH OF POPULATION

The public health mission is to recognize current public health problems, to manage them with the aim of preserving and improving the health of the population. To achieve the goals, good co-operation, coordination and partnership among public health stakeholders at the national, regional and local levels is necessary. However, national healthcare is a component of the overall global public health system, so it is necessary to link and coordinate the same with other public health organizations. This implies the international cooperation of the public health system, including the WHO and European bodies, institutions, and organizations. “To achieve the basic purpose of public health, it is necessary to adopt the concept of health for all, to reduce health and health inequalities in all policies and sectors, and to consider investing in health as the most cost-effective investment in the growth and development of society” (Croatian Public Health Association, 2017).

The main functions of public health and the main instruments used by the public health to achieve public health goals are (Government of the Republic of Croatia, Ministry of Health; 2013):

- ✦ monitoring and assessing the health status and quality of life of the population, particularly vulnerable groups,
- ✦ identification of priority health problems and hazards for population health planning and preparedness for public health emergencies,
- ✦ interventions of health protection from harmful factors in the environment and at work,



- ✦ prevention of illness,
- ✦ promoting health,
- ✦ management, financing and quality assurance in public health,
- ✦ providing competent public health personnel and planning human resources in health care,
- ✦ public health communication,
- ✦ advocating health in all policies,
- ✦ research and science in public health.

The Strategic Plan for Public Health Development of the Republic of Croatia from 2013 to 2015 contains a functional network for health promotion (Government of the Republic of Croatia, Ministry of Health; 2013):

- ✦ Establishment of the Health Promotion Service at the Croatian Institute for Public Health;
- ✦ Situational analysis - using the questionnaire to collect available data on the number of persons and their health promotion activities from the public health system and other health, government and non-governmental and private sectors;
- ✦ Establishment of regional / county functional units for promoting health and strengthening of their intersectoral, multidisciplinary cooperation;
- ✦ Connecting with international institutions in the field of health promotion.

At the Croatian Institute for Public Health, the Health Promotion Service is at the same time the Reference Centre of the Ministry of Health for health promotion with an aim of enabling people to improve their own health and training to control their own health. Health Promotion Services tasks include (Croatian Public Health Association, 2017):

- ✦ Propose, encourage and participate in the organization and implementation of health promotion programs;
- ✦ Provide the necessary recommendations and promote a healthier way of life (non-smoking, proper nutrition, regular physical activity, responsible sexual behavior, strengthening the individual's ability to overcome crisis situations, etc.) through health education and enlightenment as well as public communication tools;
- ✦ Develop appropriate professional templates and/or educational and promotional materials;

- ✦ Provide professional assistance and support for changing programs for the health of life-threatening habits;
- ✦ Encourage the creation of preconditions for a healthier lifestyle to be simpler and more attractive than other options;
- ✦ Pay particular attention to encouraging the creation of such a social environment that supports the adoption of a healthier way of life, including appropriate legislative aspects;
- ✦ In the field of health promotion, improve cooperation with other sectors (education, food industry, agriculture etc.);
- ✦ Performing monitoring and evaluation of individual programs.

It should be kept in mind: “Public health is the science and the art of preventing diseases, prolonging life and improving health through the organized efforts of society. Although public health, defined this way, is a job of everyone, this strategic document defines the role and development of a professional component of public health, i.e. public health practice.” (Government of the Republic of Croatia, Ministry of Health; 2013). Public health is an essential factor in the functioning of the overall social system. Although it has tremendous social importance, public health has to act rationally and efficiently, as business entities from the profit sector have to behave. For the purpose of survival and rational and efficient public health operations, public health must also accept marketing philosophy as its primary business philosophy.

### 3. METHODOLOGY

The survey was conducted on a sample of respondents from all over the Republic of Croatia. For the purpose of data collection, a written questionnaire was used. The questionnaire encompassed issues that sought to identify the public’s expectations of health promotion and disease prevention.

Descriptive and inferential statistics were used for data analysis. For the purpose of describing the sample, the distribution of subjects according to gender, age, marital status, employment status, the degree of education, place of residence and assessment of IT literacy were determined. Distribution of participants was shown graphically with an aim of visualization. In addition, based on participants age, basic descriptive statistical indicators were calculated.

Descriptive statistical indicators were also determined for all variables of the study, based on participants’ responses that were measured on a 5-degree scale.

Because of the use of the ordinal scale in the study, the statistical significance of the differences in degree of agreement between the individual groups was tested by nonparametric Mann-Whitney test and the Kruskal-Wallis test. The Mann-Whitney test was used to examine the significance of differences between the two groups, and the Kruskal-Wallis test in case the differences between three or more groups were analyzed. In the case where the Kruskal-Wallis test found that there are at least two groups that statistically differ significantly, the Dunn's test was used for the purpose of their identification. Statistically, significant differences were considered to be significant at  $p < 0.05$ . It should be noted that participants' responses ranges and average rankings are graphically displayed using simple, double and multiple columns.

The study was conducted on a sample of 980 examinees. Table 1 shows their distribution by gender, age, marital status, employment status, and degree of education.

**Table 1.** Distribution of respondents by gender, age, marital status, employment status, and education level

Characteristic	Number of participants	Percentage
Gender		
Male	478	48,8
Female	502	51,2
Age group		
18 – 39	491	50,1
40 – 60	380	38,8
61 – 82	109	11,1
Marital status		
Married	515	52,6
Unmarried	353	36,0
Cohabitation	30	3,1
Divorced	36	3,7
Widowed	46	4,7
Employment status		
Student	237	24,2
Employed	466	47,6
Unemployed	102	10,4
Retired	157	16,0
Dependent	18	1,8
Education level		
Lower than high school	154	15,7
High school	617	63,0
Higher than high school	209	21,3

There are more women in the sample than men. Regarding age, respondents are classified into three groups. The first consists of people aged between 18 and 39, the other of respondents between 40 and 60 years of age, and the third group include respondents 6 years or older. More than half of the respondents belong to the younger group, while the sample is least represented by the elderly. If the ungrouped data is taken into account, the average age of respondents is 39.32 years with a standard deviation of 15.9 years. According to the median, half of the respondents were, at the time of participation, 39 years of age or younger, and the other half was 39 years or older. Half of the respondents were aged between 24 and 51 years. The coefficient of variation, which amounted to 40.45%, indicates significant data variability in the distribution of respondents by age. It should be noted that the youngest person in the sample was 18 years old, while the oldest participants were 82 years old.

The majority of the respondents stated that they were married. Followed by a group of unmarried. More than a third of the respondents fall into this group. Individuals living in cohabitation, divorced or widower was represented in the sample fairly equally. However, among such individuals, the number of widowed individuals was somewhat high, i.e. approximately 5%.

In terms of working status, employed individuals were the majority. This group is followed by respondents who have stated that they are students, and this group included slightly under a quarter of the sample. The number of unemployed in the sample is approximately 10%, while retired individuals comprise approximately 16% of the sample. Only 18 respondents, which makes less than 2% of all respondents, claimed to be dependent.

According to the level of education, respondents were grouped into three groups. The first is made up of individuals with lower than secondary education. This group included respondents who stated that they did not have completed elementary school or that their highest level of education was an elementary school. There is approximately 16% of such individuals in this sample. The majority of respondents have completed secondary education. Approximately 21% of respondents stated that they had a higher education degree (completed undergraduate studies), a postgraduate specialist degree or a master's degree. Only one respondent claimed to have obtained a master's degree in science, and no respondents in the sample indicated he/she has obtained a degree of doctor of science.

## 4. RESULTS AND DISCUSSION

In the questionnaire, questions relate to citizens' expectations regarding health promotion and disease prevention. Respondents stated the level of agreement with the statements on a 5-degree scale (1 – I completely disagree, 2 – I mostly disagree, 3 – I do not disagree or agree, 4 – I mostly agree and 5 – I completely agree). Distribution of respondents with respect to their responses are presented in Table 2 and Graph 1.

**Table 2.** Distribution of respondents by the degree of agreement with claims related to their expectations regarding health promotion and disease prevention

Claim	Level of agreement				
	1	2	3	4	5
I need additional information on health promotion and disease prevention	2 (0,2%)	14 (1,4%)	199 (20,3%)	372 (38,0%)	393 (40,1%)
I expect to be informed by the family physician on activities related to health promotion and disease prevention	1 (0,1%)	14 (1,4%)	169 (17,2%)	421 (43,0%)	375 (38,3%)
I am willing to receive magazines prepared by a health institution	1 (0,1%)	16 (1,6%)	140 (14,3%)	364 (37,1%)	459 (46,8%)
I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention	4 (0,4%)	23 (2,3%)	174 (17,8%)	368 (37,6%)	411 (41,9%)
I would respond to a monthly public forum regarding health promotion and disease prevention	5 (0,5%)	34 (3,5%)	198 (20,2%)	323 (33,0%)	420 (42,9%)
Health information should be available via the phone 24 hours a day	1 (0,1%)	0 (0,0%)	104 (10,6%)	364 (37,1%)	511 (52,1%)
Information on health promotion and disease prevention should be available via the internet	1 (0,1%)	8 (0,8%)	92 (9,4%)	323 (33,0%)	556 (56,7%)
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	0 (0,0%)	4 (0,4%)	109 (11,1%)	313 (31,9%)	554 (56,5%)
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	0 (0,0%)	10 (1,0%)	76 (7,8%)	273 (27,9%)	621 (63,4%)
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	86 (8,8%)	123 (12,6%)	211 (21,5%)	222 (22,7%)	338 (34,5%)

**Graph 1.** Distribution of respondents by the degree of agreement with claims related to their expectations regarding health promotion and disease prevention

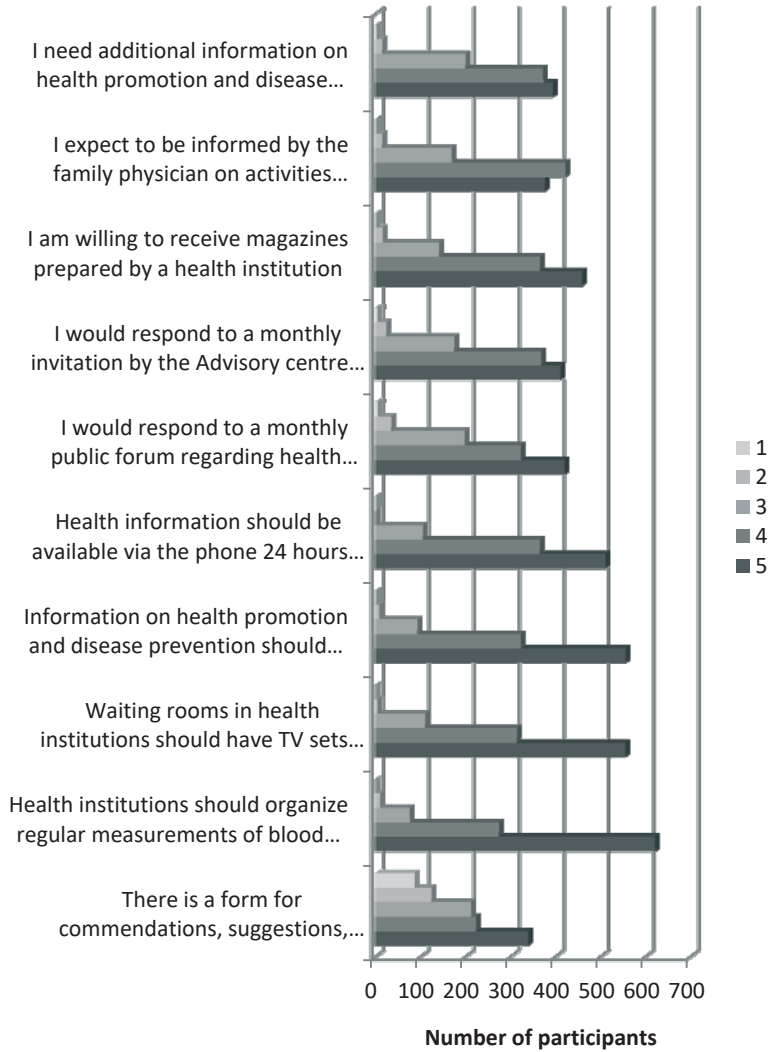


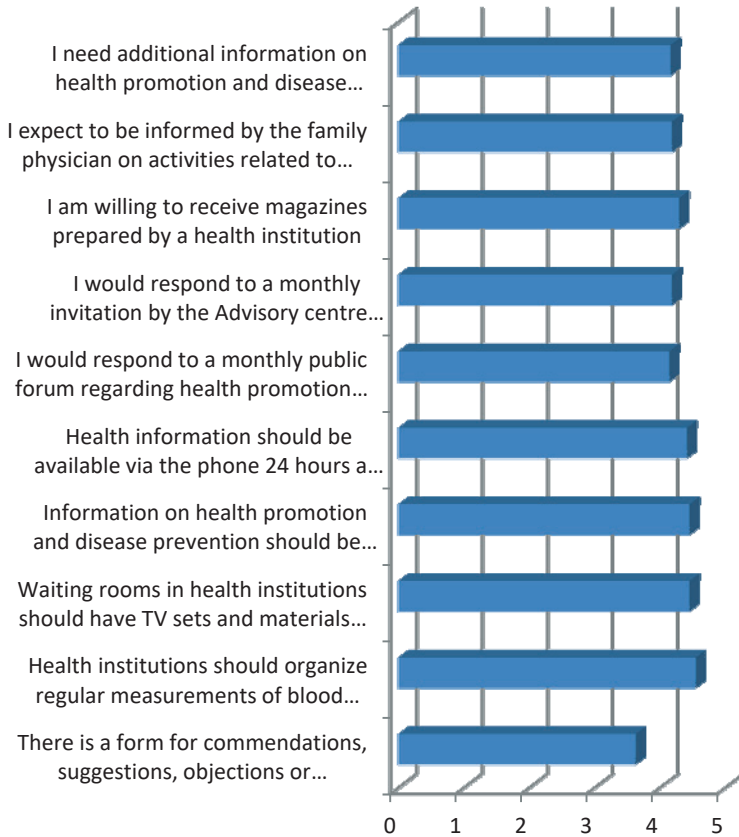
Table 3 lists descriptive statistical data, which is determined on the basis of respondents' responses regarding their expectations on health promotion and disease prevention. Arithmetic means are also shown in graph 2.

**Table 3.** Descriptive statistical indicators related to citizen expectations related to health promotion and disease prevention

Claim	Arithmetic mean	Median	Mode	Standard deviation
I need additional information on health promotion and disease prevention	4,16	4,00	5,00	0,81
I expect to be informed by the family physician on activities related to health promotion and disease prevention	4,18	4,00	4,00	0,77
I am willing to receive magazines prepared by a health institution	4,29	4,00	5,00	0,78
I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention	4,18	4,00	5,00	0,83
I would respond to a monthly public forum regarding health promotion and disease prevention	4,14	4,00	5,00	0,89
Health information should be available via the phone 24 hours a day	4,41	5,00	5,00	0,68
Information on health promotion and disease prevention should be available via the internet	4,45	5,00	5,00	0,71
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	4,45	5,00	5,00	0,70
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	4,54	5,00	5,00	0,68
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	3,62	4,00	5,00	1,31

The average respondents showed a very high level of agreement with all the claims. Only in the case of a variable related to the existence of a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention, the calculated arithmetic mean is less than 4. The greatest value of the arithmetic means refers to the claim that healthcare institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.

**Graph 2.** Arithmetic means related to citizen expectations related to health promotion and disease prevention



Based on the calculated standard deviations, it can be concluded that the largest dispersion characterizes participants' responses to the statement that there is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention. For this variable only, the average deviation of the arithmetic mean is greater than 1.

Mann-Whitney's test was used to examine the significance of differences in the responses of men and women. Its results, including the average rankings, are shown in Table 4. Average rankings are also presented in graph 3.



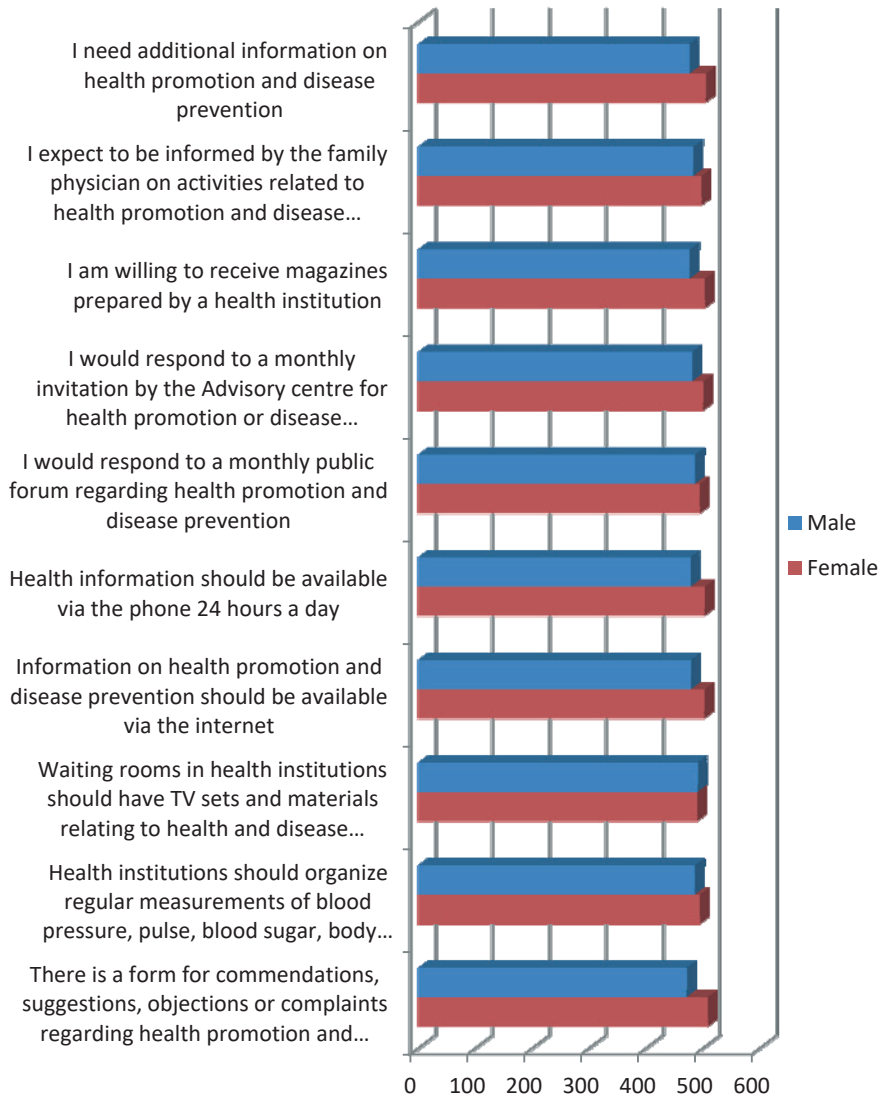
**Table 4.** Mann-Whitney test of differences in expectations regarding health promotion and disease prevention with regard to gender

Claim	Average rankings		Z	p
	Male	Female		
I need additional information on health promotion and disease prevention	475,79	504,50	-1,699	0,089
I expect to be informed by the family physician on activities related to health promotion and disease prevention	483,25	497,40	-0,843	0,399
I am willing to receive magazines prepared by a health institution	476,80	503,54	-1,610	0,107
I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention	480,44	500,08	-1,166	0,244
I would respond to a monthly public forum regarding health promotion and disease prevention	486,23	494,57	-0,492	0,623
Health information should be available via the phone 24 hours a day	477,94	502,46	-1,510	0,131
Information on health promotion and disease prevention should be available via the internet	478,26	502,15	-1,495	0,135
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	490,74	490,27	0,029	0,977
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	485,96	494,82	-0,576	0,565
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	471,42	508,67	-2,129	0,033*

\* Statistically significant at  $p < 0,05$

According to the Mann-Whitney test, men and women statistically differ significantly only with respect to the claim that there is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention. Women agree with this statement significantly statistically more.

**Graph 3.** Average rankings of expectations related to health promotion and disease prevention regarding gender



The Kruskal-Wallis test was used to test the hypothesis of the existence of at least two age groups that differ statistically between each other. Test results, including average rankings, are listed in Table 5.

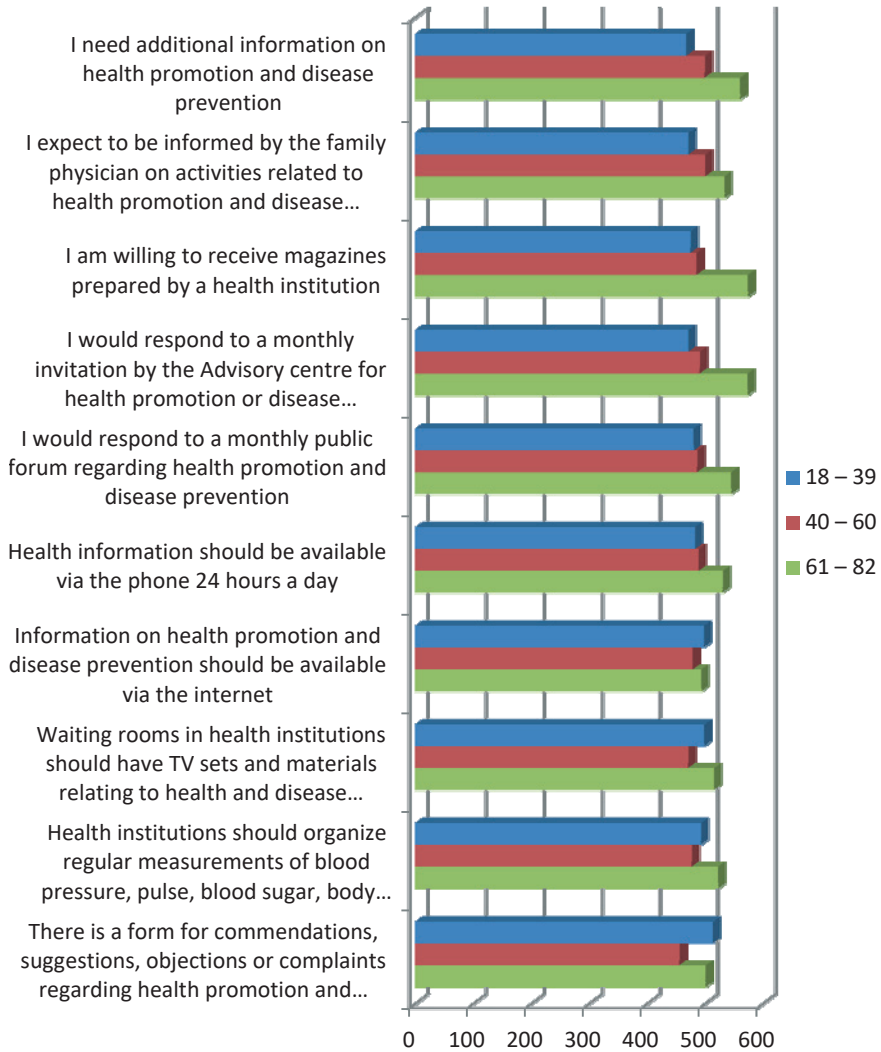
**Table 5.** Kruskal-Wallis test of different expectations regarding health promotion and disease prevention with regard to age groups

Claim	Average rankings			H	p
	18 – 39	40 – 60	61 – 82		
I need additional information on health promotion and disease prevention	467,44	500,02	561,21	12,026	0,002*
I expect to be informed by the family physician on activities related to health promotion and disease prevention	472,30	501,43	534,37	6,068	0,048*
I am willing to receive magazines prepared by a health institution	475,28	486,05	574,56	13,197	0,001*
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	471,26	491,35	574,20	13,603	0,001*
I would respond to a monthly public forum regarding health promotion and disease prevention	480,91	487,00	545,90	5,469	0,065
Health information should be available via the phone 24 hours a day	482,68	489,00	530,94	3,240	0,198
Information on health promotion and disease prevention should be available via the internet	498,16	479,49	494,40	1,224	0,542
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	499,39	471,54	516,59	3,967	0,138
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	493,19	477,58	523,46	3,200	0,202
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	514,53	456,24	501,72	9,926	0,007*

\* Statistically significant at  $p < 0,05$

Average rankings are shown in graph 4, while Table 6 presents the results of the Dunn's test which was applied in case of claims for which the Kruskal-Wallis test confirmed the existence of significant differences.

**Graph 4.** Average rankings of expectations related to health promotion and disease prevention in relation to age groups



According to the Dunn’s test, in the case of a claim relating to expect to be informed by the family physician on activities related to health promotion and disease prevention, not a single adjusted p-value lower than 0,05 has been detected.

**Table 6.** Dunn’s multiple comparison test

Claim		Compared groups		
		18 – 39	18 – 39	40 – 60
		40 – 60	61 – 82	61 – 82
I need additional information on health promotion and disease prevention	Z	-1,804	-3,350	-2,130
	p	0,214	0,002*	0,099
I expect to be informed by the family physician on activities related to health promotion and disease prevention	Z	-1,625	-2,234	-1,155
	p	0,313	0,076	0,744
I am willing to receive magazines prepared by a health institution	Z	-0,606	-3,608	-3,134
	p	1,000	0,001*	0,005*
I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention	Z	-1,116	-3,687	-2,892
	p	0,794	0,001*	0,011*
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	Z	3,118	0,442	-1,530
	p	0,005*	1,000	0,378

\* Statistically significant at  $p < 0,05$

Younger people agree statistically significantly more than middle-aged people that there is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention. In addition, younger people agree considerably less than older people that they need additional information on health promotion and disease prevention, that they are willing to receive magazines prepared by the health institution and that they would respond to a monthly invitation by the Advisory center for health promotion or disease prevention.

The Dunn’s test also confirmed that middle-aged participants agree statistically significantly less than the elderly participants that they are willing to receive magazines prepared by the health institution and that they would respond to a monthly invitation by the Advisory center for health promotion or disease prevention.

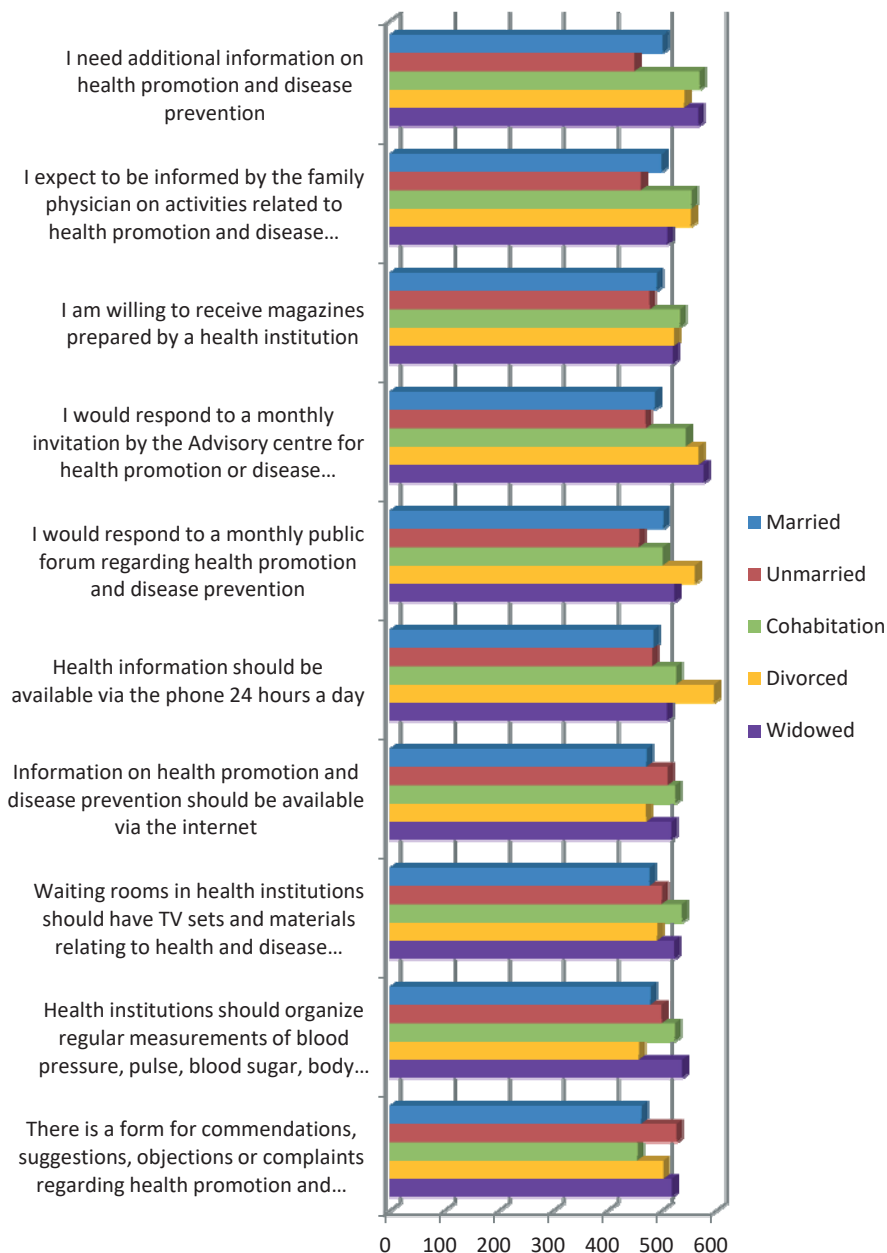
Table 7 lists the results of the Kruskal-Wallis test, which investigated differences in terms of marital status, and the average rankings, except in the table, are also shown in graph 5.

**Table 7.** Kruskal-Wallis test of differences in expectations regarding health promotion and disease prevention with regard to marital status

Claim	Average rankings					H	p
	Married	Unmarried	Cohabitation	Divorced	Widowed		
I need additional information on health promotion and disease prevention	502,58	450,75	570,67	541,72	567,92	17,111	0,002*
I expect to be informed by the family physician on activities related to health promotion and disease prevention	500,41	461,56	555,05	553,46	510,27	9,175	0,057
I am willing to receive magazines prepared by a health institution	491,17	478,45	533,77	523,71	521,33	2,829	0,587
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	487,51	471,18	544,12	567,54	576,93	11,220	0,024*
I would respond to a monthly public forum regarding health promotion and disease prevention	503,43	458,97	502,73	561,69	524,02	9,614	0,047*
Health information should be available via the phone 24 hours a day	484,82	482,49	526,60	596,13	509,35	7,689	0,104
Information on health promotion and disease prevention should be available via the internet	472,58	512,03	525,85	471,75	517,52	6,600	0,159
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	477,72	500,64	537,90	492,00	523,72	3,793	0,435
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	479,75	500,38	524,27	458,32	538,22	4,662	0,324
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	463,15	528,15	456,03	504,31	519,41	12,909	0,012*

\* Statistically significant at  $p < 0,05$

**Graph 5.** Average rankings of expectations related to health promotion and disease prevention with regard to marital status



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The results of the Kruskal-Wallis's test show that in the case of the following statements there are at least two groups that are statistically significant in

terms of the levels of agreement: I need additional information on health promotion and disease prevention, I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention, I would respond to a monthly public forum regarding health promotion and disease prevention and there is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention.

For the purpose of identifying groups that statistically significantly differ with regard to the degree of agreement, Dunn’s test was used, the results of which are presented in Tables 8 and 9.

**Table 8.** Dunn’s multiple comparison test

Claim		Compared groups				
		Married	Married	Married	Married	Unmarried
		Unmarried	Cohabitation	Divorced	Widowed	Cohabitation
I need additional information on health promotion and disease prevention	Z	2,837	-1,371	-0,859	-1,606	-2,385
	p	0,045*	1,000	1,000	1,000	0,171
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	Z	0,897	-1,143	-1,761	-2,204	-1,455
	p	1,000	1,000	0,783	0,275	1,000
I would respond to a monthly public forum regarding health promotion and disease prevention	Z	2,427	0,014	-1,275	-0,505	-0,868
	p	0,152	1,000	1,000	1,000	1,000
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	Z	-3,438	0,138	-0,872	-1,336	1,386
	p	0,006*	1,000	1,000	1,000	1,000

\* Statistically significant at p <0,05

Dunn’s test confirmed that married participants agree statistically significantly more than unmarried participants that they need additional information on health promotion and disease prevention. The Dunn test also confirmed that unmarried individuals believe statistically significantly less than widowed individuals that they need additional information on health promotion and disease prevention. According to Dunn’s test, other differences between groups are



not statistically significant. This implies that, given the marital status, there is a fairly balanced view of the analyzed statements among the different groups.

This implies that, given the marital status, there is a fairly balanced view of the analyzed claims among different groups.

**Table 9.** Dunn’s multiple comparison test

Claim		Compared groups				
		Unmarried	Unmarried	Cohabitation	Cohabitation	Divorced
		Divorced	Widowed	Divorced	Widowed	Widowed
I need additional information on health promotion and disease prevention	Z	-1,967	-2,827	0,443	0,044	-0,445
	p	0,492	0,047*	1,000	1,000	1,000
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	Z	-2,089	-2,559	-0,359	-0,530	-0,160
	p	0,367	0,105	1,000	1,000	1,000
I would respond to a monthly public forum regarding health promotion and disease prevention	Z	-2,215	-1,565	-0,900	-0,342	0,639
	p	0,268	1,000	1,000	1,000	1,000
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	Z	0,498	0,204	-0,714	-0,987	-0,248
	p	1,000	1,000	1,000	1,000	1,000

\* Statistically significant at  $p < 0,05$

Table 10 lists the results of the Kruskal-Wallis’s test, which was conducted to determine for which claims there are at least two groups, grouped according to working status, which statistically significantly differ with respect to the stated degree of agreement. Average rankings are shown in graph 6. The Kruskal-Wallis test confirmed the existence of statistically significant differences in the following cases: I need additional information on health promotion and disease prevention, I expect to be informed by the family physician on activities related to health promotion and disease prevention, I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention, I would respond to a monthly public forum regarding health promotion and disease prevention, Information on health promotion and disease prevention should be available via the internet and There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention. In the case of the first and fourth of the aforementioned arguments, the highest average rank was determined based on the responses of retirees,

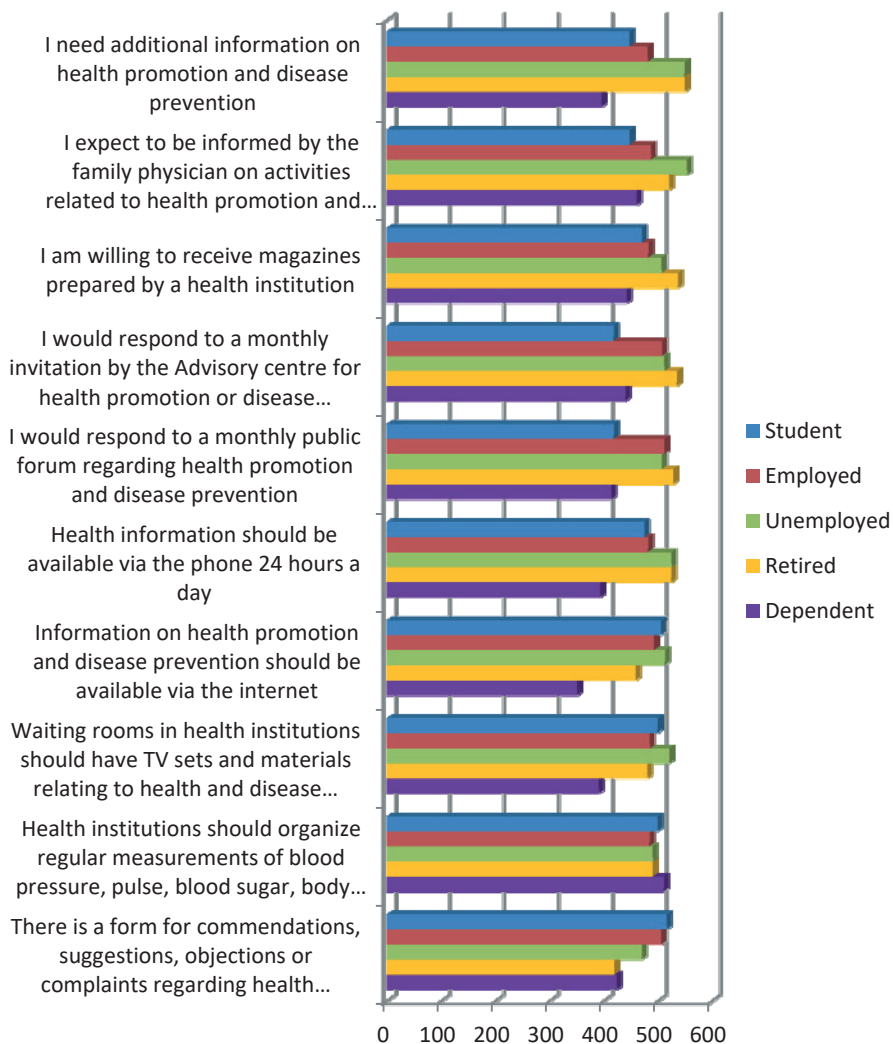
while the lowest average rank was for the dependent individual. The lowest average rank in the case of a claim relating to expectation to be informed by the family physician on activities related to health promotion and disease prevention as well as to willingness to respond to a monthly invitation by the Advisory center for health promotion or disease prevention was calculated based on the responses of students. According to the average rankings, the unemployed agree the most with the claim relating to expectation from the family physician, while retirees agree the most with the claim relating to a willingness to respond to a monthly invitation by the Advisory center for health promotion or disease prevention. Dependant individuals agree at least that information on health promotion and disease prevention should be available online, while the unemployed agree with this claim the most.

**Table 10.** Kruskal-Wallis test of differences in expectations regarding health promotion and disease prevention with regard to the working status

Claim	Average rankings					H	p
	Student	Employed	Unemployed	Retired	Dependent		
I need additional information on health promotion and disease prevention	448,58	482,18	549,67	550,78	396,72	21,955	0,000*
I expect to be informed by the family physician on activities related to health promotion and disease prevention	448,83	488,24	554,63	521,70	462,11	14,533	0,006*
I am willing to receive magazines prepared by a health institution	470,47	483,03	507,68	537,12	443,53	7,878	0,096
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	418,76	509,00	512,57	535,29	440,42	25,737	0,000*
I would respond to a monthly public forum regarding health promotion and disease prevention	418,97	512,78	508,41	529,35	415,08	25,844	0,000*
Health information should be available via the phone 24 hours a day	475,32	482,52	526,28	524,88	394,33	8,783	0,067
Information on health promotion and disease prevention should be available via the internet	506,74	492,79	513,39	460,20	351,86	9,728	0,045*
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	499,92	485,86	521,20	481,42	391,69	5,020	0,285
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	499,43	485,08	491,19	490,28	511,31	0,697	0,952
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	517,22	507,38	470,50	420,59	424,83	15,862	0,003*

\* Statistically significant at  $p < 0,05$

**Graph 6.** Average rankings of expectations related to health promotion and disease prevention with regard to the working status



The results of the Dunn's test are presented in Tables 11 and 12. Although the Kruskal-Wallis test points to the existence of statistically significant differences in the degree of agreement between at least two groups in the case of claims that information on health promotion and disease prevention should be available online, the adjusted p-values obtained within the Dunn's test do not confirm this.

**Table 11.** Dunn's multiple comparison test

Claim		Compared groups				
		Student	Student	Student	Student	Employed
		Employed	Unemployed	Retired	Dependent	Unemployed
I need additional information on health promotion and disease prevention	Z	-1,593	-3,229	-3,757	0,802	-2,335
	p	1,000	0,012*	0,002*	1,000	0,195
I expect to be informed by the family physician on activities related to health promotion and disease prevention	Z	-1,882	-3,405	-2,699	-0,207	-2,314
	p	0,598	0,007*	0,070	1,000	0,206
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	Z	-4,290	-3,005	-4,295	-0,336	-0,124
	p	0,000*	0,027*	0,000*	1,000	1,000
I would respond to a monthly public forum regarding health promotion and disease prevention	Z	-4,436	-2,849	-4,047	0,060	0,151
	p	0,000*	0,044*	0,001*	1,000	1,000
Information on health promotion and disease prevention should be available via the internet	Z	0,699	-0,224	1,808	2,533	-0,754
	p	1,000	1,000	0,705	0,113	1,000
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	Z	0,450	1,442	3,432	1,381	1,233
	p	1,000	1,000	0,006*	1,000	1,000

\* Statistically significant at  $p < 0,05$

According to Dunn's test, students agree significantly less with the claims than employed individuals do. According to the Dunn test, students agree significantly less than employed individuals agreeing with statements that they would respond to a monthly invitation by the Advisory center for health promotion or disease prevention was calculated based on the responses of students, as well as to a monthly public forum regarding health promotion and disease prevention. Students are also significantly less than the unemployed individuals agree that they need additional information on health promotion and disease prevention, that they expect to be informed by the family physician on activities related to health promotion and disease prevention, that they would respond to a monthly invitation by the Advisory center for health promotion or disease prevention, as well as to a monthly public forum regarding health promotion and disease prevention.

The results of the Dunn's test also confirm that students agree significantly less than retirees that they need additional information on health promotion

and disease prevention, that they would respond to a monthly invitation by the Advisory center for health promotion or disease prevention and that they would respond to a monthly public forum regarding health promotion and disease prevention. However, in relation to retirees, they agree more that there is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention. Dunn's test also confirmed that employed need additional information on health promotion and disease prevention significantly less than retirees, while at the same time agreeing significantly more that there is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention.

**Table 12.** Dunn's multiple comparison test

Claim		Compared groups				
		Employed	Employed	Unemployed	Unemployed	Retired
		Retired	Dependent	Retired	Dependent	Dependent
I need additional information on health promotion and disease prevention	Z	-2,812	1,346	-0,033	2,263	2,342
	p	0,049*	1,000	1,000	0,236	0,192
I expect to be informed by the family physician on activities related to health promotion and disease prevention	Z	-1,382	0,414	0,987	1,379	0,913
	p	1,000	1,000	1,000	1,000	1,000
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	Z	-1,081	1,083	-0,678	1,070	1,446
	p	1,000	1,000	1,000	1,000	1,000
I would respond to a monthly public forum regarding health promotion and disease prevention	Z	-0,677	1,534	-0,621	1,377	1,732
	p	1,000	1,000	1,000	1,000	0,832
Information on health promotion and disease prevention should be available via the internet	Z	1,412	2,346	1,672	2,526	1,741
	p	1,000	0,190	0,945	0,115	0,817
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	Z	3,437	1,256	1,434	0,653	-0,062
	p	0,006*	1,000	1,000	1,000	1,000

\* Statistically significant at  $p < 0,05$

The following Table 13 presents the results of the Kruskal-Wallis test, which was used to investigate the significance of differences with respect to the degree of education including average rankings. Average rankings are also shown in Graph 7.

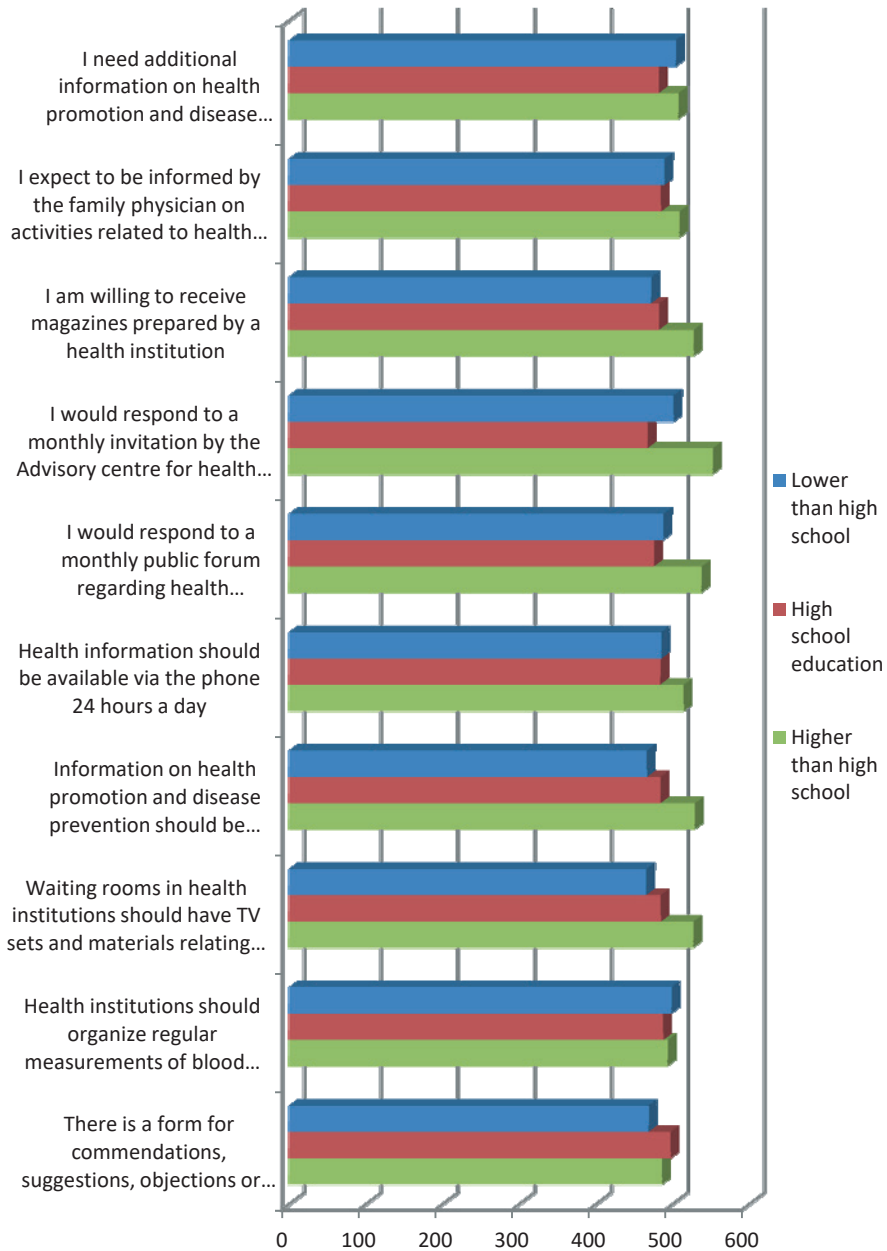
According to the Kruskal-Wallis's test, ranks of agreement between at least groups are statistically significantly different for four statements. The results of the Dunn's test are presented in Table 14.

**Table 13.** Kruskal-Wallis test of differences in perceptions of activities regarding health promotion and disease prevention with regard to the degree of education

Claim	Average rankings			H	p
	Lower than high school	High school education	Higher than high school		
I need additional information on health promotion and disease prevention	503,91	481,50	507,18	1,943	0,379
I expect to be informed by the family physician on activities related to health promotion and disease prevention	489,49	484,64	508,55	1,299	0,522
I am willing to receive magazines prepared by a health institution	471,81	482,58	527,65	5,641	0,060
I would respond to a monthly invitation by the Advisory centre for health promotion or disease prevention	501,11	467,01	552,02	16,525	0,000*
I would respond to a monthly public forum regarding health promotion and disease prevention	487,97	475,24	537,42	8,605	0,014*
Health information should be available via the phone 24 hours a day	484,98	483,80	514,36	2,345	0,310
Information on health promotion and disease prevention should be available via the internet	466,22	483,71	528,43	6,712	0,035*
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	465,61	484,47	526,63	6,207	0,045*
Health institutions should organize regular measurements of blood pressure, pulse, blood sugar, body weight etc.	498,33	487,65	493,16	0,275	0,872
There is a form for commendations, suggestions, objections or complaints regarding health promotion and disease prevention	468,62	497,40	486,26	1,427	0,490

\* Statistically significant at  $p < 0,05$

**Graph 7.** Average rankings of expectations related to health promotion and disease prevention with regard to the degree of education



**Table 14.** Dunn's multiple comparison tests

Claim		Compared groups		
		Lower than high school	Lower than high school	High school education
		High school education	Higher than high school	Higher than high school
I would respond to a monthly invitation by the Advisory center for health promotion or disease prevention	Z	1,436	-1,818	-4,029
	$\rho$	0,453	0,207	0,000*
I would respond to a monthly public forum regarding health promotion and disease prevention	Z	0,533	-1,756	-2,931
	$\rho$	1,000	0,237	0,010*
Information on health promotion and disease prevention should be available via the internet	Z	-0,776	-2,342	-2,234
	$\rho$	1,000	0,058	0,076
Waiting rooms in health institutions should have TV sets and materials relating to health and disease prevention	Z	-0,835	-2,290	-2,100
	$\rho$	1,000	0,066	0,107

\* Statistically significant at  $p < 0,05$

Using the Dunn's test, and based on the adjusted empirical levels of significance, the existence of statistically significant differences in the level of agreement as not been detected. Dunn's test, and based on adjusted empirical levels of significance, did not confirm the existence of statistically significant differences in degree of agreement between any two groups with regard to claims that information on health promotion and disease prevention should be available online and that waiting rooms in healthcare facilities should be equipped with TV sets and posters, brochures, leaflets and magazines related to health and disease prevention. According to the Dunn test, individuals with secondary education agree statistically significantly less than those with higher education that they would respond to a monthly invitation by the Advisory center for health promotion or disease prevention, as well to a monthly public forum regarding health promotion and disease prevention.

## 5. CONCLUSION

The health system of the Republic of Croatia, although faced with many problems and many tasks that need to be addressed, should be seen as a potential. However, in order to change the public image of the health system of the Republic of Croatia, and in order to maximize the function of the health system of the Republic of Croatia to promote health promotion and disease prevention in the Republic of Croatia, it is necessary for the population of the Republic of Croatia, i.e. users of the health system, to communicate effectively about the



possibilities of the health system and the importance of the preventive behaviour of the population in suppressing the disease. Quality communication with consumers is in the domain of marketing, especially the part that is called integral marketing communication. Therefore, taking into account the specificities of the economic or social system of the Republic of Croatia, and in particular the specificities of health care on the one hand, and the specificity of the needs of the population of the Republic of Croatia on the other hand, while at the same time accepting today's knowledge of marketing in the narrower sense, i.e. communication systems in the broader sense, one of the tasks of science is to research, and offer an optimal model of integral marketing communication in the function of health improvement and disease prevention in the Republic of Croatia. Accordingly, the conducted research is a starting point for a whole series of studies that should enable the implementation of integrated marketing communication in the health system of the Republic of Croatia. Today, it is more important to hear what users need than it is to send messages to users without knowing what they really want. This means that we need to make a step forward from monodirectional communication towards bidirectional communication.

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# STEM EDUCATION ON COLLEGE OF SLAVONSKI BROD

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## **Abstract**

*A STEM education is more often presented in the public as a new trend in education. Most people equate STEM with robotics or computer science, although it does not correspond to the meaning of the acronym, as well as the sense of STEM education. STEM education includes studies of the four areas (science, technology, engineering, and mathematics) in an interdisciplinary way that has a measurable and clear appliance. By starting the new studies Energetics and Ecological Agriculture and Rural Development College of Slavonski Brod prove the dynamic development towards a meeting the needs of the economy. Both programs represent a competitive approach to the market, and both are required for the economy. The programs are based on the strategies of the European Union and the Republic of Croatia. During the creation of programs for the above-mentioned studies, the emphasis is placed on the development of the economy, innovation, and scientific excellence in the creation of personnel whose professions are unavailable in the labor market. This paper will present and analyze the number and structure of enrolled students in undergraduate studies Manufacturing Engineering and Plant production and in Graduate Studies in Energy and Ecological Agriculture and Rural Development in the*

*period from 2014/2015. to 2018./2019. academic year. According to the analyzed data, there will be given guidelines for increasing the number of students in the mentioned studies from the STEM area.*

**Keywords:** STEM area, education, College of Slavonski Brod

JEL Classification: I21, I23

## 1. INTRODUCTION

Study Programs in STEM Areas of Science are programs in biotechnical, technical, biomedical, natural and interdisciplinary science and study programs that acquire the academic or professional title of Bachelor of Information Technology, business informatics, information sciences, and informatology. The Ministry of Science and Education grants scholarships to regular students enrolled in higher education institutions in the Republic of Croatia for the undergraduate university, integrated undergraduate and graduate university and undergraduate professional studies in STEM areas of science.

The subject of this paper is STEM education on College of Slavonski Brod, that has two undergraduate (Manufacturing Engineering and Plant production) and two graduate (Energy and Ecological Agriculture and Rural Development) study programs from STEM area. The first part of the paper presents the system of higher education in the Republic of Croatia and analysis the number of enrolled students in certain study areas. After that, the data on College of Slavonski Brod students, who are enrolled in study programs from the field of the STEM area, were analyzed. The data on students enrolled in pre-graduate and graduate studies are presented separately.

## 2. HIGHER EDUCATION SYSTEM IN THE REPUBLIC OF CROATIA

Higher education in the Republic of Croatia is performed within university and professional courses. University study programs qualify students to work in science and higher education, private and public sector and society in general, as well as to develop and apply scientific and professional knowledge. Professional study programs provide students with an appropriate level of knowledge and

skills required to work in applied professions, as well as a direct integration in the working process.

University study programs have three levels: undergraduate, graduate and postgraduate. Professional study programs are split into short professional studies, undergraduate professional studies, and specialist graduate professional studies. Undergraduate programs normally last three (180 ECTS) to four (240 ECTS) years. Upon completion, students are awarded an academic title of Bachelor with reference to a specialization. Graduate programs normally last one (60 ECTS) to two (120 ECTS) years. The total number of credits earned after completing both undergraduate and graduate studies is at least 300 ECTS.

Upon completion of both undergraduate and graduate studies, students are awarded an academic title of Master with reference to a specialization. Postgraduate university studies are divided into specialist and doctoral studies. Specialist studies last for one to two years. Upon completion, the student is awarded the title of University Specialist with reference to a specialization (univ. spec.). Doctoral studies last three years (180 ECTS). Upon completion of the doctoral study, the academic title of Doctor of Science or Doctor of Arts is awarded (dr. sc. or dr. art.). (AZVO)

Professional studies are divided into short professional studies, undergraduate professional studies, and specialist professional graduate studies. Short professional studies last two (120 ECTS) to two and a half (150 ECTS) years. Upon completion, students are awarded a professional title of Professional Bachelor of Economics with reference to a specialization. Undergraduate professional studies last three (exceptionally four) years and students earn 180-240 ECTS credits. Upon completion of professional studies, students are awarded a professional title of Professional Bachelor of Economics with a reference to a specialization. Specialist professional graduate studies last one to two years and students can earn 60-120 ECTS credits. Upon completion, students are awarded a title of Professional Specialist in Economics. The total number of credits earned after completing both undergraduate and graduate professional studies is at least 300 ECTS. There are currently 1358 accredited study programmes in the Republic of Croatia. (AZVO)

Higher education in the Republic of Croatia takes place under the Bologna process. The Bologna Declaration was a common declaration of the European education ministers signed in 1999 in Bologna, which marked the process of

higher education reform known today as the Bologna Process. The Republic of Croatia signed the Bologna Declaration in 2001. The aims of the Bologna Process are:

- ✦ Adoption of a system of easily readable and comparable degrees, among other things by introducing Diploma Supplements, in order to improve the employability of the European citizens and the international competitiveness of the European Higher Education Area.
- ✦ Adoption of a system essentially based on two main cycles, undergraduate and graduate. Graduation from the first cycle, in the duration of at least three years, is a precondition for enrolment to the second cycle. The qualification awarded after the first cycle should be aligned with the levels recognized at the European labor market. The second cycle leads to the master/doctoral cycle, as is the case in many European countries.
- ✦ Establishment of a system of credits, such as the ECTS, as an adequate mechanism for promoting student mobility. The credits can be awarded outside the higher education system, and within the lifelong learning, if they are recognized by the host institution.
- ✦ Facilitation of mobility includes removing obstacles to free movement, especially for: students, in access to higher education institutions and the connected services; teachers, researchers, and administrative staff, in recognition and valorization of periods spent in a European context researching, teaching, and training, without prejudicing their statutory rights.
- ✦ Promotion of European cooperation in quality assurance, aimed at assuring comparable standards and methodologies. Promoting the important European dimensions of higher education, especially in the development of curricula, interinstitutional cooperation, mobility programmes, and joint study, education and research programme. (AZVO)

According to AZVO, the largest number of candidates in the Republic of Croatia traditionally enrolled in studies in the fields of social sciences (economics, law, sociology, pedagogy, psychology, etc.). In addition, statistics from the Agency for Science and Higher Education are also supported. According to 2013/2014 year data, the number of enrolled students at public higher education institutions was as follows:

- ✦ technical sciences - 38786

- + biotechnical sciences - 9098
- + social sciences - 74000

In 2013./2014 academic year 42750 students were enrolled in studies in the field of economics, while at the same time 43825 students were enrolled in all studies in the field of technical sciences. There were only 7049 students enrolled in natural sciences field studies. This trend continued in the following academic years. Therefore, the Ministry of Science and Education of the Republic of Croatia has started to promote the professions in the STEM field, where STEM stands for Science, Technology, Engineering, and Mathematics.

College of Slavonski Brod also works on the popularization of its undergraduate (Plant Production and production Engineering) and graduate studies (Ecological Agriculture and Rural Development and Energetics) of the STEM area. College of Slavonski Brod endeavors to increase the number of enrolled students with numerous promotional activities, getting to know candidates with learning opportunities and by granting STEM scholarships.

In 2017/2018 College of Slavonski Brod awarded a total of 10 STEM scholarships (7 of them for the Plant Production students and 3 for the Production Engineering students). In 2018/2019 the number of STEM scholarships awarded increased and it was 22 (11 for the Plant Production students and 11 for the Production Engineering students). Besides that, in October 2018, College of Slavonski Brod started with the implementation of the STEM Eco & Energetics project in a partnership with College of Požega. The project is co-financed by the European Union from the European Social Fund.

The aim of the project is to increase the number of study programs and courses in English by strengthening the competences of students and staff of the College in Slavonski Brod and College in Požega, which will further enhance the quality, relevance, and efficiency of higher education and improve the degree of internationalization. (VUSB) Below are the data on the undergraduate and graduate STEM studies enrollments in College of Slavonski Brod from 2014/2015 to 2018./2019 academic years. The paper also shows demographic data, ie the counties where students come from, and the average grades of high school graduates.

### 3. UNDERGRADUATE STEM STUDIES

Since its foundation in 2006, the College of Slavonski Brod has organized and conducted undergraduate studies of Plant Production, orientation in Horticulture or Farming, and Production Engineering. Professional undergraduate study in Plant Production – Horticulture lasts for 6 semesters. Prior to graduation, a student is obliged to gain 180 ECTS. Upon completion of the professional undergraduate study in Plant Production with specialization in Horticulture, a student is awarded the qualification of Professional Bachelor - Engineer of Plant Production.

Students enrolled in the study program of Plant Production, orientation in Horticulture, gain knowledge in almost all branches of agricultural production, in particular, knowledge that is required for work with horticultural plants. The study program enables horticultural experts to independently manage technological processes in all segments of horticultural production. The study program is set up in form of lectures, exercises, seminars, and professional practice, as well as other forms of teaching, with the aim to enable graduates to apply technological and economic achievements in horticultural production in a creative way. Teaching content provides students with a level of knowledge needed for successful dealing with tasks related to horticulture and agriculture on small and large family farms.

Upon graduation, Professional Bachelor – Engineer of Plant Production is able to:

- ♦ distinguish the most important characteristics of fruit, vegetable, flower and vineyard cultures
- ♦ propose visual solutions for green areas
- ♦ identify the major biological, chemical, soil, environmental, ameliorative and technological factors in the production of plants
- ♦ propose appropriate protection of specific plant sorts
- ♦ independently coordinate less demanding technological processes in the field of plant production (fruit, vegetable, flower, viticulture, and landscaping)
- ♦ manage small agricultural farms
- ♦ recognize possibilities for continuing education and lifelong learning in order to be able to use modern technology, skills, and methods in plant production



In its structure and realization, the study program is comparable with similar programs organized in the European Union member states. Professional study program in Plant Production, orientation in Horticulture, is developed according to the model of professional studies offered worldwide (e.g. Greenmount College-Northern Ireland, Modesto Junior College-California, Harper Adams College-GB, etc.), with the intention to educate experts who would significantly contribute to the increase in vegetable, flower, fruit production, as well as in viticulture, and who would be able to independently create conceptual designs for landscape architecture.

The professional study program is carried out in CSB premises that are appropriately equipped for teaching. There are well-equipped laboratories, computer rooms, and practicums, as well as experimental plots with necessary machinery required for practical teaching. Subsistence and accommodation of students are provided in the Student Dormitory in Slavonski Brod. Professional undergraduate study in Plant Production – Farming lasts for 6 semesters. Prior to graduation, a student is obliged to gain 180 ECTS. Upon completion of the professional undergraduate study in Plant Production with orientation in Farming, a student is awarded the qualification of Professional Bachelor - Engineer of Plant Production.

Students enrolled in the study program of Plant Production, with orientation in Farming shall gain knowledge in almost all branches of agricultural production, in particular, knowledge needed for the production of arable crops. The study aims to educate experts in farming that would be able to independently manage technological processes in all areas of agricultural production. The study program is set up in form of lectures, exercises, seminars, and professional practice, as well as other forms of teaching. It enables graduates to apply technological and economic achievements in agricultural production in a creative way. Teaching content provides students with a level of knowledge needed for successful dealing with tasks related to farming on small and large family farms.

Upon graduation, Professional Bachelor – Engineer of Plant Production in the orientation of Farming will be able to:

- distinguish morphological characteristics of cereals, industrial and forage crops
- identify the major biological, chemical, soil, environmental, ameliorative and technological factors of plant growing



- ♦ explain agricultural measures in farming
- ♦ define measures for growth of certain cultures
- ♦ propose appropriate protection against pests on specific cultures
- ♦ manage independently less demanding production processes in the field of plant production (farming)
- ♦ manage small family farms that are involved in plant production
- ♦ recognize possibilities for continuing education and lifelong learning in order to be able to use modern technology, skills, and methods in plant production.

Professional undergraduate study in Production Engineering lasts for 6 semesters. Prior to graduation, a student is obliged to gain 180 ECTS. Upon completion of the professional undergraduate study in Production Engineering, a student is awarded the qualification of Professional Bachelor of Mechanical Engineering.

Upon completion of the professional study, students can enroll graduate studies offered at the Mechanical Engineering Faculty in Slavonki Brod if passing exams of the additional study year. Students enrolled in the study program of Production Engineering acquire knowledge in the field of mechanical engineering that is needed for work in production and service enterprises. The learning outcomes for the professional undergraduate study program in Production Engineering are listed below. Graduates from this study program will be able to:

1. define and solve various problems related to the basics of engineering and apply a simplified engineering judgment and creativity in defining assumptions and solution of an engineering problem. [Basics]
2. read and prepare technical and technological as well as other documentation related to realization of a production order. [Documentation]
3. constructor analyze simple heat and mechanical systems by applying knowledge in mechanics, thermal dynamics, science on materials, measuring and control and technology of materials processing with modern tools, computer visualization, and software for construction and analysis, by paying attention to their impact on environment. [Construction/Analysis]

4. plan and realize in a safe manner many laboratory experiments in order to get necessary engineering data. [Laboratory work]
5. apply, organize and perform procedures for maintenance of mechanical constructions, components and plants. [Maintenance]
6. work independently and in a team in order to solve more complex problems related to mechanical engineering. [Team work]
7. announce information related to work in the form of oral presentations or written reports, by using modern information tools and to understand texts related to profession written in a foreign language [Communication]
8. recognize the need for continuing education and lifelong learning in order to be able to apply modern techniques, skills and tools necessary in engineering practice. [Lifelong learning]
9. explain basic business principles, basic terms related to entrepreneurship, costs, meaning of a company in economy environment and key ethical issues that affect the profession. [Business skills]

Upon completion of the professional study, graduates can be employed as:

- + designers of products and components by using the CAD systems,
- + technologists dealing with the development of technological processes,
- + managers in production and logistics support in production,
- + heads of services for quality control and laboratory testing,
- + managers dealing with the maintenance of equipment and procurement of materials.

The study program is in line with the Bologna Process principles and the student performance is evaluated within the European Credit Transfer System (ECTS). Professional undergraduate study program in Production Engineering is carried out in modern laboratories and workshops for materials, technology, motor vehicles and information technology at the Mechanical Engineering Faculty in Slavonski Brod. Students are provided subsistence and accommodation in the Student Dormitory in Slavonski Brod.

**Table 1:** Undergraduate STEM study programs – the number of enrolled students in the 1st study year from 2014/2015 to 2018/2019

		Plant production, full-time students	Plant production, part-time students	Production engineering, full-time students	Production engineering, part-time students
2014/2015	entry quota	60	40	70	30
	number of enrolled	61	1	67	25
2015/2016	entry quota	60	40	70	30
	number of enrolled	61	3	70	29
2016/2017	entry quota	60	30	70	40
	number of enrolled	61	3	68	28
2017/2018	entry quota	60	30	70	40
	number of enrolled	33	5	77	19
2018/2019	entry quota	60	30	70	40
	number of enrolled	28	3	49	17

**Source:** Information system of College of SlavonSKI Brod

Table 1 data showed that the completion of undergraduate full-time studies of Plant Production and Production Engineering is very good in the period 2014/2015 by 2016/2017 unlike 2017/2018 and 2018/2019 when the number of enrolled decreases significantly. In that time the number of Plant production students halved. The data presented showed a significant decrease in interest in the Plant Production enrolment. There is almost no interest in the Plant Production part-time study enrolment, while in Production Engineering the situation is even better, although their number is declining.

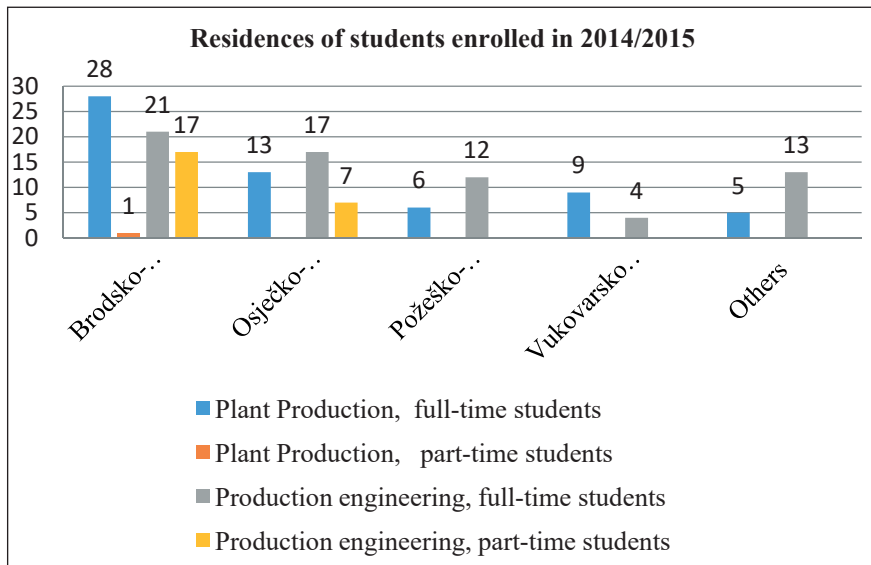
**Table 2:** Secondary school average grades of students enrolled in the 1st year of undergraduate STEM study programs

	Plant Production, full-time students	Plant Production, part-time students	Production engineering, full-time students	Production engineering, part-time students
2014/ 2015	3,24	2,83	3,30	3,95
2015/ 2016	3,32	3,52	3,30	3,23
2016/ 2017	3,32	4,00	3,35	3,19
2017/ 2018	3,37	3,60	3,30	3,57
2018/ 2019	3,78	3,89	3,56	3,35

**Source:** author's calculation

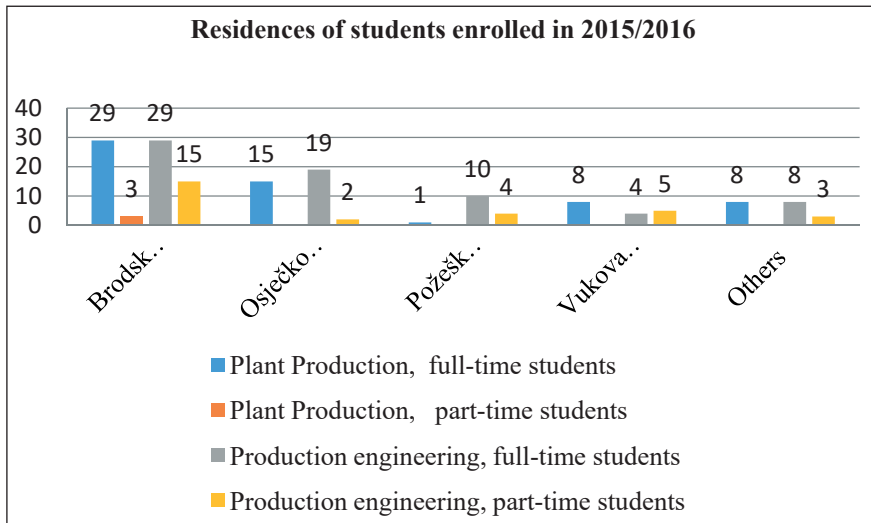
Table 2 data showed that the majority of students enrolled in undergraduate studies had an average grade of overall high school success three (3). One of the goals of College of Slavonski Brod is to attract as many candidates as possible through a variety of activities with better overall success (very good or excellent). The continuation of the work graphically shows the demographic structure of students enrolled in the 1st year undergraduate studies in the period 2014/2015. until 2018./2019. Below the paper graphically shows the demographic structure of students enrolled in the 1st year of undergraduate studies from 2014/2015 to 2018./2019.

**Figure 1:** Demographic data of undergraduate STEM studies students enrolled in the 1st study year in 2014/2015



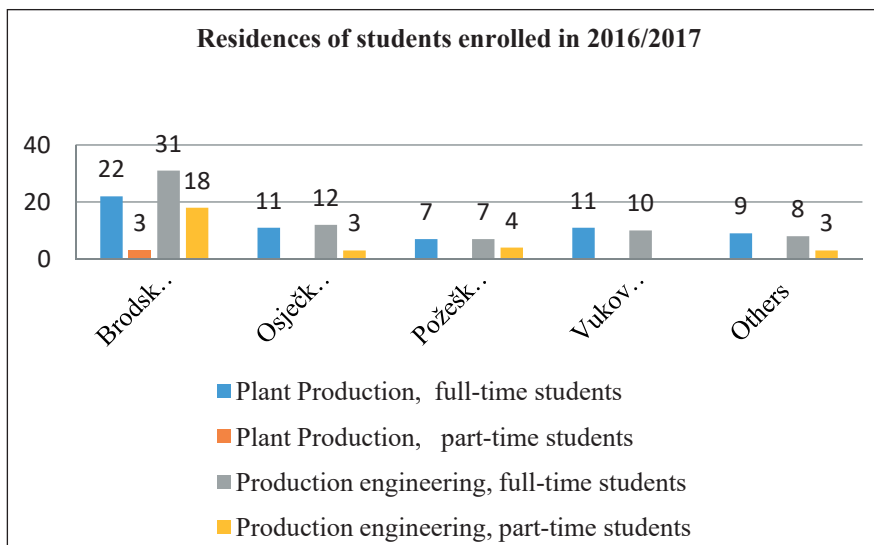
Source: author's calculation

**Figure 2:** Demographic data of undergraduate STEM studies students enrolled in the 1st study year in 2015/2016



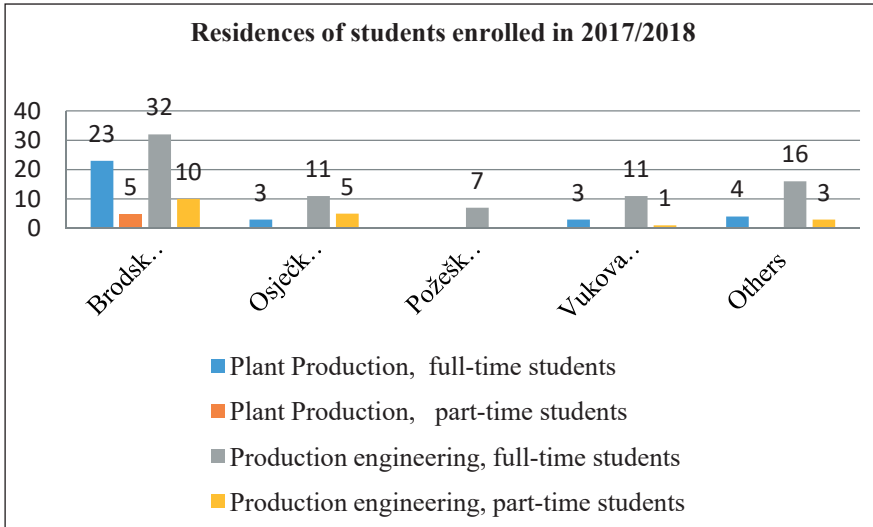
**Source:** author's calculation

**Figure 3:** Demographic data of undergraduate STEM studies students enrolled in the 1st study year in 2016/2017



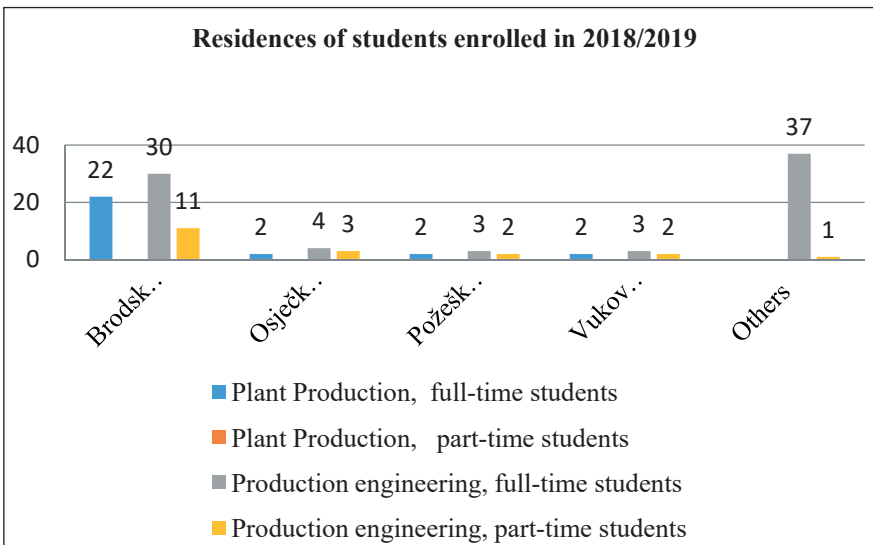
**Source:** author's calculation

**Figure 4:** Demographic data of undergraduate STEM studies students enrolled in the 1st study year in 2017/2018



Source: author's calculation

**Figure 5:** Demographic data of undergraduate STEM studies students enrolled in the 1st study year in 2018/2019



Source: author's calculation

Figures 1 - 5 show that undergraduate STEM studies students are mostly from Brodsko-posavska County and then from the surrounding counties in the

Slavonia region. This has its justification in the fact that these are agricultural counties and the nearness of Slavonski Brod to the place of residence of students also affects the selection of studies. Besides that, the living costs in Slavonski Brod are essentially lower than for example in Zagreb, Osijek, Rijeka or Split.

#### 4. GRADUATE STEM STUDIES

The College of Slavonski Brod has also organized and conducted graduate STEM studies: Ecological Agriculture and Rural Development (biotechnical science) and Energetics (technical science). The first generation of students was enrolled in academic 2017/2018 year.

Graduate study of Ecological Agriculture and Rural Development is a continuation of undergraduate study (180 ECTS) and lasts for two years (120 ECTS), enabling vertical and horizontal student mobility. Professional title obtained by completion of the study: expert specialist engineer/expert specialist of ecological agriculture and rural development engineer. By completing the study students will be able to:

- explain the importance of ecological plant production and rural development,
- explain the specificities of ecological livestock breeding and animal feeding methods,
- apply a specific agrotechnic in ecological plant breeding,
- plan ecological plant production on a given surface,
- describe measures for the protection of plants in ecological production,
- differentiate ways of biological control of harmful organisms,
- make their own business plan on a farm,
- grow vegetable, fruit and farming crops and wine grape by ecological principles,
- choose the best plant species for ecological farming in a particularly rural area
- There are similar study programs in the Republic of Croatia:
  - Study of Agriculture on Križevci College of Agriculture,
  - Ecological agriculture and agrotourism on Faculty of Agriculture in Zagreb,

- Ecological agriculture on Faculty of Agrobiotechnical Sciences in Osijek.

Graduate study of Ecological Agriculture and Rural Development is comparable to the biotechnical sciences in the European Union. It has been developed by model on other similar studies such as: Harper Adams College in Great Britain, Latenstein University of Professional Education in Netherlands, Institute of technology for life, food and environmental sciences in France, Institut Polytechnique LaSalle Beauvais in France, HEI The Province of Liege - Higher Education Institution of the Province of Liege in Belgium, INP Toulouse - Institut National Polytechnique de Toulouse in France, Instituto Superior de Agronomia (The School of Agriculture) Lisbon in Portugal. (VUSB)

Graduate study of Energetics is a continuation of undergraduate study (180 ECTS) and lasts for two years (120 ECTS), enabling vertical and horizontal student mobility. Professional title obtained by completion of the study: expert specialist engineer/expert specialist of mechanical engineering. By completing the study students will be able to:

- describe and analyze the transformation of energy into thermal power plants for the production of electrical and thermal energy,
- calculate and explain the performance of gas turbines and combined steam-gas turbines.
- explain and discuss the impact on the environment of energy systems,
- calculate the main dimensions of the steam generator pressure parts,
- explain the structure, properties and application of some technical materials in energy,
- explain basic measurement methods for measuring current, voltage, power, working and reactive energy, quality of electricity, flow and liquid level, temperature, pressure, humidity, and heat energy,
- apply the knowledge gained to make heat exchanger calculations,
- choose a suitable electric motor for starting an industrial electric motor,
- describe technical solutions, equipment, and devices in the immediate application of drying of hygroscopic materials and products,
- describe the characteristics, to select the type and to implement the calculation of the thermal insulation of pipelines, tanks, and equipment,
- explore the possibilities and choose an adequate hydraulic machine for a given situation,



- ♦ describe the procedures and technologies for the construction of gas pipelines and gas installations,
- ♦ describe processes and devices in cooling technology,
- ♦ participate individually and/or in the team in the selection of equipment and to create individual segments of technical heating solutions,
- ♦ participate in energy inspection of buildings and energy inspection of large companies.

In the Republic of Croatia, a related study program is conducted by the Faculty of Engineering in Rijeka, the Faculty of Mechanical Engineering in SlavonSKI Brod and the Faculty of Mechanical Engineering and Naval Architecture in Zagreb. Graduate study of Energetics is comparable to the technical sciences in the European Union conducted by Faculty of power and aeronautical engineering in Warsaw, c in Brno, Faculty of Mechanical Engineering in Ostrava, Faculty of Mechanical Engineering in Bratislava, Faculty of Mechanical Engineering in Prague, Budapest University of Technology and Economics - Department of Energy Engineering, Faculty of Energy Engineering and Industrial Management in Oradea (Hungary), Faculty of Mechanical Engineering in Belgrade, Faculty of Technical Sciences in Novi Sad (Serbia), Faculty of Mechanical Engineering in Tuzla (Bosnia and Herzegovina), The University of Montenegro - Faculty of Mechanical Engineering, Guru Gobind Singh Indraprastha University Dwarka in Delhi, Visvesvaraya Technological University in Belgaum and others. (VUSB)

Table 3. shows the number of enrolled students for academic 2017/2018 and 2018/2019 year.

**Table 3:** Graduate STEM study programs – the number of enrolled students in the 1st study year from 2017/2018 to 2018/2019

		Ecological Agriculture and Rural Development		Energetics	
		Full-time students	Part-time students	Full-time students	Part-time students
2017/2018	entry quota	30	is not performed	30	20
	number of enrolled	30		18	11
2018/2019	entry quota	30	10	30	20
	number of enrolled	13	4	16	23

**Source:** Information system of College of SlavonSKI Brod

In 2017/2018 the entry quota for the full-time study of Ecological Agriculture and Rural Development was 100% full. The situation is worse when it comes to the study of Energetics where full-time study coverage was 60% and part-time 55%. In 2018/2019 the interest in Ecological Agriculture and Rural Development decreased considerably and the coverage was 43% on full-time studies and 40% on part-time studies. The full-time study of Energetics had a somewhat poorer rate than in the previous year (53%), while 3 students were enrolled in the part-time study more than the enrollment quota (115%). The interest in the part-time study of Energetics has increased with candidates who are already employed so their further education is necessary for the job needs. Besides that, to students who attend the subject of Energy audits, The College of Slavonski Brod, as the authorized training provider for the training of persons conducting energy certification and energy audits of buildings, issues a certificate of successful completion for the Training Program for Professional Training and Compulsory Improvement of Persons Performing Energy Inspections of Buildings and Energy Certification of MODULE 1 and MODULE 2 Buildings.

Graduate studies are for the most part enrolled by students who have also completed undergraduate studies at the College of Slavonski Brod. In 2017/2018 it was enrolled as followed:

- 82% of those enrolled in the part-time study of Energetics previously studied at the College of Slavonski Brod,
- 94% of those enrolled in the full-time study of Energetics previously studied at the College of Slavonski Brod and
- 90% of enrolled in the full-time study of Ecological Agriculture and Rural Development previously studied at the College of Slavonski Brod.
- In 2018/2019 it was enrolled as followed:
- 65% of those enrolled in the part-time study of Energetics previously studied at the College of Slavonski Brod,
- 88% of those enrolled in the full-time study of Energetics previously studied at the College of Slavonski Brod,
- 100% of enrolled in the full-time study of Ecological Agriculture and Rural Development previously studied at the College of Slavonski Brod and
- 25% of enrolled in the part-time study of Ecological Agriculture and Rural Development previously studied at the College of Slavonski Brod.

## 4. CONCLUSION

The data stated in the paper confirmed the fact that a small number of students in the Republic of Croatia enroll the STEM studies. The situation is similar to the enrollment of students at the College of Slavonski Brod. These are studies that are characterized as “heavy studies” in the younger population, so it is probably one of the reasons for less interest. We can often hear in the public that in Croatian primary and secondary education there are a lot of students who pass the class with great success but the awarded ratings are not a reflection of real knowledge. Such candidates are not sufficiently prepared to continue studying which means that changes in the education system must start from primary school. In the last months, the public has been exposed to fake diplomas, which is very devastating and creates an ugly picture of the system of higher education in the Republic of Croatia. This certainly does not contribute to the efforts to increase the number of highly educated people necessary for the good development and progress of Croatia.

According to the Shanghai Ranking for 2017 the University of Zagreb is between 500 and 600 (out of 1000). First place is Harvard University (for the 15<sup>th</sup> times), while Stanford University is second. The third place belongs to Cambridge University, the fourth to Massachusetts Institute of Technology (MIT), and the Fifth is the University of California, Berkeley. The Shanghai Ranking is the most famous ranking of world universities based on the indicators of scientific and research work.” (AZVO) It is unrealistic to expect that Croatian higher education institutions will achieve a jump on the Shanghai Ranking for example 300 places. This does not mean that education doesn't need more devotion and enormous efforts.

Getting a college diploma must mean that it preceded the work, effort, and cooperation of students, professors and all stakeholders in the education system. The higher education system in the Republic of Croatia should encourage young people to study in the STEM area. The completion of some of the STEM study makes it easier to find employment, as opposed to, for example, studies in the field of social sciences. Completed students of the College in Slavonski Brod, especially the students of Production Engineering, are easily employed in companies such as Đuro Đaković Group or other companies in the Republic of Croatia and/or abroad. Further, jobs for which completion is required to complete the STEM study are regularly better paid. To increase the high education

population, especially the number of students in the STEM area, it is necessary to create a favorable working and investment climate in Croatia, adequate jobs, to provide adequate income, which requires time, effort and high-quality cooperation between the Ministry of Science and Education, economy, local governments and other stakeholders involved in the education process.

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# ERHÖHUNG DES LEISTUNGSNIVEAUS VON STUDENTEN IM FREMDSPRACHENUNTERRICHT ALS VORAUSSETZUNG FÜR IHRE BETEILIGUNG AN DER INTERNATIONALEN ZUSAMMENARBEIT

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## *Zusammenfassung*

*Die gegenwärtige Situation und immer stärkere Globalisierung verlangen von dem Fachfremdsprachenunterricht eine ernste Erhöhung von Leistungen der Studenten, für die dieses Gebiet nicht mehr nur einen Teil ihrer Allgemeinbildung, sondern die notwendige Voraussetzung für ihre Beteiligung an der zeitgenössischen Gesellschaft, Arbeitswelt und internationaler Zusammenarbeit darstellt. Deswegen sucht die Fremdsprachenmethodik nach Möglichkeiten, neue Modelle zu kreieren, die zu der angestrebten Leistungserhöhung führen würden. In dieser Arbeit wurde die Methode der theoretischen Analyse verwendet um neue Trends in der Didaktik und Fremdsprachenmethodik wahrzunehmen. Dabei wurde nach Möglichkeiten für ihre Implementierung in die Fachfremdsprachenmethodik gesucht, die eine bedeutende Erhöhung der Fachfremdsprachenkenntnisse, mit denen die Studenten ihre Ausbildung auf der*

*Tertiärstufe beenden, ermöglichen würde. Besonders fokussiert wurde dabei der Einfluss des Kennens von Persönlichkeitsmerkmalen und metakognitiven Lernstrategien von Studenten, weil es in der Forschung festgestellt wurde, dass die Persönlichkeitsmerkmale die Verwendung von metakognitiven Strategien und Leistungsniveau beim Fremdsprachenlernen stark beeinflussen, so dass man davon ausging, dass sie den Ansatz für das Konstruieren des Fremdsprachenunterrichtsmodells, das den gestellten Anforderungen entsprechen würde, darstellen könnten.*

**Schlüsselwörter:** *Fachfremdsprache, Persönlichkeitsmerkmale, metakognitive Lernstrategien.*

JEL Classification: I23, I29

## 1. EINLEITUNG

Zeitgenössisches Leben impliziert das Funktionieren innerhalb einer großen Gemeinschaft globaler Größe, für welches es notwendig ist, die Kommunikationsmittel zu beherrschen. Von der Vielfalt der Sprachen, die auf der Welt gesprochen werden, ausgehend, ist es klar, dass, diese Situation den Prozess des Fremdsprachenlernens in den Fokus stellt. Dabei wurde das erwartete Niveau der Fremdsprachenkompetenz in den letzten Jahren drastisch erhöht. Heute sind wir weit von der Zeit entfernt, als es genügte die Fremdsprache einigermaßen zu beherrschen, und für den präziseren Gebrauch, sich an einen Übersetzer zu wenden, oder als man die Fremdsprachen bis zu dem Grad beherrscht hat, dass man mithilfe eines Wörterbuches übersetzen konnte. Heute wird von allen, und besonders von akademisch gebildeten Mitarbeitern erwartet, die Fremdsprache komplet zu beherrschen, um sie ohne Schwierigkeiten zu verwenden. Solche Ansprüche und Erwartungen geben der Fremdsprachenmethodik die große Aufgabe auf, das alles zu realisieren, besonders wenn man die begrenzte Zeit bedenkt, die ihr zur Verfügung gestellt wird, bei den Schülern und Studenten, dessen Studiefach nicht im direkten Zusammenhang mit der Fremdsprache steht.

Diese Situation wurde in einem breiteren Kontext bemerkt, und ging auch in Gedanken und Pläne von Regierungskörpern hinein, wie, zum Beispiel, in die Sprachenpolitik der EU, deren Raat das Konzept *Plurale Ansätze zu Sprachen und Kulturen* verfasst und dann den *Referenzrahmen für plurale Ansätze zu Sprachen und Kulturen* ([https://archive.ecml.at/mtp2/publications/C4\\_RePA\\_090724\\_IDT.pdf](https://archive.ecml.at/mtp2/publications/C4_RePA_090724_IDT.pdf)) oder *From linguistic diversity to plurilingual edu-*

cation: Guide for the Development of Language Education Policies in Europe. Strasbourg. Council of Europe. Language policy division. 2007. ([http://www.coe.int/t/dg4/linguistic/Guide\\_niveau2\\_EN.asp](http://www.coe.int/t/dg4/linguistic/Guide_niveau2_EN.asp)) veröffentlicht hat, worin die Mehrsprachigkeit des Menschen propagiert wird. Daraus kann deutlich gesehen werden, dass die Sprachenpolitik eine von zentralen Fragen des Raums, in dem wir leben, geworden ist, was zu den Versuchen geführt hat, über das Fremdsprachenlernen in unterschiedlichen Richtungen nachzudenken und die Maßnahmen vorzuschlagen, die es verbessern würden.

Dadurch fiel eine große Last und Verantwortung der Fremdsprachenmethodik zu, in der zahlreiche Versuche gemacht werden, den Prozess selbst, aber auch seine Ergebnisse zu verbessern. Da sich das, was oben erwähnt wurde, zwar nicht nur, aber doch im größten Maße, an die akademisch gebildete Population bezieht, ging man in dieser Ausführung von den fremdsprachlichen Leistungen der an nicht-philologischen Studiengängen studierender Studenten aus, die in zahlreichen Untersuchungen als unzureichend bewertet wurden, und suchte nach Möglichkeiten sie zu verbessern.

## 2. METAKOGNITIVE STRATEGIEN FÜR LERNLEISTUNGEN AUF DEM GEBIET VON FREMDSPRACHEN

In der modernen Psychologie wird viel Aufmerksamkeit den Persönlichkeitseigenschaften gewidmet, die in großem Maße den Lernprozess und die Lernleistungen allgemein, also folglich auch auf dem Gebiet des Fremdsprachenlernens beeinflussen können. Deswegen ist es sehr wichtig immer daran zu denken, dass beim Fremdsprachenlehren und -lernen nötig ist, möglichst viele unterschiedliche Ansätze und Methoden zu verwenden. Besonders wichtig ist das vor allem bei der Arbeit mit und in Gruppen, was auf den institutionellen Unterricht (Schul- oder Hochschulunterricht) zutrifft, zumal sich dort in derselben Gruppe Schüler oder Studenten mit sehr unterschiedlichen Eigenschaften und Lernstilen befinden können, die nur eine Methode nie zufriedenstellen kann.

Daneben wird in der modernen Psychologie und Pädagogik die Bedeutung von Metakognition hervorgehoben. Es wird auch das Bedürfnis der Entwicklung von metakognitiven Strategien betont, die beim Lernprozess verwendet werden, und seine Ergebnisse bedeutend beeinflussen. Auf dem Gebiet des



Fremdsprachenlernens wurde die Bedeutung von Metakognition in mehreren Studien festgestellt (Anderson, 2012; Flavell, 1976, 1979; Schraw, 1998; Wenden, 1998, 1999; Zhang & Goh, 2006) und wird in der modernen Fremdsprachenmethodik als wesentliches Element des erfolgreichen Lernens gesehen, weil sie den Lernenden ermöglicht, selbständig an der Verbesserung ihrer Leistungen zu arbeiten, indem sie eigene Schwächen entdecken, und sie zu überwinden, oder „zu umgehen“ versuchen, durch das Verwenden dessen, was sie als das Gegenteil, also ihre Stärken, erkennen. Es ist, also, klar, dass beim Fremdsprachenlernen und -lernen an der Entwicklung des erwähnten metakognitiven Bewusstseins gearbeitet werden muss, weil es ermöglicht, das eigene Lernen zu planen, ordnen und verfolgen, und somit die sprachliche Performanz zu verbessern (Schraw & Dennison, 1994).

Die Psychologen definieren die Persönlichkeitseigenschaften als stabile und konstante Charakteristiken der Individuen und ihres Handelns in unterschiedlichen Situationen (Dörnyei, 2005; Kayaoglu, 2013; Komarraju & Karau, 2005; Komarraju et al., 2009; Nofle & Robins, 2007; Pervin et al., 2005; Pervin & John, 2001). Sie stellen das einzigartige und wesentlich unveränderbare Schema von Eigenschaften, Temperament und Veranlagungen unterschiedlicher Individuen dar. In der modernen Psychologie wird über den Modell von fünf großen Persönlichkeitseigenschaften gesprochen, worunter man Extraversion, Offenheit für Erfahrungen (Intellekt), Neurotizismus, Gewissenhaftigkeit, die Charakteristiken, wie Organisationsfähigkeit, Kompetenz, Eifer, Unternehmungslust, Sorgfalt, Selbstdisziplin und Zuverlässigkeit einbezogen (Costa & McCrae, 1992; Goldberg, 1993), und Verträglichkeit versteht, die mit verschiedenen Formen des menschlichen Benehmens verbunden sind, und auch sprachliche Leistungen und Motivation (Komarraju et al., 2009), Ausführungen und Sprachleistungen (McCrae & Costa, 2003), akademische Leistungen (Chamorro-Premuzic & Furnham, 2003; Komarraju & Karau, 2005; Komarraju et al., 2009; Martin et al., 2006), Redepersistenz und Kommunikationswillen (MacIntyre & Charos, 1996; MacIntyre et al., 1998; Öz, 2014; Pavičić-Takač & Požega, 2011), die Angst vor dem Sprachenlernen (Dewaele & Al-Saraj, 2015; Payne et al., 2007), akademische Leistung und Lernstil (Komarraju et al., 2011), sowie Einstellungen gegenüber dem Fremdsprachenlernen (Pourfeiz, 2015) einbeziehen. In einigen Studien (Farsides & Woodfield, 2003; Chamorro-Premuzic & Furnham, 2003) wurde zwischen der Gewissenhaftigkeit und der Prüfungsperformanz eine positive, und zwischen Gewissenhaftigkeit und der akademischen Leistung eine negative Korrelation festgestellt.



Die Untersuchungen auf dem Gebiet des Fremdsprachenlernens (Dörnyei, 2005; Farsides & Woodfield, 2003; MacIntyre & Charos, 1996; Dewaele, 2007; Dewaele & Al-Saraj, 2015; Öz, 2014; Pavičić-Takač & Požega, 2011; Zhang et al., 2013) haben festgestellt, dass die Persönlichkeitseigenschaften auch auf diesem Gebiet sehr wichtig sind, wobei Ekstraversion und Introversion besonders hervorstechen. Eine Umfassende Untersuchung (Öz 2014), die sich mit der Verbindung von dem Kommunikationswillen und den fünf großen Persönlichkeitseigenschaften beschäftigte, hat gezeigt, dass die Kooperationsbereitschaft, Extraversion und Offenheit für Erfahrungen starke Prädiktoren der Bereitschaft in der Fremdsprache zu kommunizieren darstellen. Manche Untersuchungen (Kang 2012 nach Öz), die sich mit der Beziehung zwischen Sprachlernstrategien und Persönlichkeitseigenschaften beschäftigt haben, haben eine starke Verbindung zwischen Persönlichkeitseigenschaften des Lernenden und den sechs strategischen Gruppen in SILL (Strategy Inventory for Language Learning) (Oxford, 1900) gezeigt. Offenheit für Erfahrungen (Intellekt), Gewissenhaftigkeit und Extraversion haben eine starke positive Korrelation mit den meisten Lernstrategien gezeigt, sodass es festgestellt wurde, dass der Intellekt und die Gewissenhaftigkeit die wichtigsten Prädiktoren der Lernstrategienanwendung sind. Gleichzeitig zeigte sich negative Korrelation zwischen Neurotizismus und metakognitiven Strategien. Zu ähnlichen Ergebnissen sind auch andere Untersuchungen (Ayhan & Türkyilmaz, 2015; Dewaele, 2007) gekommen.

Da die Persönlichkeitseigenschaften stabil sind, sodass sich dieselbe Person wahrscheinlich immer ähnlich benehmen wird, ist es wichtig sie zu erkennen, um das Benehmen und die Einstellungen von Menschen zu verstehen. Das oben erwähnte ist sehr wichtig, zumal die Ergebnisse in der Forschung auf eine enge Beziehung zwischen dem Entwicklungsniveau der Person und der Metakognition, dem Mechanismus, der bessere Selbsterkenntnis, Selbstwahrnehmung und Selbstregulation der Person fördert, hinweisen.

Metakognition wird als „Denken über Denken“ oder „Kognition über Kognition“ (Anderson, 2012) definiert. Darunter versteht man die Fähigkeit des Verstehens, Denkens und Kontrollierens des eigenen Lernens, sodass ihr die zentrale Rolle beim Entwickeln von Lernfertigkeiten zukommt, weil sich das metakognitive Bewusstsein auf die Entwicklung von kognitiven Fertigkeiten richtet (Gojkov, 2009). Man glaubt, dass es zwei Hauptkomponenten von Metakognition gibt: das Wissen von der Kognition und die Kognitionsregulation. Metakognitives Wissen wird als das Wissen des Individuums über die eige-

ne Kognition oder über die Kognition allgemein (Pintrich, 2002; Schraw & Moshman, 1995; Schraw, 1998) definiert. Metakognitives Wissen bezieht drei Elemente ein: das Bedingungswissen, das sich mit dem Bewusstsein von adequate Bedingungen um metakognitive Fertigkeiten anzuwenden, beschäftigt, deklaratives Wissen oder angeeignetes Wissen von unseren kognitiven Prozessen und Lernstrategien in der Lehraktivität (Anderson, 2012).

Metakognitive Regulation umfasst eine Reihe von Unterprozeduren, die den Schülern helfen, ihre Lernprozesse anzupassen und zu beobachten und kontrollieren (Öz, 2014b, 2015a; Schraw et al., 2006). Die Kognition wird auch von dem Planen, der Fertigkeit der Informationshandhabung, der Beobachtung, der Fertigkeit des Fehlerbeseitigens und der Evaluation reguliert (Schraw, 1998).

Metakognitive Strategien (Oxford, 1990), wie das Identifizieren des Lieblingslernstils und der Bedürfnisse, das Planen von Aufgaben für das Fremdsprachenlernen, das Sammeln und Organisieren des Materials, das Einrichten des Lernplatzes und –plans, die Fehlerkontrolle, die Bewertung des Erfolgs beim Aufgabenlösen und in irgendeinem Typ der Lernstrategie stellen ihre direkte Anwendung bei der Realisation des ganzen Lernprozesses dar.

Nach einigen Arbeiten Oxfords (1990), beziehen metakognitive Strategien für das Fremdsprachenlernen drei Hauptdomänen: das Lernfokussieren, Lernplanen und – einrichten und die Evaluierung ein. Das Lernfokussieren bezieht sich auf das bestimmen des eigenen Lieblingslernstils und der Lernbedürfnisse, sowie auf das Bewusstsein über die Prozedur des Sprachenlernens und des Aufgabenmachens. Lernplanen und – einrichten beziehen sich auf das Sammeln und Ordnen von Material, Raum- und Planeinrichten, sowie auf die Zielstellung und das Auswählen von angemessenen Strategien für ihr Erreichen. Die Evaluierung bezieht sich auf das Beobachten und Kontrolle von Fehlern und die Bewertung des Erfolges beim Aufgabenlösen, sowie auf das Bewerten von Lernleistungen, Zielen und Strategien, die beim Lernprozess verwendet wurden (Öz, 2015). Zahlreiche Untersuchungen (Anderson, 2002, 2012; Hart & Memnun, 2015; Hashempour et al., 2015; Iwai, 2016; Memnun & Akkaya, 2009; Mokhtari & Reichard, 2004; Negretti & Kuteeva, 2011; Öz, 2015a; Schraw, 1998; Schraw & Dennison, 1994; Wenden, 1998, 1999) haben gezeigt, dass die Lernenden, die erfolgreich und metakognitiv bewusst die Sprache lernen, mehrere Lernstrategien verwenden im Vergleich zu denen, die es nicht bewusst machen. Metakognitives Bewusstsein befindet sich im Forschungsfokus

in fast allen Bildungsbereichen, so auch auf dem Gebiet des Sprachenlernens (Hart & Memnun, 2015; Iwai, 2016).

Einige Untersuchungen (Sun, 2013) waren den Studenten und der Häufigkeit ihres Verwendens von metakognitiven Strategien beim Englischlernen gewidmet. Die Ergebnisse haben eine wichtige Beziehung zwischen dem erreichten Leistungsniveau in der englischen Sprache und der Häufigkeit des Verwendens von metakognitiven Strategien gezeigt. Einige andere Studien (Öz, 2005, 2007, 2015a), die mit der Absicht, die Natur des metakognitiven Bewusstseins von Studenten und Englischlehrern zu erforschen, durchgeführt wurden, haben gezeigt, dass die meisten Teilnehmer ein sehr hohes Niveau des metakognitiven Bewusstseins aufzeigen. Das Bewusstsein und die Kognitionsregulation haben sogar eine signifikante Verbindung gezeigt, was die weit diskutierte Ansicht über die Nützlichkeit des kognitiven Wissens für die Kognitionsregulation hervorgehoben hat (Schraw, 1998). Es wurde bemerkt, dass akademische Leistungen in einer positiven Verbindung mit metakognitivem Wissen von Teilnehmern stehen. Der Schultyp und das Geschlecht haben, dagegen, keinen Einfluß auf das metakognitive Bewusstsein von Teilnehmern gezeigt.

Einige Autoren (Purpura, 1999) haben bei ihren Untersuchungen an Studenten beim Fremdsprachenlernen bemerkt, dass metakognitive Strategien direkten Einfluss auf die Anwendung von kognitiven Strategien hatten. Sie haben entdeckt, dass metakognitive Strategien die Anwendung von kognitiven Strategien beim Aufgabenlösen kontrollieren. Studien, die das Fremdsprachenlernen in Südafrika und der Türkei (Dreyer & Oxford, 1996) untersucht haben, haben entdeckt, dass metakognitive Strategien oft überzeugende Prädiktore für hohe Leistungen beim Fremdsprachenlernen darstellen.

### 3. ANWENDUNG VON METAKOGNITIVEN STRATEGIEN IN DER FACHFREMDSPRACHEN DIDAKTIK

Das, was moderne Psychologie festgestellt hat, diskutierend, wurde in der Didaktik die Frage gestellt, wie diese Entdeckungen im Unterricht verwendet werden könnten, um den Lernenden zu helfen, ihr Lernen zu verbessern und bessere Leistungen zu erreichen. Die Artikel von Didaktikern haben gezeigt, dass es von den Bemühungen der Lehrer, den Lernenden zu helfen, ihre neu

gelernte selbstregulierende Strategien auf das Niveau der automatischen Kontrolle zu übertragen, abhängt, ob die Intervention oder das Training erfolgreich wird (Boekaerts, Cascallar, 2006). Auf diesem Gebiet wurde in den letzten Jahren viel geforscht, wobei man auch versucht hat, didaktische Instruktionen, die Meta-Äußerungen effizient provozieren, festzustellen. In einer von diesen Untersuchungen (Gojkov, 2009) wurden in der Faktorenanalyse als effizient zehn Faktoren ausgesondert, dessen Inhalte unter folgende Namen gruppiert wurden: Klassifizieren, Informationskontrolle, Fehleranalyse, Fördern von Verwendung flexibler Ansätze, Erklärungsformulation, Zurückkommen an gegebene Informationen, Analyse von wichtigen Momenten, Schätzung von Möglichkeiten zum Ziel zu kommen, Überblick über frühere Strategien und Modelle und zusätzliches Nachdenken über Beziehungen und Situation.

All das bedenkend, stellt sich für die Fremdsprachenmethodik, als Fachdidaktik, die Frage, wie man in ihr das Wissen über Metakognition implementieren kann, und wie sie verwendet sein könnte, um den Unterricht zu verbessern, und den Schülern zu helfen, nicht nur ihre momentane Leistungen zu verbessern, sondern ihnen auch Wege für die Zukunft zu öffnen, beziehungsweise sie für effektives selbständiges weiteres Lernen auszurüsten. Das ist besonders für den hochschulischen Fremdsprachenunterricht wichtig, weil es sich hier für die meisten Studenten um die Endstufe von formaler Ausbildung handelt. Moderne Umstände und Charakteristika der Zeit, in der wir leben, die das lebenslange Lernen kennzeichnet, bedenkend, bedeutet das, dass die Studenten für das weitere selbständige Lernen auf diesem Gebiet gut ausgerüstet werden müssen.

Nach einigen Autoren (McCormick, 2006; Yang, Ling, Wang, 2007) gibt es metakognitive Fragen, die im Lernprozess verwendet werden können, um den Lernenden zu helfen. Man ist der Meinung, dass man die Realisation des Aktionsplans und Lernfortschrittüberwachung mithilfe folgender metakognitiver Fragen unterstützen kann:

- Wie geht mein Aufgabenlösen/Lernen von Inhalten voran?
- Bin ich auf dem richtigen Weg?
- Wie soll ich weitermachen?
- Habe ich den Lehrer/die Lehrerin in Beziehung auf das Ziel dieser Arbeit richtig verstanden? Soll ich den Lehrer/die Lehrerin bitten, mir das näher zu erklären, oder werde ich auf meine Weise weitermachen?

- ♦ Soll ich mich an den Lernplan halten, oder wäre es besser, ihn zu revidieren?
- ♦ Brauche ich zusätzliche Informationen?
- ♦ Was soll ich machen, wenn ich etwas nicht verstehe?
- ♦ Wie vieles ist mir noch unklar?
- ♦ Sollte ich lieber die Richtung ändern?
- ♦ Habe ich genug Zeit?

Kennen der Wichtigkeit von Metakognition, bringt dem Lehrer die Pflicht an ihrem Wecken und Entwickeln zu arbeiten als natürliche Reaktion. Obwohl man im Hochschulunterricht mit der Population arbeitet, für die man erwartet, dass die Metakognition schon entwickelt ist, weil es sich um fast Erwachsene handelt, die durch unterschiedliche Prüfungen ihre höhere Intelligenz schon gezeigt haben, für die in der Forschung eine enge Verbindung mit der Metakognition festgestellt wurde (Stojaković, 1998, 2009), haben weitere Untersuchungen gezeigt, dass das nicht unbedingt der Fall sein muss, so dass es umso wichtiger ist auf dieser Bildungsstufe ihr Aufmerksamkeit zu widmen.

#### 4. METHODISCHER RAHMEN

In dieser Arbeit ging man von der Annahme aus, dass, das Stellen von entsprechenden Fragen im Fremdsprachenunterricht die Entwicklung von Metakognition fördern wird, die dann auch auf weitere Gebiete des Fremdsprachenlernens übertragen werden wird, und die Studenten für weitere, erfolgreiche Fortbildung auf diesem Gebiet ausrüsten wird, die auch ohne Führung und Hilfe eines Lehrers erfolgen kann. In dem Sinne wurden bei der Vorbereitung auf den Fachfremdsprachenunterricht (Deutsch und Englisch) passende Fragen und didaktische Instruktionen konzipiert, mit der Absicht die Entwicklung von Metakognition bei Studenten zu provozieren. Diese Fragen wurden bei der Realisation einer kleinen explorativen Untersuchung des qualitativen Ansatzes mit der Gelegenheitsprobe von 120 Studenten des ersten (30) und zweiten (25) Studienjahrs der Pädagogischen Fakultät der Belgrader Universität (Lehrabteilung in Vršac) und der Pädagogischen Fachhochschule „Mihailo Palov“ in Vršac (65) verwendet. Der Wahl des Studiums (zukünftige Lehrer und Erzieher) entsprechend, überwiegte in der Probe weibliche Population (100), und männliche war viel weniger (20) vertreten. Von der erwähnten Idee ausgehend, dass man

mit Verwendung von adequaten Fragen und Instruktionen die Entstehung und Entwicklung von Metakognition provozieren kann, die nicht nur den Erwerb von Wissen aus diesem Gebiet im Unterricht erleichtern wird, sondern auch die Studenten für weiteren erfolgreichen, selbständigen Fortschritt auf diesem Gebiet auch nach der formalen Bildung befähigt, wurden im Unterricht durch systematisches, nicht-experimentelles Beobachten Daten gesammelt, darüber, wie solche Fragen auf die Studenten und ihre Arbeit wirken. Als Instrumente wurden Observationslisten - Metakognition im Fremdsprachenlernen (Anlage 1) und Selbstbeobachtungsprotokoll – Metakognition im Fremdsprachenlernen (Anlage 2) verwendet, die, auf allgemein akzeptierten Elementen für das Definieren von diesem Konstrukt basierend, für diese Untersuchung konstruiert wurden. In die Observationslisten haben die Professoren die Fragen und die Reaktionen von Studenten evidenciert, und der Selbstbeobachtungsprotokoll diente den Studenten, eigene Gedanken wahrzunehmen und zu notieren. Die erhaltenen Daten wurden danach in Diskussionen mit Studenten ausgewertet und es wurde erwogen was und in welchem Maße solche Fragen in ihnen provozieren.

## 5. BEFUNDE UND DISKUSSION

Obwohl viele Studenten schon alle notwendigen grammatischen Elemente beherrschen, so dass sie mit Leichtigkeit das Repertoire von ihren Sprachfertigkeiten durch Elemente, die direkt mit ihrem Studiumfach verbunden sind, weiter ergänzen, zeigt die konkrete Arbeit im Unterricht, dass das nicht bei allen Studenten der Fall ist. Das trifft besonders auf Deutsch zu, das heutzutage in Serbien, wie Französisch, Russisch und alle anderen Fremdsprachen auch, neben dem Englischen, das von der ersten Klasse der Grundschule Pflicht ist, als zweite Fremdsprache in den höheren Klassen der Grundschule und im Gymnasium gewählt und gelernt wird. Das bedeutet, dass es vor dem Studium insgesamt acht Jahre gelernt werden kann. Aber, da in Serbien nicht nur Abiturienten das Studium antreten können, ist das oft nicht der Fall. So befinden sich in den Gruppen, neben Studenten die es seit acht Jahren lernen, auch solche, die es nur vier Jahren, entweder in der Grundschule, oder in einer Fachmittelschule gelernt haben. Eines von den schwierigeren Elementen, die sowohl im Deutschen, als auch im Englischen als Fachsprache öfter vorkommen, stellt das Passiv dar, das, besonders als Vorgangspassiv im Serbischen fast gar nicht

vorkommt, und dadurch für unsere Lerner eine besondere Herausforderung darstellt. Die erwähnten Besonderheiten dieses Sprachelements bedenkend, wurde es erwählt, um dessen Lernerfolg durch Fragen zu fördern, von denen man erwartet, dass sie das Erscheinen und die Anwendung von Metakognition unterstützen und provozieren.

In dem Sinne wurden Fragen konzipiert und gestellt, für die angenommen wurde, dass sie die Studenten dazu bringen würden, über neue Strategien nachzudenken, und dadurch ihre Metakognition weiter zu entwickeln. Die schon früher erwähnte Entdeckung, dass diese Schritte auch unterbewusst geschehen können, bedenkend, scheint es nützlich zu sein, die Studenten zu „trainieren“, in der Richtung, in der sie beim Kontakt mit den Sätzen, in denen diese grammatische Konstruktion vorkommt, nachdenken sollten. Zu diesem Zweck wurden bei der klassischen Aktiv in Passiv Transformation, die meistens den ersten Schritt beim Passiv-Üben darstellt, folgende Fragen gestellt:

- ♦ Was bedeutet dieser Satz?
- ♦ In welchem Tempus steht dieser Satz?
- ♦ Wer/Was ist in diesem Satz Subjekt?
- ♦ Gibt es in diesem Satz ein Objekt?
- ♦ Wer/Was ist in diesem Satz das Objekt?
- ♦ In welchem Kasus steht das Objekt in diesem Satz?
- ♦ Wer ist die handelnde Person/Agens in diesem Satz?
- ♦ An wem/Woran wird die Handlung in diesem Satz ausgeübt?
- ♦ Was braucht man, um diesen Satz ins Passiv zu transformieren?
- ♦ Wer/Was wird im Passivsatz Subjekt sein?
- ♦ In welchem Kasus wird es stehen?
- ♦ Was wird im Passivsatz mit dem Agens (der handelnden Person) geschehen?
- ♦ In welcher Form wird es stehen?

Am Anfang wurden die Studenten gefragt, welche Fragen man sich stellen sollte, wenn man einen Satz aus dem Aktiv ins Passiv transformieren will. Danach wurde zusammen die erwählte Liste zusammengefasst. Solche Fragen sollte man den Studenten stellen, solange es nötig ist. In dieser Forschung hat es sich gezeigt, dass sie bald von selbst anfangen, alle Elemente anzugeben, die



Antworten auf erwähnte Fragen darstellen würden, falls man sie fragen würde. Das könnte als eine Art Manifestation von metakognitiven Prozessen, die bei ihnen entweder auf der bewussten, oder auf der unbewussten Ebene geschehen, betrachtet werden, was in späteren Diskussionen von den Studenten auch bestätigt wurde. Das erwähnte Bedürfnis nach lebenslangem Lernen bedenkend, sollte man den Studenten die Mechanismen erklären, und sie daran erinnern, was in ihren Köpfen vor sich geht. Sie sollten, also, hingewiesen werden, mehr Aufmerksamkeit diesen Prozessen zu widmen, um über sie einmal Kontrolle zu übernehmen, und ihr Lernen und Denken selbständig zu steuern.

Im weiteren Schritt des Passiv Lernens kommt das Bedürfnis vor, das Umgekehrte zu machen, bzw. die Passivsätze in Aktivsätze zu transformieren. Obwohl das als leichter als die erste Transformation scheint, weil es das Zurückkehren „auf dem schon gegangenem Wege“ bedeutet, zeigt die Praxis, dass das nicht der Fall ist. Solche Aufgaben verursachen bei einigen Studenten, die die Aktiv-Passiv-Transformation schon beherrschen, eine Art Ratlosigkeit und Verwirrung, die dann viel Üben benötigen um überwunden zu werden. Deswegen ist auch hier sehr wichtig die Studenten zu leiten und in der Richtung von Metakognition hinzuweisen, damit sie später selbst die Kontrolle über eigenen Lernprozess übernehmen. Hier wurde dasselbe Prinzip angewandt. Es wurden zuerst zusammen mit den Studenten Schritte festgelegt, die man bei der Transformation unternehmen muss, bzw. was man alles davor wahrnehmen muss. Danach wurde auf das konkrete Üben mit dem Stellen von Fragen übergegangen und das wurde geübt, bis diese Prozesse Routine wurden, was sich als das Übergehen zum direkten Transformieren manifestiert hat, und gezeigt hat, dass metakognitive Prozesse automatisiert wurden. Die Fragen, die am Anfang gestellt wurden, waren:

- + In welchem Tempus steht dieser Satz?
- + Wer/Was ist in diesem Satz Subjekt?
- + Wer/Was ist in diesem Satz das Präpositionalobjekt?
- + Wer/Was ist die handelnde Person/Agens in diesem Satz?
- + An wem/Woran wird die Handlung in diesem Satz ausgeübt?
- + Wer/Was wird in diesem Satz Subjekt sein?
- + In welchem Kasus wird es stehen?
- + Wer/Was wird in diesem Satz Objekt werden?



- ♦ In welchem Kasus wird es stehen?
- ♦ Welches Verb wird das Predikat in diesem Satz sein?
- ♦ In welchem Tempus und welcher Person wird es stehen?

Bei den Sätzen mit Modalverben wurden die Fragen gestellt, die die Studenten nachzudenken veranlassten, über das spezifische Problem und dessen Lösen, abhängig davon, ob der Satz im Aktiv oder Passiv konzipiert ist.

- ♦ Welches Verb ist das Predikat in diesem Satz?
- ♦ In welchem Tempus steht es?
- ♦ Steht solches Verb in einem Satz allein?
- ♦ Wer/Was ist in diesem Satz Subjekt?
- ♦ Wer/Was ist in diesem Satz Objekt?
- ♦ Wer/Was ist die handelnde Person/Agens in diesem Satz?
- ♦ An wem/Woran wird die Handlung in diesem Satz ausgeübt?
- ♦ Wer/Was wird in diesem Satz Subjekt werden, wer/was wird in diesem Satz Objekt werden, und in welchem Kasus wird es stehen?
- ♦ Welches Verb wird das Predikat im neukonstruierten Satz werden?
- ♦ In welchem Tempus und welcher Person wird es verwendet werden?

Bei den subjektlosen Passivsätzen wurde die Prozedur wiederholt und ähnliche Fragen gestellt, nur wurde hier der Fokus zuerst auf die Tatsache gelegt, dass der Aktivsatz keinen Akkusativobjekt hat, und deren Folgen im Passiv, bzw. umgekehrt, falls es sich um einen Passivsatz handelt. Hier wurde die Aufmerksamkeit der Studenten zuerst auf Folgendes gelenkt, damit sie bemerken:

- ♦ Wer/Was ist in diesem Satz Subjekt?
- ♦ Wer/was ist in diesem Satz Objekt?
- ♦ In welchem Kasus steht es?
- ♦ Was bedeutet das für unsere Transformation?
- ♦ Wie wird es im transformierten Satz aussehen?
- ♦ Wer ist die handelnde Person/Agens in diesem Satz, und an wem/woran wird die Handlung in diesem Satz ausgeübt?
- ♦ In welcher Form wird es stehen?

- Was bedeutet das für das Prädikat/Was für Folgen hat es für das Prädikat/In welcher Person wird es stehen?
- Was wird an welcher Stelle im Satz stehen?

Danach wurden schon erwähnte Fragen bis zur Automatisierung der Satztransformation weiter gestellt. Der nächste Schritt verlangt von den Studenten, dass sie erkennen, ob es sich um einen Aktiv- oder Passivsatz handelt, und dass sie es danach in das Umgekehrte transformieren. Auch hier wurden adäquate Fragen gestellt, die die Metakognition von Studenten gefördert und sogar „trainiert“ haben. Sie wurden darauf hingewiesen, sich entsprechende Fragen zu stellen, und so auch nötige Denkprozesse auszuführen. Nach den Einleitungsinstruktionen und Besprechungen wurden folgende Fragen gestellt:

- Was ist in diesem Satz das Prädikat?
- Was kann man daraus schließen?
- Wer ist die handelnde Person/Agens in diesem Satz, und an wem/woran wird die Handlung in diesem Satz ausgeübt?
- In welchem Tempus steht dieser Satz?
- In welcher Form steht der Satz, und in welcher Richtung soll er transformiert werden (Aktiv → Passiv / Passiv → Aktiv)?
- Was bedeutet das für uns; Was soll gemacht werden?

Im Deutschunterricht können auch die Sätze mit dem Verb *werden* genauso behandelt werden. Den Studenten kann es am Anfang verwirrend erscheinen, dass dieses Verb drei verschiedene Funktionen haben kann, bzw. dass es als Hilfsverb für Futur I im Aktiv, Hilfsverb für das gesamte Passiv und Vollverb mit eigener Bedeutung im Satz verwendet werden kann. Bei solchen Übungen wurden den Studenten zuerst alle Möglichkeiten vorgestellt und erläutert, und danach wurden sie mithilfe folgender Fragen zum Nachdenken aufgefordert:

- Wie viele Verben gibt es in diesem Satz?
- Welches Tempus befindet sich in diesem Satz?
- Was steht am Satzende; ein Infinitiv, Partizip Perfekt oder nichts?
- Von welchem Verb kommt das?
- Wer/Was ist der Agens, und wer/was ist der Patiens?
- Wer/Was ist das Subjekt, und wer/was ist das Objekt in dem Satz?

♦ Was bedeutet der Satz?

Dasselbe wurde gemacht, sowohl bei der Transformation, als auch bei der Erkennung von Zustandspassivsätzen, für die dieselben Fragen gestellt wurden. Derselbe Ansatzpunkt wurde die Grundlage für das Verfahren, mit dem die Texte, die immer, sowohl bekannte, als auch unbekannte und neue, Wörter, Konstruktionen, Phrasen und Wendungen enthalten, bearbeitet wurden. Wie in dem vorherigen Beispiel, wurde auch hier zuerst zusammen mit den Studenten der Arbeitsablauf geplant, der schon erwähnte, festgelegte, für die Metakognition wichtige, Elemente von didaktischen Instruktionen enthalten hat. In dem Sinne fing man das Textbearbeiten mit dem Kennenlernen, bzw. mit dem Wahrnehmen von Informationen und Aufgaben die zu lösen sind, an. Der nächste Schritt war die Instruktion, sich in den Text zu vertiefen, und das Bekannte von dem Unbekannten zu trennen, um dann das, was als unbekannt erkannt wurde, sich wieder anzusehen, es zu klassifizieren, und das Wesentliche, ohne das der Text nicht zu verstehen wäre, von dem, was dafür nicht entscheidend ist, zu trennen. Dabei wurden den Studenten die Fragen gestellt, bzw. sie wurden dadurch geführt, sich die verlangten Überblicke zu verschaffen, und ihre Möglichkeiten zum Ziel zu kommen, bzw. den Text zu verstehen oder die gestellten Aufgaben zu lösen (die Fragen zu beantworten, den Text zu ergänzen, die Titel/Untertitel zu schreiben, von den angebotenen, das passende Wort zu wählen ...) zu schätzen. In dem nächsten Schritt wurden die Studenten darauf angewiesen ihre Strategien und Verhaltensmuster zu reflektieren und noch einmal nachzudenken, sowohl über den Text und seinen Inhalt, als auch darüber, ob sie alle Möglichkeiten, um die Aufgabe zu lösen, erschöpft haben. In diesem Moment wurden sie durch Fragen dazu gebracht, eventuelle weitere Möglichkeiten; anderes Verknüpfen, oder sich etwas aus einer anderen Perspektive ansehen, zu bedenken, wodurch sie sich, vielleicht, doch bessere Resultate und weitere Klärungen verschaffen würden.

Bei der Lernstoffbearbeitung wurden die Studenten durch erwähnte Fragen geführt, bzw. ihre Metakognition wurde provoziert, und die Beobachtungen haben die Professoren in die Observationslisten eingetragen. Wie es schon erwähnt wurde, bemerkte man schnell, dass die Studenten nach einer kurzen Phase, in der sie die Fragen beantwortet haben, dasselbe weitermachen, auch wenn die Fragen ausbleiben. Dadurch wird das, was gewöhnlich, von fremden Blicken verborgen, in ihren Köpfen geschieht, sichtbar. Es wurde bemerkt, dass entsprechende Instruktionen ihren Ziel erreichen und die beabsichtigten

Denkprozesse in Gang setzen, die zum Lösen von Aufgaben und weiter zum Lernstoffbewältigen führen. Es wurde weiter bemerkt, dass in der nächsten Phase dieses „Beantworten“ von nicht existierenden Fragen ausbleibt. Die Studenten gehen einfach zum Sagen von richtigen Lösungen über. Das weist auf die Tatsache hin, dass bei ihnen die Automatisierung von diesen Denkprozessen stattgefunden hat, so dass ein Teil ihrer Aufmerksamkeit für anderes frei wird, und sie in die Domäne des Unbewussten übergehen (Segalowitz, 2003).

In der nächsten Phase wurden den Studenten die Aufgaben aus dem Bereich, der vorher bearbeitet wurde, gestellt, mit der Bitte, bei der Arbeit den Selbstbeobachtungsprotokoll zu führen, um die Einsicht in den Prozess des Lösens, bzw. Charakteristiken ihres kognitiven Funktionierens zu ermöglichen. Erhaltene Daten haben auch die Wichtigkeit der erwähnten Instruktionen und des Führens gezeigt. Bei der Frage, in der von den Studenten verlangt wurde, ihre Ideen, Pläne und Schritte beim Aufgabenlösen, wie auch die Gründe für die Auswahl, zu notieren, haben die Studenten, nämlich, am öftesten die Fragen und Instruktionen, die bei der Bearbeitung von diesem Lernstoff verwendet wurden, genannt, und als Begründung wurde oft die Auferlegung dieser Fragen erwähnt, die sie dann durch das Lösen von Aufgaben „geführt“ haben. Solche Antworten bestätigen die Anfangsidee, dass man mit entsprechenden Fragen und Instruktionen die Metakognition provozieren kann, bzw. dass man im Fremdsprachenunterricht, neben Wissen von diesem Gebiet, auch zum sogenannten „Lernen des Lernens“ und zur Befähigung von Studenten für weitere selbständige Weiterbildung kommen kann.

Nach der durchgeführten Forschung wurde ein Treffen mit den Studenten organisiert, bei dem die Ergebnisse präsentiert wurden, und die Studenten gebeten wurden ihre Meinung über dieses Verfahren zu äußern. Sie wurden auch gefragt, wie nützlich solche Arbeit für sie war, und wie sie in diesem Moment, nach dem Provozieren der Metakognition bei neuen Aufgaben nachdenken. Wie erwartet, haben alle Studenten bestätigt, dass sich bei ähnlichen Aufgaben die Fragen, die im Unterricht in der Anfangsphase der Bearbeitung von diesem Lernstoff gestellt wurden, aufdrängen, und sie dann führen. Diese Kommentare haben das bestätigt, was auch beim Beobachten von ihrer Arbeit im Unterricht bemerkt wurde. Das fällt mit dem bemerkten Übergehen zum selbständigem „Antworten“ auf nicht gestellte Fragen zusammen. Noch wichtiger sind aber die Kommentare von Studenten über ähnlich, aber doch anders gestellte Aufgaben. Für diese Situationen haben die meisten angegeben, dass sie nach dem

ersten Überblick über die Aufgabe stehen bleiben und „sich selbst fragen: Was soll ich jetzt und wie unternehmen?“ Von diesem Punkt aus haben sie dann ihr Nachdenken und Schritte des Lösens angefangen, für die sie sagen, ihrer viel bewusster zu sein als früher.

## 6. SCHLUSS

Aufgrund der gesammelten Daten kann es geschlossen werden, dass der Fremdsprachenunterricht mit Elementen, wie Klassifizieren, Informationskontrolle, Fehleranalyse, Fördern von flexiblen Ansätzen, Erklärungsformulation, Zurückkommen auf gegebene Informationen, Analyse von wichtigen Momenten, Schätzung von Möglichkeiten zum Ziel zu kommen, Übersicht über vorherige Strategien und Formen und nachdenken über Beziehungen und Situation, die die Metakognition provozieren, durchwoben werden sollte, und dass diese Elemente durch Instruktionen und Fragen implementiert werden sollen, die die Studenten nicht nur den betreffenden Lehrstoff lehren, sondern sie auch für weiteren Fortschritt ausbilden werden. Es wird also schlussfolgert, dass die Fachfremdsprachendidaktik die Möglichkeit bietet, neue Modelle zu entwerfen, die es ermöglichen würden, beim Kennen der Persönlichkeit von Studenten das Wissen aus der Didaktik anzuwenden, und dadurch bessere Lernergebnisse in der Fachfremdsprache zu erzielen. Das wäre ein guter Ansatzpunkt für Konstruieren von Fachfremdsprachelehrmodellen, die die Studentenleistungen auf diesem Gebiet signifikant erhöhen würden, die die Voraussetzung für ihre Beteiligung an der internationalen Mitarbeit darstellen.

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## ANHANG I: OBSERVATIONSLISTE – METAKOGNITION IM FREMDSPRACHENLERNEN (MIFL)

1. Wie entwickelte sich der Prozess des Aufgabenlösendens?
2. Haben die Studenten, während der Arbeit, nach zusätzlichen Informationen gefragt, und falls ja, welche haben sie verlangt?
3. Sind die Studenten, beim Aufgabenlösen, wieder an den Anfang, oder an bestimmte Etappen zurückgegangen, und falls ja, wann war das der Fall, bei wem und an welche Etappen kamen sie zurück?
4. Haben die Studenten ihre Arbeit geprüft; haben sie sich selbst kontrolliert?
5. Haben die Studenten manchmal ihre Arbeitsweise geändert; haben sie wieder von vorne angefangen und einen anderen Weg gewählt?
6. Haben die Studenten auf die Uhr geschaut oder nach der Zeit gefragt (haben sie gefragt wie viel Zeit sie noch haben)?

## ANHANG 2: SELBSTBEOBACHTUNGSPROTOKOLL – METAKOGNITION IM FREMDSPRACHENLERNEN (MIFL)

Wir bitten Sie, beim Lösen von gestellten Aufgaben, Ihre Beobachtungen über den Prozess des Lösens, bzw. über einige Charakteristiken Ihres kognitiven Funktionierens, zu evidentieren.

1. Beschreiben Sie, in welchem Maß Sie mit Ihrer Effizienz beim Aufgabenlösen zufrieden sind und womit sie in Ihrem eigenen Funktionieren beim Aufgabenlösen nicht zufrieden sind.
2. Wenn Sie sich, bevor Sie mit dem Aufgabenlösen angefangen haben, Ihre schon bekannte „Schwächen“, bzw. dass, worauf sie besonders aufmerksam sein sollen, bewusst gemacht haben, notieren Sie das, worauf sie selbst aufmerksam gemacht haben, um die Fehler beim Nachdenken vorzubeugen.
3. Wenn Sie zu der Idee kommen, bzw. wenn Sie schon eine Skizze, einen Plan für das Lösen der Aufgabe haben, bringen Sie es zu Papier. Schreiben Sie danach auch jeden weiteren Schritt, sowie Ihre Gründe, warum Sie so gehandelt haben, nieder.
4. Beschreiben Sie die Momente, als Sie erkannt haben, dass etwas gut geprüft werden sollte, und als Sie verstanden haben in welcher Richtung Sie nach der Lösung suchen sollen.
5. Was haben Sie gemacht, als Sie verstanden haben, dass Sie nicht auf dem richtigen Wege sind?

Danke!

# FUTURE OF SHARING ECONOMY IN MEDICINE IN CROATIA

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## **Abstract**

*Sharing economy (SE) is a new fast-growing economy model and the biggest economy trend of all time. It is based on peer to peer sharing of goods and services and as opposed to previous ownership-based economy it puts focus on the accessibility of a good or service instead of ownership. One of the principles in SE is that unused value is wasted value, therefore, it makes use of unused equipment or possessions and it is estimated that there is over £3,5 trillion worth of unused goods in the world. SE differentiates itself from the classical economy in that it doesn't have a common hierarchy where one side is the provider of the service and the other is the consumer, in SE everyone can be a provider and a consumer of service at the same time. In the last couple of years, SE has grown in a number of users, companies, start-ups and different fields in which SE has taken the lead. In the past, there have been several attempts of introducing SE in the health profession and some (i.e. COHEALO) were more successful than the others. Health and health services are one of the biggest problems in the world as well as in Croatia. There is a current lack of medical staff in all medical fields and medical devices are very expensive to own. Therefore, there is a need for reduction of medical expenses. In this paper we will analyze the possibility of implementing SE in everyday work in hospitals and other health centers as well as possible places of its implementation and*

*how could it be used in the near future. SE in medicine will be regarded from a professional, financial, legal, and cultural perspective in Croatia.*

**Keywords:** *sharing economy, medicine, public health, management*

JEL Classification: I18, M19

## 1. INTRODUCTION

Sharing economy (SE) is a trend that has taken the world economy by a storm in recent years. It came into the public eye as a result of the success of various companies such as Airbnb and Uber. Even though it is a relatively new trend the concept of sharing, collaborative or peer-to-peer economy exists, in its primitive form, since the beginning of mankind. SE in a way deletes the past strict wall between the producer and the consumer and creates a market where everyone can be a producer and a consumer of the goods and services at the same time. SE has developed in the last fifteen years because increasingly people find that there are some things that they do not need to own to enjoy them, such as vehicles, accommodation and so on. It is a reaction to the ever-growing technological industry and smart tech that allows people to have all of those things just a call or a message away in the palm of their hand. True evidence of SE popularity is the fact that in 2017. The value of SE economy has grown to \$2 trillion (BofAML, BIA/Kelsey, 2017). Sharing economy today can be divided into 4 different subgroups: access economy, gig economy, collaborative economy and commoning economy (Ferrer, 2017). There are subtle differences in each subgroup. Access economy refers to access to goods and services through renting them for a period of time and it is not based on ownership of said goods and services. The pivotal part of the access economy is that ownership doesn't matter just the access to the goods. The gig economy is based on sporadic gigs where the transaction is done through the digital market. The collaborative economy as a subgroup of SE is known as economy *inter pares* and is more widely known as a peer-to-peer economy. This economy is based on the principle that its own customers help develop the economic activity of said company by participating in the process of developing and designing the production of assets. Finally, we have a commoning economy. "Commoning" is a word developed and popularized by the writer Peter Linebaugh and he described it in his book *The Magna Carta Manifesto* as a word that means people living in close connection to the common people and life. Therefore, the commoning economy means that there

is a growing need for cooperation in place of competition and that economic growth and market should serve the community. Sharing economy today is a melting pot of all four subgroups and today it gives the opportunity to everyone to develop their business in a different and modern way. Sharing economy is a way to use unused goods and resources that go to waste each year.

The aim of this paper is to show the past and present usage of sharing economy in health-related businesses and to propose SE business models that have the potential of developing in Croatian healthcare.

## 2. RESEARCH METHODOLOGY

Today, the key question is how to redesign health care systems without damaging the foundations these were built on. Research has shown that the costs of financing health care will further increase in the near future. Around one-third of this increase will be the consequence of an aging population, and the remaining two thirds will refer to the excessive growth of costs, reflecting thus technological changes, income growth, and health policies. It is necessary to point out that the increase in health costs occurs at a time when countries need to undertake significant fiscal adjustments to reduce public debt and state budget deficit in the light of the global financial crisis.

The key challenges and problems of Croatian health care can be divided into three groups: functioning of health care systems, health care personnel, and external factors. Research has shown that key challenges related to the functioning of health care are inefficiency, financial unviability, inadequate infrastructure, and the lack of system transparency. Poor governance is another limiting factor. With regard to health care personnel, they face the problems of low salaries, which then lead to migration challenges and a potential shortage of health care personnel. The following external factors are deemed to be among the most significant challenges: an aging population, bad living habits, and an increase in the number of chronic diseases. However, problems caused by the global financial crisis and the consequential macroeconomic situation must not be neglected.

Following the above-explained complex situation of Croatian health care system, the authors are proposing the SE model a solution for reducing the inefficiency and financial unviability of the Croatian health care system.

In the course of the research, a considerable number of scientific methods was used, among which the following should be highlighted: the method of deduction, the method of analysis and synthesis, the method of causal inference, the method of abstraction, the method of composition, the method of analogy, the historical method as well as the method of descriptive inference.

### 3. SHARING ECONOMY IN DIFFERENT BUSSINES ENVIRONMENT

#### 3.1. SHARING ECONOMY SECTORS

According to the report by the European Commission, we can divide the sharing economy into five key sectors (Vaughan & Daverio, 2016):

1. Peer-to-peer accommodation: households sharing access to unused space in their home or renting out a holiday home to travelers through digital platforms. Some of the platforms include Airbnb, LoveHome-Swap and HomeAway.
2. Peer-to-peer transportation: individuals sharing a ride, car or parking space with others through an app. This includes short-distance and long-distance rides as well as car sharing networks. Platforms in transportation are Uber, Blablacar, GetAround, Zipcar and so on.
3. On-demand household services: freelancer marketplaces enabling households to access on-demand support with household tasks such as food delivery and “Do It Yourself”, they are online “crowd-based” marketplaces which give access to household task services and deliveries. They include specialized and general delivery services and on-demand household chores platforms like UberRUSH, Instacart, TaskRabbit and Deliverooo.
4. On-demand professional services: freelancer marketplaces enabling businesses to access on-demand support with skills such as administration, consultancy, and accountancy. This differs from the previous sectors since freelancers usually work remotely. Business’ included in this sector are Upwork and HolterWatkin
5. Collaborative finance: individuals and businesses who invest, lend and borrow directly between each other, such as crowd-funding and peer-to-peer (P2P) lending, this is different from traditional intermediaries like

banks. Crowdfunding platform includes Kickstarter and LendingClub is an example of lending platform.

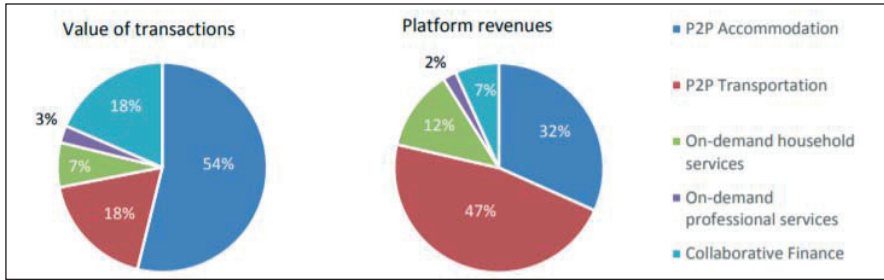
As reported by European Commission (Vaughan & Daverio, 2016) regarding the data from PricewaterhouseCoopers (PwC) UK (Table 1.) - The sharing economy - Sizing the revenue opportunity, these sectors generated revenues of almost €4 billion and facilitated €28 billion of transactions within Europe in 2015 and to date it includes 275 collaborative economy platforms which are an increase from the previous report (Vaughan & Daverio, 2016). The report shows that the UK and France are the countries with most collaborative economy organizations founded with over 50 organizations; they are followed by Germany, Spain, and the Netherlands with over 25 organizations. Regarding specific sectors in sharing economy most revenue was made by P2P Accommodation and P2P Transportation which cumulatively make around 79% of total revenue from sharing economy in Europe in 2015 (Figure 1.) which was to be expected since not only are they pioneers in the field of sharing economy but they require the least amount of resource. More interesting for us is seeing that just 2% of revenue and 3% of total transactions were done in the field of on-demand professional service where we could categorize medical services as well. The reasons for this could be many but most probable ones could include the stability of the employment where medical staff don't have needs to provide their service outside of their regular jobs and another reason could be the fact that there aren't many medical sharing economy platforms and those that exist are not very well known and are not used. Unfortunately, there haven't been official reports regarding medical SE platforms in Europe. Either way, the growth in transactions and revenue is fast (Figure 2.) and since there aren't many medical platforms for SE this could be an unexplored and potentially very profitable future market for SE and medical economy in general.

**Table 1.** Revenues and transaction values facilitated by collaborative economy platforms in Europe (€m, 2015)

Sector	Revenue 2015 (m)		Value 2015 (m)	
P2P Accommodation	€	1150	€	1510
P2P Transportation	€	1650	€	5100
On-demand household services	€	450	€	1950
On-demand professional services	€	100	€	750
Collaborative Finance	€	250	€	5200
Total	€	3600	€	28100

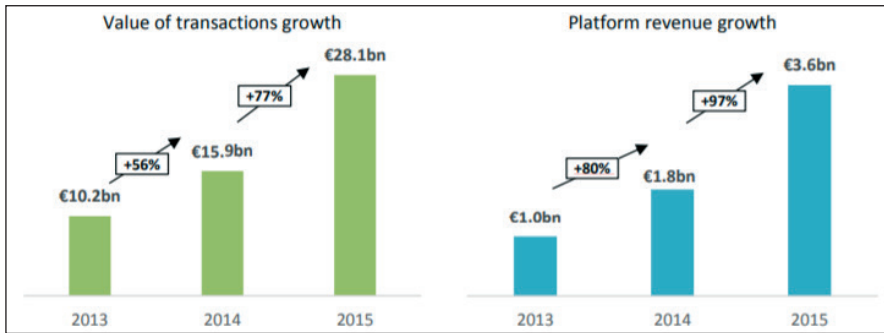
**Source:** PwC analysis. Note: Figures may not sum due to rounding.

**Figure 1.** Revenues and transaction values facilitated by collaborative economy platforms in Europe (% of the total, 2015)



Source: PwC analysis

**Figure 2.** Revenues and transaction values facilitated by collaborative economy platforms in Europe (Growth, 2013-2015)



Source: PwC analysis

### 3.2. BUSINESS IN THE ERA OF MODERN SOCIAL NETWORKING

Social networking is a social system that exchanges resources, the interactions occur between organizations or, what is recently becoming more popular, individuals to achieve the common goal (Kang, 2018). Its main concept includes the exchange and sharing of different products, capital, information services and many more. It gives a basis for developing social capital, also known as a collective asset, which is defined as an assembly of actual or potential resources connected to the continuous network ownership level. Social capital promotes a specific behavior in regard to the structure of transactions (Coleman, 1988). This has evolved during the time and we can see the emerging and growth of collaborative ownership, where the main point of the market and business isn't just profit but



social growth and development of social capital. This is resulting in the development of shared values between the producer and the consumer since, in time, they are becoming the same. Today social networking is more approachable than ever through different social networks and development of technology.

### 3.3. LAWS, REGULATIONS, AND POLICIES AFFECTING THE SHARING ECONOMY IN THE EUROPEAN UNION

Since its start sharing economy has encountered problems with regulations worldwide. With its disruption of previous business concepts, there were no laws that covered the sharing economy. Many traditional businesses that provided similar services were found at a sudden disadvantage. Most of them require either special permission, additional tax fees or extra courses or tests. We present several cases of these changes (Vaughan & Daverio, 2016). Italy has recently proposed a 'sharing economy act' which includes definition of the sharing economy as well as its platforms, requires all platforms to sign up to a sharing economy registry and provide documents for the *Autorità Garante della Concorrenza e del Mercato* (AGCM) (competition authority) approval all that with addition of extra taxes according to income rate. In Germany Uber has stopped operations in three German cities citing a 'difficult regulatory environment'. Drivers were required to register as a private rental car enterprise, which made the registration process too costly and lengthy for many. Another example is France where Airbnb started collecting 'tourist tax' of €0.83 per room night. In Spain Uber has been banned nationally in December 2014 and is now trying to re-enter the Spanish market by only working with drivers who carry a valid professional VTC license which is required by all professional drivers. This is similar to the law passed in Croatia in 2018. where Uber drivers were required to pass same programs and licensing as regular taxi drivers (Zakon o prijevozu u cestovnom prometu, 2018).

### 3.4. SHARING ECONOMY PROTOTYPES

#### 3.4.1. Uber

Today Uber is the most recognized and arguably the most successful SE business in the world (Gabel, 2016). Uber has been a star in SE. It was first started in 2009 by Garrett Camp and Travis Kalanick in San Francisco. The idea was to make affordable driving service where both the driver and the pas-

senger could have an easy to access driving service at a lower cost. The company operates on a mobile app principle. Users can sign in as either a driver or a passenger in two separate apps. The drivers go under background check and have a registration requirement and car standards. The passengers have to download the Uber app register and simply order their drive.

The main problem for Uber is the opposition of traditional Taxi drivers to this form of taxi service. Since Uber is more available through digital platforms, usually faster, more accessible and affordable for the driver and the consumer since the only thing it requires is for the driver to register through the Uber app as a driver and for him to own a car it is much easier for a person to become an Uber driver rather than a Taxi driver. Following this, since Uber was developed as a form of SE the laws and legislation that applied to traditional taxi drivers didn't and couldn't be applied to Uber drivers and consumers. There are many examples of this throughout the world from London, Toronto, Melbourne to New York. In recent years there have also been lawsuits against Uber regarding their working policy and driver exploitation since in the beginning there were no working hour limitations and many drivers for example in the USA drove from their home town to the big cities for the weekdays or the weekends and lived inside their cars to maximize their working hours. In Croatia, a new Law on Transportation in Road Traffic passed in 2018 (Zakon o prijevozu u cestovnom prometu, 2018) which enabled every driver who has a B category driver's license to take an additional test and, if they pass, provide driving services. This law legalized Uber driving service in Croatia but resulted in a reduction of Uber drivers across Croatia because it required a lot of additional registration and additional examination.

### 3.4.2. Airbnb

Airbnb is another extraordinary SE business. As opposed to Uber which is more of an example for the gig economy, Airbnb is based first and foremost in access economy. While Uber has just one digital transaction per person for a very short time, Airbnb offers a longer service and connects people who want to rent their accommodation to those who are looking for accommodation. There are several benefits of this kind of business such as free listings, hosts being able to set their own price, additional services and protection for guests and hosts (Folger, 2019). Unfortunately, much like Uber, Airbnb has faced legal problems.

Since both Uber and Airbnb can be classified as disruptive innovation, they also created disruption in legal regulations in different countries which were never introduced to this form of market making these businesses basically illegal.

### 3.5. SHARING ECONOMY IN THE WORLDWIDE HEALTHCARE

#### 3.5.1. Cohealo

Cohealo was developed in 2011 in Boston, Massachusetts. It was developed as a platform to use unused surgery equipment, such as surgical tables, from one hospital in another. This would activate unused capital from one hospital that had extra equipment and use it to create profit. This was created to lower the cost of everyday hospital management.

#### 3.5.2. “Šestar”

“Šestar” is an internet platform on which scientists can exchange diagnostic machines that are not in use at the moment in their laboratory. This type of SE offers a highly effective and complete usage of all machines and at the same time saves money to the laboratories so that they don't have to buy them and therefore they can use their money on other needed materials. The way the site works is that there are different machines listed, they have a contact person and the location of the machine available (Šestar, 2019).

#### 3.5.3. Telehealth platforms - Teladoc

Modern telehealth platforms present a variety of unique benefits to both consumers and physicians. Patients may seek telemedicine services for episodic care, specialty management of chronic illnesses, and primary care. Consumers stand to experience increased convenience in accessing medical services and encountering a variety of connection services platforms, choosing the modality they prefer based on their own unique characteristics as consumers. In contrast to traditional, office-based services, patients may access medical services in an “on-demand” fashion, engaging in instant message exchanges, video chats, and remote exams. Lastly, clinicians will also benefit from the improved work-life balance due to flexible practice hours and location, in addition to potential increased earnings.

Both consumers and physicians will also benefit from the system's innovations that will accompany the increased use of telehealth platforms. For example, in order to mitigate malpractice risk, telehealth platforms will need to differentiate between, and then route, patients requiring higher-acuity or more specialized care to the right point and service provider. Telehealth platforms may also innovate in how they regulate quality and safety standards and screen and select providers, and in how consumers rate service providers—a common feature of many platforms in the sharing economy. By facilitating information collection and making it transparent, telehealth platforms have the potential to protect and empower consumers.

Telehealth platforms can further expand access to general medical services by reaching out to consumers in underserved areas and providing access to highly specialized consultancy services. Currently, medical care delivery is highly local, with physicians practicing in their towns or cities and patient interaction occurring primarily in person in an office or hospital setting. Highly localized delivery, coupled with state-based licensure systems, potentially restricts the supply of physicians and limits consumer access to, and price competition for, telemedicine services. Telehealth platforms offer an opportunity to expand access without major financial investment, in addition to increased price competition for some medical services.

Early market evidence supports the conclusion that telehealth platforms yield substantial consumer and clinician benefits. Teladoc, a publicly traded telehealth platform company, had 576,000 visits in 2015 with 95% consumer satisfaction, 5 while physician hourly income increased 50%. These and other benefits will power market growth, with estimates of the current telemedicine market ranging from \$1.9 billion to \$30 billion. Despite this rapid growth, some have raised concerns regarding the safety of telehealth platforms as a rationale for restricting the market entry and growth of telehealth platforms. In addressing this concern, one must note that physicians have successfully practiced telemedicine for over 100 years by using the telephone to conduct physician-to-physician consults, diagnose and treat patients, prescribe medications, and order diagnostic tests. Like the taxi industry's move from telephone dispatch to matching through GPS-enabled smartphones, modern telehealth platforms represent a natural outgrowth of the practice of medicine, using modern technology to grow a systems approach to safety and quality (Miller et al.; 2016).

### 3.6. POSSIBILITIES OF FUTURE USE OF SHARING ECONOMY IN HEALTHCARE IN CROATIA

#### 3.6.1. Developing tech exchange between hospitals

Even though hospitals are usually overcrowded with patients and patient waiting lists are a couple of months-long there are occasions in which not all facilities and diagnostic machines are adequately used. The reasons for this vary from too few patients in that town or region which is usually a result of low population in that area to the lack of specialists and other experts who work in the specific medical field. Reason for the lack of experts can be found in higher immigration rates and older population of doctors in some areas who then retire. As a result, we have on one side overcrowded waiting lists in larger hospital centers, and on the other hand unused, expensive and highly sophisticated diagnostic machinery. A solution for this could be found in an app that enables all hospitals to list their devices and when they are not in usage offer them to those institutions with long waiting lists. This is similar to previously presented “Cohealo” and “Šestar”. Problem with this is that the larger machines would be very expensive to transfer from one hospital to another so profitability would be a limiting factor, another problem is potential damage to the machines that could occur to the machines.

From the medical point of view, the main problem would be “What to do when there is an emergency and those machines are needed?” this is solvable since most of the hospitals have more than one machine of one kind and it could be used in an emergency.

The overall technological exchange between hospitals is possible and achievable but with smaller devices and with the calculation of the profitability of this exchange.

#### 3.6.2. Patient redirection

Another way of using SE in medicine is to redirect patients from overcrowded hospitals to those with fewer patients. That way we could completely bypass all the problem with the transport of medical machinery.

All patients who are using health insurance in Croatia would have opportunity to download an app that would show all waiting lists of all hospitals, of

course, all patients would have their unique ID which would be shown in the lists and the app could just show when the next available appointment is. Another possibility for this app would be that when the patient decides in which hospital, he wants to go he could register on their waiting list in the app. This form of admitting patients already exist in Croatia in primary medicine but it is only available to Family medicine specialists who can “save your date” for their patients. This is a problem because if there are sudden open places for new admissions the hospital has to contact the next patient on the waiting list or leave it unused. This is a great waste of medical personnel, money and time. Firstly, because you have an administrator who has to use his time to call other patients to see whether there are patients who are able to come at different time and secondly, because a lot of patients are unable to come on call into hospital, it usually leaves that time unused which results in lost profit for the hospital.

This solution is cheaper and easier to carry out in reality. Main problem for this model is that except for Zagreb there are no cities in Croatia with more, large hospitals and hospital centers to which the patients could be rerouted so the patients wouldn't be able to use the app in an adequate way or they would have to travel larger distances to reach the hospital which would increase patient's cost. On the other hand, the pilot of this app could be done in Zagreb with great efficiency.

### **3.6.3. Doctors and nurses on demand**

With a increasingly aging population, longer lifespan and more people with chronic diseases there is a larger need for in-house care. With the usual population of 2000 patients per family medicine specialist, there is very little room for healthcare workers to visit each patient daily. This would enable the immobile patient's adequate healthcare. There are several problems. First of all, house call visits already exist, and they are a part of regular healthcare services for a specific kind of patients

### **3.6.4. Chronic patients**

Two of the most common chronic diseases that require daily supervision and regulation are hypertension and diabetes. With technical development we now have smart devices that can measure blood pressure and glucose levels in

the blood, however, while the regulation of hypertension requires just daily consumption of antihypertension drugs, insulin dependent diabetes requires a sometimes-complex administration of insulin. Since diabetes is still considered a disease of older age and taking into consideration the fact that a lot of elderly are still not used to use advanced settings on their smartphones or some of the modern technologies used in diabetes therapy it would be beneficial to have a platform where previously educated personnel (nurses, doctors, and even medicine students) could be employed by family members of diabetic patients to ensure that those diabetic patients regulate their blood sugar levels daily by measuring blood sugar levels and administrating insulin or per oral therapy.

### 3.6.5. Pharmacology in the palm of a hand

Because of the difference in size, location and need for drugs in each location, all pharmacies don't carry the same drug, and because of the supply organization and management, it can sometimes happen that the specific pharmacy doesn't carry the required drug. This problem has two solutions either there needs to be peer – to – peer exchange of drugs between pharmacies so that one pharmacy can supply the other with the required drug in between orders. This would require a list of available drugs for each pharmacy as well as a way of informing and delivery. Other solution would be to offer a list of other pharmacies that carry the required drug to the patients. Out of these two possibilities we expect the best solution to be the one where a patient is offered a list of pharmacies with available drug because pharmacies are fairly widespread in every city and it wouldn't require a high increase in patient's personnel costs to go to another pharmacy, while the first solution would create much larger expenses for the pharmacies, and unnecessarily complicate everyday work.

### 3.6.6. Doctors and nurses as freelancers

With ever-growing lack of medical staff in all hospitals especially in rural areas, there is a need to provide quality health service in those areas. Since urban areas, especially large cities, give a lot of opportunity for medical practice most of the doctors gravitate towards jobs and practices in urban area, leaving the rural area jobs with either short-time practitioners who go from one practice to another, or no doctor at all. A possible way of solving this problem would be to create a platform for doctors and nurses only on which the short-term jobs



(one to two days a week) would be offered. A sort of freelancers in medicine where a doctor or a nurse could fill a spot in a practice and in that way enable quality health service in all areas. The app would have a possibility to apply for a job a month in advance after which a schedule would be formed and sent to the applicants according to the days on which they applied. There would be set payment for each qualification (i.e. those with specialization, sub specialization, and finished courses would get additional increase of payment in set percentages ) and a grading system and scale for doctors and nurses in accordance to their training and education (i.e. an MD with valid practice license would get 10 points, a specialization would grant another 15 points, Ph.D. another 5 points and every further education such as ultrasound of heart, abdomen or Color Doppler would grant additional 8 points and so on). This way if there are more applicants, they would get an advantage to choose desired jobs according to their qualifications. In addition, at jobs that require certain qualification (i.e. pediatric practice) those with required qualification would get additional points and preference before other applicants. Advantage of this kind of project and platform would enable health care in underdeveloped locations, open more jobs, and create a job for health professionals after they finish their internship or if they want to do more work. Problem with this kind of work would again be focused on the distance from the larger city and the amount of work required since this frequent exchange of doctors can account for them not knowing regular patients (like their regular family medicine specialist would), and also many doctors and nurses would not be interested in traveling that far so the jobs would probably be filled with younger staff that is still not specialized with some exceptions.

#### 4. CONCLUSION

SE will reduce costs and improve healthcare, particularly its accessibility. Our goal should be to help accelerate these changes first by identifying them and driving awareness, and also giving them a context and framework so that new models can be developed more rapidly. The important step to be taken now is to change the way of designing and thinking about our healthcare facilities in light of the emergence of these new models of economies. It is time to stop debating whether the SE will affect our healthcare ecosystem or not, as this is an undeniable solid fact. It is time instead to discuss what happens after the change occurs



like community-driven health, and how we can regulate it to ensure quality and privacy. We also need to think about the new data ownership rights and how we can provide our patients with full access to their medical records without hampering their privacy. SE is here to stay, it has taken a large and important piece of cake in the economic market and as far as we see it will only keep on growing exponentially. The main problem of SE is that even though it is very adaptable there are usually just recycled versions of the same idea that are not applicable to all fields of the market. SE is an interdisciplinary phenomenon and it requires interdisciplinary solutions. Since healthcare is a highly specialized field of work and science with a lot of highly specialized experts it calls for a more specific and focused problem-solving applications of SE.

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# THE AGING SOCIETY: A CHALLENGE FOR POLICY MAKERS

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## **Abstract**

*Population aging is a demographic certainty that is happening in all six geographic regions in the world. The world population 60 and over is growing faster than any other group. The projection of 3.1 billion people in 2100 (UN World Population Prospects: the 2017 Revision) is representing a big challenge for policymakers particularly if one considers that older people are changing their behaviors and expectations of retirement and later life. This paper discusses the population aging and policy responses to it. After presenting and analyzing descriptive statistics of population aging, the paper focuses on the baby boomers as a particular group of the older population who will have a significant effect on economy and society. Finally, the paper discusses challenges for policymakers in managing the effects of population aging and offers selected policy suggestions. By recognizing and understanding a variety of demographic, behavioral and policy forces behind graying of the world, one can work on policy and institutional setting that will consider aging population inevitable part of society that still can contribute to socio-economic development.*

**Keywords:** *population aging, demographic trends, baby boomers, public policy*

JEL Classification: J11, N30

# 1. INTRODUCTION

“With mirth and laughter let old wrinkles come.”

*Merchant of Venice*  
William Shakespeare

There is a growing trend worldwide that the number of elderly population is dramatically increasing due to the increase in life expectancy. According to data from *World Population Prospects: the 2017 Revision*, the number of older persons — those aged 60 years or over — is expected to more than double by 2050 and to more than triple by 2100, rising from 962 million globally in 2017 to 2.1 billion in 2050 and 3.1 billion in 2100. World population aged 60 or over is growing faster than all younger age groups. This increasing longevity is a result of numerous factors such as improved nutrition, sanitation, improved healthy behaviors (better eating habits, more physical activities etc.) as well as better medical care. In addition to this, one has to acknowledge the role of higher education, income and trends regarding health in contributing to living longer.

The share of older persons in a total number of population will be increasing due to *baby boomers* (born between 1946-1954), who are in or are close to retirement. This generation has different age-specific behaviors with respect to employment, consumption, and savings as they are in better medical and economic shape than previous generations. Thus, their behaviors will have a significant impact on the economy as well as on policy and institutional environment.

When it comes to the European Union (EU), one expects that the age structure of the European population will change significantly over the next decade, and by 2060 the share of persons aged 65 and over will increase from 18% to 30% compared to the present, while the share of persons over the age of 80 will more than doubled. This explains why the EU has launched the term *Silver Economy* in relation to the economic activity of the population aged 50 as well as there is increased interest of academic scholars and policymakers related to their impact on different sectors of the national economy (see, for example, Zsarnocky and Gyorgy, 2016, Barković Bojanić and Erceg, 2017). While elderly have been for a long time perceived as a fiscal burden, there has been a significant shift in considering that this negative demographic trend can represent as a market opportunity for new products, services, jobs, and consequent growth.

Three helixes – academia, government, and industry – recognize population aging as a new demographic reality. There is an increased number of academic scholars researching in theory and practice the economics of aging. Particularly evident is the shift from studying individual aging to the collective problem of aging economy and society. The field of age-specific economic theory has been progressing in the last thirty years with more and better data available more analysis that differentiates the economic circumstances of different elderly sub-groups, more and better longitudinal data sets and the like (Infield, 2002: xv).

There is an increased number of authors discussing various issues related to economics and aging either from macroeconomic or microeconomic point of view. For example, Disney (1996) states the economics of aging raises the macroeconomic issues that influence economy as a whole, while microeconomics deal with the individual prospects for consumption and income over lifecycle associated with longevity and lower fertility. Schulz (2001) discusses the economic status of age, retirement planning etc. Ipparaguire (2018a and 2018b) offers modelling frameworks, that have become central tools in studies of economics and aging, including the life cycle, the overlapping generations, the perpetual youth and dynastic models, as well as various economic approaches to valuing later life, including economics of long-term care, caregiving demand to questions around insurance and so-called sandwich generation.

When it comes to the economy and the market in general, companies are becoming more aware of the aging market place and they start to innovate products and services in order to serve their aging customers as result of intersecting “market pull” and “technology push”. The term *Silver economy* has been developed in order to capture the influence of the aging population as a new consumer market for products and services designed for them. It includes all activities performed in the economic sector, which are focused to deliver products and services to satisfy elderly’s needs in the area such as media, fashion, tourism, education system, robotics, culture, local markets etc. (Zsarnocky and Gyorgy, 2016). The list of companies is becoming longer and longer – Harley Davidson, Intel Corporation and General Electric, Saga, etc. (Barković Bojanić *et al.*, 2018). All of them are beginning to see the elderly consumer as an important market. Take, for example, the Harley-Davidson. The famous US producer of motorcycles recognized the potential in older people as well as shifting the focus from the age to the values. Namely, the baby boomers have been the most loyal buyers’ age of Harley’s and as they are getting old they still want to hold on the

feel by driving Harley motorcycle. That is why the Harley-Davidson offered an innovation in a motorcycle – the *Three Glide*. The innovation included a three-wheeled motorcycle that has added stability and the triangle wheel-based that has become very popular among older riders (Barković Bojanić *et al.*, 2018)

Legal and institutional framework, financial support and other incentives have been increasing lately in order to help the aging population to find its place in the socio-economic development of the country based on its expectations and abilities. For example, Equal Treatment Directive (2008), European Disability Strategy (2010-2020) accompanied by European Disability Act; Ambient Assisted Living Program etc. (see for more details European Parliament Research Service, 2014).

The purpose of this paper is to discuss the global trend of population aging in order to point out that policymakers need to take into consideration different expectations of older people today when it comes to quality of life and sustaining activities when faced with retirement and aging process itself. The paper is structured in five sections. After the introduction, section 2 presents population aging as a unique global trend. Section 3 focuses on baby boomers as a particular group of people who were born between 1946 and 1964. They have emerged as a significant age group who will change the way people look at older age and retirement since they tend to show different expectations of older age, consumption patterns, technology use and the like which significantly affects the way private sector, as well as policymakers, need to react towards this large age cohort. Section 4 discusses the importance of policy and institutional environment in managing the effects of population aging and offers selected policy suggestions. Section 5 offers a brief conclusion.

## 2. POPULATION AGING: UNPRECEDENTED AND IRREVERSIBLE GLOBAL TREND

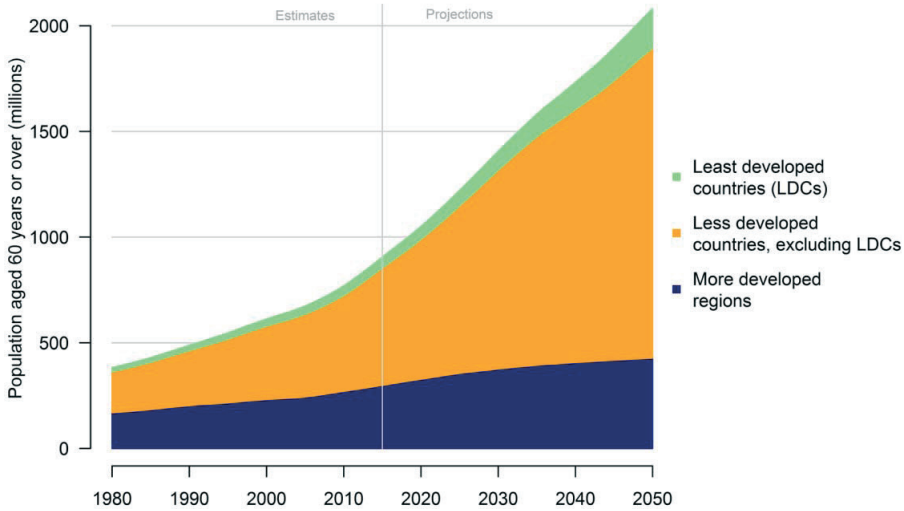
*“The aging and declining of the population will have far-reaching impact.  
Declining fertility rates will possibly increase immigration.  
The structure of family and society will inevitably change.”*

*Toshihiko Fukui*

According to the United Nations, the Department of Economic and Social Affairs, Population Division (2017), population aged 60 and over in 2017

counted 962 million people, which is more than twice the number of population 60+ in 1980. The further projections suggest that by 2050 the number of persons over the age of 60 will again be twice as high and should amount to 2.1 billion people (see figure 1).

**Figure 1** Number of people age 60+ from 1980 to 2050 (in million)



**Source:** United Nations (2017). World Population Prospects: the 2017 Revision.

Ten countries with most population in the world are coming from following regions: one from Africa (Nigeria), five from Asia (Bangladesh, China, India, Indonesia, and Pakistan), two from Latin America (Brazil and Mexico), one from Northern America (United States of America), and one from Europe (the Russian Federation). Amongst these, Nigeria’s population, currently the seventh largest in the world, is growing the most rapidly and is projected to surpass that of the United States shortly before 2050 (UN, World Population Prospects 2017 – Data Booklet). Projects suggest that in 2050 the population in six of the ten largest countries will exceed 300 million - China, India, Indonesia, Nigeria, Pakistan, and United States of America (see table 1).

**Table 1** Ten countries with the largest populations (2017 and 2050)

Rank	Country	2017 Population (millions)	Country	2050 population (millions)
1	China	1410	India	1669
2	India	1339	China	1364
3	USA	324	Nigeria	411
4	Indonesia	264	USA	390
5	Brazil	209	Indonesia	322
6	Pakistan	197	Pakistan	307
7	Nigeria	191	Brazil	233
8	Bangladesh	165	Bangladesh	202
9	Russian Federation	144	Dem.Rep. of the Congo	197
10	Mexico	129	Ethiopia	191

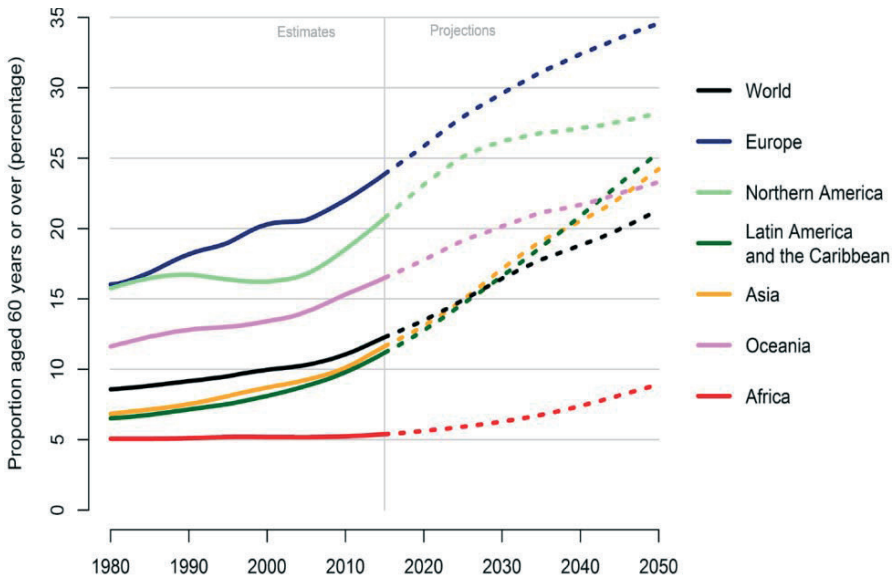
**Source:** United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects 2017 – Data Booklet (ST/ESA/SER.A/401)

The population statistics reveal that there is no geographic region that is immune to getting old. From 2017 to 2050 all world regions will face an *absolute increase of population* aged 60 and over in various percentages: Africa will experience the fastest grow where the population aged 60+ will increase from 69 to 226 million; Latin America and the Caribbean are projected to face an increase from 76 to 198 million, while Asia will see an increase from 549 to nearly 1.3 billion. The slowest growth will be in Europe with a projected increase of 35% in the stated period (United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Ageing 2017 – Highlights). The dynamics of absolute aging of the population are not equal in all regions of the world. The reasons for this are different from the number of people living in this area, fertility, morality, and social opportunities.

Aging influences various sectors of economy and society, including health and social care, transport, housing, entrepreneurship etc. When researching those influences, *relative demographic aging of the population* is helpful since it shows aging of population related to the population as a whole. In another word, relative demographic aging shows various age groups within the entire population. This is quite important as it shows the impact of population aging on social activities, the economy of a given area, and the pressure on social security systems - through the prism of “pressure” of the older population on the younger, working-active population. According to UN projections, the year

of 2050 will bring increase in percentages of population aged 60 years in all geographic regions: older persons are expected to account for 35 % of the population in Europe, 28 % in Northern America, 25 % in Latin America and the Caribbean, 24 % in Asia, 23 % in Oceania and 9 % in Africa (figure 2).

**Figure 2** Percentage of population aged 60 years or over by region, from 1980 to 2050

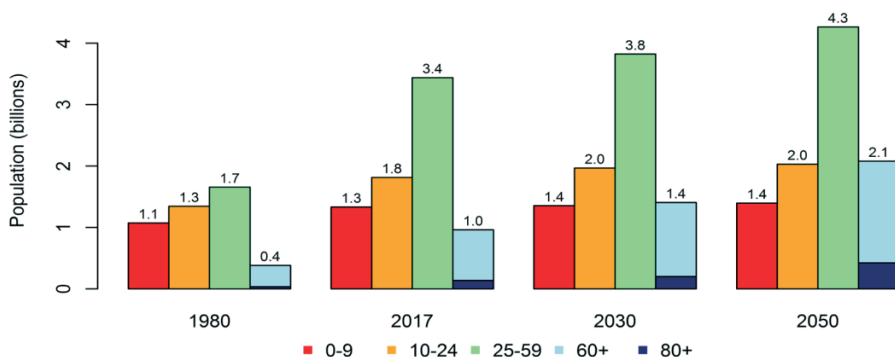


**Source:** United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Ageing 2017 – Highlights.

At the global level, one can notice that the number of older persons is growing faster than the number of all younger age groups. Some time ago, in 1980, children aged 0-9 years substantially outnumbered persons aged 60 years or over with 1.1 billion versus 0.4 billion, while one expects that by 2030 the global number of older persons will surpass the number of children under age 10 with 1.41 billion versus 1.35 billion (figure 3).



**Figure 3** Global population by broad age group, in 1980, 2017, 2030 and 2050



**Source:** United Nations, Department of Economic and Social Affairs, Population Division World Population Aging 2017: Highlights.

To emphasize, the population will be getting older in all six major geographic regions across the world in both absolute and relative terms. This global demographic reality puts the pressure on government across the world to create public policies that will tackle the issues related to older people – from medical and health care to various forms of inter-generational solidarity.

This inevitable increase has been the result of a decline in fertility and improvement in survival, which are the major features of demographic transition. According to Bloom *et al.* (2008), there are three major demographic drivers of population aging: (i) *declining fertility rates*, which are reducing the number of young people while at the same time increasing the share of old people in the total population. The total fertility rate fell from approximately 5 children per woman in 1950 to just over 2.5 in 2005 and this trend is expected to continue by 2050 falling to 2 children per woman. This will seriously affect the old-age dependency ratio, which is the number of working individuals to people age 65 and over; (ii) *increases in life expectancy* whereby the current global life expectancy is the age of 65 and projected to be 75 years by 2045; (iii) *past variations in birth and death rates are the third factor* behind population aging. This relates to, for example, baby boom occurred in developed countries after the World War II whereby these baby boomers are becoming “older boomers” or in developing countries where fertility temporarily increased due to reduced child mortality.

Aforementioned selected statistics point out that the population aging is a global phenomenon that will continue to affect all geographic world regions of

the. We are talking about an unprecedented era in history with various economic and social implications. Increased number of older population, as well as the shift in the size of age group, puts calls for the different allocation of economic and financial resources that affects the entire population at the end. Thus, it does not surprise that academic scholars are interested in understanding and policymakers in reacting to economic and social implications of aging society (see, for example, Lloyd-Sherlock, 2000, Harper, 2014, Yenilmez, 2014)

The most mentioned economic implications of an aging population are mostly related to the following (Global Risk Insights, 2018):

- ✦ Pressure on social insurance programs and pension systems meaning that many nations will be forced to increase their budget allocation for social security;
- ✦ Increasing health care costs since the health declines with age and elderly require more medical attention such as visiting doctors, hospital stays, surgeries and the like. In addition, there is an increase in illnesses such as cardiovascular problems, cancer or Alzheimer's since people are living longer and medical treatments are better. These illnesses put significant pressure on public health expenditures in order to provide human (medical) resources to provide required health care to those in need;
- ✦ Shortage of skilled labor trained to provide care for aged patients (e.g. lack of registered nurses);
- ✦ Impact on economic growth while there are fewer workers on the labor market, which translates into a problem for firms to make products and provide services. Further, this shrinking labor force means an increase in the age dependency ratio as well as the fact that fewer workers need to support a greater number of older retired people. Needless to say that this will also increase.

There are academic scholars that consider the aging population not solely as a burden. For example, Prettner (2012) and Lee *et al.* (2011) have suggested that there is a positive interaction between aging and economic growth since the older people tend to save more and thus providing more resources for investment. However, this does not eliminate the prevailing thought that demographic revolution, that is currently taking place in the world, will be a serious burden to economic growth without adequate strategy and policy response.

### 3. BABY BOOMERS: REDEFINING EXPECTATIONS OF ELDERLY

*“Age is an issue of mind over matter. If you do not mind, it does not matter.”*

*Mark Twain*

To have a better understanding of challenges we are facing with the population aging in an economic, social and policy sense, it is useful to consider baby boomers as a particular group of the older population who will have a significant effect on economy and society.<sup>1</sup>

The baby boomer is a term that describes a person who was born between 1946 and 1964. The baby boomer generation makes up a significant proportion of the world population, especially in developed nations. Looking back in history, not all countries experienced the baby boom in that period. USA, Canada, and countries like Great Britain, Italy or France did, but many others did not such as countries in Africa, Australia and New Zealand. According to the Pew Research Center (2018), there were an estimated 74.1 million baby boomers in the USA in 2016.

Baby Boomers have been attracting the attention of numerous scholars. They are particularly interested because they are large age cohort starting to enter the age of retirement and later life with different lifestyle and attitudes than the previous generation, which calls for different social and public policies (Biggs *et al.* 2007, Phillipson *et al.* 2008, Wilson and Simpson, 2012). Baby boomers see themselves as a generation that bridges the gap between old ways of their parents and significantly different views of the next generation (Leach *et al.* 2013).

What makes this generation different from previous generations? According to various researchers (e.g. Young and Tinker, 2017, Leach *et al.*, 2008, Kahana and Kahana, 2014, Siren and Haustein, 2016, Chambré and Netting, 2016) a term ‘baby boomers’ denotes following (selected) characteristics:

<sup>1</sup> Generation names and age spans are defined somewhat differently depending on country and/or region but this roughly holds true (names and age spans): globally: Baby Boomers: 1946–1964, Generation X: 1965–1980, Millennials: 1981-1996, Post-Millennials/Generation Z: after 1997. See for more details: [https://www.catalyst.org/research/generations-demographic-trends-in-population-and-workforce/#footnote22\\_25ne5s3](https://www.catalyst.org/research/generations-demographic-trends-in-population-and-workforce/#footnote22_25ne5s3) (accessed 17.03.2019.)

- ✦ high level of education technological proficiency and a youth self-image;
- ✦ longer working lives as well as increased level of employment at an older age;
- ✦ higher rates of home ownership and desire to live at home independently as long as possible;
- ✦ higher rates of divorce as well as less high rates of childless;
- ✦ a higher level of consumption and different consumption patterns focusing on products that enable them active and healthy aging;
- ✦ a higher level of independence and mobility.

Identifying and researching these characteristics of baby boomers is extremely important because they reflect their needs and priorities in later life. This impact is not a solely an individual issue but has business and policy implications. For example, a high level of childless and the fact that they own their own house may be a signal to entrepreneurs to offer innovative housing solution for elderly, which provides a significant business opportunity. This is already happening. Namely, smart homes for the elderly is a new step in adapting the living space to the needs of elderly people. By combining various home appliances in a creative way (audio and video systems, lighting, window blinds, air conditioning heating, and cooling systems, anti-theft systems and other security systems etc. these homes offer longer independent living of aged placing a less burden on the government to secure solution for elderly housing and care.<sup>2</sup> Another example related to baby boomers desire to be independent and mobile as long as possible is the question of car use. Traditionally, retirement means less car use as a consequence of it. Yet the research suggests that baby boomer will continue to use it for leisure purposes, which increases with retirement. It is likely that this generation will affect demand for transport in a different way that the previous generation had done it (Siren and Haustein, 2016, Chambré and Netting, 2016).

Even though this paper does not provide a thorough analysis of baby boomer' characteristics and their impact on the various economy sector, it is still very

<sup>2</sup> Deutsche Telekom believes that 100 million homes worldwide will be conceived as smart homes, and that number will triple over the next ten years. Strategy Analytics, a market research firm, believes that the smart home market will be worth 15.5 billion EUROS by 2019, and will account for almost a quarter of world market value estimated at 55.8 billion Euros. For more details see Forbes, <https://www.forbes.com/sites/freddiedawson/2015/09/30/smart-home-sector-could-be-worth-hundreds-of-billions-in-next-five-years/#5c266da96a20> (accessed 19.3.2019.)

much clear that business sector and policymakers cannot respond it in a way they have been used to. As baby boomer generation changes the way they look at aging and their working and lifestyle past the traditional age of retirement, so should policy makes. According to Bloom *et al.* (2008), it seems that the problem of population aging is not so much problem of demographic change but rather of rigid and outmoded policies and institutions.

#### 4. CHALLENGES FOR POLICY MAKERS

*“Every industry is going to be affected by the aging population. This creates tremendous opportunities and tremendous challenges.”*

*Pat Conroy*

Institutions and policy environment is extremely important when it comes to the aging population (Pifer, 1986, Paterno, 2011, Naaldenberg *et al.*, 2012, Keyes and Dicke, (2016). One has to bear in mind that the aging population is still on the way and that the majority of the aged population increase will happen in years to come. That gives a chance to policymakers to create a policy environment, i.e. institutional and legal framework, just in time to exploit the potential opportunities and manage risks of projected demographic upheaval.

Several policy suggestions should be in the focus:

1. *Evidence-based policies:* population aging is a multidimensional challenge. Thus, intensive and continuous multidisciplinary research on aging population is a *condition sine qua non* for government to create policies that will be better aligned with realities of an aging population which will promote aging as an opportunity, not a threat. Generations that will become retirees are changing in terms of what they expect and plan for their old age. Thus, it is necessary to have more data systems, research capacities and coordination between various cross-cutting themes across policies such as health policy, tax policy, labor policy etc. Results, i.e. evidence obtained will be important policy input for government and policymaking.
2. *Retirement, Social Insurance System and Economic Security:* changes in retirement incentives represent a policy response to people who desire to work at older age assuming they have mental and physical abilities

to do so. Also, it would be useful to consider more flexible pension arrangements as well as increasing the official age of retirement. One has to think of the economic security of older people through various incentives for older to continue to work, tax incentives for workers or tax incentives for individuals retirement savings.

3. *Lifelong long learning and education programs*: if older people want to remain in the workforce they need to adapt their knowledge and skills to ever-changing the economy. Academia can play a significant role in it by providing, for example, the concept of the university for the third age with lifelong learning programs adjusted to the labor market demands.
4. *Demographic renewal*: having children today seems to be rather demanding due to numerous pressures coming from continuous changes, increased competition at workplace etc. Improving conditions to child-bearing and having a family would mean, among else, to have policies encouraging a balance between work and family life by e.g. state-funded childcare, more flexible working hours for parents etc.
5. *Supporting older worker to remain active as workforce*: older workers are often a target for discrimination and stigma, thus the policy should be focused on eliminating all age-based discrimination at the workplace. With proper lifelong learning education and potential changes in the workplace itself, older people can still be valuable human resource considering their important characteristics such as loyalty, experience, wisdom, no need for changes in career etc.
6. *Eliminating cultural and societal bias towards old(er) population*: one should not forget that older people are often stereotyped as grumpy, fragile, sluggish and the like, thus the policy effort should be focused on changing a cultural mindset towards elderly. Increased media attention should be paid to proactive seniors, who are getting more involved in volunteerism or become entrepreneurs, who travel and experience in order to change a collective sentiment that older people are a burden. Policymakers themselves should be aware of changes in demographics in communities they serve and start to think strategically on how to support the growing number of older people with limited public resources they have.

7. *Supporting family caregivers*: many family members have a responsibility to provide caregiving to their older family members which put a lot of pressure on their personal and professional life. It would be useful to consider help for family members in terms of financial relieves for caregiving, tax credits and the like. Finding for more health care professionals is also an indirect way to help families in providing long-term care for their needed ones.
8. *Considering immigration as demographic corrective*: since the aging process does not occur at the same pace across the world regions, and the wealthier regions are aging faster than poor ones, migrations seems like a way to reveal the pressure on the economy and labor market. Namely, immigration from developing world to developed countries can mitigate that negative effect which calls for politically feasible migration policies. Immigration should be a part of the solution to population aging.

These selected policy challenges serve as a highlight of issues for (future) policymaking. Since population aging is a multidisciplinary challenge, policy-makers should focus on creating and/or innovating health, social and economic institutions to serve better the needs and expectations of the elderly.

## 5. CONCLUSION

*“Age is not lost youth but a new stage of opportunity and strength.”*  
Betty Friedan

Population aging is a global trend with far-reaching economic, social and policy implications. The way older people look at themselves and the society look at them is changing. This is due to the series of improvements in living conditions and lifestyle as well as changes happening in science, technology, medicine etc. All of that represents a challenge for policymakers as older people have different values and pursuit different social and work engagements, as well as lifestyles, form generations that preceded them.

Efficient public policy regarding the aging population means understanding well the demographic changes that are taking place and what they bring to the economy and society. One has to be aware that demographic changes require the change of mindset of policymakers themselves in order to create policies



that will meet the needs and expectations of the elderly. Demographic context, as well as political and economic system, will also play an important role in creating a policy environment. The practice across the globe show that some countries rely on state-run programs aimed at elderly while in the other the state has less of the role. Whether private or public, beneficial aging policy is the only solution to handle aging with deserved care.

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# THE IMPACT OF TOURISM ON THE QUALITY OF LIFE AND HAPPINESS

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## **Abstract**

*In April-May 2018 an online questionnaire survey with a sample of 1,085 respondents was implemented in order to get an insight into the attitude of the Hungarian population concerning tourism, in a breakdown by generations. The survey was representative of the Hungarian population aged 15-74 as regards gender, age groups (10-year intervals) and the region of the place of residence. Five indices were applied in the analysis: gender, generations, settlement category of the place of residence, level of school education and subjective assessment of the income position. The paper analyses those findings of the research that are related to the impact of tourism on the quality of life. We are looking for the answer to important questions like how much tourism, an extremely important social phenomenon of our age, is seen by consumers as a factor significantly influencing their quality of life, and to what extent tourism is the source of happiness for them. During the analysis, we use statistical methods to find out whether there are statically verifiable (so-called significant)*

*differences in the responses to certain questions by the respective demography groups and the different consumer groups designated by the different variables analyzed. The research findings give us useful information for the organization of human resources management and tourism management, both as regards the Hungarian businesses and tourism destinations.*

**Keywords:** *tourism, quality of life, happiness, generational differences, age groups.*

Jel Classification: L83, Z32

## 1. INTRODUCTION

In the second half of the 20<sup>th</sup>-century tourism became a global societal phenomenon. Tourism activities have almost become part of the basic human needs of the inhabitants living in developed countries; they must be seen as a dominant means of passing leisure time. It has become so significant that it has a considerable impact on general wellbeing, living standards and the quality of life, and also the happiness of people. The complex examination of this issue was a selected topic of tourism researches in Hungary in the first decade of the new millennium; it was given significant attention by academics. Using the research findings of this period, as a sort of organic follow-up, we started to survey the issue again. The possibility of achieving new research findings was given by a questionnaire survey using a representative sample, implemented with the financial assistance of the European Union. The quick analysis of the research findings was done (Csapó et al. 2018), the detailed in-depth analyses will be constant work for the members of the research team. This paper too was written as part of this work process. In the case of several tourism product types the connection to the quality of life is evident – just think of health tourism where the primary motivation is the preservation of the good health condition (wellness tourism) or the alleviation of the severity of illness, or rehabilitation (medical tourism). Also, good well-being and thereby improved quality of life are offered by the aesthetic and intellectual experience that we can get from cultural tourism, but ecotourism that can be pursued as part of living a healthy life (see the LOHAS lifestyle group) can also be mentioned as a kind of tourism improving the quality of life. The present research is an abstraction from the concrete tourism products: we sought the answer to the general question of how people judge the impact of tourism on their quality of life and happiness.

## 2. LITERATURE REVIEW

The surveys of the quality of life started as soon as in the 1960s and 70s. In the different international researches, the issue was looked at from several aspects: psychology, economics, sociology, and politics (Diener 1984). At this time the role and significance of tourism were not included in the examinations (Michalkó 2010), although the number of international tourism arrivals ran into hundreds of million by that time, and its continuous and dynamic growth projected its increasing social importance. A major part of the examinations of the first research period was the interpretation of the quality of life, but, approaching the new millennium, researchers started to reach a consensus inasmuch as the quality of life can be seen as the joint dimension of objective factors determining human existence, on the one hand, and the subjective reflections of them, on the other hand (Kiss 2015, Diener et al. 1999). The first papers on the relationship between tourism and the subjective quality of life were published in the academic literature in the 1990s (Dobos & Jeffres 1993, Richards 1999).

The research of the connection between quality of life and health has significant traditions and a considerable volume of professional literature in Hungary (Kopp 2008, Kopp-Kovács 2006), however, the relationship between tourism and the quality of life was given little attention within Hungarian tourism researches, apart from a case or two or a few research programmes. Several types of research and papers were made in the topic of the quality of life, the authors made attempts to comprehensively interpret and approach the concept, but the positive impact of tourism on the quality of life did not seem to grab the attention of the researchers (Michalkó 2010). The research findings by Utasi (2006) were the first to feature the statement that several elements of subjective well-being were connected to tourism. Of the researchers implemented after the millennium, one that is of outstanding significance for our topic is the OTKA (Országos Tudományos Kutatási Alapprogramok, i.e. Hungarian Scientific Research Fund) research programme led by Gábor Michalkó (Michalkó 2010), and his previous researches connected to our topic to some degree (Michalkó 2005, 2007, Michalkó-Lőrincz 2007, Michalkó et al 2009, Kovács et al 2006). It was only after the millennium that political decision-makers started to focus on the correlation between tourism and the quality of life. One of the main objectives of the The National Tourism Development Strategy approved in 2005 was the optimization of the impacts of tourism on the quality of life (Turizmus Bulletin 2005 special edition, Govt. Decree 1100/2005 (7 October)).

Probably this was the foundation of the representative survey of a sample of 11,500 respondents, implemented by the Hungarian Central Statistical Office, in cooperation with State Secretariat of Tourism of the Ministry of Local Governments and Regional Development, Hungarian tourism Inc. and the Geographical Institute of the Hungarian Academy of Sciences (Michalkó 2010). The research focused on the impact of traveling on happiness (i.e. travel as a source of happiness) and the impacts of travel activities on the quality of life.

Research on the quality of life had been done before as well, and the Hungarian literature on this issue is quite extended too (Sebestyén 2005, Ágoston 2007, Utasi 2006); however, the HCSO survey of 2007 and the parallel research programme mentioned above, led by professor Michalkó were pioneer works. The positive impact of the change of environment on regeneration and on the satisfaction of different human needs had been researched before, and tourism science had discovered the issue to the necessary depth (Puczko-Rátz 1998, Michalkó 2007). Nowadays the tight connection between experience and tourism is evident for the professionals, as the modern definition of tourism is “change of the environment coupled with gaining experiences” (Michalkó 2007). This definition has directly led us to the connection between tourism and happiness. In his work, Csíkszentmihályi describes happy moments as a flow experience, and he chooses an example from tourism to illustrate this: skiing (Csíkszentmihályi 2001). We firmly believe that every experienced traveler can come up with beautiful examples reinforcing happiness from their own previous for experiences. This is exactly why we find it important to examine to what extent active participation in travel activities, i.e. “being a tourist” increases the happiness of the participants, whether it impacts their quality of life and if there is a discrepancy among the generations in this respect. The survey of this issue cannot be indifferent to political decision-makers, either, as the continuous improvement, upgrading of the quality of life of the population is a task of selected importance for modern governance work (Bianchi 2007). In the surveys of the connection of tourism and quality of life, it is not only travelers but also local inhabitants and tourism service providers that must be taken into consideration (Andreck et al. 2007.) Despite all these, in Hungary, this topic was not in the mainstream of tourism researches, although a “society where happy people live is much more open to the world and sensitive to environmental issues” (Michalkó 2010. p. 108). This is why we found it important to focus again in this research on the relationship between tourism and the quality of life, of tourism and happiness

in the framework of an attitude survey. In line with the issue, we also look at consumer habits visible in the changes of impulses related to tourism. We know it from the theory of the development of tourism products (Gonda 2016) that the same person can prefer both slow and fast tourism products, depending on his/her situation in life. As a reinforcement of the known trends of tourism (Töröcsik-Csapó 2018), the findings of our research also supported that tourism activities are basically no longer about the sweetness of doing nothing, as almost half of the travelers are characterized by physical efforts and dynamic consumer behavior.

### 3. METHODOLOGY

The findings of the research were gained by the use of three methods: by a questionnaire survey personally and online, using a nationally representative sample, and the implementation of three focus group discussions. We conducted an *online questionnaire survey with a sample of 1,085 respondents* in April and May 2018 in order to examine the attitudes of the Hungarian population concerning tourism, in a generational dimension. The survey was representative of the Hungarian population aged 15-74 as regarded gender, age groups (10-year intervals) and the region of the place of residence. The processing of the findings was done in two steps: first the primary (frequency) analyses are demonstrated. This paper too was made as a part of this work phase. This work will be followed by a demographical background analysis. During this, SPSS programme, statistical methods will be applied whether there are statistically verifiable (so-called significant) disparities among the responses of the respective age groups to the questions. The variables included in the analyses were gender, generations, settlement category of the place of residence, higher finished school education, and the subjective judgement of the incomes.

*Personal questioning of 2,001 respondents* was implemented in April and May 2018 with the objective of examining the behavior and opinion of the Hungarian population concerning several topics. These topics were as follows: aging, health innovations, tourism, eating habits, cultural activities, and lifestyle. The survey was representative of the Hungarian population aged 15-74 as regarded gender, age groups (10-year intervals) and the region of the place of residence. In this survey, tourism had an inferior role, but these findings are also taken into consideration for drawing the right conclusions.



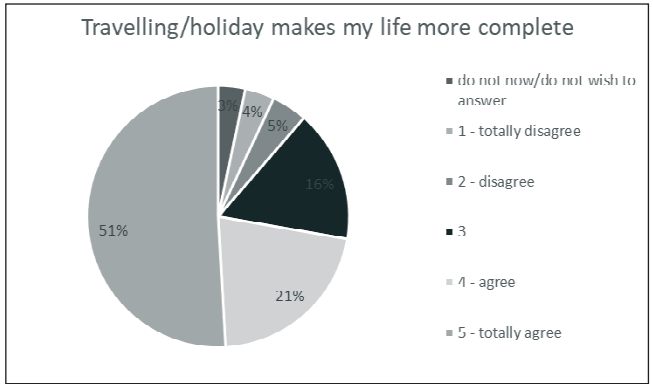
At the survey of the connection between tourism and the quality of life, respondents were asked to read 7 statements, and they had to indicate to what extent they agreed with the respective statements, quantifying their level of agreement in a 5-point Likert scale. Respondents who chose 1 definitely rejected, the ones opting for a two rejected to a smaller extent the statement, i.e. they disagreed with it. Those indicating a value “four” agreed to a smaller extent (rather agree) and the ones choosing value “five” totally agreed with the answer. It is problematic, on the other hand, to interpret the personal attitudes of those who opted for value “three”. We can doubtlessly say that they did not reject the statement, but they did not commit themselves to accept it, either. Whether this dilemma means that they are more likely to reject or to accept the statement will be revealed by a more in-depth analysis of their responses in the questionnaire, using the methodology of subjective Likert scale. This, however, will only be done in the following phase of the research.

#### 4. RESULTS

The first question was used to detect how the population judged the importance of tourism in their own lives – whether it makes people’s life more complete, or they do not feel such a strong correlation between tourism and the quality of life. The respective statement that travel/holiday makes their life more complete was fully agreed with 50.9% of respondents, whereas 21.4% of them indicated the “rather agree” option (value four on the scale). The very high proportion of those who agreed (72.3%) is a clear-cut indication of the fact that tourism plays an important role in the lives of almost three-quarters of the Hungarian population, it is a significant factor in their quality of life. The very low level of disagreement with this statement is another indicator of the fact that respondents, in general, consider tourism as a societal phenomenon important in making their lives more complete. There were only 3.6% who totally disagreed with the sentence, and another 4.4% chose the option “rather disagree”, i.e. value 2 on the scale. The combined share of those rejecting this statement did not reach more than 8%. The exact percent values of the responses given to this question are featured in Figure 1.



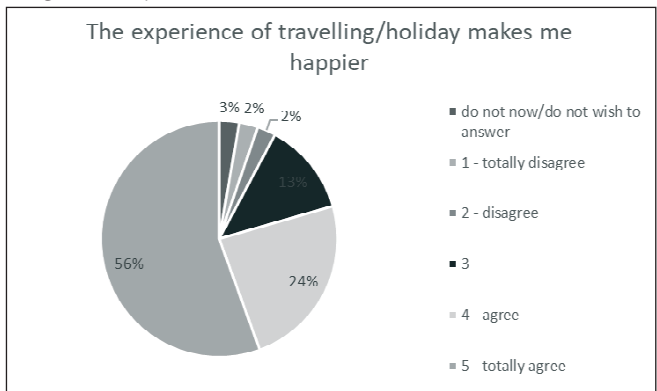
**Figure 1:** Breakdown of responses to the question “Travelling/holiday makes my life more complete”



**Source:** edited by the authors.

Our second question was asked to detect the subjective judgment of the correlation between happiness and tourism. As we have already discussed in the theoretical summary, the examination of the connection between happiness and tourism is not a new thing, and our research reinforced the formerly already discovered strong relationship. Almost 80% of respondents believe that they are made happier by the experience of the travelling/holiday (the proportion of those who totally agreed was 55.6%, that of respondents who rather agreed was 23.9%). Accordingly, the rejection of the statement is very low: only 5.1% think that traveling does not influence happiness – 2.6% definitely and another 2.5% rather disagreed with this statement (Figure 2)

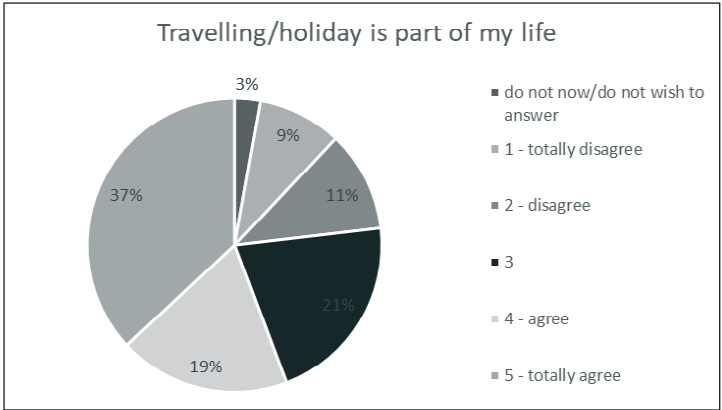
**Figure 2:** Breakdown of responses to the question “The experience of the travelling/holiday makes me happier”



**Source:** edited by the authors.

After learning from the previous two questions that a dominant part of the Hungarian population think that tourism makes life more complete and happier, the third question was used to examine to what extent traveling/holiday becomes part of one's life. Unfortunately, almost 10% of respondents (9.2%) are probably excluded from being actively involved in tourism, as they totally rejected this statement. Another 11.1% shoes value 2 on the scale, i.e. also disagreed with the statement that tourism is part of their lives. If we compare the findings of the first two questions with those of this one, we can draw the conclusion that even those respondents in whose lives traveling and holiday are important parts at all agree that tourism can make one's life more complete and tourism can contribute to the to increase the feeling of happiness. Over half of the respondents believe that to a smaller (18.9%) or greater extent (36.9%) traveling/holiday has already become part of their lives (Figure 3).

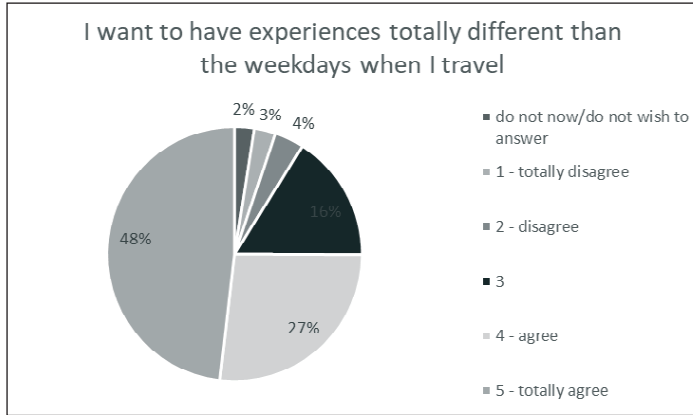
**Figure 3:** Breakdown of responses to the statement “Travelling/holiday is part of my life”.



**Source:** edited by the authors.

The survey also supported that tourists, stepping out of the daily routine of their everyday lives, want to have completely different experiences when traveling. Only 6.4% of the respondents were of the different opinion (2.7% and 3.7%, respectively), as opposed to almost half of them (48.1%) who totally agreed with this statement and another 26.8% who rather agreed with it (Figure 4).

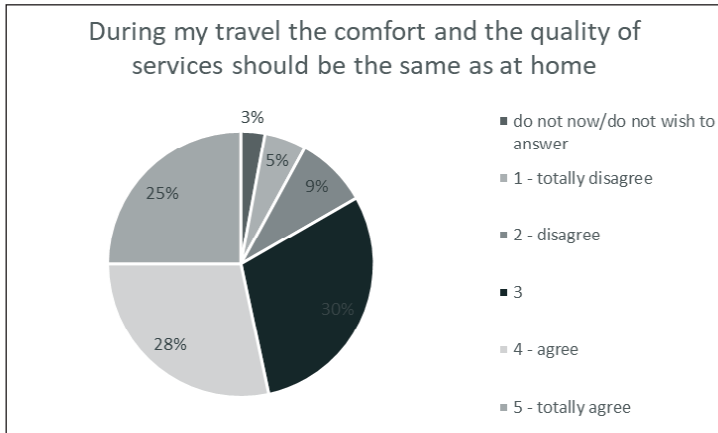
**Figure 4:** Breakdown of responses to the statement “I want to have experiences totally different than the weekdays when I travel”



**Source:** edited by the authors.

What comfort do people expect during their travels? Should the comfort level be similar to what they get at home, or do people like versatility and react flexibly to the given circumstances when traveling? This was the question to which we sought the answer. We presumed that getting experiences is what matters the most and the aspects of comfort are less important compared to this. The research findings, however, do not fully support this. More than half (53.4%) of respondents agree with this statement, i.e. they expect that the comfort level and the quality of service should reach at least the level that they are used to at home (Figure 5). A very large proportion of respondents cannot decide whether to agree or disagree with this statement (which is indicated by 29.9% of them giving a value “three” on the scale). The proportion of those who definitely do not need the comfort level of their home is only 13.8%.

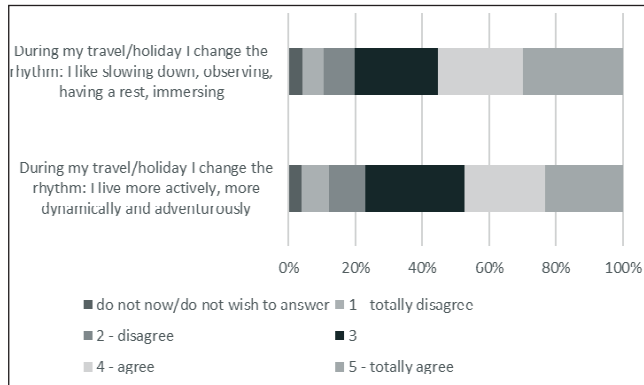
**Figure 5:** Breakdown of responses to the statement “During my travel the comfort and the quality of services should be the same as at home”.



**Source:** edited by the authors.

When looking at the practice of tourism, the intention of consumers to change impulses is a striking phenomenon for the researchers. In many cases during the travels/holidays, participants change their rhythm: after the overburdened weekdays they slow down in their holidays, they are observing and enjoy the pleasure of the possibility of not doing anything, and after the boring office work they desire some physical activity, adventure, and days full of happenings. Depending on their life situations, the same person can develop needs for different types of activities. This is also supported by the evaluations of the responses given to the two questions below (Figure 6).

**Figure 6:** Breakdown of responses to the statement “During my travel/holiday I change the rhythm: I like slowing down, observing, having a rest, immersing, or I live more actively, more dynamically and adventurously”.



**Source:** edited by the authors.

The chart above demonstrates that slightly more people choose the possibility of slowing down during their travels/holidays (55.4%) than the increase in their activities (47.2%). At the same time, this also shows that using leisure time for tourism is no longer about the sweetness of doing nothing, only. Although 19% of respondents disagree with the statement that they speed up and become more dynamic during their travels, almost half of them occasionally choose the increase of their physical activity, speeding up when traveling. We can say that notwithstanding the increasing trend of physical activity, tourism is still more closely linked to having a rest, slowing down, contemplating and accordingly the rejection of this is at a very low level (the combined value of responses indicating values 1 and 2 on the scale is 15.7%.)

## 5. A BACKGROUND ANALYSIS OF THE QUESTIONS EXAMINING THE RELATIONSHIP BETWEEN TOURISM AND QUALITY OF LIFE, AND TOURISM AND HAPPINESS

The use of the IBM SPSS statistical software allows us to examine whether the responses of the persons questioned show significant correlations to the following factors examined: place of residence, gender, age, school education and subjective judgment of income. We are in the initial phase of these analyses, but during the analysis of the impact of tourism on the quality of life and hap-

piness we could justify the research hypothesis that it is primarily the financial situation and schooling of a person (we may not exaggerate when we talk about his/her cultural level) that determines what impact touristic activities will have on the life, happiness, and experiences of an individual. In the case of the first three questions (traveling makes life more complete; traveling increases happiness; traveling is part of my life), there is a very strong correlation between schooling and the financial position. The higher the level of school education and the better the financial situation, the larger the proportion of those who totally agree with these statements. The statement that traveling makes life more complete was totally accepted by 40% of those who had finished primary school, the same proportion as those with university diploma was 60.8%, i.e. they chose scale value 5 in a more than one and a half times larger proportion. Also, parallel to the increase of the schooling/cultural level, an increasing number of respondents say that the experience of traveling/holiday makes them happier. Of those with primary school education, 48.6% opted for value 5 on the scale, whereas college and university degree holders did so in proportions over 60% (61.7% and 63.4%, respectively). An even bigger difference can be seen in the evaluation of the statement "travel is part of my life": 20% of respondents with primary school education definitely agreed with this, while the proportion of college and university graduates who were of the same opinion was more than twice of that (44.3% and 44.9%, respectively). The correlation to the financial situation is even stronger: there is an evident and strong significant connection between the financial situation of a person and the impact of tourism on his/her lifestyle. Almost two-thirds of those really well off feel that tourism makes their lives more complete, while the same proportion at those struggling to make ends meet is less than one-third. The proportions are similar if we look at the impact of tourism on happiness. Of the five groups by financial situation, at the two in the best position, the place of residence of those of totally agree that tourism makes their lives happier is approximately 2/3, while only 1/3 of the respondents in the groups struggling with financial problems think so. However, even this result is worth attention, as the splendor of tourism and its societal significance is proved by the fact that one-third of even the poorest layers think that tourism makes their lives happier. The extent to which tourism can become part of one's life is clearly determined by the financial situation. The disparity between the smallest and largest proportion (14.9% and 58.9%, respectively) is almost fourfold.

## 6. CONCLUSION

Our research findings reinforced the connection between tourism and the quality of life, already discovered before. For the majority of the inhabitants living in Hungary traveling making holidays is important, as tourism makes their lives more complete and happier. Tourists, in search of new experiences, would like to break out from the daily routine but at the same time expect comfort, at least at the level that they are used to at home. The majority of them want to have rest, but a growing share of them choose different forms of active recreation.

When we looked at the answers to our questions by the features of the respondents, we found significant differences. In those questions where we examined the relationship between traveling and the quality of life, we found a strong correlation between the income position and the level of schooling. Respondents with more schools and in better financial situation agreed in larger proportions with the positive impact of tourism on the quality of life and on happiness. The research also demonstrated an evident correlation between the financial situation of tourists and the impact of tourism on the quality of life.

The findings of our research may contribute to the theoretical background of tourism management, especially to the development of the methodology of the analysis of target groups connected to the respective tourism products but also to the process of tourism product development. At the same time, when designing the human resources management policy of companies, important aspects are the improvement of the quality of life of employees and the promotion of their rest and recreation. In this, special attention should be paid to the different motivations and considerably diverging needs of persons with different levels of schooling and financial backgrounds.

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## REMOVAL OF HEAVY METALS FROM WATER USING ZEOLITE

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### **Abstract**

*Increased industrialization leads to water pollution with heavy metal ions. Heavy metals in drinking water appear lately increasingly often. Drinking water contains them in small quantities that are permitted by the regulations in force, but as our knowledge about all the harmful effects of these substances is still incomplete, many believe that even a small quantity of harmful substances can be potentially dangerous. Due to the strict regulations and greater efforts to safeguard the environment by removing these ions from water is the subject of a lot of research. Today, different methods are used with the aim of is trying to achieve the effective removal of Cu, Zn, Pb, Cd, Ni, and Cr from the waste stream. The paper will describe the application of an adsorption process to remove heavy metal ions using the properties of natural zeolite, which according to previous research can effectively remove traces of heavy metal ions from the contaminated water by selecting appropriate settings. According to the published information, the method of adsorption with the use of zeolite can achieve efficient removal of Cu<sup>2+</sup>, Zn<sup>2+</sup>, Pb<sup>2+</sup>, Cd<sup>2+</sup>, Ni<sup>2+</sup>, Cr<sup>3+</sup> ions. The most commonly used and most effective zeolite for removing heavy metals from water is clinoptilolite. According to recent findings and research results it*

*can be concluded that natural zeolite with an increased proportion of clinoptilolite as active components and their chemical modification has a great potential to remove the heavy metal ions during the final stage of water treatment.*

**Keywords:** *water, pollution, heavy metal ions, adsorption, clinoptilolite*

JEL Classification: Q57, Q59

## 1. THE IMPACT OF INDUSTRIALIZATION AND URBANIZATION ON WATER

In urban areas, the quality of surface and groundwater is most endangered by industrial, municipal and precipitation wastewaters. Acute impacts are shown abruptly and intensively at the point of discharge of wastewater into natural recipients and are especially expressed in dry periods when dilution processes in surface water recipients are minimal. High concentrations of degradable organic matter, ammonia, and heavy metals, as well as pathogenic microorganisms, causing surface water and groundwater contamination, which are directly related to the contaminated recipient. The cumulative effects of wastewater discharges into surface recipients are seen by the gradual deterioration of water quality, which becomes apparent only after some of the quality parameters reach the critical value or maximum permissible concentration (MPC).

One of the most significant indicators of pollution is the content of dissolved oxygen, which is drastically reduced if there is organic contamination in the water. Organic pollution is also indicated by biological oxygen demand (BOD) that affects the amount of oxygen needed to biodegrade the organic substance by microorganisms. Although BOD is not the most reliable indicator of the number of organic substances or substances that hinder growth of microorganisms, it is still used to dimension the wastewater treatment plant.

The indicator of the amount of organic non-degradable substance in water is chemical oxygen demand (COD), calculated from the consumption of the oxidizing agent necessary for the complete degradation of the non-degradable substance. Along with various toxins, such as hydrocarbons and heavy metals, in wastewater there are more and more modern synthetic organic chemicals such as drugs and hormones.

## 2. HEAVY METALS IN WATER

Heavy metals as fine particles of dust come into the atmosphere, from where they are deposited in water and soil. In water they are rapidly diluted and deposited as carbonates, sulphates or sulphides at the bottom of the water surfaces. The circulation of heavy metals is particularly intensified through a process called biomethylation. Particularly toxic are metal-organic compounds of mercury, lead, chromium. As for chromium, unlike its trivalent form the hexavalent form is toxic and causes serious consequences such as liver and kidney failure, digestive tract damage and carcinogenic changes (Days, 1996).

It is known that heavy metals (mercury, lead, cadmium, chromium, arsenic) have a negative effect on the body, and their accumulation in the body over a long period of time can cause serious disorders and illnesses.

The ever-increasing presence of heavy metals in water is the biggest consequence of widespread use in the industry. Heavy metals are not degradable and are successfully implemented in soil and water sediments. Permissible concentrations of heavy metals in water are shown in Table 1 [32].

**Table 1** Permissible concentrations of heavy metals in drinking water

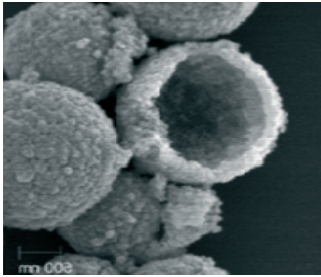
Metal	U.S Environmental Protection Agency	World Health Organization
As	50 ppb	50 ppb
Cd	5 ppb	5 ppb
Pb	20 ppb	50 ppb
Hg	2 ppb	1 ppb

Source: <http://www.who.int/en/>

## 3. ZEOLITES

Zeolites, Picture 2 (Gottardi G. et al., 2008) are hydrated aluminosilicates, of a unique three-dimensional structure composed of primary and secondary  $\text{SiO}_4$  and  $\text{AlO}_4$  tetrahedra units, interconnected by oxygen atoms, the pores of which contain water molecules. The zeolite structure is characterized by a specific cross-linked structure with cavities that are interconnected by channels of a particular shape and size (Gottardi G. et al., 2008).

**Picture 1** Electro - microscopic picture of zeolites



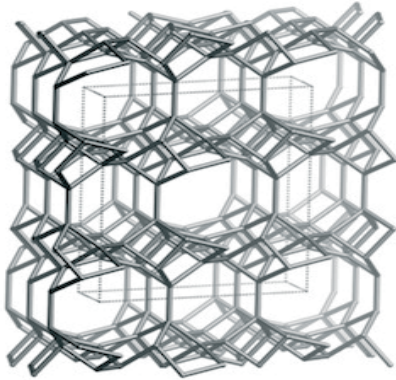
**Source:** Gottardi (2008)

For now, about 50 natural zeolites have been discovered, which differ in composition, mode of networking in a three-dimensional structure and pore dimensions. There are only six in the vast quantities in nature: habasit, clinoptilolite, mordenite, erionite, heulandite, and phillipsite. After discovering the catalytic ability of natural zeolites to increase activity and selectivity, a large number of these minerals with precisely defined pore size and selectivity were synthesized in laboratories. So far about 200 artificial zeolites have been synthesized.

About 25 years ago 300,000 tons of natural zeolites were produced annually in the world, today it is about 4,000,000 tons per year. In 1997, about 3,600,000 tons were produced, mostly clinoptilolite and habasit, of which 2/3 in China. Demand for natural zeolites as well as their application in the last decade is expanding very rapidly. The increase of 10 % in zeolite production is expected annually. Depending on the quality and purity, the price of natural zeolites ranges between 50 and 300 USD per ton. Zeolites, by their structural properties, belong to a group of porous crystals. The most important characteristics of zeolites are:

- ♦ high level of hydration and zeolite water,
- ♦ high thermal stability,
- ♦ ion exchange,
- ♦ channels, pores and cavities of molecular dimensions and
- ♦ molecular sieve effect.

**Picture 2.** Three-dimensional zeolite structure

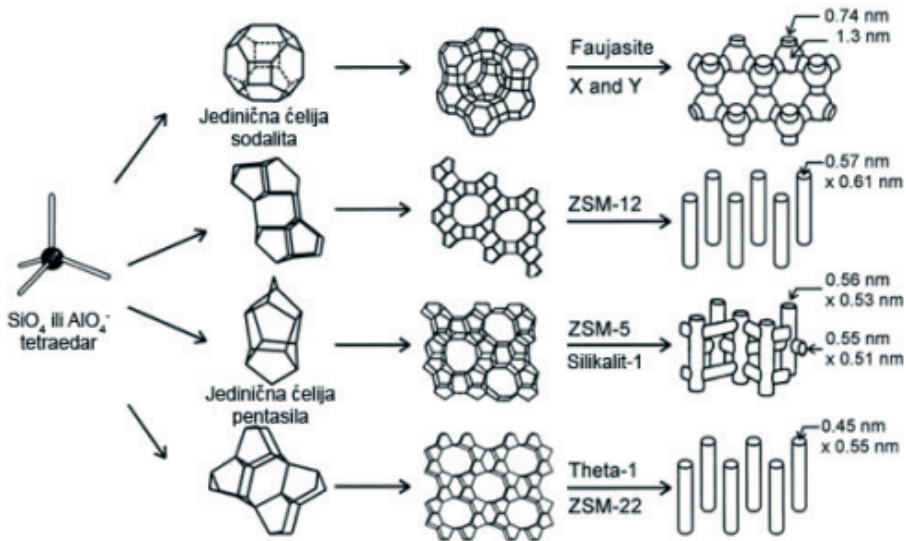


**Source:** Vojnović et al., 2013; Baerlocher, 2001

Cavities and channels in natural zeolite contain water (up to 25% of their mass). The surface negative charge of the aluminosilicate structure was sampled by isomorphic substitution of  $\text{Si}_{14}^{4+}$  with  $\text{Al}_{13}^{3+}$  and was compensated by hydrated alkaline and alkaline earth cations (Baerlocher, 2001) which can be modified with ions (cations) from the solution in contact with the zeolite (Vojnović et al. 2013). The nature of the ionic link between these cations and the zeolite crystalline lattice allows their mobility, replacement with other ions or dehydration without decomposition of the silicate skeleton. Figure 3 (Vojnović B., 2011) shows us three-dimensional zeolite structure.

Silicon or aluminum atom, also called T atom, is in the center of the tetrahedron and is surrounded by four anions of oxygen. Tetrahedrons can be arranged in regular structures in an unlimited number of combinations, forming various three-dimensional creations with well-defined pores. Schematic representation of zeolite formation is shown in Figure 4 (Gottardi G. et al., 2008).

**Figure 3.** Schematic representation of zeolite formation



Source: Gottardi G. et al., 2008

In addition to silicon, aluminium and oxygen, whose pores contain water molecules that form the basic structural unit, zeolites inside the pore may contain other cations: sodium, magnesium, calcium, potassium. The pores within the zeolite are of the molecule size, and the channels are arranged uniformly throughout the entire structure. Therefore, it is obvious why these materials are often referred to as molecular sieves (their pores are the size of molecules and are selective according to the size and shape of the molecule). Many of these materials can be found in nature, while synthetic zeolites are produced and used for commercial purposes or used in laboratories in which their features are examined and their possible application in industrial practice.

Various natural zeolites in the world have shown the ability of ion-exchange for cations such as ammonia and heavy metals. By introducing an active metal cation into the zeolite structure, which can be achieved by a direct method in the synthesis of zeolites or the ion exchange post-synthesis method, a significant increase in the activity of zeolite catalysts in the oxidation processes of organic pollutants in the aqueous phase is achieved.

Due to its high cation exchange capacity as well as molecular properties, natural zeolites are widely used as adsorbents for separation and purification in the last decades.

### 3.1 NATURAL ZEOLITE PROPERTIES

There are many identified natural zeolites in the world. Clinoptilolite, mordenite, stilbite are just some of the forms of natural zeolites found in nature. The most widely used and most widely used zeolites are clinoptilolite. Looking at the structure of zeolites we find three relatively independent components:

- aluminosilicate frame
- exchangeable cations
- zeolite water

General zeolite formula:  $M_{x/n} [Al_x Si_y O_{2(x+y)}] \cdot pH_2O$

The primary structure of the zeolite is tetrahedron, the center of which is occupied by an atom of silicon or aluminium with four oxygen atoms on top. By substituting  $Si^{4+}$  with  $Al^{3+}$ , the negative charge of the framework is defined, which is compensated for with the monovalent or bivalent cations in the water. The aluminosilicate framework is a stable component that defines the structure of zeolites. Water molecules may be present in the cavities and connected with ionic frames by aqueous bridges. Water can also serve as a link for exchangeable cations. Significant characteristic of zeolite is the ability to exchange ions with the outer medium. The ion exchange balance is described by the following formula:

$z_B A^{z+A} + z_A B L_{zB} \Leftrightarrow z_A B^{z+B} + z_B A L_{zA}$  (Passaglia;2008) where: -  $z_A^+$  and  $z_b^+$  are valencies of the corresponding cations, - L part of the zeolite framework containing the negative charge.

The ionic exchange behaviour of natural zeolite depends on several factors that include the frame structure of the ion, size and shape, charge, density of the anionic framework, concentration of the external solution of the electrolyte. Regarding the influence of the surrounding environment, natural zeolites have a different chemical structure and cation exchange capacity (CEC). From Table 2 (Wang S. et al., 2010), it can be seen that the cation exchange capacity is between 0.6 and 2.3 meq/g.

**Table 2** Chemical structure and capacity of cation exchange of zeolites depending on the site

Zeolite	Chemical composition (%)								CEC (meq/g)
	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	Na <sub>2</sub> O	K <sub>2</sub> O	TiO <sub>2</sub>	
Turkey clinoptilolite	70.90	12.40	1.21	2.54	0.83	0.28	4.46	0.089	1.6–1.8
Iranian clinoptilolite	70.00	10.46	0.46	0.2	–	2.86	4.92	0.02	–
Cuba clinoptilolite	62.36	13.14	1.63	2.72	1.22	3.99	1.20	–	–
Brazil mordenite	67.82	14.96	0.42	1.87	0.18	0.32	4.47	0.07	2.29
Italy phillipsite + chabazite	56.42	15.8	4.08	2.42	0.86	2.35	8.14	0.004	2.12
Turkey clinoptilolite	69.72	11.74	1.21	2.30	0.31	0.76	4.14	–	1.84
Chinese clinoptilolite	65.52	9.89	1.04	3.17	0.61	2.31	0.88	0.21	1.03
Chilean clinoptilolite + mordenite	67.00	13.00	2.00	3.20	0.69	2.60	0.45	0.20	2.05
Turkey clinoptilolite	69.31	13.11	1.31	2.07	1.13	0.52	2.83	–	–
Croatia clinoptilolite	64.93	13.39	2.07	2.00	1.08	2.40	1.30	–	1.45
Iranian clinoptilolite + mordenite	66.5	11.81	1.3	3.11	0.72	2.01	3.12	0.21	1.20
Turkey clinoptilolite	64.99	9.99	3.99	3.51	1.01	0.18	1.95	–	–
Chinese clinoptilolite	68.27	7.48	1.95	2.61	1.87	0.68	1.69	–	–
Turkey clinoptilolite	70.00	14.00	0.75	2.50	1.15	0.20	2.30	0.05	–
Chinese clinoptilolite	69.5	11.05	0.08	2.95	0.13	2.95	1.13	0.14	–
Ukrainian clinoptilolite	67.29	12.32	1.26	3.01	0.29	0.66	2.76	0.26	–
Ukrainian mordenite	64.56	12.02	0.95	3.58	0.68	0.94	2.03	0.23	–
Slovakian clinoptilolite	67.16	12.30	2.30	2.91	1.10	0.66	2.28	0.17	–
Croatian clinoptilolite	55.80	13.32	1.30	5.75	0.70	3.90	2.35	–	–
Ukraine clinoptilolite	66.7	12.3	1.05	2.10	1.07	2.06	2.96	–	0.64
Australian clinoptilolite	68.26	12.99	1.37	2.09	0.83	0.64	4.11	0.23	1.20

Source: Wang S. and Peng Y., 2010

The adsorption characteristics of any zeolite depend on the detailed chemical/structural composition of the adsorbent. The ratio of silicon and aluminum, the type, number, and location of cations are factors that have a particularly strong influence on adsorption. Chemical treatments can change these properties to improve the efficiency of natural zeolite adsorption.

### 3.2 CLASSIFICATION OF ZEOLITES

The classification of zeolites according to Smith, Fischer, Meier, and Breck is based on grouping according to the topology of the crystal grid. The division consists of seven zeolite groups of different structures. Within each group, zeolites have a common structural unit with a specific tetrahedron arrangement (Al, Si) O<sub>4</sub>. In some cases, the zeolite skeleton is represented as a polyhedron or ultimate octahedron. From Table 3 (Ordinance on Drinking Water Health OG 47/08) there is a visible zeolite classification based on secondary and structural elements with the representatives.



**Table 3** Classification of zeolites based on secondary and structural elements

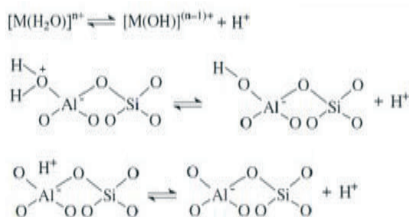
Group	Secondary structural unit	Representative
1	Single 4-ring	Analcime
2	Single 6-ring	Erionite
3	Double 4-ring	NaA
4	Double 6-ring	NaX, NaY
5	Complex of 4-1 units T5O10	Natrolite
6	Complex of 5-1 units T8O16	Mordenite
7	Complex of 4-1 units T10O20	Stilbite

**Source:** Ordinance on drinking water safety OG 47/2008

### 3.3 ACTIVE ZEOLITE CENTERS

The catalytically active centers on the surface of the zeolite have an acidic character and are mainly located on the inner surface of the zeolite. Brønsted's acid centers are donors of protons, and Lewis's acceptors of an electron-pair. Brønsted's acidity in zeolites is shown in Figure 5 (Gottardi G. et al., 2008).

**Figure 4.** Brønsted acidity in zeolites



**Source:** Gottardi and Galli, 2008.

Catalytically active centers can be classified into three groups:

- network hydroxyl groups that act as Brønsted acids or bases
- Lewis acid centers within a network such as (AlO)+
- cations in the zeolite network

Under certain conditions, there is a possibility of replacement of Lewis and Brønsted acid centers.

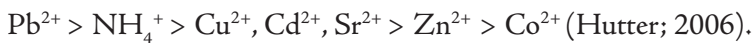
## 4. WATER TREATMENT BY USING ZEOLITES

The use of natural zeolites to remove heavy metals from water is still at the beginning. Most of the literature refers to isotherm modifications and corresponding equilibrium and thermodynamic data, but there is little testing of the removal of heavy metals from real wastewater or even from model solutions that simulate real wastewater.

The application of natural zeolites is based on four basic structural and physical-chemical properties:

- the existence of hydrated alkaline and alkaline earth cations that have ion exchange properties,
- the existence of structural cavities forming pores and channels of large internal specific surfaces,
- the existence of strong acidic sites in the structure of zeolites,
- similarities in chemical composition with composite materials.

In 1984, Blanchard et al. examined the selectivity of clinoptilolite for heavy metal cations in the presence of ammonium ions. Using low mass concentration solutions ( $10\text{-}50\text{ mg dm}^{-3}$ ), the following range of selectivity was obtained (Passaglia; 2008):



In 1990 Zamzow and his associates investigated the removal of heavy metals and other cations from acid industrial wastewater. By treating wastewater from copper mines, they managed to lower  $\text{Al}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Cu}^{2+}$  and  $\text{Zn}^{2+}$  concentrations below the concentrations permitted for drinking water. The experiments were conducted by colonization (Passaglia; 2008).

### 4.1 REMOVAL OF HEAVY METALS FROM WATER BY ZEOLITE

Removal and recuperation of heavy metals from the aqueous environment using natural zeolite is a cyclic process involving metal recuperation and regeneration of zeolites to be re-used. In addition, the mineral stability of zeolites and their structural changes within the treatment are very important for the potential use of zeolites as ion exchangers. Many scientists have explored several aspects of heavy metals removal from wastewater using the clinoptilolite, most commonly used natural zeolite (NA, K, CA)  $4\text{Al}_6\text{Si}_{30}\text{O}_7_2$  (Passaglia;

2008) and other zeolites. The nature of the process, as well as the factors that influence the process, are very intriguing.

#### 4.1.1 The process of removing heavy metals by zeolite adsorption

The chemical treatment of the zeolite starts by adding 0.25 L of 2M HCl and  $\text{NH}_4\text{Cl}$  solution in clinoptilolite fractions of 0.71-1.0 mm (15g). After 24 hours the solid phase is separated from the solution and Cl ions and are further dried at room temperature (Motsi T et al., 2008). The concentration of heavy metals present in the samples is correlated with the actual concentrations in domestic waters. Synthetic solutions are prepared by dissolving metal nitrates ( $\text{Pb}(\text{NO}_3)_2$ ,  $\text{Cd}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ ,  $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ ,  $\text{Ni}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$ ) in deionised water (Motsi T et al., 2008). Exchangeable cations and heavy metals concentration in the adsorbent are determined by flame emission using the AAS800 adsorption spectrometer. The average deviation of measurement is from 0.01 to 0.1%. The standard deviation of repeatability is 0.1-3%.

In the first stage of the experiment, three fractions of clinoptilolite dried at room temperature, each weighing 0.5 g, mixing with 10, 20, 40, 400 and 800 mg/L  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$  and 1,2,4 and 80 mg/l solution of  $\text{Cd}^{2+}$ . After 48 hours, metal concentrations are analyzed. The metal adsorption equilibrium from the aqueous solutions is defined by the formula:

$$q_t = m_s / m = (C_0 - C_e) V / \mu \text{ for which:}$$

- $q$  is the amount of sorbed metal ions (mg/g),
- $m_s$  is the mass of sorbed metals (mg),
- $m$  is the mass of adsorbent (g),
- $C_0$  is the initial concentration of metal ions (mg/L),
- $C_e$  is the concentration equilibrium of metal ions (mg / l),
- $V$  is the volume of solution with adsorption (L)

The efficiency of sorption is calculated by the formula [31]  $E = 100m_s / (VC_0)$  (Tunali et al., 2006) where:

- $E$  is the efficiency of sorption expressed in percentages,
- $m_s$  is the mass of sorbed metals (mg),
- $C_0$  is the initial concentration of metal ions (mg/L),
- $V$  is the volume of solution with adsorption (L)

The equilibrium test results are used to estimate the coefficient distribution by equation [31]. The distribution coefficient shows the selectivity, capacity, and affinity of the ion for the ion exchange  $K_d = q_e / C_e$  (Bish and Ming, 2001) where:

- $K_d$  is the distribution coefficient (L/g)
- $q_e$  and  $C_e$  are solid and liquid concentrations (mg/g and mg/l).

The specific area of clinoptilolite ( $S, m^2/g$ ) occupied by interchangeable cations and adsorbed metals is determined by the equation (Motsi T et al., 2008) and  $S = qN\Omega$  (Erdem et al., 2004) where:

- $q$  is the number of exchangeable cations (mmol/g)
- $\Omega$  is the area occupied by only one cation,
- $N$  is Avogard's number.

The conversion of heavy metal ions with natural zeolite was carried out using a serial method. Adsorption experiments were carried out with 10g adsorbents in 500 ml of the solution containing the desired heavy metals concentration at a constant temperature of 25°C in plastic bottles. The particle size of the sample (clinoptilolite) used is in the range of 63 -106  $\mu m$ . The bottle composition is filtered through Whatman's filter paper. The exact amount of heavy metal ions is determined by the spectrophotometer). The method of adsorption and distribution relationship ( $K_d$ ) is calculated using the equation (Motsi T et al., 2008):

(Dal Bosco et al., 2005) where: -  $C_i$  and  $C_f$  are concentrations of metal ions in the initial and final solution (Jusoh et al., 2005) where:

- $V$  volume of solution (ml),
- $m$  weight of adsorbent (g).

Adsorption of  $Cu^{2+}$ ,  $CO^{2+}$ ,  $Zn^{2+}$  and  $Mn^{2+}$  on natural zeolite was studied at 30°C but the concentration of metal changes from 100 to 400 mg/l while other parameters remained unaltered. The percentage of metal adsorption is reduced by increasing the concentration in the solution. The results indicate that by increasing the concentration of metal ions in the solution, they include energy-adverse agents that reduce the percentage of adsorption.

Clinoptilolyte is an active component in sorption and ion-exchange processes. The tested samples were chemically and thermally processed. Chemical modification of natural zeolite, which affects the efficiency of sorption processes, was performed using inorganic salts (2 M NaCl, 0.1 M  $FeCl_3$  in acetate buffer) and 0.1 M HCl. Chemical and mineral experiments were performed on

the prepared samples of natural (NZ) and modified zeolites (NaZ, NaFeZ and HNaFeZ).

Samples of natural (NZ) and modified zeolites (NaZ, NaFeZ, and HNaFeZ) were thermally treated at temperatures of 25 to 900 °C for 1 hour. Structural changes in zeolite samples occur at the temperature of 900 °C, and the clinoptilolitic phase is no longer present, as demonstrated by mineralogical X-ray analysis in mass fractions of 8.6% PZ, 10.7% NaZ, 12.5% NaFeZ and 12, 6% HNaFeZ. Table 4 (Motsi T et al., 2008) gives us data on kinetic parameters for heavy metals adsorption on zeolites.

**Table 4** Kinetic parameters for heavy metals adsorption on zeolites

Zeolite	Metal ion	Reaction order	First-order rate constant (min <sup>-1</sup> )	Second-order rate constant (g/mg h)
Clinoptilolite	Cd <sup>2+</sup>	First-order	0.0137	
	Pb <sup>2+</sup>		0.0532	
	Ni <sup>2+</sup>		0.0158	
	Cu <sup>2+</sup>		0.0200	
	Zn <sup>2+</sup>		0.0210	
Clinoptilolite	Pb <sup>2+</sup>	First-order	2.9 × 10 <sup>-4</sup>	
Chabazite	Pb <sup>2+</sup>	First-order	4.3 × 10 <sup>-4</sup>	
Clinoptilolite	Pb <sup>2+</sup>	First-order	0.0053	
	Ni <sup>2+</sup>		0.1419	
Clinoptilolite	Pb <sup>2+</sup>	First-order	3.5 × 10 <sup>-4</sup>	
Scolecite	Mn <sup>2+</sup>	Second-order		0.0155
	Cr <sup>3+</sup>			0.0365
	Ni <sup>2+</sup>			0.0248
	Cd <sup>2+</sup>			0.0503
Clinoptilolite	Cu <sup>2+</sup>	Second-order		0.00113
	Cd <sup>2+</sup>			0.0226

**Source:** Motsi, Rowson and Simmons, 2008

Modification of natural zeolite (NZ) in sodium form increases the Na<sub>2</sub>O by weight of 3 to 5% in modified zeolite samples, and iron-form modification increases the Fe<sub>2</sub>O<sub>3</sub> by 7% relative to the natural zeolite.

Zeolite modification with CH<sub>3</sub>COON and NaCl may increase Ni<sup>2+</sup> adsorption by 25-30%. For better elimination of Cu<sup>2+</sup> by the use of zeolite from the wastewater, the presence of copper hydroxide has been shown to be effective, and the presence of Ca<sup>2+</sup> and Mg<sup>2+</sup> does not significantly influence the adsorption of Cu<sup>2+</sup>.

The results of the efficiency of the removal of arsenic ions show that at lower concentrations of the initial arsenic solutions (0.1-5 μg/L), arsenic concentra-

tions in the eluates are very low, i.e. below the detection limit. The efficiency of the removal depending on the presence of arsenic compounds and the pH value of the solution is 90 to 100%.

At higher concentrations of arsenic initial solutions (10-300  $\mu$ g/L), arsenic concentrations in the eluates, after the contact of the modified zeolite and the solution, resulted in higher values in the eluates relative to lower initial concentrations with the efficiency of removal of arsenic compounds from 90 to 95% depending on pH value of the solution. By chemical processing of natural zeolite, by translating it into Na form, its affinity to chromium ions increases. The chromium mass in different ionic forms, which was bound to the natural zeolite and the modified Na-zeolite, determined spectrophotometrically with diphenylcarbazide (as an indicator), was obtained from the difference of the initial concentration of the chromium ion and the concentration in the solution after equalization depending on the starting mass of the zeolite.

If necessary, oxidation of trivalent chromium with potassium permanganate was performed. After establishing the optimal conditions for determination of zeolite chromium, the definition of the total capacity of zeolite samples started, as well as studying how different types of chromium ions bind to zeolite samples, depending on the initial concentration of chromium ions and contact time and chemical processing of zeolite samples (Na-form). Na-form (NaZ) has 18% higher total conversion capacity, which amounts to 11.38 mg of  $\text{Cr}^{3+}$ /g zeolite, compared to the natural zeolite which amounts to 8.32 mg of  $\text{Cr}^{3+}$ /g zeolite. Natural zeolite converted to sodium form, NaZ, proved to be more effective than chemically untreated zeolite when binding and chromium sorption. From Table 5 (Motsi T et al., 2008) we can see the success of adsorption of heavy metals with different zeolites.

**Table 5** Adsorption of heavy metals with different zeolites

Material	Metal	Adsorption (meq/g)	Reference
Sardinian clinoptilolite	Cu <sup>2+</sup>	0.34	[78]
	Cd <sup>2+</sup>	0.05-0.19	
	Pb <sup>2+</sup>	0.27-1.2	
	Zn <sup>2+</sup>	0.1	
Turkish clinoptilolite	Pb <sup>2+</sup>	0.299-0.730	[82]
	Zn <sup>2+</sup>	0.108-0.251	
	Cu <sup>2+</sup>	0.022-0.227	
	Ni <sup>2+</sup>	0.017-0.173	
Natural phillipsite	Pb <sup>2+</sup>	0.234-0.345	[81]
Natural clinoptilolite	Cr <sup>3+</sup>	0.237	[95]
	Ni <sup>2+</sup>	0.068	
	Zn <sup>2+</sup>	0.106	
	Cu <sup>2+</sup>	0.186	
	Cd <sup>2+</sup>	0.082	
Clinoptilolite	Cd <sup>2+</sup>	0.12-0.18	[87]
Scolecite	Pb <sup>2+</sup>	0.056	[94]
	Cu <sup>2+</sup>	0.130	
	Zn <sup>2+</sup>	0.064	
	Ni <sup>2+</sup> , Co <sup>2+</sup>	0.031	
	Cd <sup>2+</sup>	0.0078 0.0032	
Bigadic clinoptilolite	Pb <sup>2+</sup>	0.222	[85]
	Zn <sup>2+</sup>	0.734	
	Cd <sup>2+</sup>	0.0053	
Mexican clinoptilolite	Pb <sup>2+</sup>	1.4	[80]
Ukraine clinoptilolite	Pb <sup>2+</sup>	0.134	[84]
	Cu <sup>2+</sup>	0.405	
	Ni <sup>2+</sup>	0.222	
	Cd <sup>2+</sup>	0.0375	
Turkish clinoptilolite	Co <sup>2+</sup>	0.448	[23]
	Cu <sup>2+</sup>	0.282	
	Zn <sup>2+</sup>	0.268	
	Mn <sup>2+</sup>	0.153	
Brazilian scolecite	Cr <sup>3+</sup>	5.81	[97]
	Ni <sup>2+</sup>	2.08	
	Cd <sup>2+</sup>	1.78	
	Mn <sup>2+</sup>	4.00	

**Source:** Motsi, Rowson and Simmons, 2008

## 5. CONCLUSION

The natural environment has limited resources that require human protection. Endangering nature is not just a diminution of the beauty of a landscape, but a direct threat to life itself. As for heavy metals, it is quite clear that we are in some way constantly and fatally exposed to the action of various ecological contaminants.

Natural zeolites, low-cost materials that have the ability to purify wastewater from heavy metals, are very important. Due to the nature of the cation exchange, zeolites exhibit high efficiency in the adsorption of heavy metal ions.

From recent findings and rich own experience based on the results of the research it can be concluded that natural zeolites with an increased proportion of clinoptilolite as an active component and its chemical modification have great potential for application in the final stage of water treatment and removal of

chromium, arsenic metal ions and serve as highly effective means for removing metal ions from drinking water and wastewater.

Based on the scientific and research experience and the significant results obtained on the Eureka E4208 PUREWATER project (2008-2011 Slovenia-Croatia-Serbia), a new natural material for removal of toxic ions has been obtained, the material that has acceptable properties for its application and above all financial justification for its use, which is in line with a large number of current research and patents in the application of these environmentally acceptable materials.

## Acknowledgments

This paper describes the results of research being carried out within the project “Centar održivog razvoja”/”Center of sustainable development”, co-financed by the European regional development fund and implemented within Operational Programme Competitiveness and Cohesion 2014 – 2020, based on the call “Investing in Organizational Reform and Infrastructure in the Research, Development and Innovation Sector”.

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# ENVIRONMENTAL INCOMES IN THE FUNCTION OF PRESERVING AND PROTECTING THE ENVIRONMENT

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## **Abstract**

*The growth of the human population along with the accelerated development of economic activities, globalization and dynamic processes of internationalization of the enterprises, increasingly determines the needs and dependence on natural resources, which consequently leads to negative effects on the environment and ecological sustainability. Environmental incomes have a fundamental function of preservation and protection of the human environment and represent the basis of green growth policies and impacts on the preservation of the human environment. Environmental incomes include, along with taxes, fees and various forms of non-tax benefits that combine fiscal instruments of action to change consumer behaviour towards environmentally sustainable standards. In this paper, the authors attempt to analyse the persistence, as well as the possibilities of environmental incomes influencing the improvement of the economic and ecological effects of environmental protection on the example of Slavonia*

*region. Recommendations of the paper, in accordance with the given objectives, are aimed at protecting the human environment through more efficient tax and fiscal policy from the standpoint of studying sources of environmental protection funding. The objective of the research is derived from the analysis of the regulation and analysis of environmental incomes at the level of the Republic of Croatia and other European Union Member States, which are considering current and future assumptions about the economic and environmental effects of preservation and sustainability of the human environment.*

**Keywords:** *environmental incomes, taxes, fees, budget, environmental protection.*

JEL Classification: Q50, Q56

## 1. INTRODUCTION

The human environment is every natural and any other environment composed of living organisms and their communities that together with humans allows their existence as well as their further development, especially evolutionary and ecological development. The human environment includes air, sea, water, soil, earth's crust, energy and material goods and cultural heritage. All of these resources are a part of the environment in which man lives and which, regardless of the present forms of state development and other vertical state sovereignties, should represent the primary state sovereignty in the form of general principles of thinking and realization of state activities. Along with the development of human civilization, cities, regional states, states and other larger institutional state entities have developed. All of the above-mentioned entities have largely caused, along with human activity, negative environmental activities and environmental pollution and are obliged to undertake certain activities of the protection of the human environment in the present and future times.

Environmental pollution is a process of changing the state of the environment due to a series of unauthorized activities such as: unauthorized emissions of harmful substances, secondary harmful effects, lack of necessary proactive action and current control effects of interventions that need to maintain existing level of environmental quality. On the other hand, pollution is the process of direct or indirect introduction of harmful substances generated consequently due to human activities, which can adversely affect human health or the quality of the environment and may further lead to destruction and thus usurp the potential and ways of using the environment.

In the Republic of Croatia, according to the Sustainable Development Strategy (NN, 30/2009), the main elements of the environment include segments such as: nature protection, natural resources, sea, forests and agricultural areas. The concept of nature protection includes the protected areas which cover about 9% of the total area of the Republic of Croatia, of which about 5% are national parks and nature parks. Also, there are 461 protected areas in the Republic of Croatia. Natural resources cover the entire area of the Republic of Croatia, which is 87,661 km<sup>2</sup>, with 56,594 km<sup>2</sup> of land area and 31,067 km<sup>2</sup> of the sea. In the structure of the mainland, the majority consists of agricultural and forest areas. Agricultural areas account for about 52%, with about 80% of agricultural land being privately owned, while 20% of agricultural land is state-owned. In the structure of total agricultural land in the Republic of Croatia, 27% of agricultural land is not arable land due to ecological problems. Sea is one of the most important forms of environment in the Republic of Croatia, where special attention should be paid to environmental protection within the current and future functions of environmental protection and ecology, and with regard to biodiversity. On the other hand, forests account for 47% of the territory of the Republic of Croatia, with 74% of state-owned forests and 26% of forests being privately owned.

In the last few decades, the problem of environmental protection has been one of the more important topics of reflection and state policies, which is becoming increasingly important subject in the national economies. The activities of the state and regional and local governments from the standpoint of care and protection of the human environment are based on public services. The basic territorial division of public services is based on public and regional / local public services. The segment of public and regional / local public services that cover the area of protection of the human environment, includes: water services, renewable energy sources, protection of air, ozone layer and mitigation of climate change, electricity and other energy sources, greenhouse gas emissions and research and development in the field of environmental protection.

From the standpoint of public services, which are in the domain of regional / local government activities, there are these forms of public services: utility services, water protection, air quality monitoring and protection, waste management, horticulture, protection and maintenance of forests and soil, energy management, noise protection, research and development in the field of environmental protection and protection of biodiversity and landscape. The above-mentioned

types of public and local public services have many years of defined legal regulations as well as sources of funding, so there is a certain range of activities that are primarily focused at preserving and protecting the human environment.

Consistent with the traditional economic determinism of the welfare state of the national and the regional / local economies to measure them with the size of GDP, it is possible to include the consumption of natural resources and goods as a variable, in this case, a category that encompasses everything in the segment of the human environment. For example, activities such as pollution reduction or better health care are considered an important indicator of a positive impact on GDP. However, the greatest effects of the protection of the human environment can be measured through financing, which is most often based on certain forms of environmental taxes, environmental fees, and other forms of environmental compensation.

## 2. ENVIRONMENTAL TAXES AND FEES IN THE FUNCTION OF ENVIRONMENTAL PROTECTION

With the growth of the human population along with the accelerated expansion and development of economic and social changes, globalization as well as internationalization of the enterprises, there is a growing exploitation of natural resources, which consequently negatively affects the environment and ecological sustainability. The global challenges cannot adequately respond to the challenges of economic growth and ecological development of the environment, given the growing trend and rapid rise of the world's population. Such dynamics point to the need for the consolidation of strategies and programs towards more concrete environmental preservation and protection activities, mostly from the standpoint of redefining the sources of funding. It is necessary to undertake additional activities to ensure the preservation of air, ocean and water resources, sustainable use of land and ecosystems, and maintaining climate change at appropriate levels and ecological standards. Accordingly, cooperation and harmonization are necessary within all EU member states, but also all countries of the world. In order to ensure the level of appropriate ecological standards and sustainability concepts, it is necessary to ensure the adequacy of financial resources, which at this moment primarily depend on the national economies' budgets and the fiscal policies of individual countries.

The primary sources of funding are taxes and fees. Secondary sources of funding are derived from European Union funds and other categories of funding sources such as subsidies and grants. Taxes are among the most important fiscal instruments of the environmental protection policy. In the usual theoretical context of study there are 3 forms of environmental taxes (Jelčić, 2003, p.312), which are: Pigou taxes or green taxes, Para-Pigou taxes, and bilaterally beneficial taxes. The main characteristics of these tax forms are based on the internalisation of external costs and the purposefulness of financing. Environmental Taxes represent fiscal pricing instruments that encourage the possibility of implementation in order to reduce environmental pollution, primarily from the standpoint of cost. Such taxes provide incentives for further increase of efficiency, green investments and innovations, as well as advances in consumption distribution models. They are included in indirect taxes and are intended to influence the following factors:

- behaviour of the economic policy holders
- organization and individuals in the exploitation of natural resources
- legislative regulatory framework for the regulation of the emissions of harmful gases
- improving the quality of the environment as well as human health.

In addition to taxes, fees are also considered a very effective instrument in shaping behavioural changes of consumers and environmental pollutants towards more environmentally sustainable directions. In defining the concept of fees (Karačić, 2011, p.193), within the meaning and content of the term fees and its basic characteristics, the theoretical basis of the concept of fees is not uniformly defined even today. The interweaving of the practice in which the fees is used in relation to the theoretical aspect of the concept of fees is a common case which leads to the fact that the fees represent the type of financial instrument of revenue collection that has all similarities with the tax, but in classification it falls into the category of other public revenues.

Environmental taxes<sup>1</sup> are increasingly used to influence the behaviour of economic entities, whether they are producers or consumers. The governments of the European Union member states can direct collected environmental tax revenues on potential increase of expenditures in the area of environmental pro-

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<sup>1</sup> According to Eurostat: "European statistics distinguish four different environmental tax categories related to energy, transport, pollution and resources; Value Added Tax (VAT) is excluded from the scope of ecological taxes."

tection and efficient management of natural resources. Table no. 1 analyses the European Union member states that have the highest share of environmental tax revenues in their gross domestic product.

**Table 1.** Environmental tax revenues (% of gross domestic product)





geo\time	2010	2011	2012	2013	2014	2015	2016	2017	Average	St. deviation	Coefficient of variation
Denmark	4,02	4,02	3,97	4,14	4	3,97	3,92	3,72	3,97	0,11	2,81
Slovenia	3,62	3,46	3,85	3,94	3,86	3,88	3,88	3,73	3,78	0,15	4,05
Turkey	3,83	3,59	3,41	3,64	3,39	3,42	3,4	3,24	3,49	0,17	4,96
Netherlands	3,49	3,41	3,24	3,26	3,31	3,32	3,35	3,33	3,34	0,08	2,25
Italy	2,79	3,05	3,49	3,45	3,59	3,39	3,47	3,33	3,32	0,25	7,53
Greece	2,64	2,91	3,28	3,65	3,71	3,81	3,77	3,97	3,47	0,44	12,83
Croatia	3,03	2,68	2,56	2,85	3,18	3,37	3,49	3,43	3,07	0,33	10,73
Latvia	2,98	2,99	2,99	3,17	3,35	3,53	3,63	3,48	3,27	0,25	7,64
EU (28)	2,37	2,4	2,43	2,45	2,45	2,43	2,44	2,4	2,42	0,03	1,10
Euro area	2,28	2,34	2,39	2,41	2,42	2,38	2,4	2,37	2,37	0,04	1,79

**Source:** Authors' calculation according to Eurostat data

Observing the data shown in Table no. 1 it is evident that the highest average share of environmental tax revenue in percentage of GDP is in Denmark (3.97%), with an average deviation from the average of 0.11. Next, Slovenia has an average share of the environmental tax revenue of 3.78% and the standard deviation of 0.15, followed by Turkey (3.49% of GDP) and the Netherlands (3.34% of GDP). Among high-ranking EU member states, according to the share of environmental tax revenues lies the Republic of Croatia, with an average environmental tax revenue of 3.07% of gross domestic product.

Table no. 2 shows Total environmental investments (% of GDP), Environmental protection expenditure (% of GDP), GDP per capita (in PPS) and Greenhouse gas emissions (tons per capita) for Croatia.

**Table 2.** The trend of observed parameters for the Republic of Croatia

	Total environmental investments (% of GDP)	Environmental protection expenditure (% of GDP)	GDP per capita in PPS	Greenhouse gas emissions (tons per capita)
2002	0.04	0.12	51.01	6.6
2003	0.06	0	53.25	6.9
2004	0.01	0	54.41	6.9
2005	0.07	0.07	55.39	7
2006	0.05	0.08	58.31	7.1
2007	0.35	0.36	61.07	7.4
2008	0	0.02	62.98	7.1
2009	0.01	0.02	62.08	6.7
2010	0.05	0.07	59.36	6.6
2011	0.26	0.32	59.78	6.5
2012	0.02	0.26	59.98	6.1
2013	0.32	0.32	59.76	5.9
Trend				

**Source:** Authors' calculation according to Eurostat data

Observing the data shown in Table no. 2, a growing trend of total environmental investments (% of GDP) and environmental protection expenditure (% of GDP) is visible during the observed period. Over the observed period, the average investment in the environment is 0.10% of GDP, while the average environmental spending is 0.14% of GDP. Gross domestic product expressed in purchasing power standards during the observed period grew till 2009 and since then falls, with mild oscillations. The greenhouse gas emissions amount to an average of 6.73 tons per capita.

Table no. 3 shows correlation of selected independent and dependent variables.



**Table 3.** Correlation of values of Total environmental investments (% of GDP), Environmental protection expenditure (% of GDP), BDP per capita (in PPS) and Greenhouse gas emissions (tons per capita)

	Total environmental investments (% GDP)	Environmental protection expenditure (% GDP)	GDP per capita in PPS	Greenhouse gas emissions (tons per capita)
Total environmental investments (% GDP)	1			
Environmental protection expenditure (% GDP)	0.848622995	1		
GDP per capita in PPS	0.254115434	0.32457194	1	
Greenhouse gas emissions (tons per capita)	-0.116426911	-0.363409188	-0.034962359	1

**Source:** Authors' calculation according to Eurostat data

Observing the results of the analysis in Table no. 3 it can be concluded that there is a positive statistical link in the correlation of the *Total environmental investments*, *Environmental protection expenditure* and *Gross domestic product per capita*, while in the observed variable *Greenhouse gas emissions* correlation is negative.

Strong positive link was noted between *Total environmental investments* and *Environmental protection expenditure* (0.85), while there is a weak and at the same time negative link between *Greenhouse gas emissions* and *GDP per capita*. Per capita GDP indirectly affects the reduction of greenhouse gas emissions through environmental protection expenditure. Medium strong, but still negative correlation is present between *Greenhouse gas emissions* and *Environmental protection expenditure*. The biggest impact on *Greenhouse gas emissions* is the *Environmental protection expenditure*, as larger environmental protection expenditure will reduce greenhouse gas emissions.

Table no. 4 shows a model of three-dimensional linear regression.

$$Y = a + b_1 \cdot X_1 + b_2 \cdot X_2$$

where:

Y = *Greenhouse gas emissions* (dependent variable)

X1 = *Real growth of GDP*

X2 = *Total environmental taxes* (% of GDP)

**Table 4.** Results of regression analysis of influence of the *Real growth of GDP* and *Total environmental taxes (% of GDP)* on *Greenhouse gas emissions*

Regression Statistics	
Multiple R	0.901716
R Square	0.813092
Adjusted R Square	0.75969
Standard Error	211.6305
Observations	10

ANOVA					
	df	SS	MS	F	Significance F
Regression	2	1363850	681925.1	15.2258	0.002823
Residual	7	313512.3	44787.47		
Total	9	1677363			

	Coefficients	Standard Error	t Stat	P-value
Intercept	54.37594	1770.981	0.030704	0.976363
Real growth of GDP	82.06406	19.38211	4.234011	0.003869
Total environmental taxes (% of GDP)	-953.588	219.2221	-4.34987	0.003355

	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	-4133.33	4242.08	-4133.33	4242.08
Real growth of GDP	36.23266	127.8955	36.23266	127.8955
Total environmental taxes (% of GDP)	-1471.97	-435.21	-1471.97	-435.21

**Source:** Authors' calculation according to Eurostat data

Three-dimensional linear regression of impact of the *Real growth of GDP* and *Total environmental taxes (% of GDP)* on the intensity of *Greenhouse gas emissions (kg per capita)* is significant because the calculated multiple correlation coefficient of 0.90 indicates a strong correlation between the dependent variable and the two chosen parameters of the independent variables. In the observed period, the average *Greenhouse gas emissions* was 4,734 kg per capita with a standard deviation of  $\pm 410$  kg per capita.

The determination coefficient indicates that 81% of the deviations from the average of *Greenhouse gas emissions* can be interpreted with the level of *Gross domestic product* and the level of *Total environmental taxes*. The F-test says that the interpreted values are 15 times larger than the non-interpreted ones, which is less than 5% of significance. P-values for independent variable parameters are less than 0.01, which means that calculated values are accurate. Parameters indicate that GDP growth of 1% increases *Greenhouse gas emissions* by 82 kg per

capita, while *Total environmental taxes* growth by 1% reduces emissions by 954 kg per capita. The analysed results indicate a significant impact of GDP and *Total environmental taxes* on *Greenhouse gas emissions*.

Table no. 5 shows the values of the parameter required to compare real GDP trends with the difference between the realized and the value of the linear regression model for *Greenhouse gas emissions* conditioned by environmental taxes at the level of the Republic of Croatia.

**Table 5.** Comparison of real GDP trends with the difference between realized and the value of the linear regression model for *Greenhouse gas emissions* conditioned by environmental taxes in the Republic of Croatia

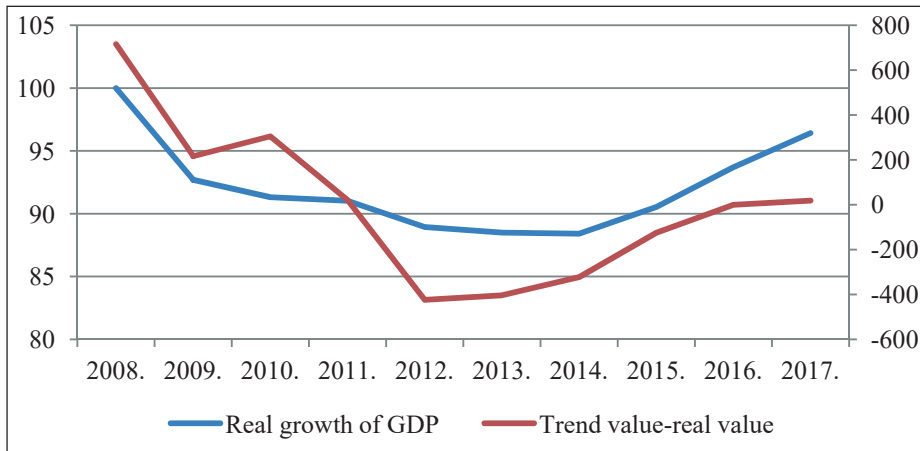
	Real growth of GDP	Total environmental taxes (% GDP)	Greenhouse gases (kg per capita)	Trend value	Trend value - real value	Growth
2008	100.00	2.85	5,581.39	4,865.42	715.98	
2009	92.70	2.79	5,127.37	4,910.93	216.44	-499.54
2010	91.31	3.03	5,034.04	4,728.88	305.15	88.71
2011	91.04	2.68	5,015.24	4,994.36	20.88	-284.27
2012	88.94	2.56	4,661.30	5,085.38	-424.08	-444.96
2013	88.50	2.85	4,461.41	4,865.42	-404.00	20.07
2014	88.41	3.18	4,291.97	4,615.11	-323.14	80.87
2015	90.53	3.37	4,346.18	4,470.99	-124.81	198.33
2016	93.70	3.49	4,379.40	4,379.97	-0.57	124.24
2017	96.42	3.43	4,443.64	4,425.48	18.16	18.73

**Source:** Authors' calculation according to Eurostat data

Linear trend equation for *Total environmental taxes* and *Greenhouse gases*:

$$Y = -758.5x + 7027.2$$

**Chart 1.** Comparison of the real GDP trend with the difference between the realized and the value of the linear regression model for *Greenhouse gas emissions* conditioned by environmental taxes



**Source:** Made based on the authors' calculation

Chart no. 1 shows the result of the developed GDP trend analysis and the difference between the realized value and the value of the linear regression model of *Greenhouse gas emissions* which are conditioned by *Total environmental taxes* over the observed ten-year period in the Republic of Croatia. Namely, the primary analysis of the correlation between *Greenhouse gas emissions* and *Total environmental taxes (% of GDP)* shows differences that are attributed to seasonal oscillations. The observed seasonal oscillations are the result of changes in GDP, hence the analysis of the impact of the change of the *Gross domestic product* on the difference between the realized and the values of the linear regression model of *Greenhouse gas emissions*, which leads to the conclusion that there is a significant impact.

### 3. FINANCING ENVIRONMENTAL PROTECTION IN THE REPUBLIC OF CROATIA

From the standpoint of existing sources of fiscal instruments, environmental protection in the Republic of Croatia is based on regulatory and legal regulations defining a number of fees such as permits, quotas, licenses, concessions, user fees, usage taxes, access fees, performance fees, bonds, deposits, claims rights and financial insurance. Such structured fees have a dual role. On the one

hand, they are important for and focused on resource users or existing polluters. On the other hand, they are important and necessary in the form of subsidizing regular or sudden transfers to primary and secondary environmental protection projects. The whole situation around the environmental protection analysis in the Republic of Croatia can be read in the document, which is called the National List of Indicators. The National List of Indicators (Law on Environmental Protection, 2018, a.2) is a set of data tables for the development of the environmental status indicators for each particular thematic area based on national and EU regulations and international regulations for environmental state recordings in the country. Another document that further defines the issue of environmental protection, as well as predictions about environmental burden, is a reference document on best available techniques. This document (Law on Environmental Protection, 2018, a.2) further describes the applied techniques, current emission and consumption levels, techniques considered in the determination of the best available techniques and conclusions and is entirely a result of the exchange of data and experiences of the member countries of the European Union.

The most important thing in the environmental protection planning is to timely anticipate potential environmental risks as well as damage from the standpoint of liability in case of new pollution. Within the scope of the existing law, the so-called “emerging technologies” are defined (Law on Environmental Protection, 2018, a.2), which include current and new industrial activities, with the aim of pre-determining the optimal level of environmental protection and thus sublimating the future negative financial effects of environmental pollution. Precisely these documents represent a framework for defining sources of funding, where environmental protection should be coordinated with those subjects that cause pollution according to the permitted standards. It is also necessary to ensure the level of environmental burden standards so that resource users or polluters pay a fair price for the purpose of consumption or permissible pollution.

The financing of environmental protection in the Republic of Croatia (Law on Environmental Protection, 2015, a.209 and 39) is legally regulated and is determined by the types of institutional entities and certain ways of collecting revenue. Institutional entities include the following: The Ministry of Environmental Protection and Energy, the Environmental Protection and Energy Efficiency Fund, the Croatian Agency for the Environment and Nature, the

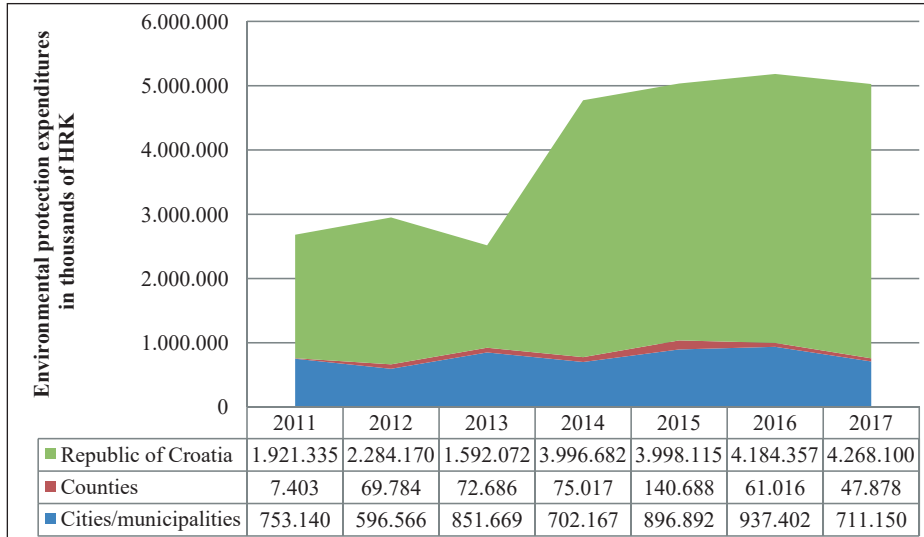
Meteorological and Hydrological Service and the Croatian Waters. From the standpoint of ways of collecting revenue, primary funding is stipulated, based on direct financial resources from the state, regional and local government budgets. Secondary sources of funding are stipulated through the private sector participation in the form of concessions, public-private partnerships and other forms of cooperation involving a stronger connection but also the responsibility of both the public and private sector. Other sources of funding do not have a continuous funding dynamic as they include non-permanent methods of collecting revenue, including donations, loans, aid and investment funds, and resources from the European Union funds programs and other international organizations and institutional entities. Sources of environmental protection financing in the Republic of Croatia are explained in only one legislative article (compared to 270 other legal articles), which indicates that this issue is not sufficiently elaborated and that the stability of revenue collection depends on the amount of appropriations from the budget, which falls into the category of political risks. The allocation and redistribution of budget revenues is based on the main taxes, where none of the above-mentioned taxes is an environmental tax.

According to the Law on Environmental Protection and Energy Efficiency Fund (Law on Environmental Protection, 2015, a.39), the sources of financing are stipulated that directly regulate the categories of payers for pollution incurred, and for which a certain amount of money is allocated, which are called fees. Fees are a dedicated revenue and as such have all tax characteristics. In the Republic of Croatia, there are the following types of compensation: environmental polluter fees, environmental user fees, environmental burden fees, and special environmental fees for motor vehicles. Total revenues of the Ministry of Environmental Protection, which include aid and grants, revenues from administrative fees and fee revenues, amounted to more than HRK 1 billion in 2016, while in previous years they were considerably smaller.

Precisely this kind of revenue structure points to the fact that there is no more significant revenue form that could have a significant impact on fiscal capacities in terms of funding sources, but also in terms of ensuring the necessary continuity in the segment of higher quality implementation of environmental programs and activities.

Chart no. 2 shows expenditures of the state budget of the Republic of Croatia that were intended for environmental protection during the observed period

**Chart 2.** Expenditures of the state, regional and local budgets in the Republic of Croatia that were intended for environmental protection



**Source:** Authors' calculation according to data of the Ministry of Finance of the Republic of Croatia

The state budget expenditures, as well as the budgets of local and regional government units, within the field of environmental protection are focused primarily on financing waste management activities, wastewater management, pollution reduction activities, biodiversity and landscape protection, research and development in the field of environmental protection, and other environmental activities and services. The increase in waste represents the largest item in the overall environmental protection allocation structure, whereby these expenditures range between 40% and 45% of allocations. Furthermore, in the structure of expenditures about 35% to 40% is allocated for waste water problems, for waste water treatment and construction and reconstruction of existing sewage systems. Other minor allocations are directed to the protection of biodiversity and landscape and to research and development of environmental protection. Both state and regional as well as local budgets have a similar structure of allocating funds for environmental protection. The share of total environmental protection allocations is materially less significant compared to total revenues of the state, regional and city budgets and other components of public service allocations such as education, defence, health care and other categories.

Table no. 6 shows expenditures for environmental protection, environmental protection revenues and investments over selected time periods, referring to the counties belonging to Slavonia and Baranja, the so-called Slavonia region.

**Table 6.** Analysis of environmental protection in Slavonia region according to expenditures, revenues and investments

	2014	2015	Growth rate 2015 / 2014 (%)	2016	Growth rate 2016 / 2015 (%)	2017	Growth rate 2017 / 2016 (%)
in thousands HRK	CURRENT EXPENDITURES FOR ENVIRONMENTAL PROTECTION						
Republic of Croatia	3,996,682	3,998,115	0.04	4,184,357	4.66	4,268,100	2.00
Virovitica-Podravina C.	14,720	48,900	232.19	10,950	-77.61	11,147	1.80
Požega-Slavonia C.	10,340	13,263	28.27	20,803	56.85	21,178	1.80
Sl. Brod-Posavina C.	15,757	16,835	6.84	18,175	7.96	18,502	1.80
Osijek-Baranja C.	63,681	73,952	16.13	67,411	-8.84	68,624	1.80
Vukovar-Srijem C.	36,049	120,666	234.73	28,846	-76.09	29,365	1.80
Slavonia region	140,547	273,615	94.68	146,185	-46.57	148,817	1.80
	ENVIRONMENTAL PROTECTION REVENUES						
Republic of Croatia	9,452,845	9,589,820	1.45	9,797,732	2.17	9,954,495	1.60
Virovitica-Podravina C.	51,853	62,379	20.30	80,321	28.76	81,606	1.60
Požega-Slavonia C.	77,372	64,840	-16.20	73,202	12.90	74,373	1.60
Sl. Brod-Posavina C.	540,972	554,662	2.53	371,064	-33.10	377,001	1.60
Osijek-Baranja C.	511,629	787,582	53.94	664,884	-15.58	675,522	1.60
Vukovar-Srijem C.	319,496	259,135	-18.89	172,909	-33.27	175,675	1.60
Slavonia region	1,501,322	1,728,598	15.138	1,362,380	-21.19	1,384,178	1.60
	INVESTMENTS IN ENVIRONMENTAL PROTECTION						
Republic of Croatia	2,910,144	2,904,301	-0.20	3,056,447	5.24	3,102,294	1.50
Virovitica-Podravina C.	3,853	18,493	380.00	17,709	-4.24	17,974	1.50
Požega-Slavonia C.	43,884	14,982	-65.86	8,747	-41.62	8,878	1.50
Sl. Brod-Posavina C.	7,574	5,605	-26.00	24,683	340.38	25,054	1.50
Osijek-Baranja C.	99,393	191,471	92.64	253,317	32.30	257,117	1.50
Vukovar-Srijem C.	14,629	42,718	192.01	160,890	276.63	163,303	1.50
Slavonia region	169,332	273,269	61.38	465,345	70.29	472,326	1.50

**Source:** Authors' calculation according to data of the Croatian Bureau of Statistics



Current expenditures for environmental protection include all expenditures on goods, services and investments that are directly aimed at the prevention, reduction and elimination of pollution or any form of environmental pollution. In the observed period in the region of Slavonia the current expenditures on environmental protection in the period 2014 to 2015 have significantly increased as a result of more intensive activities related to adjustment to directives and standards of the European Union in the field of environmental protection. Increased expenditures represent activities aimed at building regional landfills by funding through EU funds, but not in each county. Environmental protection revenues include income from activities regulated by law and investments and from future savings. In the observed period in the region of Slavonia, specifically in the period 2014 to 2015, the highest growth in revenues was generated by investments that were part of state transfers in the form of rehabilitation of the existing landfills.

In 2016 to 2017 period there is a decrease in expenditures and revenues, although there is a strong growth in investments in some counties, which is based on the financial resources of the European Union funds. At the level of the Republic of Croatia, the indicators are constant and inadequate, and compared to the total revenues and expenditures of the state budget, they have no significant material value. Priorities placed before the Slavonia region for environmental protection are focused on the establishment of an integrated waste management system and modernization and construction of communal infrastructure. Other problems affecting the region and other regions of the Republic of Croatia are identical to those at the state level as they cover the issues of environmental protection in the segment of transport, optimal utilization of agriculture and industry, and protection of water and soil. Sources of funding for environmental protection activities are based on local taxes, fees and volatile state transfers which have not changed for many years, and it is apparent that existing sources of funding are insufficient for basic environmental protection programs at regional and local levels.

#### 4. CONCLUSION

Croatia's accession to the European Union has brought significant progress in the field of environmental protection management. The basic doctrine of the goals and activities of the European Union stems from the promotion

of sustainable development which includes a smart, sustainable and inclusive economy based on a range of activities, policies and measures that need to follow guidelines for a low level of carbon dioxide, as well as more efficient use of natural resources. Environmental protection expenditures at the level of the EU member states according to the basic economic and budgetary indicators are not at a satisfactory level. They also point to the need to strengthen fiscal capacities towards the environmental protection segment, although some progress is visible in certain tax efforts and the classification of more specific sources of funding from the standpoint of implementation of fiscal and tax policies. Certain research carried out by the European Commission based on the COMETR project have shown that the implementation of tax reforms with an emphasis on environmental taxes has led to positive externalities. It also points to the role and importance of taxes in further definition of activities, policies and measures for preservation and protection of the environment. The perception of the existence of a unique environmental tax is not recognized and most states avoid thinking about implementing it. Even more so, because taxes that affect the financing of health, pensions, or defence at this time are more important than taxes that finance the environment. The environment in which people live is becoming more and more inhabited, experiencing dynamic changes in the climate, as well as changes in the management of renewable and non-renewable energy sources.

The structure of environmental protection financing in the Republic of Croatia is dispersed and unconnected, as it represents a combination of funding, consisting of insufficient local, regional and state environmental revenues and fees. The aforementioned hybrid of diverse income is insufficient for quality care of the environment. The allocation of environmental protection expenditures is based on certain obsolete functional and economic classifications of state, regional and local budgets, which ultimately fail to provide a concrete insight into the structure of sources of environmental protection funding and they are insufficient to carry out and finance environmental protection activities. For the above reasons, it is necessary to carry out the following pre-phases and phases of realizing activities:

- creating a unique environmental tax
- modernizing the processes of administrative and fiscal decentralization regarding powers and concerns about environmental protection within the state and regional and local government units

- ♦ more coherent linking of state, regional and local interests of achieving environmental protection activities (e.g. strategies, investments, standards and norms, etc.).

The recommendations in this paper are aimed at more concrete implementation activities regarding the achievement of fiscal policies in the form of better planning of existing and future financial resources directed at environmental protection.

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LAW  
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ECONOMICS



# EFFICACY OF LAW IN THEORY AND PRACTICE: THE EFFECTIVENESS OF THE ADJUDICATION

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## **Abstract**

*The efficacy of the law is a crucial topic in legal theory and legal practice. The theoretical problem relates to different understandings of the concept of the efficacy, and this research addresses specifically the meaning of that concept as the application of the law in adjudication. A more detailed analysis of this term is further developed into a theoretical framework that can serve to explore the adjudicative effectiveness in particular positive legal systems. Among the various elements that fall under the underlying concept of adjudicative efficacy, this article will pay specific attention to the issue of the effectiveness of the initiation of adjudicative proceedings. The first practical problem refers to the question how the (in)effectiveness of the adjudicative application of the law in various elements of this concept, and in particular regarding the aspect of initiating adjudicative proceedings, affects economic and political relations in the political community. The second practical problem is how to improve the efficiency of the initiating of adjudicative procedures to achieve the effectiveness of the law and thus the specific economic and political goals. Based on the theoretical framework and the answers to practical questions in this research we will look at the issue of the efficiency of the initiation of adjudicative proceedings in the Republic of Croatia.*

**Keywords:** *adjudication, efficacy, initiation of adjudicative procedures, legal theory*

JEL Classification: K00, K20

## 1. INTRODUCTION

The efficacy of the law is one of the fundamental concepts in the theory of law, and its importance for the understanding of practical legal issues can be recognized in public policies of states and supranational associations. The approach to the term 'efficacy of the law' in this paper is one of the possible approaches presented in Alf Ross's theory, i.e. understanding this concept as the effectiveness of the law before courts. This understanding of the term refers to different elements necessary for the effectiveness of adjudication, and one of such elements is the central topic of this paper. It relates to the effectiveness of the initiation of adjudicative proceedings. After the conceptual analysis, two practical issues related to the effectiveness of adjudication will be covered: its importance for political and economic goals and measures through which it can be increased. Finally, the focus will be directed on the efficiency of the initiation of adjudicative proceedings in the Republic of Croatia indicating some areas for possible further research. This research will be conducted on the basis of conceptual analysis of the law and using reports that point to practitioners' discourse in this issue.

## 2. THE CONCEPT OF MATERIAL EFFECTIVENESS OF THE LAW AS THE APPLICATION OF THE LAW IN ADJUDICATION

In the theory of law, the efficacy of the law can be defined in several ways. The law can be considered effective a) when it contains norms on the creation and application of the law under the assumption, without further determination of the realization of this assumption, that such norms are actually implemented by the bodies whose decisions are adhered to by the citizens; b) when citizens apply the law in reality, because it is present in their consciousness; c) when the law is applied by the law-applying bodies, primarily judges, because it is present in their consciousness.

When the law is viewed as a normative system, we can discuss formal effectiveness of the law. The state of the system of norms created when this system introduces secondary norms authorizing someone for adjudication can be called 'formal effectiveness of the law'. This, however, does not mean that the system of norms is indeed effectively applied in society, and it can, in fact, remain just

the law in books. Building on formal effectiveness with regard to the system of norms, the effectiveness of the law expressed in real life will be referred to as material effectiveness and it is the topic of this paper which is the basis for further elaboration.

Given that the sociological-psychological approach explores what happens in people's real lives, according to this theoretical approach, to understand the law, it is not enough to establish the existence of legal norms through the fulfillment of the formal criteria for the membership of norms to the legal system; it is rather necessary to establish whether this system of norms is applied in real life. What are the social facts that, as a legal phenomenon, form another realistic side of legal norms? Ross considers them to be court decisions and that the effectiveness of the law, which he equalizes with the validity of the law, should be sought in adjudication itself (Ross, 2004, p. 35). Therefore, in order to discuss (materially) effective law, legal norms should be indeed used by judges in the same way they exist in their consciousness. They exist in the judges' consciousness when they feel them to be socially obligatory and therefore comply with them (Ross, 2004, p. 35). "To realistic view, the validity of the law is in the last resort a manifestation of certain socio-psychological facts. For the genesis and development of these, however, the regular 'enforcement' by the courts of law is of decisive importance [...] (Ross, 2006, p. 80) Is the existence of legal norms in citizens' consciousness necessary for material effectiveness of the law? Ross defines 'law in action in a broader sense', in the way that it includes court acts and legal acts of private persons in legal relations. However, the 'law in action in the narrower sense' – such as the application of the law in courts – is the only decisive social fact for determining the validity of legal norms in the society. "The effectiveness which conditions the validity of norms can, therefore, be sought solely in the judicial application of the law, and not in the law in action among private persons" (Ross, 2004, p. 35)

Ross, therefore, defines the effectiveness of the law only as the effectiveness of the court in making decisions on the law, while the behavior of individuals in the society is irrelevant for his understanding of the effectiveness of the law. "It makes no difference whether the people comply with or frequently ignore the prohibition. This indifference results in the apparent paradox that the more effectively a rule complies in the extrajudicial legal life, the more difficult it is to ascertain whether the rule possesses the validity because the courts have that much less opportunity to manifest their reaction." (Ross, 2004, 36) The impor-



tance of adjudication for the effectiveness of the law was similarly highlighted by John Chipman Gray. Gray is aware that there can be cases when citizens act in compliance with the rules, not because of court rulings, but because of their moral considerations. Also, an individual can adjust his/her behavior due to the execution of force by an administrative body. "But in all such cases, the rules are Law because, in the ultimate resort, judges will apply them [...]" (Gray, 1909, p. 102). For Gray, even if the persons do not follow court decisions, they still remain the law. Also, the rule on a behavior ban becomes the law only when courts deliver a judgment in a case (Gray, 1909, p. 102). According to Gray, it is not important for law whether the members of the society comply with court decisions because the law is what the courts lay it down to be.

Although there are objections to realistic theories that emphasize this crucial role of courts for the concept of law, the hypothesis on the primacy of adjudication for the effectiveness of the law points to two important insights. Firstly, court decisions are necessary to determine the content of the law in a particular society. Such a hypothesis does not necessarily contradict the hypothesis on the existence of citizens' legal consciousness of the law; different emphasis has been placed on each of these two hypotheses. In the process of determining 'material effectiveness in a narrower sense', the emphasis is on the determination of the content of the law in the consciousness of the judges, while in matters of material effectiveness in a broader sense, the emphasis is on how the law affects the consciousness of individuals. Why is the law in the consciousness of judges necessary to determine the contents of the law?

Unlike individuals in a society, only institutions – whose legal authority is recognized in society – can authoritatively determine the contents of the law. In this process, while the legislator can in her consciousness define abstract legal provisions for regulating the interests in a society, only judges can determine the exact meaning of such a behavioral regulation on specific interests in the society. Since members of the society cannot know all their rights and obligations, nor the rights and obligations of other members of the society, courts are necessary for the effective application of the law. "If every member of the State knew perfectly his own rights and duties, and the rights and duties of everybody else, the State would need no judicial organs; administrative organs would suffice. But there is no such universal knowledge. To determine, in actual life, what are the rights and duties of the State and of its citizens, the State needs and establishes judicial organs, the judges. To determine rights and duties, the judge

settles what facts exist, and also lay down rules according to which they deduce legal consequences from facts. These rules are the Law” (Gray, 1909, p. 101).

Indeed, from the viewpoint of law beneficiaries, court decisions are very important for knowing what the law is, in the sense of adjusting our behavior to the norms adopted by the court or those expected to be adopted. “If anyone asks what in regard to a given matter is valid law, at the present moment he undoubtedly wants to know how current disputes will be decided if they are brought before the courts” (Ross, 2004, p. 40). “When a client asks his solicitor what is ‘the law’ in a certain situation, the practical import of this question is how legal proceedings, if instituted, will be judged by the courts” (Ross, 2006, p. 80). Moreover, if the court does not deliver judgments, it is difficult to know what the law in real life really is. As pointed out by Ross, court decisions are the pulse of legal life (Ross, 2006, p. 80).

Another insight, originating from the hypothesis on the primacy of adjudication for the effectiveness of the law, refers to specific demands placed upon the community to ensure the effective functioning of adjudication.

### 3. THE EFFECTIVENESS OF ADJUDICATION

Research of the effectiveness of adjudication is an integral part of the sociological-psychological theory of law. These theories attempt to empirically examine the impact of the law on the society and the operation of judicial institutions fits into the basic subject of their research. Thus, for example, as part of the sociological jurisprudence programme, Roscoe Pound, among other things, also explained the importance of studying the real social effects of legal institutions and the ways which would make legal standards for the behaviour of individuals more effective in real life (Pound, 2000a, pp. 350-358). Similarly, speaking of the ‘law and society’ academic movement, Brian Tamanaha points out questions of interest to this school in studying the relationship between legal institutions and the social context (Tamanaha, 2010, p. 371). Some issues relate to the actions within the legal institutions, and others to how the actions of legal institutions relate to the social environment in which they operate (Tamanaha, 2010, p. 372). When studying the institution-society relationship, Tamanaha states that there are issues such as: “Do legal actors indeed enforce stated legal norms?” “Who invokes the legal apparatus and why?” “Whose interests are served by the actions of legal institutions?” “How do people in society react to

the actions of legal institutions?“. Tamanaha’s research topics are, for example, the following: 1) the gap between the declared norms and what legal officers really do (Tamanaha, 2010, p. 372); 2) the gap between the declared norms and norms followed in social life; thus, the focus of the research is more on social behavior than the norms declared or carried out by official legal bodies (Tamanaha, 2010, p. 373); 3) the gap between real behaviour and the general image of the law (Tamanaha, 2010, p. 374); 4) why individuals in the society are not willing to turn to legal institutions (Tamanaha, 2010, p. 373).

If we single out only the topics related to the effectiveness of adjudication from the area of social-psychological theories of law, then the theory of law in the context of understanding the law itself can point to an understanding of the conceptual apparatus necessary for a study of the effectiveness of adjudication. In this context, it is important for the effectiveness of adjudication that the courts have the capacity to effectively carry out their decision-making function, which sets the requirements for the study of elements necessary to perform such a function, such as material working conditions of judges, appropriate organization of court work, and professional qualities of judges. In addition, for example, court decisions must be published – publicly declared and harmonized. It is also fair to mention the importance of witness and victim participation in the proceedings and, in general, the importance of securing evidence before the court.

On the other hand, for the effectiveness of adjudication, the efficiency of courts alone is insufficient. It is equally important for the effectiveness of the initiation of adjudicative proceedings. There are two main types of adjudication which can be differentiated based on the empowerment for initiation of the adjudicative proceedings. The first one is adjudication which is initiated only when both parties agree to resolve the dispute before the court. The second one can be named the ‘adjudication on demand’. The term is coined based on the Dworkin’s concept of legal rights defined as rights “enforceable on demand in an adjudicative political institution such as a court.” (Dworkin, 2011, p. 404). The members of the community are entitled to enforce legal rights in the adjudicative institution on demand without further legislative intervention (Dworkin, 2011, p. 406). Besides the members of the community, in some cases, legal systems empower official organs to unilaterally initiate proceedings for the protection of individual rights and collective interest.

The ideal model of the adjudication on demand satisfies all formal and substantive conditions required for the initiation of adjudicative proceeding whenever the protection of legal rights and collective interest is needed according to the officially proclaimed values or the existing needs in the community regulated by law. In reality, there is a gap between the ideal model of the adjudication on demand and the existing situation of the initiation of the adjudication proceedings.

#### 4. EFFECTIVENESS RELATED TO THE INITIATION OF ADJUDICATIVE PROCEEDINGS

Three groups of problems can be detected as the source of the gap between the ideal and existing model of the adjudication on demand with regards to the initiation of the adjudicative procedure: 1) organs or citizens do not recognize the need for proceedings; 2) there is a need for proceedings, but there are limitations in the society that discourage the citizens from initiating proceedings; 3) there is a need for proceedings, but the authorities do not initiate them.

(1) Firstly, it is possible that court proceedings are not initiated because there is no need for them in the community. Although such a situation does not really question the effectiveness of adjudication, it still remains questionable what the law according to which individuals can direct their behavior really is, regardless of whether they agree with such a law or not. These situations are possible, especially in cases when new legal institutes are still not supported by the community but are nevertheless transplanted into the community. The extreme example is provided by Brian Tamanaha to describe the situation when citizens carry on with life on the basis of a normative order wholly different from that of the state (Tamanaha, 2001, p. 145). It is also possible that some legal regulations have no direct connection with citizens' attitudes of interest or lack that interest; or that citizens cannot recognize such a connection although it exists, and habitually accept other normative arrangements outside of the law. In this case, cultural consciousness affecting the consciousness of the law comes into focus (Ross, 2004, p. 376).

The other way around, the community can officially proclaim some values while at the same time organs do not establish the practice which realizes these values in the community life. Sometimes the existing community practice opposite to the practice proclaimed as the value can corrupt or contaminate, if not

the whole law, at least some of its segments to the level that it cannot be considered as law at all (MacCormick, 2007, p. 271).

(2) Another situation is when citizens recognize a need for adjudicative proceedings, but they refuse to initiate them. There are two different cases here. In the first case, it is a situation in which there are no external obstacles for citizens to initiate proceedings, but they avoid them due to internal attitudes of no interest in adjudication. Another reason for the inefficiency of initiating the proceedings may arise if the individuals cannot initiate proceedings although they wish to do so for reasons of external limitations. These two reasons can be recognized in some authors' theories of law. The importance of citizens' motivation for the initiation of court proceedings takes a special place in Jhering's theory of law. He pointed out that the law is implemented in reality if public officers perform their duties and individuals protect their rights.

„The existence of all the principles of public law depends on the fidelity of public officials in the performance of their duties; that of the principle of private law, on the power of the motives which induce the person whose rights have been violated to defend them: his interest and his sentiment of legal right. If these motives do not come into play, if the feeling of legal right is blunted and weak, and interest not powerful enough to overcome the disinclination to entering into a controversy and the indisposition to go to law, the consequence is that the principle of law involved finds no application” (Jhering, 1915, p.72).

According to Jhering, the work of the state bodies is a minor problem, because it is their duty to initiate proceedings. “[W]hile the realization in practice of public law and of criminal law is assured, because it is imposed as a duty on public officials, the realization in practice of private law is presented to individuals under the form of their legal rights; that is, it is left exclusively to them to take the initiative in its realization, left exclusively to their action” (Jhering, 1915, p. 71). It is much more important that individuals fight for their subjective rights and initiate proceedings, which is their duty to themselves, but also their social duty (Jhering, 1915, p. 69;70). Jhering correctly pointed out how important it is for the individuals to protect their subjective rights before the court. However, Pound noticed serious limitations regarding the level of interest of individuals to highlight their rights and protect them in court. According to Pound, the reasons for individuals' inactivity may be material in nature, because citizens lack the means to cover court costs or simply do not want to spend their time.

“Jhering urged the duty of the good citizen to go to trouble and expense to vindicate his legal rights, even on small occasions, as his contribution to maintaining the legal order. But in the busy world of today men are less and less inclined to pursue their legal rights even in matters of no little moment at the expense of time, money, and energy, they can more profitably employ in their everyday work. Hence, we have to deal in new ways with the subject of making legal precepts effective. We must study the limits of effective legal action. We must determine what we may expect to go through law and what we should leave to other agencies of social control. We must examine our armory of legal weapons, appraise the value of each for the tasks of today, and ask what new ones may be devised and what we may expect reasonably to accomplish by them when devised. There is a serious limitation upon the possibility of social progress through law” (Pound, 2000b, p. 372).

As a follow-up to Jhering and Pound’s insights, one can point out other external reasons for inactivity of individuals in the protection of their rights before the court. The reasons can be found in the fact that citizens are insufficiently informed of the law, and therefore do not know how to initiate a proceeding. Limitations can also be of political nature, e. g. if the citizens feel threatened to take part in the proceedings or if they do not believe in the independence of judicial institutions.

(3) As a follow-up to the first two cases – the lack of interest for court proceedings and the absence of civil initiative – the third, much harder case is when court proceedings are not initiated because the official bodies authorized for the initiation of adjudication – the police, state attorney’s office, examining magistrate – do not process the cases for which the adjudication proceeding should be initiated. Ross pointed out that the term ‘court’ is used in its broad sense to include all authorities administering criminal prosecution: the police, the state prosecution, and the court. “If the police regularly omit to investigate certain breaches of the law, or if the prosecuting authority regularly omits to bring a prosecution, the penal law loses its character of valid law, notwithstanding its application at rare intervals in the courts” (Ross, 2004, p. 35; in note 1) Considering the fact that the state attorney’s office has the power to initiate certain procedures when the law is violated, their inefficiency may jeopardise the application of the law where there really is a need to concretize the regulation of some social relationships. This is why it is important from the aspect of material effectiveness that, if there are any third bodies for the official initiation of the

proceedings on behalf of the community such as for example state attorney's office, additional requirements necessary for this body on which the initiation of adjudication proceeding depends are fulfilled so that it can function effectively. Such requirements may relate, for instance, to legal, political, and material conditions that have to be such that the state attorney's office can function effectively.

A precondition for the fulfillment of the requirements of material and political efficiency – of both official bodies and private persons – is, naturally, an adequate normative solution that regulates the power and obligation to initiate a proceeding. From the legal theory aspect, these norms can be recognized as the special sort of the power-conferring norms. Effectiveness in this sense requires the authorization of as many entities as possible for the initiation of proceedings. In cases where a particular authority is authorized to initiate a proceeding, especially in societies where this is the only option, control is required of the interested parties in the decision to initiate proceedings by this body and that this body bases its decision on the initiation of the proceedings on the law.

International law is facing the same challenges regarding the effectiveness of the initiation of adjudicative proceedings. The effectiveness of the European Commission, which can initiate adjudicative proceedings alongside the individuals and the states themselves with the procedures of consultation and conciliation that may precede the initiation of the court proceedings, certainly had an impact on the level of adoption of European legislative standards in the conduct of states and individuals. On the other hand, difficulties related to the initiation of proceedings before the International Court of Justice, before which, except in certain limited circumstances, one state cannot initiate a proceeding without the consent of the opposing state, challenge the effectiveness of international law. It is worth to mention the legal regulation for seeking the legal opinion of the International Court of Justice according to which only certain bodies may request the opinion of the court, among which the UN General Assembly. A state's success in winning the support of other member states of the UN General Assembly depending on the majority vote in the Assembly to initiate the procedure of seeking a legal opinion of the International Court of Justice surely depends on many 'non-legal conditions'.



## 5. THE RELATIONSHIP OF THE EFFECTIVENESS OF ADJUDICATION AND ECONOMIC AND POLITICAL RELATIONS

In political and economic discourse, the effectiveness of adjudication is often referred to as one of the fundamental goals of a successful political community model. One of the fundamental conditions for the accession of countries to some international or transnational associations is the effectiveness of adjudication. A special negotiation chapter that the countries have to fulfill to become member states of the European Union refers to adjudication in particular. The Council of Europe body, the European Commission for the Efficiency of Justice (for example CEPEJ, 2016), measure and compare the situation in the justice systems of its member states. The Organization for Economic- Cooperation and Development reports (for example OECD, 2013) and the World Bank reports (for example World Bank, 2010) covers the situation in the justice systems in different countries.

The interest in the adjudication of supranational organizations can be explained as follows. As noticed by scholars of the European integration, this process has made national citizenship less parochial and more universalistic by limiting what national governments can award or deny, not just to the citizens of other European countries (Streck, 1997). We can add to this insight that it is not only the avoidance of the discrimination between the citizens of the different states which are members of the same inter-states association that are forbidden, but the national systems have to increase the capacities so to provide equal conditions for the citizens of the association in all state members. The transnational integration, in both versions of unity or community vision, rejects the classical model of international law which celebrates state sovereignty and it provides neutral, more or less limited, an arena for states to prosecute their own goals (Weiler, 1991, p. 2479). Depending on the kind of integration, economic or social-political, the intensity of some integrative factors could be different but they are always potential factors for realization as the result of transnational human intercourse. How do these integrative factors influence the effectiveness of the adjudication?

On the one hand, state-members in supranational associations demand that their citizens have an equal and effective opportunity to protect their rights, regardless of where they are located within the association of countries. We



can say that in the context of political integration, effective adjudication contributes to the conviction of citizens: a) that community members have equal chances of realizing their personal choices without the interference of arbitrary decisions; b) that subordination of citizens to the community empowered to legitimately use force against its members, is not perceived as a 'robbers act', but as a result of cooperation of community members; c) and that the community seeks to preserve the integrity of individuals and the community. On the other hand, effective adjudication enables the citizens who appear as economic agents that, regardless of the state in which they perform economic activities, they can perform these business activities in an equal, predictable and competitive way, which is guaranteed by effective adjudication. This is the result of economic integration.

Based on the introductory considerations of theories on effectiveness, the legal-theoretical aspect should also be added to the political and economic aspect of studying the importance of adjudication effectiveness. Namely, if we accept the view that without court proceedings, we cannot reliably claim what community law really is (Ross. 2004) and that without court decisions there may be discrepancies between the official understanding of the law and the law that is really valid in the community, adjudication effectiveness also becomes an essential element for the concept of the law. This insight is not only theoretical but also reflects the political and economic aspect of the consideration of the law. Namely, without law before the courts, it may occur that official description of the law loses touch with reality and that the gap between upholding institutions and political morality of the citizens in relation to what this law produces is such that it endangers the proclaimed political and economic models of the functioning of the community. From this aspect, the effectiveness of initiating proceedings is the key element for both the effectiveness of adjudication and the political and economic goals of the community.

There are elaborated models in the professional discourse on how the effectiveness of adjudication can be achieved. For the purpose of this paper, we will outline the model that has been developed through the process of countries' accession to the European Union through the fulfillment of the requirements from Chapter 23, Judiciary and Fundamental Rights, for the part relating to the effectiveness of adjudication. The progress reports of the EU accession countries alone cannot provide full insight into the measures that need to be fulfilled, but the reports should rather be viewed in the context of projects financed from

the EU funds in order to meet the requirements of Chapter 23. Based on this analysis (for example UNDP, 2012), it is possible to summarise that the model includes the following elements: strategic management of adjudication and project management of reforms, the system of appointments and promotions in judicial sector and the implementation of disciplinary actions, judicial training systems, rationalisation of the network of courts and state attorney's offices, organisation of processes in courts and state attorney's offices, infrastructure and equipment, enforcement of court decisions, judicial inspection, alternative dispute resolution, court proceedings and file management, court organisation and court services management, probation service, prison infrastructure and living conditions in prisons, court jurisdiction in administrative matters, and free legal assistance. In such a model, there is an element that relates to the effectiveness of the initiation of adjudication. It is the element of the accessibility of adjudication to citizens which concept is unfortunately reduced to measures of free legal assistance. Although the possibility to initiate the proceedings is recognized as an important element, it is evident from the previous chapter that free legal assistance is not the only element important for the initiation of proceedings and effectiveness of adjudication.

## 6. EFFICIENCY OF INITIATING PROCEEDINGS IN THE REPUBLIC OF CROATIA

As previously stated, the effectiveness of initiating proceedings can be considered from the following aspects of the gap between the ideal and existing model of the adjudication on demand: a) the unconsciousness of the existence of real needs of the citizens and the community organs to initiate proceedings; b) the existence of social internal and external barriers to initiating proceedings for the citizens who could protect their interests; c) the existence of obstacles for the institutions to officially initiate proceedings, although there are needs for their initiation.

Regarding the first aspect, it is possible that the law provides a regulation aiming to achieve certain officially published values, but that community members simply do not perceive such normative regulations as relevant for their lives. For example, what is the awareness in the Republic of Croatia of the understanding of certain manifestations in the community such as corruption, degrading treatment, mobbing, discrimination, or abuse of power? According to

the study of discrimination in the Republic of Croatia, 1/5 of the respondents are not familiar with the concept of discrimination (Ombudsman, Center for Peace Studies, 2017).

Another aspect of the effectiveness of initiating adjudicative proceedings relates to internal attitudes towards the initiation of court proceedings and external obstacles that prevent citizens from initiating proceedings, although they might wish to do so. On the one hand, there are factors that can contribute to the negative attitude towards the initiation of proceedings, although citizens believe that there are social needs for the initiation. One of the reasons may be distrust of citizens in judicial institutions. According to a survey of the perception of entrepreneurs on judicial independence, Croatia is ranked 120<sup>th</sup> of 140 countries (World Economic Forum, 2015).

On the other hand, there are factors that can be external obstacles for imitating the court proceedings. One of the important preconditions for the initiation of proceedings by the citizens is financial resources. As stated before, Croatia participates in the measuring of the effectiveness of adjudication including the free legal assistance system. For example, in 2016, among forty-one analyzed countries, the Republic of Croatia was 18<sup>th</sup> according to the budget spent on free legal assistance per capita. In comparison with the average funds spent for free legal assistance per capita that amounts to 6,5 EUR, with 2,6 EUR per capita, Croatia is in the mid-range group of countries (CEEPEJ, 2018, p. 78). The statistical data on the free legal assistance can be interpreted by someone as the Croatian system being in accordance to the European trends, but also used by others to require the more efficient free legal aid system. More important is to notice that, as mentioned before, this data refer only to one segment of the whole picture on the effectiveness of the initiation of adjudication proceedings.

Also, lack of proceedings may be conditioned by specific forms of pressure in areas and situations that are considered risky for pressure on individual autonomy, such as, for example, in the prison system. Based on several cases in which problems were reported in the filing of complaints by prisoners, the CPT recommended to the authorities of the Republic of Croatia to provide all prisoners with confidentiality in filing a complaint and to examine any threats to prisoners for filing a complaint (CPT, 2014, p. 45) Such complaints can have an impact on the initiation of the proceedings for the protection of prisoners' rights.

The third aspect refers to obstacles faced by the very institutions that initiate proceedings. There is no doubt that human and material resources are one of the important preconditions for the institutions to initiate proceedings. Insufficient capacities, which may include insufficient expert knowledge to process complex criminal offenses can lead to a situation where such acts are not processed. Based on the data from the Central Bureau of Statistics (Central Bureau of Statistics, 2016/2017) we can make some insights regarding the crimes committed against the economy. In the period from 2016 to 2017, only one person was sentenced to more than five years in prison, nine persons were sentenced to three to five years in prison, 24 persons to two to three years in prison, 123 persons to 1 to 2 years in prison, and 1128 perpetrators to a prison sentence of up to one year, most of whom got a suspended sentence. These statistical data point to a small number of verdicts for the most serious violations of economic law considering the pronounced sentences, and there are no verdicts whatsoever in this period for some criminal offenses such as money laundering. Such a situation can also be caused by the inefficiency of initiating court proceedings for such, most serious crimes. This assumption, of course, need not necessarily be correct, but it points to the importance of additional investigation of the situation and causes of initiation of criminal proceedings.

Moreover, the effectiveness of investigation is one of the standards according to which the European Court of Human Rights decides on violations of citizens' rights. Violation of this standard may also indicate a lack of institutional capacity to conduct effective investigations, which may have a negative impact on the initiation of the proceedings. By 2014, the European Court of Human Rights issued 13 decisions against the Republic of Croatia in which it found a violation of principles of effective investigation with regard to only two types of violations prescribed by the European Convention on Human Rights (Turković, Omejec, 2016. p. 2016). One of the examples of the problem can be the case of *D.J. v. Croatia*. (ECtHR, 2010).

The victims and witness support can also influence the effectiveness of the initiation of adjudication. The assessment of the witness and victims' support system in 2007 (Turković et al., 2007) detected some severe shortcomings in providing assistance to victims through the criminal proceeding. Although serious progress has been made since then, the assessment of the same quality is missing to describe the current situation.

A special area of research may also be the discretion of authorities to decide on the initiation and conduct of proceedings. Although this discretion is necessary for effective adjudication, there is a question of effective monitoring of such discretion (Davis, 2007).

## 7. CONCLUSION

This paper outlines the theoretical concept of the effectiveness of the law by focusing on one of the understandings of this term. It is the understanding of the effectiveness of the law as the effectiveness of adjudication. One of the key elements for such an understanding of effectiveness is the effectiveness of initiating adjudicative proceedings. Without such an element, there are no court proceedings, and without court proceedings, we do not know what is the real community law. Three groups of problems can be recognized as the source of the gap between the ideal and existing model of the adjudication on demand regarding the initiation of the adjudicative procedures.

Afterward, we focused on practical issues: to what extent is the effectiveness of adjudication important for economic and political relations and how it can increase the effectiveness of adjudication. The answers to these questions are based on the reports of supranational associations that show interest in the effectiveness of adjudication in all member states. It has been pointed out that measuring the element of the effectiveness of initiating adjudicative proceedings is often oriented to free legal assistance, while a comprehensive analysis would also require the inclusion of other elements.

Finally, we have highlighted some areas that might be interesting for the studies of the effectiveness of initiating adjudicative proceedings in the Republic of Croatia. The areas are systematized under the three groups of issues outlined in the theoretical framework. Based on the analysis in the sixth chapter, we can mention several hypotheses for further researches and initial suggestions for legislative and institutional changes. Firstly, in some areas of the Croatian law, public and official legal consciousness cannot recognize the connection between existing legal norms and needs the law should serve according to the Croatian culture. This problem could be addressed by the normative and non-normative influence on the openness of the communication channels for the public debate and presentation of relevant experiences, as well as for strengthening the strategic litigation. Secondly, internal and external obstacles exist in the Croatian

legal system for citizens when initiating the proceedings. The negative attitude towards the judiciary makes citizens feel helpless when their rights are endangered. Although the free legal aid was conceptualized in a way to be in line with the European requirements for the EU accession, the model does not meet the needs of disempowered citizens. The problem of the internal obstacles can be improved by a political decision that independent and efficient judiciary presents the core value of the Croatian society. Following this decision, the strategic planning, implementation, and financing of the measures, as well as monitoring of the reforms, should be improved and perceived as equally important as before Croatian accession to EU. The external obstacles can be removed by the development of judicial and extra-judicial services oriented to facilitation of the approach to the administration of justice and to the empowerment of deprived categories of citizens. The supervision of the places where persons are deprived of liberty should be intensified with the aim to ensure equality in using the legal remedies. Thirdly, detection and prosecution of the breach of law do not respond to some deviations in the society. The normative and institutional influence should be aimed at increasing the independence and efficiency of police and state prosecutor's office with the adequate civil and parliament supervision of the correspondence between social trends and track records of successful prosecutions. The professional standards of the effective investigation, as well as prosecutor's discretion, should be developed and monitored. One of the concrete measures for improvement of the effective investigation is the finalization of the establishment of the victims-witness support system.

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# MANAGEMENT IN THE FUNCTION OF EFFICIENT WORK OF STATE ATTORNEYS

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## Abstract

*The State's Attorney Office of the Republic of Croatia is an autonomous and independent judicial body which proceeds against the perpetrators of criminal acts, initiate legal measures to protect the property of the Republic of Croatia and applies legal remedies for the protection of The Constitution and the laws. The State's Attorney Office of the Republic of Croatia (hereinafter referred to as State's Attorney Office of the Republic of Croatia) is a unique judicial body that has authority over the whole territory of the Republic of Croatia. State Attorney General of the Republic of Croatia (hereinafter referred to as State Attorney General) is at the head of the State's Attorney Office.*

*The organization of State's Attorney Office comprises 39 state's attorney offices (Central State Attorney Office, Croatian State Prosecutor's Office for the Suppression of Organized Crime and Corruption (USKOK), 15 county's and 22 municipal state's attorney offices) with the total of 1731 employees. The organization of the State's Attorney is strictly hierarchical, so municipal state's attorney offices are subordinated to the county state's attorney offices while county offices are subordinated to the State's Attorney Office of the Republic of Croatia in Zagreb.*

*The State's Attorney General as Head of the body supervises the work of the entire state's attorney organization, takes care of duly and timely execution of tasks in the state's attorney, solves tasks related to the court's applications and complaints to the work of state's attorney, takes care of professional education of all state's attorneys, deputy state attorneys, consultants, legal trainees and other state's attorney officers and employees, keeps statistics and perform other duties as prescribed by the law and state attorney Rulebook.*



*In order to improve its functionality, the management of state's attorney offices requires the application of principle and methods of business management. Management of state's attorney offices is becoming an activity which enables the fulfillment of the basic tasks and goals of the state's attorneys to work in the best (quality) and most efficient (efficient and cost-effective) way.*

*The aim of this analysis is to establish how much a good organization of the state's attorney management, the motivation of deputy state's attorneys and other employees, efficient work organization and prompt reactions and decision-making in a complex situation impacts the entire state's attorney organization as well as the strength of the legal state as a whole.*

**Keywords:** *the judiciary, state attorney, management, efficiency, management tools*

JEL Classification: K00, M10

## 1. INTRODUCTION

In light of the demands for more stronger legal security in Croatia, the state's attorney, as well as the judiciary as a whole, is under the stronger social and political pressure. The management of the state's attorney has become an activity which enables the fulfillment of basic tasks and goals in the best (quality) and most effective way (efficiency and cost-effectiveness). When a person takes on the role of a state's attorney, he/she is confronted with the challenge to achieve the most efficient results for which professionalism and respect in the legal community need not necessarily be a guarantee. The underlying reason is that the position of a state's attorney as the head is very often assumed without a special training, management knowledge and skills.

The traditional model of public administration of which state's attorney offices are an integral part requires a minimum of planning. The role of state's attorney as the leader of the organizational process is not envisaged as a managerial position. Strategy development is within the jurisdiction of Ministry of justice so those planned for managerial positions as civil servants, in fact, implement the instructions received from the Ministry with no opportunity to, aside from the existing strategy, develop the efficient management model.

As it has already been mentioned, in most of the countries of the European Union, the new public management represents the philosophy of management

aimed at modernizing the public sector of which the state's attorney office is also the part. Planning, vision, and forecasting are introduced in the politics of management. The concept of public management in the judiciary, i.e. in the state's attorney presupposes, among the other, building-in the implementation of behavior based on market principles, the realization of efficiency through better management, by providing confidence, managerial strength and operative freedom with increased responsibility.

There is no systematic education for the area of management of a state's attorney office, thus the heads in the state's attorney are on their own, i.e. they manage their organizational units based on their own active approach they invest in the realization of the results - in the number and ratio of the cases solved, financial and material operating, the introduction of IT technology, upgrading the system for statistical monitoring of the work, improvement of administrative proceedings and alike.

In this analysis, the notion of the management of the state's attorney is used in the sense of managing the Central State's Attorney Office in which a key role belongs to the State's Attorney General.

In such a context a concise definition which defines the management of state's attorney as the management both within the state's attorney office and out of the cases is acceptable. It encompasses the management (leadership) within a state's attorney office, relations between the state's attorney, deputy state's attorney, advisory and administrative staff, allocation of cases, appraisal (evaluation) of deputy state's attorney and advisory staff, management of the budget and real estate, maintenance and security of building, use of new technologies, human resources management and communication with other judicial staff and citizens.

## **2. MANAGEMENT FUNCTIONS AND LEGAL FRAMEWORK FOR MANAGEMENT OF STATE'S ATTORNEY**

The management functions comprise all the activities by means of which managers manage the organizations. Traditionally this includes the following activities: planning, organization, leadership and control, and in the new literature human resources management is often included as it is logically linked with

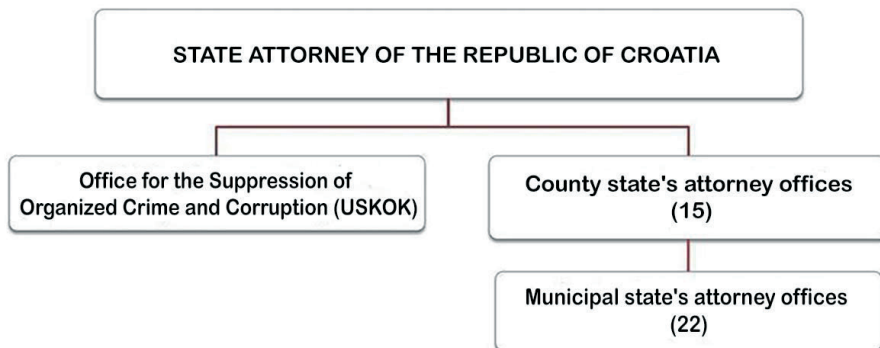
the organization. The aforementioned functions are inherent to the management of the judiciary, the courts and state's attorney office, it is only the question of how much attention is invested into this segment or whether those who run the state attorney's office have sufficient knowledge and managerial skills to respond to the challenges that are present in each state's attorney system.

The space for the realization of the main management functions and the application of managerial skills and knowledge in the management of the judiciary and state's attorney office is defined by the legal framework defined by the Law on State's Attorney Office of the Republic of Croatia and by the Rules of Procedure of the State Attorney Office.

The position and the role of state's attorney as an independent judicial body are defined by The Constitution of the Republic of Croatia, Art. 124, para 1.<sup>1</sup> The State's Attorney's Office is authorized to proceed against perpetrators of criminal and other criminal offenses, undertake legal actions to protect the property of the Republic of Croatia and submit legal remedies for the protection of the Constitution and the rights.

In the Republic of Croatia state's attorney, offices are the following: The Central State Attorney of the Republic of Croatia, county's state attorney offices (15) and municipal state's attorney offices (22) including permanent services in individual municipal state's attorney offices.

**Graph.1.** Structure of the State Attorney's Office



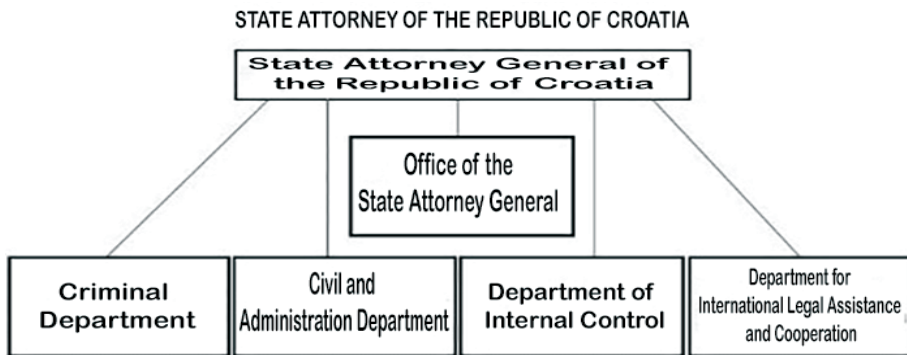
**Source:** <https://pravosudje.gov.hr/pravosudni-sustav-11207/drzavno-odvjetnistvo/11209>

<sup>1</sup> (Official Gazette, no. 56/90., 135/97., 8/98. – revised text, 113/00., 124/00. revised text, 28/01., 41/01. – revised text and 55/01. – changes and amendments, no. 76/10.) – in Article 125 –in revised text published in Official Gazette, no. 85/10, further in the text: The Constitution)

State Attorney of the Republic of Croatia undertakes legal actions from its jurisdiction for the protection of The Constitution of the Republic of Croatia and the legality before The Constitutional Court of the Republic of Croatia, undertakes actions from its jurisdiction before The Supreme Court of the Republic of Croatia, High Commercial Court of the Republic of Croatia and High Administrative Court of the Republic of Croatia. State's Attorney Office of the Republic of Croatia undertakes legal actions from its jurisdiction before international and foreign courts and other bodies and at the request of state bodies issues opinions about draft proposals of the law and other provisions.

State Attorney of the Republic of Croatia consists of the four departments: Criminal department, Civil-administration department, Department of Internal Supervision and Department for International Assistance and Cooperation.

**Graph 2.** Organization of the State Attorney's Office



Source: <http://www.dorh.hr/Default.aspx?sec=632>

The county state's attorneys' offices are formed for the area of jurisdiction of the county's commercial courts and for the area of jurisdiction of county's administrative court. The county's state attorneys' offices represent the Republic of Croatia in the legal actions before the county's court and before the commercial and administrative courts unless otherwise provided by law or by the decision of a competent state body based on the law.

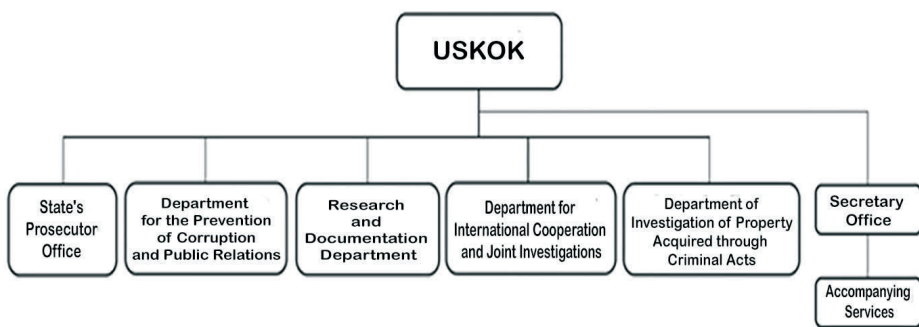
Municipal state's attorney offices are established for the area of jurisdiction of one or more municipal courts. The Municipal state's attorney offices represent the Republic of Croatia in proceedings before the municipal court and be-

for the administrative bodies unless otherwise provided by law or by a decision of a competent state authority based on the law.

Heads of departments and sections are heads of departments and sections.

State's Prosecutor Office for the Suppression of Organized Crime and Corruption (abbreviation in the Croatian language: USKOK) is a specialized body within the State Attorney Office of the Republic of Croatia, responsible for persecuting corruption and organized crime. USKOK headquarters are in Zagreb and the Office has jurisdiction over the entire Republic of Croatia. The office is managed by a director, appointed by the State Attorney General of the Republic of Croatia, with the previously obtained opinion of the Minister of Justice and the State Attorney Collegium. Senior counselors, advisors and professional associates assist the director and deputy directors in their everyday work.

**Graph 3.** Office for the Suppression of Organized Crime and Corruption (abbreviation in the Croatian language: USKOK)



Source: <http://www.dorh.hr/Default.aspx?sec=606>

According to the provision of Article 31 of The Law on the State's Attorney Office, the actual and local jurisdiction of state's attorney office is determined according to the provisions of laws that are applicable to the jurisdiction of the courts before which they exercise their powers unless otherwise stipulated by the Law.

Municipal state's attorney offices proceed before municipal and misdemeanor courts, i.e. administrative bodies and they file a lawsuit before the Administrative court, county state's attorney offices before the county and commercial courts, the state's attorney office before the Constitutional Court, Supreme

Court, Administrative Court, High Misdemeanour Court, High Commercial Court and international and foreign justice and other bodies, unless otherwise determined by law or the provisions based on the law.

State Attorney General is a key figure and main body responsible for carrying out the activities of the court's administration.

### **2.1. PLANNING**

Planning is the management function which includes defining the goals and defining the direction of future activities with the aim of achieving these goals. Planning is the process of several levels: definition of the goals, definition of the actual position of the organization in relation to the defined goals (scanning of the environment), forecasting the future events (challenges to be addressed), drafting a precise plans for the realization of the defined goals and ensure the conditions necessary for the implementation of the plan. With regard to the time aspect, the planning can be short-term, medium-term and long-term, and from the point of view of the scope of work to be undertaken, usually operational, tactical and strategic planning differ (Sikavica & Bahtijarević-Šiber, 2004, p. 75).

The State Attorney General represents the State's Attorney Office and is responsible for the work of the state's attorney office; he/she manages the State's Attorney Office, performs tasks of state's attorney administration, cares for the professional relations and actions of officials and other State's Attorney Office employees towards clients, the court, other state bodies, and legal entities as well as for relations between the state's attorney office employees. He/she convenes sessions of the collegium and meetings of other employees, provides mandatory instructions for work and procedures when necessary for the purposes of uniform application of the laws, as well as orders and instructions for resolving a particular case, evaluates the exercise of the state's attorney duties and gives public statements related to the state's attorney office activities, drafts annual work schedule, etc.

### **2.2. ORGANIZATION**

The organization, as the function of management, is the next step of the planning process and consists of drafting the organizational structure and al-

location of human resources in order to ensure the realization of the goals. The structure of the organization is a framework within which tasks to be performed according to the plan are coordinated. Organization means to determine the assets and methods for performing the planned activities. Management of human resources (staffing) is logically linked with the organization (Buble, 2009, p. 13) and, due to its importance, is often referred to as an independent function of the management. It is accomplished by identifying available staff, recruiting and selecting them, planning of the career, retaining and motivating (rewarding) quality employees and their training and improvement. The main goal of the human resources management is to deploy the right people to the right jobs. (Sikavica & Bahtijarević-Šiber, 2004., p. 77).

The state's attorneys structure is such that, as a rule, it has criminal and civil-administrative departments, however, the State Attorney General may, for reasons of purposefulness and cost-effectiveness, decide that representation in a certain type of civil and administrative cases is carried out by one state's attorney for an area where there are more local and actually authorized courts. For the purpose of performing the tasks of the state's attorney administration, the Department for Internal Control and the Department for International Legal Assistance and Cooperation is established.

Sections may be established within the departments, as expert bodies of at least three deputy state's attorneys specializing in a particular type of cases (e.g. sections for general crime, homicide, white-collar crime, juvenile delinquency, first instance and second instance criminal offenses, actual judicial relation, obligatory legal relations, administrative proceedings, labor relations, protection of natural resources and the environment, and alike). Sections within departments are usually organized only in the largest state's attorney offices.

Senior state's attorney may take over certain tasks assigned to a lower state's attorney (avocation) and may, in accordance with the law, authorize lower state's attorney office to proceed in a particular case or to perform certain actions from the jurisdiction of another lower state's attorney (delegation).

### **2.3. LEADERSHIP**

Leadership as the management function comprises the direction and motivation of employees for the tasks, they perform to achieve the desired orga-



nizational goal. The degree of employee's enthusiasm for the realization of the goals depends on the efficiency of the manager. Managers must first get familiar with the personality, values, attitudes, and feelings of employees to know how best to encourage them to work more efficiently (first and foremost with a persuasive communication) and how to adapt management styles to specific situations. Leadership is the only real and one of the most important functions of the management that deals with its interpersonal aspect (Sikavica & Barjaktarević-Šiber, 2004, p. 77).

Although the State Attorney's Office is hierarchically structured, the way of leadership, understanding of the personality of its associates, deputies, counselors, and staff leaves enough space to encourage labor productivity. The state attorney as a system manager must be aware that expertise, up-to-date work, and performance at work should be the main parameter in the work. Ability to change and adapt to new opportunities should be the basic conditions for advancement within the State Attorney's Office

#### **2.4. CONTROL**

The control comprises measuring the success of achieving goals and implementation of plans and also facilitates the correction of deviations from the standards. It enables the realization of plans by ensuring that the realized tasks do not deviate from the standards. The main control functions are demonstrated in setting the standards for implementation of the planned, in measuring the implementation in relation to the set standards and undertaking corrective measures when it is assessed to be appropriate (Buble, 2009, p. 13). By comparing the achieved with the planned, control integrates the entire management process (Sikavica & Barjaktarević-Šiber, 2004, p. 77).

The state's attorney performs supervision over the orderly and timely execution of all activities in the state's attorney office, while the heads of departments and sections, under the authority of the State Attorney General, and perform supervision over the orderly and timely execution of all assignments in their respective departments and sections (Article 7 of the Book of Regulations).

The state's attorney, or the head of departments and sections, supervises the work:



- ♦ by getting insight into the work of officials and other staff members of the state's attorney office, which he/she obtains through examination of files for which he/she or the deputy has requested consultations,
- ♦ by inspecting files and decisions, thereby controlling the work of the deputy if s/he has knowledge about work deficiencies,
- ♦ by reviewing the decisions of the courts issued on the occasion of an indictment or a lawsuit i.e. second statement, and in particular by obtaining insight into decisions made by second-instance courts and decisions on extraordinary legal remedies,
- ♦ or by reviewing registers, directories, supplementary books and lists, and the like.

Pursuant to Article 56 of the Law of the State's Attorney Office of the Republic of Croatia, in exercising the right to oversee the work of state attorneys, is obligated to take appropriate measures and in particular to get an immediate insight into the entire work and operations of each county state's attorney office. Paragraph 2 of this Article obligates county state's attorneys to review the overall work of district state attorneys once every two years.

Article 20, paragraph 2 of the Rules of Procedure stipulates that the State Attorney General shall, in accordance with the work program, individually or with the aid of certain officials and other professionals, conduct an overview of all operations or their individual parts of the county state's attorney office every two years. During the review of the county state's attorney office, full or partial reviews of municipal state attorneys in the county state's attorney office may be conducted. Examination of the work of certain municipal state attorneys can be done separately.

The review can be general and partial. The state's attorney office whose work has been reviewed is made familiar with the results of the review and the measures taken, by stating briefly the most important observations made, at the final meeting, while the written report states in detail what was established during the review. The county state's attorney offices also send a copy of the minutes and reports to the State's Attorney Office of the Republic of Croatia.

Mandatory (general) reviews, carried out every two years, comprise the work of the state's attorney and the deputy on the cases, but also a review of the work of all public prosecution services, including the writing office and the state's attorney office. General reviews may also be carried out on a number of occa-

sions when deemed necessary as result of disruption in the work of the state's attorney office.

Partial reviews may also be limited to individual departments, ancillary services (accompanying services), or to a review of individual state's attorney decisions, areas of crime i.e. civil or administrative cases.

The Rules of Procedure regulate the actions of the head of a department or section (Article 8, paragraph 2 of the Rules of Procedure) in the event of noticing an unequal treatment or conduct contrary to the established practice of a higher-level state's attorney office.

Reviews of the work of lower level state's attorney offices or the work of individual officials are regulated by the Law on the State's Attorney Office and the Rules of Procedure.

The mandatory (general) review is carried out by the state's attorney alone or with the deputies appointed by him and may be done by the deputies themselves. The review of the work of the ancillary services under the supervision of the deputy state attorney shall be carried out by officials (this will be regularly the case with the scrutiny of the writing office, the public prosecutor's office and with financial supervision).

Articles 19 to 21 of the Rules of Procedure prescribe the duty to carry out reviews, the deadlines, and types of reviews. Article 21 paragraph 1 of the Rules of Procedure relating to the review of the work of counselors and officials prior to their appointment to another duty or reinstatement at the beginning has the following words omitted: "The review is carried out...", and although it is clear that this paragraph specifies exactly what type of review, it is necessary to indicate it until the Rules are corrected. In order for the examinations to be carried out in a single way, the State Attorney General issued a Review Task No. O-7 / 06-1 of 20 February 2006.

### **3. ROLE OF THE STATE ATTORNEY GENERAL IN THE WORK MANAGEMENT OF THE STATE'S ATTORNEY OFFICE**

The State's Attorney Office is a vertically-hierarchically structured organization headed by the State Attorney General of the Republic of Croatia. The sub-

ordination stems from the Law on the State's Attorney Office, which stipulates that municipal state attorneys' offices are subordinated to county state attorneys' offices, and the latter is subordinated to the State's Attorney Office of the Republic of Croatia. Subordination is particularly pronounced in the administration of the state's attorney office. A senior state's attorney may issue to a lower level state's attorney mandatory instruction for work and following a procedure when it is necessary to ensure uniform application of the law and a unified procedure of state's attorneys.

The power of the state's attorney is limited by the powers of the higher judicial administration bodies as well as by the operations of the state's attorney office administration in which the State's Attorney General is the highest body. Despite such limitations, the state's attorney is the key figure in the state's attorney administration as regards his/her role in planning the work of the State's Attorney Office (short-term planning that needs to be included in the frameworks set out in the strategic documents), its organization (annual work schedule), guidance (orderly relations between its employees as well as their effects depend on the manner of communication that the state attorney develops with his/her deputies and other employees) and control (overseeing the orderly and timely execution of all assignments, establishing the fulfillment of state-level duties). His/her role, however, is most pronounced in terms of strengthening work efficiency. In that context, within the framework of leading as a managerial function, he/she would have to devote his/her utmost attention to his/her communication with state attorneys, deputies, counselors, and other employees in order to improve their motivation for increasing work efficiency. The state's attorney should also have more initiative and influence on the training and professional development of the deputy as well as on shaping the budget of his/her state's attorney office.

#### 4. CONCLUSION

The activities of the state attorney's office are increasingly complicated and diverse every day. International contacts, participation in drafting laws and other documents, joint work with prosecutors of other countries are just a part of these new jobs. Intensity and dynamism increase not only in relations with prosecutors in other countries and in changes in the state attorney's office. Ac-

cepting change and the ability to learn and change becomes crucial for the work of state attorneys.

Criteria for the success of state attorneys are increasing. The state attorney must be expert, educate, supervise the work of the state attorney's office and the lower state attorney's office, but also have to know and supervise important matters. Therefore, the increase in interdependence in the work of some state prosecution departments, new activities, and various forms of international cooperation and assistance require teamwork, within the state attorney's office, but also at the level of state attorney's office. The team in which the state attorney is primarily a coordinator, not a state attorney who decides everything for everything and everything is the basis for effective and quality work. The ability of teamwork and the ability to acquire permanent learning is a prerequisite for selecting a state attorney, but also the condition of recruiting trainees, counselors, and in particular deputy state attorneys.

There is no doubt that the modernization of the judicial system is unimaginable without the strengthening of management knowledge and skills in the function of improving the state's attorneys work efficiency. The results of scientific research of judiciary management (in the sense of managing a state's attorney office aimed at greater efficiency) confirm the necessity of applying managerial knowledge and skills through which the state's attorney office administration also performs its fundamental management functions. We particularly emphasize the importance of education and raising the level of professional development standards, the significance of planning for the purpose of establishing (short-term and long-term) goals and prioritization, as well as characteristics that a state's attorney is expected to exhibit as a good manager (communication capability, leadership, and vision).

The existing legal framework of the state's attorney office provides enough room for change, so there is no need to delay undertaking concrete measures.

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Zakon o državnom odvjetništvu, NN 67/2018

Poslovník državnog odvjetništva NN br. 05/2014 i 123/2015

# PURPOSE OF PUNISHMENT AND LEGALITY OF PARTIES' AGREEMENT IN CRIMINAL PROCEEDINGS

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## **Abstract**

*This paper deals with practically important issue whether the court in the context of reviewing the legality of the agreement of the parties in the Croatian Criminal Procedure is authorized to assess whether the negotiated punishment will meet the expected purpose, as well as to evaluate whether all relevant circumstances for determination of punishment are taken into account. Based on such evaluation, the court should decide whether the proposed agreement in the present case will be accepted or refused.*

*When it comes to the purpose of punishment, it is especially important to point out the interest of achieving the so-called positive general prevention. Bearing in mind the clear and unambiguous substantive legal provisions on sentencing and the content of procedural provisions on court proceedings when assessing the legality of a parties' agreement, it is right to conclude that only a court in each particular case can resolve any unpleasant antinomy between justified demands for efficiency of criminal proceedings and just punishment. Limiting the role of a criminal court in assessing the legality of the proposed punishment only to control compliance with the prescribed limits for the mitigation of punishment is in fact illicit abolition of one of its basic functions (sentencing) and at the same time completely unacceptable favoring the state attorney as a criminal policy maker. For the purpose of a more appropriate harmonization of the parties' agreement in criminal proceedings, which justifiably seeks to strengthen its effectiveness, with the basic substantive (guilty principle) and the procedural law (principle of the search for material truth) principles, the paper proposes amendments to the legal provisions on the agreement of the parties obliging the state attorney to present to the court the evidence he has, other than the defendant's confession, and to explain the negotiated punishment. This would*

*make the parties' agreement in the criminal proceeding more transparent, and the possibility of unfair punishment as well as convictions of innocent persons would be reduced.*

**Keywords:** *purpose of punishment, parties' agreement in criminal proceedings*

JEL Classification: K14, K49

## 1. INTRODUCTION

The 2008 Criminal Procedure Act (further in the text: CPA) introduced provisions on the negotiation of parties on the terms of guilty plea and the agreement on punishment and other measures that allow judgment on the basis of the parties' agreement, regardless of the severity of the criminal offense and with the significant passivation of the court (Tomičić & Novokmet, 2012, 149, 178). They represent the answer of the Croatian legislator to the challenges arising from the need to accelerate and simplify criminal proceedings, to reduce the costs of criminal justice system and to increase its effectiveness. The introduction of provisions on the possibility of completing criminal proceedings by a judgment under the agreement of the parties may also be justified by the need for the humanization of criminal law and the re-socialization of perpetrators of criminal offenses (Krapac, 2012, 87). Changes in the area of criminal procedural law are also strongly supported by the provisions of the Criminal Code (further in the text: CC), which, in the case of a parties' agreement, substantially extend the limits of mitigation of punishment.

The reform of the criminal procedure that was carried out by the CPA 2008 and which included, *inter alia*, the introduction of a judgment on the basis of the parties' agreement as one of the forms of consensual completion of the proceedings, was pursued in accordance with the principles established in 2007 by the working group of the Ministry of Justice. The principles were directed towards the adoption of a new system of criminal procedure rules that must guarantee the protection of human rights, reliable determination of the truth, in a speedy, simpler and more cost-effective manner that will take into account the nature and severity of the criminal offense, the person of the defendant and the victim, as well as the need to protect society from criminal offenses (Pavišić, 2008, 518).

With regard to the content of the procedural provisions on the agreement of the parties, it should first be noted the provision of the CPA related to the defendant's statement of his guilt and the agreement on punishment and other measures. This provision defines the subject of negotiation and the defendant's obligation to have a defense counsel during the negotiations (Article 360, paragraph 1 of the CPA), the possibility for the court (indictment panel) to briefly postpone the session in order for the parties to conclude the negotiations (Article 360, paragraph 2 of the CPA), the proceedings before the indictment panel (Article 360, paragraph 3 of the CPA), the conduct of the State Attorney after the signing of the statement and his obligation to obtain the consent of the victim of an agreement for more serious criminal offenses against life and limb and against sexual freedom (Article 360, Paragraphs 5 and 6 of the CPA).

Concerning the subject of agreement and its boundaries (negotiation on terms of guilty plea and agreement on punishment and other measures), it is a key obligation of the State Attorney to act on the principle of legality, excluding the negotiation on modification of the indictment through the mitigation of the qualification or withdrawal from persecution for particular criminal offenses in the purpose of obtaining the defendant's guilty plea (Ivičević Karas & Puljić, 2013, 835; Tomičić & Novokmet, 2012, 178-181).

The State Attorney may not negotiate a less severe punishment or other measure for the possible use of the defendant as a witness in another criminal proceedings because in such a case it is his inadmissible manipulation and abuse by replacing the procedural roles of the perpetrators of criminal offenses to secure the conviction and to strengthen the evidence against the co-defendants (Turudić et al., 2016, 150-151; Ivičević Karas & Puljić, 837; Đurđević, 2009, 790-791).

The provisions of the CPA (Articles 361 to 364 of the CPA) relating to the making of a judgment based on parties' agreement (plea bargaining) govern the conduct of the indictment panel following the receipt of the statement for making that decision, the content of the judgment based on plea bargaining, and the exceptional possibility of rebutting such a judgment by appeal. With regard to the subject of this paper, it is particularly worth mentioning the provision concerning the judicial control of the legality of the parties' agreement referred to in Article 361, paragraph 3 of the CPA, according to which the indictment panel will not accept the statement for making a judgment based on plea bar-



gaining if, under the circumstances, the acceptance of such a statement is not in accordance with the determination of punishment prescribed by the law or the agreement otherwise is not lawful. In that case, the indictment panel shall refuse the statement for making the judgment on the basis of a parties' agreement by a decision against which an appeal is not allowed. Following the decision to refuse the statement for the judgment on the basis of the plea bargaining, the indictment with the case file must be submitted to the presiding judge of the trial panel to determine the hearing (Article 361, Paragraph 4 of the CPA). If it accepts a statement for making the judgment on the basis of a parties' agreement, the indictment panel shall pronounce the punishment or other measure to the accused under Article 360, paragraph 4 of the CPA (Article 361, paragraph 2 of the CPA). In the manner described, the president of the trial panel at the preliminary hearing (Article 374 of the CPA) may also act upon submission of the statement for making the judgment on the basis of the parties' agreement.

Acceptance of any model (type) of plea bargaining and any other form of consensual justice is difficult to reconcile with the achievement of more important procedural principles (Damaška, 2004, 19). Therefore, in the Croatian literature on criminal procedure law, after the introduction of the institute of the judgment on the basis of the parties' agreement, ideas emerged that seek to eliminate the perceived shortcomings of the current legal solution.

Following some of the solutions from the comparative criminal procedural law, they are primarily aimed at excluding the possibility of making agreements in the most serious criminal offenses, the more active role of the court when deciding on accepting a statement for making the judgment based on plea bargaining statement and a more transparent procedure, and should reduce the possibility of conviction of the innocent and to contribute to the realization of the victim's interest (Ivičević Karas & Puljić, 2013, 841-843; Tomičić & Novokmet, 2012, 186).

This means in particular that the court should have a wider opportunity to not accept the agreement after a public contradictory hearing if it considered that the existing evidence was insufficient for the conviction or that the proposed punishment was not determined in accordance with the legally prescribed purpose of the punishment (Ivičević Karas & Puljić, 2013, 847). In the context of making the judgment on the basis of plea bargaining, fair punishment is also emphasized as the fundamental task of the court, the connection

between the guilty principle and the duty to investigate (substantive) truth and the necessity of finding a balance between the aspiration for efficiency and the way of acting (transparent, public) that creates and strengthens the trust of citizens in the legal system as a whole (Turudić et al., 2016, 146, 149-151). The latter refers to the problem of the relationship between the legal regulation of parties' agreements in criminal proceedings and the theories about the purpose of punishment (especially those that emphasize positive general prevention).

Contrary to the theoretical approaches advocating strengthening the role of the court when deciding on the legality of a party's agreement, the Supreme Court of the Republic of Croatia in several recent decisions represents a very dubious standpoint, which considerably narrows the judicial control of the legality of the negotiated punishment because it eliminates the possibility of refusing the parties' agreement because the proposed punishment is not determined in accordance with the purpose of punishment and the circumstances relevant for determining the punishment, leading to an even greater marginalization of the court.

The purpose of punishment in Croatian criminal law, the relation of the parties' agreement in criminal proceedings and the positive general prevention, as well as the judicial control of negotiated punishment are discussed below. The conclusion sets out the main guidelines for future amendments to the legal provisions on plea bargaining that can contribute to more appropriate pursuit of certain purposes of punishment, in particular positive general prevention.

## 2. THE PURPOSE OF PUNISHMENT IN CROATIAN CRIMINAL LAW

The Criminal Code usually does not have an explicit rule on the purpose of punishment. This is understandable because it is a controversial theoretical question on which consensus is difficult to reach, and it is even more difficult to express it with a simple formula required by the legal text. However, the Croatian legislator has explicitly defined the purpose of punishment in Article 41 of the CC. This provision reads: the purpose of punishment is to express public condemnation for a criminal offense committed, raise the confidence of citizens in the legal order based on the rule of law, exert the influence on the perpetrator and all others so that they do not commit criminal offenses by raising awareness of the perils of committing criminal offense and of the fairness of punishment,

and allow the perpetrator's reintegration into society. This provision is shaped in accordance with contemporary mixed (uniting) theories that seek to balance retribution and prevention (Novoselec & Bojanić, 2013, 376), and its elements have primarily preventative content (Horvatić et al., 2017, 222).

Defining the purpose of punishment does not solve the problem of possible antinomy of certain purposes of punishment because it is not the legislator's task, but it provides guidelines for practice, which should be taken into account when determining the sentence. Article 41 of the CC is dominated by a positive aspect of general prevention which comes to the fore in the section on strengthening the public confidence in the legal order based on the rule of law and the impact on all the others not to commit criminal offenses by raising their awareness of the danger of criminal offenses and fairness of punishment. The idea of special prevention is contained in the influence on the perpetrator not to commit criminal offenses, and such influence is also achieved by strengthening the perpetrator's awareness of the perils of committing criminal offenses and of fairness of punishment. The purpose of punishment is also to enable the perpetrator to re-engage in society. This is a reflection of the idea of re-socialization, which is dominant in the execution of punishment. For realization of special prevention, it is especially important that the perpetrator himself accepts the punishment as fair. The emphasis on fairness as the object of awareness of perpetrators and all other citizens makes it possible to link special and general prevention with retribution, which is also the purpose of punishment in Croatian criminal law, since Article 41 of the CC also mentions the public condemnation for a criminal offense committed. A just (fair) or deserved punishment is only a punishment based on the guilt of the perpetrator and which is limited by the degree of his guilt. That is why the purpose of the punishment is derived from the principle of (individual) guilt, according to which no one shall be punished unless found guilty (culpable) of the committed criminal offense (Article 4 of the CC), and the severity of punishment shall not exceed the degree of culpability (Article 47 § 2 of the CC). Only such punishment can strengthen the public confidence in the functioning of the legal order and direct the perpetrator to life without committing criminal offenses. Such social condemnation should be perceived as a social-ethically-based disapproval (censure), which is the core of perpetrator's guilt towards normative theories that accept Croatian criminal law. Since guilty is the foundation of punishment, and its degree limits the severity of punishment, the expression of social condemnation is closely related

to the retribution or the requirement that punishment must be fair (Novoselec & Bojanić, 2013, 376-377).

The model of unifying (mixed) theory on the purpose of punishment which treats retribution, special and general prevention as equal punishment purposes and which comes to light in Article 41 of the CC deserves approval. Retribution as a purpose of punishment is acceptable in terms of expressing a social-ethical censure for perpetrated criminal offense and in the sense of deserved punishment which corresponds to the degree of perpetrator's guilt. The sense of justice, which is of great importance in stabilizing the general legal consciousness, requires no one to be punished more than he deserves, and just punishment is the only one that is based on the perpetrator's guilt and is limited by the degree of guilt. The severity of punishment must never exceed the degree (measure) of guilt (Bojanić & Mrčela, 2006, 439-440). Fair cannot be a drastic punishment if the degree of guilt is low (Novoselec & Bojanić, 2013, 370), as well as excessively lenient punishment if the degree of perpetrator's guilt is high. Only a just punishment can strengthen the public confidence in the functioning of the legal order (positive general prevention) and the training of perpetrator for life without the commission of criminal offenses (special prevention) is not possible if he does not accept the punishment as just. The punishment may also go below the level of the established degree of guilt when this requires special prevention interests, but only if the minimum requirements for general prevention are met with such punishment. The punishment, however, should not be over-reduced due to special prevention effect, since such punishment would no longer be seriously understood by citizens; such a punishment could shake confidence in the legal order and encourage the imitation of the perpetrated criminal offense. The concept of retribution as shown here is also useful for achieving preventive goals (Bojanić & Mrčela, 2006, 439-440).

Accepting unifying (mixed) theories in Croatian criminal law is consistent with modern concepts that wish to align the idea of censure and the requirements of prevention, especially positive general prevention. The element of censure in punishment should act as an appeal to existing beliefs that conduct which is prohibited by criminal law deserves a condemnation. The appeal contained in the punishment indirectly and in the long run can contribute to the prevention of criminal offenses, even if such effects cannot be quantified or measurable. The principle of proportionality of punishment must be strongly emphasized in the area of the determination of punishment. The measure of

punishment reflects the measure of condemnation, so that the higher punishment expresses the stronger and the lower the weaker censure (Hörnle & von Hirsch, 1995, 270, 279). The punishment cannot be justified by the one-sided emphasis of preventative purposes or by the exclusive emphasis of socio-ethical disapproval of perpetrators' conduct, but merely on the basis of a combination of both elements (von Hirsch, 2011, 44). Such a combination tries to overcome the sharp contradiction of absolute (retributive) and relative (consequentialist) theories of the purpose of punishment.

The definition of the purpose of punishment referred to in Article 41 of the CC is not contrary to the understanding that the purpose of punishment is seen only in (special and general) prevention, but also point out that the severity of punishment is limited by the offender's guilt. And such a concept of prevention that is limited by the guilty of the perpetrator is based on the knowledge that neither guilt nor prevention take for themselves (alone) cannot legitimize the punishment. The need for the preventive necessity of punishment, as well as its limitation to the just measure of guilt, is laid down in the foundations of democracy that respects human rights. The „mixed“ theory, which in this way links prevention and fairness, does not represent the eclectic connection of heterogeneous approaches, but by its insistence on cumulative justification, it is the only convincing possibility of sufficient justification for the state power of punishment (Roxin, 2006, 95). According to the concept presented, guilt is derived from the purpose of individual punishment and requires an extension with regard to preventive aspects, since punishment does not only depend on guilt but on the requirements of prevention. When the punishment depends on its preventive necessity and, moreover, on the perpetrator's guilt and guilt degree, the punishment has a double limit. It must not exceed the measure of guilt, but it must not be severe than necessary. For example, a punishment may be measured below the measure (degree) of established guilt measure if this is desirable because of re-socialization or it can be waived if it is not preventive necessary. In this way, the traditional term of guilt is supplemented by the condition of preventative necessity for punishment, and their cumulating forms the notion of responsibility (Roxin, 2011, 680, 684-686). The punishment serves all in the individual case for the relevant purposes of positive and negative special and general prevention, and responsibility assumes the perpetrator's guilt and is limited by its measure. In such a concept, the dispute between absolute and relative theories about the purpose of punishment ceases. The punishment

serves for all purposes of (positive and negative) special and general prevention relevant to the individual case, and responsibility assumes the perpetrator's guilt and is constrained by its measure. In such a concept, the dispute between absolute and relative theories about the purpose of punishment ceases (Roxin, 2015, 202).

### 3. PLEA BARGAINING AND POSITIVE GENERAL PREVENTION

Since the conclusion of the criminal proceedings by the judgment based on plea bargaining primarily meets the interests of the parties and contributes to the cost-effective use of funds intended for the criminal justice system, it can rightly be asked whether the particular purposes of punishment referred to in Article 41 of the CC can be met at all in the case of the negotiated punishment (compatibility of plea bargaining and the theories about purpose of punishment) or what is the relationship between the legal provisions on the parties' agreement in criminal procedure and the purpose of punishment?

The proportionality between the punishment and the guilty of the perpetrator is in the case of an agreed sentence in the second plan, the mitigation of punishment may be appropriate to the interests of special prevention and re-socialization, while the degree of mitigation should not jeopardize the interests of general prevention. Since Article 41 of the CC, as has already been emphasized, is dominated by positive general prevention, it is only in this work to discuss the interaction of legal provisions on parties' agreement in criminal proceedings and positive general prevention.

#### 3.1. THE IMPORTANCE OF POSITIVE GENERAL PREVENTION

The theory of general prevention today is very influential, thanks to its positive aspect of preserving and strengthening public confidence in the functioning of the legal order, the constant demonstration of the inviolability (sanctity) of the law or norm validity, and thus the strengthening of general legal awareness and loyalty of citizens to legal norms. Such a concept of general prevention criminal law theory gives precedence over intimidation, although these two aspects cannot be completely separated, because trust in the power of functioning of the legal order depends in part on the intimidating (threatening) effect of

criminal law (prescribed punishments). The theory of positive general prevention appears in various variants and can be considered almost prevalent in the German criminal law theory (Jescheck & Weigend, 1996, 68). It is interesting to note that positive general prevention is also discussed by Anglo-American authors, which this aspect of general prevention, together with the theory of legal goods, consider as the most important achievement of German criminal law dogmatics (Dubber, 2005, 679-707).

Some German authors describe positive general prevention through its effects. Thus, for example, they emphasize the socio-pedagogical motivated effect of learning, according to which the criminal law and court decisions make it clear that the social values are respected, the effect of confidence (trust) that arises when everyone is convinced that the law is respected and the effect of satisfaction, which calms the public that is disturbed after the perpetration of the offense, and who, after the pronouncement of the sentence, considers the conflict with the perpetrator to be resolved (Roxin, 2006, 80-81).

It is the task of punishment to insist on voluntary compliance with the norm, so that the threat of punishment affects the processes of personal development and learning, instead of focusing only on the short-term behavioral adjustment. The punishment should have a moral and educational impact, and positive general prevention should not contribute to the general respect of norms through intimidation, but through strengthening internal links with social norms and by promoting internalization and acceptance of norms (Baurmann, 1994, 368).

The aforementioned standpoint links the positive general prevention and the socio-ethical function of criminal law that advocated in German criminal law theory 50 years ago. The primary task of criminal law is not to protect the current legal goods because the criminal law usually comes to the scene when these goods are already violated but respecting the positive social-ethical values in the actions of individuals. By punishing murder, criminal law calls for respect for human life, it shapes the socio-ethical judgments of citizens and strengthens their loyalty to the law (Welzel, 1969, 2). However, criminal law does not want to impose any conviction, but only respect for the legal goods protected by criminal law and recognition of norms. There is no doubt that stabilizing norms in society, as a positive general prevention, falls under criminal law tasks (Roxin, 2006, 48). By prosecuting and punishing behaviors that deviate from fundamental legal values, the criminal law in the most impressive way avail-



able to the state clearly shows the invulnerable validity of the positive values of human actions, shapes the socio-ethical beliefs of citizens and strengthens their loyalty to justice. Ensuring respect for legal goods is more important than achieving a positive result in the current individual case. Only in such a way is it possible to achieve a lasting and truly thorough protection of legal goods. The socio-ethical function of criminal law guarantees deeper and stronger protection of legal goods than is possible through the very idea of the protection of legal goods (Welzel, 1969, 3-4). Almost at the same time, the socio-ethical function of criminal law was emphasized in Croatian literature. It manifests itself in the continuing action of the criminal law that is increasingly being developed by citizens in their positive attitude toward the social values that are protected by the law. It is not the purpose of the Criminal Code that only citizens of fear of punishment refrain from disturbing or endangering elementary social values, but that these values are respected in their own beliefs and that they enter them into their moral code (Zlatarić & Damaška, 1966, 305).

The effects of positive general prevention are difficult or almost impossible to empirically check because general trust in the functioning of the legal order is influenced by many factors. General prevention also justifies punishment in situations where there is no longer a danger of repetition of a criminal offense for a particular perpetrator, and that is its advantage over special prevention theories. The fundamental objection, as well as the objections to special prevention theory, consists in the fact that general prevention theories do not have a criterion to determine the severity of the sentence. They generally meet the form of criminal policy that committing criminal offenses is considered to be an indicator that past penalties were not sufficient for efficient general preventive action, and the solutions to these are more severe punishments. The idea that more severe punishments have a more intimidating effect has historically proven to be the most common cause of excessive punishment. Overestimation the measure needed to stabilize the legal order contains the threat of state terror. More severe punishment for general-purpose reasons calls into question a human dignity.

In addition to the most powerful point of criticism of positive general prevention that is reflected in the fact that its assumptions are not empirically provable (Hörnle & von Hirsch, 1995, 262), it should be particularly emphasized here that general prevention ignores the guilty of the individual perpetrator and questions his human dignity because the perpetrator is used as a means of



achieving preventative goals of others (Novoselec, 2016, 364). In this connection, it is necessary to provide a convincing explanation as to why the perpetrator is not punished solely for his offense but also for the others to believe in the real validity of the norm (Weigend, 2011, 33) achieving the preventative goals of the state? It is considered that the perpetrator within the scope of his responsibility must also bear the burden arising from the general preventive purposes of the punishment. In other words, he should accept that an example of his punishment will also affect others not to commit criminal offenses and that his punishment will strengthen public awareness of the need to punish incriminated behaviors (the effect of learning), that it will strengthen public trust in the implementation of the law (confidence effect) and that the ending of the disorder arising from the perpetration of the criminal offense would be deemed appropriate (the effect of satisfaction). All this covers the perpetrator's responsibility, which is the result of a culpable conduct. Responsibility for unlawful conduct is contained in the disapproval (censure) of the act. At the same time, it requires that the perpetrator faces his responsibility and that he must assume what is preventively necessary to re-establish legal peace (Roxin, 2015, 198).

Positive general prevention comes to the fore when punishment is imposed and within the prescribed limits can justify a higher or lower penalty. The modification of punishment (pronouncing more or less severe punishment, suspended sentence or community service) based on the requirements of positive general prevention comes into consideration only in exceptional cases. As a general rule, it should be assumed that general prevention should only be considered when the imposed punishment sufficiently expresses the perpetrator's guilt. The punishment in which its proportionality to the perpetrator's guilt is at the center of attention is likely to be considered by the public as fair and therefore it is realistic to expect to be accepted as the correct form of norm validity confirmation (Meier, 2001, 182; Jescheck & Weigend, 1996, 881).

Situations in which the demands of positive general prevention appear as corrections of more or less severe punishment also appear in court practice. For example, mitigation of punishment from the standpoint of positive general prevention would be justified in the case of lengthy proceedings that were not delayed by the accused, as well as that also there will be a need for more severe punishment in case of unacceptable mild negotiated punishment.

However, the importance of positive general prevention should not be overestimated. In this connection, criticism of radical functionalism is justified (Ambrož, 2018, 21-22), which in the design of criminal law terms puts the purpose of punishment in the foreground, as in the example of a functional perception of guilt that guilty defines and measures (estimates) according to the requirements or needs of positive general prevention (Jakobs, 1976, 8-9). In the context of such an understanding of guilt, it is also wrong to assess the view that the defendant's guilt due to the need for positive general prevention in case of agreement should be assessed differently than in other cases with similar or equal criminal content (Schmitz-Remberg, 2014, 72).

### 3.2. THE IMPACT OF THE LEGISLATION ON PLEA BARGAINING ON POSITIVE GENERAL PREVENTION

An agreement on punishment may, to a certain extent, create a positive impression among citizens. Judgments based on a parties' agreement in criminal proceedings will not undermine public confidence in the functioning of the legal order if they are perceived as a quick and effective response to the perpetrated criminal offense, which does not at the same time compromise the fairness of punishment. However, adequate substantive and procedural legislation can contribute to the achievement of desirable effects from the standpoint of positive general prevention. Some previous research on the compatibility of legal provisions on plea bargaining and positive general prevention seeks to identify key points in normative content that need to be addressed in order to realize certain aspects of positive general prevention in the best possible way (Schmitz-Remberg, 2014, 62, 82-121). The results of such investigations are also useful for Croatian criminal procedural law in view of the modalities and desirable modifications of the provisions on plea bargaining *de lege ferenda*.

The following questions should be answered: Is it justifiable to exclude the plea bargaining for the most serious criminal offenses from the point of view of positive general prevention? What role in plea bargaining belongs to the principle of seeking material truth? Is it possible to improve the transparency of the proceedings leading to a judgment based on parties' agreement? To what extent should the limits of the punishment mitigation be extended in the case of parties' agreement on mitigated sentence?

In this connection, it is especially worth pointing out the standpoint of the German Federal Constitutional Court in which that court states that search for truth, determination a (fair) punishment that is proportionate to the perpetrator's guilt, as well as the fairness and transparency of proceedings constitute important values of the criminal justice system that also must be respected in the context of plea bargaining (BverfG - Federal Constitutional Court, Judgment of March 19, 2013, §§ 67, 95-96, 104-105).

### **3.2.1. Exclusion of parties' agreement for the most serious criminal offenses**

Despite the interest of the judiciary for the quickest possible completion of the criminal proceedings and the aspirations of the defendants for the slightest possible punishment, judgments based on parties' agreement should be an exception and not a rule. A common practice of negotiating may weaken or even nullify the threat of punishment, and unequal treatment of offenders can also be considered. The level of certainty in determining the guilt of the accused in the case of a judgment based on agreement of the parties is, in principle, lower than in the case of the defendant's conviction after a public and transparent hearing that was conducted with formalities guaranteeing all the rights of defense and reducing the probability of conviction of the innocent. Therefore, support should be given to proposals that, based on the insight into comparable solutions in continental law, for the protection of the defendant's rights and respect for the interests of the victim and the public, advocate the exclusion of plea bargaining for the serious and most serious criminal offenses (Tomičić & Novokmet, 2012, 181-182; Ivičević Karas & Puljić, 2013, 843-844). The reasons behind the above-mentioned proposals are also sufficient from the point of positive general prevention to justify exclusion of plea bargaining for the most serious criminal offenses.

### **3.2.2. The search for (material) truth and parties' agreement**

The duty to seek (material) truth is an indispensable precondition for the realization of the guilt principle, or the principle of proportionality between the punishment imposed and the established degree of perpetrator's guilt. Although the principle of guilt belongs to substantive criminal law, it has procedural implications because it obliges the court to establish the facts necessary

to determine the degree of the accused's guilt. Moreover, if the punishment is mitigated only for the sake of acceleration of the proceedings and the reduction of the number of cases and therefore remains below the level reflecting the accused's guilt, the imposition of such a sentence constitutes a breach of the guilt principle (Weigend & Turner, 2014, 82, 84-85).

In the German literature on criminal procedure law, it is particularly insisted that the plea bargaining does not affect the principle of seeking truth and that the duty of clarification the facts undoubtedly is higher than the possible completion of the proceedings. Giving up (withdrawal) from the duty to search for truth cannot be supported under any circumstances for the reasons of positive general prevention. The most important consequence of such waiver would be the loss of confidence. In the end, the public should have doubts whether the defendant actually committed a criminal offense. It would also no longer be recognizable to the public whether the law or the mere agreement had actually come to light in the proceedings. In addition, the effect of satisfaction could not be fully realized because it would remain unclear whether a pronounced sentence resolved a conflict with the actual or alleged perpetrator. It is reasonable to fear that without this principle a much more innocent would be punished, which could cause problems with respect to maintaining / ensure social cohesion.

Positive general prevention therefore requires that the principle of seeking the truth also applies within the framework of the plea bargaining, and in the event of any contradiction between the acceleration of the criminal proceedings generated by parties' agreement and judicial determination of the truth, such a duty of the court must always take precedence (Schmitz-Remberg, 2014, 90).

Affirmation of the search for material truth is also needed in the context of possible change of the provisions related to making a judgment based on parties' agreement in Croatian procedural law. Since the court does not assess the existence of the defendant's guilt at all before pronouncing the verdict, it is necessary to create mechanisms that will enable it (Tomičić & Novokmet, 2012, 186), i.e. to ensure effective judicial control of the legality of the agreement, it is necessary to ensure effective judicial control of the lawfulness of the agreement, which would include not only verifying whether the punishment was measured in accordance with the legal rules on determination and the purpose of the punishment, but also to ascertain whether the existing evidence is sufficient for the

conviction (Ivičević Karas & Puljić, 2013, 842). In the latter case, it is about strengthening the court's inquisitorial powers and the connection between the inquisitorial principle and the duty of the court to investigate material truth. The necessity of prescribing a procedure in which truth will be established arises from Article 1 of the CPA, which requires that procedural rules ensure the release of the innocent and lawful punishment of the guilty. The search for the truth and its determination give legitimacy to criminal proceedings and criminal judgments (Đurđević, 2013, 341).

### 3.2.3. Transparency of the bargaining

Control of the legality of the parties' agreement (negotiated punishment and evidence justifying the conviction) should be conducted at a public hearing instead of *in camera*, to ensure transparency and as far as possible avoid the risk of superficial ratification of the agreement by the court (Ivičević Karas & Puljić, 2013, 842). In this way, it would be possible to remove the justified objection (Turudić et al., 2016, 142-143) that the current provisions on the parties' agreement in criminal proceedings are not harmonized with the guidelines contained in the Recommendation of the Council of Europe Committee of Ministers concerning the simplification of criminal justice no. R (87) 18 of 17 September 1987. The guidelines relating to the guilty plea proceedings require that it be carried out before a court at a public hearing, that there should be a positive response of the accused to the charge against him and that before the conviction of the defendant exists the opportunity for the judge to hear both parties.

Determination of the punishment is in the hands of a state attorney who thus exercises a strong influence on the judicial punishment policy because the court can only refuse the proposed punishment after checking its compliance with the legal rules on punishment determination. Transparency of the proceedings here requires that the circumstances that a state attorney should take into account when measuring the sentence should be regulated by law (Ivičević Karas & Puljić, 2013, 840) instead by instruction of the Chief State Attorney and that the law should also prescribe the obligation of the State Attorney to explain the proposed punishment. Because of the impression that the judgments based on the parties' agreement can be made in public, it is a convincing proposition that the prosecutor should briefly present what evidence he still has, other than the confession of the accused (Damaška, 2004, 18-19). The

publicity and transparency of the negotiation procedures is certainly necessary from the standpoint of positive general prevention, as this creates and strengthens the public confidence of citizens in the functioning of the legal system as a whole (Turudić et al., 2016, 151).

### 3.2.4. The limits of mitigating the negotiated punishment

Regarding other practices that shorten the procedure, confession of the accused is of special importance because the accused in a special way assumes responsibility for his conduct; in the end, at least in relation to the public, he recognizes a violated norm and values that are protected by the norm, which is still more than the usual savings of funds. His assumption of responsibility is a significant contribution to re-establishing the legal order and proof of the of the norm validity. It is a contribution to faster determination of facts, shortening of the proceedings and saving of the resources of the judiciary, which is generally recognized by the court as a mitigating circumstance in the determination of the sentence. However, the question may be raised whether the special provisions of the Penal Code on the limits of mitigating the negotiated punishment are justified by which the court may impose a milder sentence than prescribed for a particular criminal offense when a state attorney and defendant are agreed upon the mitigation of the punishment (Article 48, § 3 of the CC). Namely, for such a case, the Croatian legislator provided that the punishment may be reduced to half the lowest punishment obtained by mitigation according to the rules of regular mitigation cases without the agreement of the parties but may not be less than three months in prison (Article 49, § 2 of the CC).

The literature states that the parties should be provided with a maneuvering space in the sanctions negotiation in order to fully apply the parties' agreements in criminal proceedings and that the defendant will be motivated to confess only if he is offered a less severe punishment than he could receive during the proceedings. In addition, the provision that provides significant benefits in determination of the sentence should contribute to greater use of alternative sanctions, as further mitigated punishment open the possibility of applying suspended sentence and community service. It is also considered that disputes related to the mitigation of punishment do not call into question the rational punishment policy (Turković & Maršavelski, 2012, 814). In the latter view, however, it is the

erroneous interpretation of the finding of another author (Damaška, 2004, 15) that appears in a context that suggests the opposite conclusion.

Rational punishment policy will certainly be called into question if the negotiated punishment is not transparent because of the absence of an obligation to state the reasons for the mitigation of the punishment or because the degree of perpetrator's guilt and other circumstances relevant to the determination of punishment other than the defendant's confession are completely ignored. The use of substantially extended mitigation limits can be extremely sensitive to the most serious criminal offenses where significant mitigation of punishment can hardly be theoretically justified. Thus, for example, a criminal offense of genocide referred to in Article 88, paragraph 1 of the CC, which is punishable by imprisonment for at least ten years in prison or a long lasting imprisonment, may be punished by imprisonment for a term of one year and six months in prison, only on the basis of the fact that such a reduced sentence was agreed by the state attorney and the defendant.

In addition to the conviction of the innocent defendant, which has nothing to do with the purpose of punishment, the main problem of the judgment based on the parties' agreement in the context described above may be the imposition of excessively mild sentences that are contrary to the requirements of positive general prevention, but also to the demands for retribution if the punishment imposed is obviously unjust with regard to the degree of perpetrator's guilt (Bojanić & Barković Bojanić, 2015, 758). It is therefore certainly necessary to re-consider very significant benefits in determination of punishment that the legislator prescribed for punishment mitigation resulting from the parties' agreement.

#### 4. JUDICIAL CONTROL OF THE NEGOTIATED PUNISHMENT

In the introductory part of this paper, a provision from Article 361, paragraph 3 of the CPA has already been highlighted that relates to the judicial control of the legality of the agreement of the parties, according to which the indictment panel will not accept the statement for making a judgment based on the parties' agreement if, its acceptance is not in accordance with the determination of punishment prescribed by law or the agreement otherwise is not lawful. That provision clearly sets out the reasons why the court will not accept the statement of the parties for making a judgment based on plea bargaining: either



because the acceptance of such a statement (negotiated punishment included) would be contrary to the law on determination of punishment (purpose of punishment included), either because the parties' agreement is unlawful because it violates other provisions of the CC or CPA on plea bargaining (TPBB, 2016, p. 145). Such control powers of the court in the Croatian literature on criminal procedure law are not questioned by anyone. Moreover, there are several suggestions for their extension. There is, however, a misinterpretation (Cambj, 2013, 672) that Article 361, Paragraph 3 of the CPA should be interpreted so that the court is empowered to assess the compliance of the negotiated punishment with the penal policy of the courts. This is not about harmonization of the negotiated punishment with the penal policy of the courts, but about the compliance of such a punishment in the concrete case with the legal provisions on the determination of punishment.

Contrary to the foregoing, several recent decisions of the Supreme Court of the Republic of Croatia (hereinafter: the SRCR) show, however, a clear desire to restrict the judicial powers of controlling the negotiated punishment by multiple dubious reasoning. In this connection, it is probably the most famous case in which the SCRC ruled on two occasions on the request for protection of legality filed by the State Attorney against the decision of the first instance court (Zagreb County Court) on the refusal to accept the parties' agreement proposing the pronouncement of a suspended sentence (for a term of one year imprisonment and a probationary period of 4 years) to the accused who confessed the commission of the criminal offense of bribing in the amount of 100,000 Euros. The court of first instance (the president of trial panel) twice refused to accept the statement of the parties for making a judgment based on plea bargaining, arguing that the negotiated punishment was inappropriately low or that it was not in accordance with the purpose of punishment prescribed by law and the circumstances relevant to the determination of punishment. Contrary to such a position of the court of first instance, the SCRC in its decisions advocates a very restrictive stance that judicial control of the negotiated punishment covers only the strictest control, i.e. whether there is a negotiated sentence in accordance with the prescribed punishment for a particular criminal offense, the limits of punishment mitigation, as well as with other legal provisions by which the legislator has arranged the negotiation of the parties on punishment and other measures, assuming that an agreed punishment is appropriate to all circumstances of the particular case.



In the explanation of the first decision of the SCRC (Kzz 38 / 16-3, judgment of 21 September 2017) it is stated that accepting the position of the court of first instance would lead to arbitrariness in the proceedings of that court, because the court did not know the circumstances which the parties had in mind when they negotiated punishment. The SCRC states that the law does not oblige the parties to state such circumstances in the statement and the court in a procedural stage deciding on (no) accepting the statement of the parties (preparatory hearing) cannot determine or evaluate such circumstances. Acceptance of the position of the first instance court would also mean that, within the preparatory hearing, decided upon by the president of the trial panel, that court has greater powers than the indictment panel making the judgment on the basis of the parties' agreement or the second instance court.

In his second decision in the same case, accepting the statement for making a judgment based on parties' agreement and pronouncing the accused conditional sentence, the SCRC (Kzz 17 / 2018-5, judgment of 9 May 2018) reiterated the arguments set out in the first decision and supplemented them with the assertion that the SCRC in another decision (Kzz-2 / 2018-3), in a completely different composition of the panel, also found that the court has no power to refuse the negotiated punishment by considering this punishment as too lenient if the proposed sentence is within the limits legally prescribed. This fact confirms that the stated position is the result of reasoning of a very large number of judges of the SRCR, not just individual judges. The SCRC, however, does not mention the fact that one of the judges of that second panel had a dissent opinion and assumed a completely opposite position. Furthermore, the norm governing the court's control powers over the legality of the negotiated punishment is considered by the SCRC to be insufficiently clear and invokes its authority in the interpretation of the law stemming from its constitutional duty to care for equal application of the law to all citizens. In advocating a very restrictive interpretation of Article 361, paragraph 3 of the CPA, the SCRC is still not completely consistent, as it does not exclude the possibility of refusing a statement for making a judgment based on the parties' agreement for the protection of the defendant if the proposed excessive sentence is the result of inadequate assistance of his defense attorney. The SCRC also refers to the provisions of Article 48, paragraph 3 and Article 49, paragraph 2 of the CC, which explicitly prescribe the right of the state attorney and the accused to negotiate the amount (severity) of the punishment, with the

application of the provisions on the punishment mitigation, which are not at all available to the court if there is no such agreement.

In the aforementioned dissent opinion of one of the members of the Panel, it is emphasized that a clear provision of Article 361, Paragraph 3 of the CPA does not open any doubts because its simplest language interpretation unambiguously leads to the conclusion that the court is not only authorized but also obliged to refuse the statement for making a judgment on the basis of a parties' agreement if it considers that the type and range of the sentence to which the parties have agreed does not correspond to the degree of guilt of the offender, the purpose of the punishment, as well as any mitigating and aggravating circumstances affecting the severity of the punishment by type and measure. The dissent opinion also states that there is no doubt that data on such circumstances are already contained in the file (factual description of the criminal offense and data on the accused) and that they cannot be unknown to the court. A misreading of Article 361, Paragraph 3 of the CPA by the majority of members of the Panel is illustrated by a hypothetical example of a serious murder with several qualifying features for which a sentence of imprisonment for a period of one year to six months may be imposed by respecting the provisions on limits of the punishment, but such a sentence is obviously not fair.

In addition, according to a dissent opinion, accepting the view that the legislature excluded the authority of the court to examine whether the negotiated punishment is in accordance with the provisions of Article 47 of the CC would mean accepting the full arbitrariness of the State Attorney when measuring the sentence and lead to inequality of citizens before the law.

Standpoints from a dissent opinion on the aforementioned SCRC decision deserve approval. Indeed, there is no doubt that Article 361, Paragraph 3 of the CPA refers to a determination of punishment prescribed by law that primarily encompasses the general rule of Article 47 of the CC, which specifically points out the degree of guilt and the purpose of punishment as the starting point for each punishment determination, and lists the typical mitigating and aggravating circumstances, as well as special provisions for mitigating the punishment. There is no legal provision that would exclude the power of the court to assess in a concrete case whether or not the purpose of the punishment is to be reached through parties' agreement, whether it corresponds to the degree of

perpetrator's guilt and whether it is appropriate in view of the existing mitigating and aggravating circumstances.

A court controlling the legality of negotiated punishment does not take part in the determination of its type and measure, but the imposition of a punishment is solely in its power and only that court can adequately resolve the problem of possible antinomy between efficiency and fairness. The practice of narrowing the power to control the legality of an agreed punishment imposed by the SCRC constitutes a flagrant violation of the clear provisions of the CPA and such practice marginalizes the role of the court and promotes the State Attorney's Office to the main creator of the punishment policy.

The view of the SCRC that taking into account the circumstances relevant to the determination of punishment allegedly unknown to the court leads to arbitrariness, irrespective of whether or not the court accepts or refuses an agreement, effectively conceals the real problem arising from the insufficient legal arrangement of the negotiation process as well as from the deficient content of the statement for making a judgment on the basis of the parties' agreement, which does not require explanation of the proposed negotiated punishment. It is a legislator's omission that allows the arbitrariness of the state attorney, which can only be effectively countered by the court's power to refuse an agreed punishment, considering that such a punishment is not in accordance with the purpose of punishment prescribed by law and the mitigating and aggravating circumstances known to the court.

The standpoint of the SCRC that the presiding judge of the trial panel, who at the preparatory hearing decides on (non) acceptance of the parties' statement for making a judgment based on the plea bargaining on the basis of the circumstances relevant to the determination of punishment, would have greater powers than the indictment panel or the second instance court is also wrong, since the control authority of the court when deciding on the negotiated punishment does not include the possibility of imposing a sentence not proposed by the parties. Furthermore, the correctness of the standpoint on any problem does not depend on the number of its advocates, rather than from the persuasiveness of the arguments supporting it.

The existence of special provisions which, in the case of the parties' agreement, allow the mitigation of punishment in broader terms in relation to the regular punishment mitigation also cannot be any argument in favor of a nar-

row interpretation of Article 361 Paragraph 3 of the CPA. Such a possibility testifies only to the criminal-politically motivated decision of the legislator to support the parties' agreement as the most desirable way of completing the criminal proceedings and has no particular theoretical foundation.

Finally, it must be concluded that the court that decides on the legality of the negotiated punishment, due to the narrow interpretation of Article 361, Paragraph 3 of the CPA, supposedly advocated by an extremely large number of judges of SCRC, is brought to an almost paradoxical situation in which, due to the pragmatism of the process economy, has to pronounce a punishment that considers unjust because its level is significantly below the degree of the perpetrator's guilt and is evaluated as harmful from the standpoint of positive general prevention because the measure of punishment (or the modification of punishment in the case of suspended sentence or community service) scandalizes the public rather than strengthens its trust in the functioning of the criminal justice system.

## 5. CONCLUSION

Article 361, paragraph 3 of the CPA prescribes not only the right but also the duty of the court to refuse the parties' statement for making a judgment based on bargaining, if its acceptance, under the circumstances, is not in accordance with the statutory rules on determination of punishment. According to these rules, the court will assess all the circumstances that may influence the type or size of the sentence (mitigating and aggravating circumstances), starting from the degree of guilt and the purpose of the punishment. Sentencing rules also include provisions on the limits of the punishment mitigation, which are, in the case of a parties' agreement, much more favorable to the accused than in the case of regular mitigation. Therefore, for the judicial control of the legality of the negotiated punishment, it is of special importance to assess whether such a punishment meets the purpose of punishment prescribed by law. Despite the fact that the primary objective of parties' bargaining is to quickly and cost-effective completion of criminal proceedings in the pre-trial stage, the agreed sentence should meet the requirements of special and general prevention, resocialisation, and retribution. This is not a simple task, especially from the point of view of retribution, because the negotiated penalties are, in principle, not proportionate to the defendant's guilt, and excessive mitigation questions the

principle of guilt and the requirements of positive general prevention. Significant discount in the determination of punishment issued by a state attorney to an accused in exchange for his confession may be justified by special prevention or re-socialization, but it is still closer to the breach of the guilty plea or trade with justice which, in the interest of faster and more cost-effective proceedings, must sacrifice the proportionality of punishment and full determination of the facts. In addition, the promise of a sentence that prompts the confession may in some cases induce the innocent defendant to a false confession of the criminal offense.

Negotiated punishment must in particular comply with the requirements of positive general prevention, which is dominated by the statutory provision for the purpose of punishment. The parties' agreement on punishment may, to a certain extent, create a positive impression in public. Judgments based on a parties' agreement in criminal proceedings will not undermine public confidence in the functioning of the legal order if they are perceived as a quick and effective response to the perpetrated criminal offense, which does not at the same time compromise the fairness of punishment. However, adequate procedural and substantive legislation can contribute to the achievement of desirable effects from the standpoint of positive general prevention. Therefore, with regard to possible changes in the future legislation, support should be given to ideas advocating the exclusion of bargaining for the most serious offenses, the more active role of the court when deciding on legality of statement for making a judgment based on plea bargaining, the strengthening of the inquisitorial powers of the court and the related principle of the search for material truth, which enables the realization of guilty principle, a more transparent negotiation procedure on guilty plea and punishment as well as a thorough review of the limits of mitigation of the agreed punishment.

Contrary to justified demands for the expansion of the court's control powers when examining the legality of the parties' agreement in criminal proceedings, decisions of the SCRC, which deprives the court of the right to assess the purpose of the punishment and the circumstances relevant to the imposition of a sentence when deciding on accepting the parties' statement for making a judgment based on plea bargaining, can be evaluated as unsustainable. The practice of narrowing the power to control the legality of an agreed punishment imposed by the SCRC constitutes a flagrant violation of the crystal clear provisions of the CPA (Art. 361 paragraph 3 of the CPA) as well as substantive provisions on

determination of punishment (Article 47 of the CC), and such practice, based on a scarce, unconvincing and misleading interpretation of legal provisions on plea bargaining, marginalizes the role of the Court deciding on the lawfulness of the negotiated punishment (the Indictment Panel, the President of Trial Panel) and promotes the State Attorney to the main creator of the punishment policy.

The reasons for the restrictive interpretation of Article 361 (3) of the CPC by the SCRC are not easy to explain. However, it can be assumed that they are at least partially rooted in the development of the Croatian criminal procedural law since 2008, when the State Attorney became a *dominis litis* or a key figure in the pre-trial proceedings, and the inquisitory principle is the main characteristic of his action with simultaneous passivizing the court. The dominant position of the State Attorney in relation to the court is practically preserved even in the case of a judgment based on the parties' agreement, since he must take into account only the limits of the punishment mitigation. Such a situation is also unsustainable because the court decisions on the guilt of a defendant cannot be based on the blind faith or the presumption that the State Attorney correctly assessed the purpose of the punishment and the circumstances relevant to the determination of the sentence. The position of SCRC is ultimately contrary to the constitutional provision (Article 29 paragraph 1 of the Constitution of the Republic of Croatia) according to which everyone has the right to have an independent and impartial court established by law fairly and within a reasonable period of time decides on suspicion or accusation of a criminal offense. Therefore, only the court is empowered to decide on the charges for the criminal offense committed, and in the case of the defendant's guilt, only the court has the authority to measure and pronounce punishment. The arguments raised in this paper against the unacceptable attitude of the SCRC are also an appeal for its change.

Taking into account the serious problems in the practical application of Article 361, paragraph 1 of the CPA, as well as the previously outlined ideas on possible changes in the normative content relating to the agreements of the parties in the criminal proceedings *de lege ferenda*, after the desirable corrections of the actual provisions, one can hope for a more successful and a more balanced implementation of the principles for the design of a new system of criminal procedure law from 2007, which were highlighted in the introduction to this paper. These are the rules that need to guarantee the protection of human rights, reliable determination of the truth in fast, simpler and more cost-effective proce-

dures that will take into account the nature and gravity of the criminal offense, the defendant and the victim, as well as the social need to protect against criminal offenses.

## 6. REFERENCES

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