



**Varazdin Development and Entrepreneurship Agency**  
in cooperation with  
**University North**  
and **Faculty of Management University of Warsaw**



# **Economic and Social Development**

18<sup>th</sup> International Scientific Conference on Economic and Social Development –  
“Building Resilient Society”



Editors:  
**Damir Mihanovic, Anica Hunjet, Zeljka Primorac**

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## A COMPARISON OF PRODUCTIVITIES OF THE NORTH AFRICAN RAILWAYS NETWORKS BASED ON THE INDEX OF MALMQUIST

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### **ABSTRACT**

*Multi-period differences of technical and financial performances are analysed by comparing five North African railways over the period (1990-2004).*

*Our approach is based on the Malmquist DEA TFP index for measuring the total factors productivity change, decomposed into technical efficiency change and technological changes.*

*This method provides complementary detailed information, especially by discriminating the technological and management progresses by Malmquist.*

**Keywords:** *Case Study, Malmquist DEA TFP (The total productivity of the factors) index, North African railways, Multiple Periods Performance analysis*

### **1. INTRODUCTION**

Conceived to be the vector of the strategies of economic development, the African railway companies became a factor of exasperation in the economic and financial crisis that shakes some African States. The analysis of the terrestrial transport policy in most African countries emphasizes an absence of planning. With the result that the configuration of the infrastructures of transport in Africa produces serious problems in the economic and social development coordination and in means of transport as well.

So, the evaluation and the measurement of public utilities presented by Estache and Kouassi [1], especially in the developing countries, became a crucial point in the open and liberal economies. Yet, there is a surprising lack of literature attempting to measure the efficiency of operators in a way that would allow economic regulators to introduce explicit performance incentives in the regulation of the operators in African countries.

The total productivity of the factors is well known in the economic literature and was the subject of several empirical evaluations, particularly on the public services in networks (Coelli and Perelman [2]) (Plane [3]). The analysis of the productivity contributes to provide a good base of information and thinking on the way in which the organizations are managed. From this point of view, this paper aims to measure the Northern African railways performance.

Within the framework of liberalization and privatisation, this measurement can help the regulator catching a global idea about what to improve at the level of networks performance (Estache et al. [4]).

The approach we follow will be based on the Malmquist index (Estache et al. [5]) in order to compare the networks productivities.

## **2. BACKGROUND OF THE NORTHERN AFRICAN RAILWAYS**

### **2.1. In Algeria**

The rail network is managed by the National Company of the Railroad Transports (Société Nationale des Transports Ferroviaires: SNTF). It consists of 3.973 km of lines of which 2.888 km present a normal gauge (1435 mm) and 1085 km a narrow spacing (1055 mm). This network is third in km for Africa after the South African and the Egyptian network. But it remains insufficient for the country economic needs. Mainly inherited from the colonial time, it is primarily made up of lines with normal way and narrow gauge railway. The mining line, connecting the mines of Ouenza to the town of Annaba (300 km), is the only one electrified. The network comprises 400 km of double tracks ways focused on the north of country.

The structure of the network followed the development and the localization of the population, the industry and the mining sources. The crossing ways in the stations are short and do not allow putting into circulation long trains, while the systems of signalisation and telecommunications are decayed and do not allow a modern exploitation. Algeria intends to open the railroad transport with the private sector under a mode of concession. It is envisaged to stop the monopoly of the SNTF on the rail, which is the only transport sector still avoiding competition, since the road transport was opened to the private sector in 1988, the maritime transport and air in 1998. The general trend of privatisation in Northern Africa will give an opportunity to delegate the exploitation of the national rail network to one or more companies under the concession mode. The opening of the railroad transport to competition is justified by the fact that the monopoly of the State involved a constant reduction in the performances of this means of transport and a systematic recourse to the Treasury for its financing. The private sector should have the load of a rehabilitation and development of the rail network.

### **2.2. In Libya**

The railway mode is not yet existent in Libya; the road ensures the totality of the carriage of goods and passengers. Two national companies operate in the sector, one for the transport of long distance and the other committed in the connections between the cities. Transport by taxi is also used for short and average distance.

### **2.3. In Morocco**

Railroads in Morocco are managed by the National office of the Railroads (Office National des Chemins de Fer ONCF), a publicly owned establishment with a financial autonomy. ONCF exploits 1.907 km of lines that constitute the national network, of which 1.003 km are electrified and 370 km have a double track. This network is composed of a principal line connecting Marrakech to the south to Oujda on the Morocco - Algeria border, with ramifications towards Tangier in North and the zones of exploitation of phosphates and some large ports. Since the end of the decade 80, ONCF undertook the realization of a vast programme of modernization of the network related to the reorganization of some stations, the renewal of ways and the installation of telecommunications and signalisation, in order to offer a service of quality to its customers.

## **2.4. In Mauritania**

For forwarding iron since its place of extraction to its place of transformation and export, the Mauritanian State financed the construction of a railway line of 670 kilometres length with a single track between the field of Fderik and the Nouadhibou port. Six convoys of 220 coaches (2000 tons per convoy) circulate each day since the opening of the line in 1963. It is the longest train in the world with more than 2 km length. The train crosses an almost uninhabited zone, and transports only ore. Bases of maintenance were envisaged along the way. The material is maintained perfectly, since it is out of question to stop the trade of iron, only assistance and source of income for the economy in crisis times. Since ten years, the Industrial and Mining National Company, first company of the country, held up to 80 % by the State, and which manages all the mining dies from the mine to the port, follows a policy of diversification of its activities. The train also accommodates several coaches intended for the transport of the passengers. Due to the lack of reliable available data, the Mauritanian network will not participate to our study.

## **2.5. In Tunisia**

The overall length of the network is of 2.186 km, of which nearly 1862 km are currently in exploitation. The network presents a majority of metric gauge (1.687 km), except for the line Tunis-Ghardimaou (trans-Maghreb) on 471 km length and for its antennas (116 km) that present normal gauge. Owing to the fact that the majority of the lines converge towards Tunis, this difference in gauge does not seem to constitute, for the moment, a major handicap for the exploitation. But if the Maghrebian network were to develop (towards Libya), the difference in gauge could constitute a serious handicap. The structure of the network is conceived to ensure a good service road. Also, all agricultural zones of the Northeast or the Centre, and all the frontier mining zones are connected to the large poles of activity and ports located on the littoral zone.

The railway activity is managed by two public operators: The National Company of the Tunisian Railroads (Société Nationale des Chemins de Fer Tunisiens: SNCFT), publicly-owned establishment and the Company of the Leger Subway of Tunis (Société du Métro Léger de Tunis: SMLT) specialized in the urban railroad transport by subway in large Tunis. 135 km of railway line present double tracks and only 65 km are electrified.

## **2.6. In Egypt**

The first railway built in Africa was done in Egypt in 1853. The idea of building a railway goes back to 1833 when Mohamed Ali consulted his Scottish chief engineer, T. Gallway, about building a road between Suez and Ain Shames to become the link between Europe and India. Mohamed Ali started initiating the project as he bought the rails in order to start building the road and the stations. However, France was able to prevent this from happening because the French government wanted to substitute this project with building a canal between the Red and the Mediterranean Seas. Mohamed Ali found himself shattered between the two ideas, so he refused to carry out any of them. When Mohamed Ali died in 1849, England wrote to his successor, Abass Helmy I, asking him to build a railway in Egypt. He agreed and he signed a contract with Robert Stephenson, on the 12th of June in 1851.

The contract asserted that the work should start in September of the same year and that Stephenson should be responsible for all the matters of the project. The first railway route in Egypt was built in 1854, between Alexandria and Kafer Eassa, and it reached Cairo in 1856. In 1858, the route between Cairo and Suez was built, but it was taken off in the year 1878 after digging the Suez Canal. A new route was built in 1867 to connect Cairo with southern Egypt and Imbaba Bridge

was built in 1891 to enable the trains to pass over the Nile near Cairo. And from this point on, the railway has become one of the most important means of transportation in Egypt. You can use the railway to go as far as Matrouh (Libya frontier) in the west and as far as Aswan in the north. Passengers can depend on the railway service to travel all over Egypt.

Today, the Egyptian Railway is made up of 4,900 kilometres of train tracks, traversed by 1,315 cars daily and servicing an estimated 2.28 million passengers. Its cargo fleet transports some 35,000 tons of commodities daily.

### 3. A COMPARISON OF PRODUCTIVITIES OF THE RAILWAYS NETWORKS BASED ON THE INDEX OF MALMQUIST

Table 1 presents the differences in the size of the railways, expressed in line kilometers. So we can notice that Egypt network is, according this classification, the largest one with 4974 Km. In the second place, we have Algeria followed by Tunisia and finally Morocco comes in the last place with 1905 Km. We can explain this difference by the area of each country and by goals of colonization. We shall see that the ranking by productivity does not reflect this size ranking of networks.

**TABLE 1.** Size of railways expressed in line kilometers

	ALGERIA SNTF	EGYPT ENR	MOROCCO ONCF	TUNISIA SNCFT
Mean Line Km	4124	4974	1905	2133
Ranks	2nd	1st	4th	3rd

\*Source : UIC (l’Union internationale des chemins de fer)

#### 3.1. Methodology of the Malmquist index analysis

We will begin our analysis by having recourse to the index of Malmquist (Färe et al. [6]). One can read a description of this index in “A Primer on Efficiency Measurement for Utilities and Transport Regulators” (Coelli et al. [7]):

*"The Malmquist index of productivity measures the variation of productivity (TFP) between two observations, by calculating the ratio of the distances from each data (network) compared to a common technology (the efficient frontier of production). The Malmquist index of variation of TFP (directed in input) between period 0 (the basic period) and period 1 (by using the technology of period 1 as technology of reference) is defined by:*

$$TFP_1/TFP_0 = D_1 (Y_0, X_0) / D_1 (Y_1, X_1), \quad (1)$$

*Where the notation  $D_t (X_s, Y_s)$  represents the distance between the observation of the period  $S$  and the technology of the period  $T$ , and  $X_s$  and  $Y_s$  are respectively the input and the output in period  $S$ .*

*A value of this ratio in (1) higher than 1 will mean an improvement of the TFP ".*

Our study relies on the physical data of four northern African railways networks (Algeria, Egypt, Morocco and Tunisia) over a 15 years period (1990 to 2004). This method will allow us to know the origins of the positive or negative evolutions of the total productivity of the operators with a splitting into a technological change and a change of efficiency. The last component often reflects the improvement of management within each network and the first one comes from the innovation (new investments).

In this same quoted reference and using Färe et al. [8]), we read that the Malmquist productivity index is defined as the geometric mean of two indices, namely an index evaluated in connection with technology of period 1 and another in connection with the technology of period 0. We obtain then:

$$TFP_1/TFP_0 = [D_1(Y_0, X_0)/D_1(Y_1, X_1) * D_0(Y_0, X_0)/D_0(Y_1, X_1)]^{0.5} \quad (2)$$

We can also transform (2) in (3):

$$TFP_1/TFP_0 = D_0(Y_0, X_0)/D_1(Y_1, X_1) [D_1(Y_0, X_0)/D_0(Y_0, X_0) * D_1(Y_1, X_1)/D_0(Y_1, X_1)]^{0.5} \quad (3)$$

The ratio outside the brackets of (3) measures the change in the input-oriented measure of technical efficiency between the periods 0 and 1. The remaining part of the index in the equation is a measure of technical change, i.e. the geometric mean of the technical change between the two periods, evaluated with the observations of periods 0 and 1.

### 3.2. Presentation of data and choice of variables

Table 2 gathers all the data available for the analysis, concerning the railways operators in the four North African countries during the period 1990-2004. As output, we chose “passengers-kilometres” and « ton-kilometers » (A. M. Mbangala [9]). We could have chosen for example the sales turnover that reflects the sold production of the operators. But several problems remaining about the availability of reliable data and diversity of the countable standards in each country encouraged us to avoid this kind of output. Equipment (total number of coaches and wagons) and railway employees are the input variables. We notice the absence of Sudan and Mauritania in this presentation due to a lack of reliability with their data.

*Table following on the next page*



**TABLE 2. Inputs and outputs of the Malmquist DEA TFP index analysis**  
*(Continues on the next page)*

Railways	Years	Outputs		Inputs	
		T-km	P-km	Equipment	Manpower
Algeria	1990	2178000	2990851	10650	18200
	1991	2716736	3192091	10930	18104
	1992	2529701	2903505	6893	18187
	1993	2304584	3009728	10653	17497
	1994	2278800	2234011	10894	16780
	1995	2121000	1797000	10950	16600
	1996	2301430	1826113	10911	16269
	1997	2301430	1826113	10845	16269
	1998	2174000	1163000	10806	14400
	1999	2033000	1163251	10796	14385
	2000	1979714	1141646	10573	12510
	2001	1990000	981000	10558	12300
	2002	2247000	955000	10488	11400
	2003	2040892	963517	10483	11420
	2004	1947135	949872	10466	11139
Morocco	1990	5107346	2237276	10477	13716
	1991	4526170	2345462	9022	14002
	1992	5001100	2232718	9079	14157
	1993	4419089	1903566	8897	14349
	1994	4679216	1881191	8623	14385
	1995	4621201	1530892	8443	13782
	1996	4757208	1686398	7561	12639
	1997	4834688	1855934	7265	12016
	1998	4757000	1875000	7121	11600
	1999	4794499	1880000	7016	10905
	2000	4576000	1956000	6700	10308
	2001	4622000	2019000	6417	10200
	2002	4974000	2145000	6421	9800
	2003	5146525	2374169	6282	9487
	2004	5563323	2644583	6037	9207
Egypt	1990	3028979	38533000	17054	88000
	1991	3276000	41151000	16717	88000
	1992	3211511	42589000	15906	88000
	1993	3141129	46338000	14143	71653
	1994	3621000	44293000	14437	72890
	1995	4072577	48242000	14800	74123
	1996	4117000	50465000	14947	74015
	1997	3969000	52926000	16276	71684
	1998	4265000	55000000	16200	71062
	1999	3464000	59638000	16242	71000
	2000	4000000	63060000	16123	70900
	2001	4217000	66008000	15889	70750
	2002	4188000	39083000	14661	70500
	2003	4104000	46185000	15028	70200
	2004	4321000	52682000	15101	70000

Tunisia	1990	1858880	1019000	5343	9636
	1991	1820000	1019000	5189	9600
	1992	2015000	1078000	5316	9061
	1993	2012000	1057000	5450	8687
	1994	2225000	1038000	5426	8252
	1995	2317000	996000	5300	8364
	1996	2329000	988000	5195	8299
	1997	2338000	1096000	5088	8124
	1998	2358000	1136000	5342	8200
	1999	1636981	1192454	4903	6719
	2000	2029000	1192500	4272	6634
	2001	2282000	1257000	4903	6075
	2002	2273000	1281000	4708	5737
	2003	2174000	1243000	4708	5554
	2004	2082193	1294000	4164	5507

\*Sources: Algeria: Société Nationale des Transports Ferroviaires (SNTF),  
 Morocco: Office National des Chemins de fer (ONCF),  
 Egypt: Egyptian National Railways (ENR),  
 Tunisia: Société Nationale des Chemins de Fer Tunisiens (SNCFT),  
 UIC: l'Union internationale des chemins de fer

### 3.3. Presentation and analysis of the results

From table 3: "MALMQUIST INDEX SUMMARY OF ANNUAL MEANS", we conclude that the total growth annual rate is 3.2% over the period 1990-2004 -We have converted the indices in growth rates-. The decomposition of this rate shows that this growth comes primarily from the column ‘technological progress’ which reflects the development of the investment level in the railways sector. This change is mainly due to the investment in equipment. Technological progress takes part at a rate of 4.4% in the growth rate. The remaining effect is negative (- 1.2%) issued from the column ‘change of the technical efficiency’ that assesses the evolution of the management in this sector. So we can conclude that North African railways are very inefficient like a majority of state-owned enterprises (SOE) in developing countries. It is difficult to interpret the evolutions year per year since meaningful tendencies cannot be detected.

*Table following on the next page*

**TABLE 3. The mean productivity changes of the North African railways from 1990 to 2004**

<i><b>MALMQUIST INDEX SUMMARY OF ANNUAL MEANS, converted in growths rates<sup>1</sup></b></i>			
<b>Year</b>	<b>Efficiency change</b>	<b>Technological change</b>	<b>Total factors productivity change</b>
1991/1990	+3.3%	+1.1%	+4.4%
1992	+2.3%	+6.9%	+9.4%
1993	-2.6%	-1.2%	-3.7%
1994	-0.2%	+2.5%	+2.3%
1995	-2.9%	+2.5%	-0.4%
1996	-3.4%	+10.3%	+6.6%
1997	-2.8%	+6%	+3.1%
1998	-2.3%	+2.9%	+0.6%
1999	-5.9%	+5.5%	-0.8%
2000	+5.8%	+3.7%	+9.7%
2001	+3.2%	+3.7%	+7.0%
2002	+1.5%	-3.0%	-1.5%
2003	-6.3%	+9.9%	+3.0%
2004/2003	-6.0%	+12.5%	+5.7%
<b>Mean</b>	<b>-1.2%</b>	<b>+4.4%</b>	<b>+3.2%</b>

Source : calculation of Karim Sabri from DEAP-XP.

**TABLE 4. The productivity changes of the North Africa railways of 1990 to 2004 by countries**

<i><b>MALMQUIST INDEX SUMMARY OF networks MEANS converted in growths rates</b></i>			
<b>Sector</b>	<b>Efficiency change</b>	<b>Technological change</b>	<b>Total factors productivity change</b>
Algeria	-4.6%	+4.9%	+0.1%
Egypt	0.0%	+3.8%	+3.8%
Morocco	0.0%	+4.1%	+4.1%
Tunisia	-0.3%	+5.0%	+4.7%
<b>Mean</b>	<b>-1.2%</b>	<b>+4.4%</b>	<b>+3.2%</b>

Source : calculation of Karim Sabri from DEAP-XP.

\* Note that all Malmquist index averages are geometric means

The second table “MALMQUIST INDEX SUMMARY OF NETWORK MEANS” indicates for each year, which network contributed more (or less) than others into the improvement of productivity. Thus we can confirm that Tunisia comes at the head of the ranking while contributing at a rate of 4.7% to the total growth rate, followed by Morocco that presents 4.1%, and then comes Egypt in third position with a rate of 3.8% and in last position Algeria shows the very weak rate of 0.1%. We can notice for all operators that the rates of the Technological column are higher than those of the Effectiveness column, which confirms that the annual total growth rate results primarily from the technical progress that reflects investment in the railway sector, and that to the detriment of the management change. According to these average productivities growths of table 4, we can rank the countries railway performances as follows:

**Tunisia: 1<sup>st</sup> (+4.7%); Morocco: 2<sup>nd</sup> (+4.1%); Egypt 3<sup>rd</sup> (+3.8%); Algeria: 4<sup>th</sup> (0.1%).**

<sup>1</sup> Let us recall that indexes are f.i. for the last line 0.988 and 1.044 producing by multiplication: 1.032, thus 3.2% of growth decomposed into - 1.2% and 4.4%. Thus the figures of the last column can be obtained sometimes by an addition as an approximation.

We can also compare this ranking to the first ranking made by size (table1). The size of network can’t indeed give a good evaluation of the company productivities (table 5).

**TABLE 5. The compared ranking of the North Africa railways from 1990 to 2004 by size and productivities (Malmquist index)**

Ranks	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
Size ranking	Egypt	Algeria	Tunisia	Morocco
Malmquist index ranking	Tunisia	Morocco	Egypt	Algeria

Source : by karim sabri.

## 5. CONCLUSION

In general, we can confirm that all the networks analysed in this paper, like the majority of the public companies in the developing countries, have to do much effort to improve their performance mainly in management. For J.Nellis [10], many African state-owned enterprises (SOEs), particularly those working in infrastructure, have a long history of poor performance. The reasons for the heavy African reliance on SOEs, and their unsatisfactory performance, are several. The failure of the African States in this respect gave rise to a reform approach relying much more heavily on private sector participation and ownership (Nellis [11]).

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## THE LABOUR MARKET IN THE FACE OF DEMOGRAPHIC AGEING IN THE SELECTED COUNTRIES OF CENTRAL AND EASTERN EUROPE

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### **ABSTRACT**

*Demographic processes observed in the EU countries constitute a challenge for their labour markets, causing decline in labour force and increase in share of elderly. The paper presents a research thesis that the changes observed in population age structure may significantly impact the supply side of the labour market (supply of labour force) in a multifaceted way and with a changing dynamics in individual countries. Applied quantitative and qualitative analyses were conducted based on data from Eurostat statistical databases with the use of demographic projections. Absolute increases of dynamics and indicators (single base) were the methods used for time series changes. The temporal scope of the analyses was largely determined by data accessibility.*

**Keywords:** *Labour force, population ageing, demographic structure*

### **1. INTRODUCTION**

The process of population ageing refers to almost all countries of the European Union and is perceived as one of the most important phenomena from the perspective of the economy and principles of life in society. This process is most affected by the decrease in the number of births. Such decrease causes the deepest changes in the proportion of the shares of the youngest and the oldest in population. A similar factor in vital statistics, which leads to longer life expectancy, is the decreased level of the mortality rate, especially in the oldest age groups. Apart from that, the dynamics and state of progress of the processes discussed herein are modified by migrations. In terms of demography, the labour market is mostly presented and investigated from the perspective of changing labour force, or labour supply. However we should bear in mind that in the economy all processes have to be examined in terms of mutual interactions. This also refers to studies of the impact of population ageing on the labour market, which is the aspect that has been addressed in this paper. The paper is a continuation of the research into consequences of demographic processes and their impact on labour markets in European Union countries (Skibiński, Sipa, 2015, Skibiński, 2016). The subject of the current analysis is comparison of the occurring demographic changes and their consequences for the labour market in the Baltic states, countries of the Visegrad Group and the Balkan countries. In view of the above, the aim of this publication is to present the impact of

changes in the population age structure on potential labour force in the selected groups of EU countries.

## 2. METHODOLOGY OF RESEARCH

The quantitative and qualitative analyses applied herein were conducted using data from Eurostat Statistics databases, taking into account demographic projections. Methods of graph plotting points changes were used, such as absolute increases and dynamics indexes. The temporal scope of the analyses was to a large extent determined by data availability. The year 1990 was chosen as the beginning of the period of temporal comparisons. In order to illustrate the differences in the increasing process of population ageing, the following groups of EU countries were selected for the research, taking into account the geographical aspect: Baltic countries - Lithuania, Latvia, Estonia, Visegrad group countries – Poland, Czech Republic, Slovakia, Hungary, Balkan countries- Bulgaria, Croatia, Romania<sup>1</sup>. For each of the characteristics discussed, spatial comparisons were made, with a country as a comparison unit.

## 3. THEORETICAL BACKGROUNDS

Due to the dynamism of today's labour market, various aspects of its functioning, which are important in the context of both the situation in the foreseeable future and from the perspective of the position of various social groups and categories, are analysed. Previous labour market analyses have been focused on such basic categories as "the employed", "not economically active", and mostly "the unemployed", whose number often displays mismatch between the supply and demand sides of the labour market. However, in the context of occurring demographic processes, assessments of the situation on the labour market increasingly take into account what is important from the perspective of labour supply, i.e. the demographic aspect (Serban, 2012; Lee, 2003). Hence, the process of population ageing is receiving increasing attention, beyond discussions of researchers representing a wide range of scientific disciplines such demography, economics, social politics, medicine or sociology. The issue is more and more often raised in politicians' speeches and public discussions. Europe is the oldest continent. What's more, in more and more European countries the increase in the number and percentage of older people is accompanied by the decrease in the number of working age people, i.e. potential labour force, which leads to increased old age dependency ratio (Kotowska, 2010, Borsh-Supan, 2003). Therefore, an ageing population and ageing workforce are a rather well recognised and documented fact among industrialised countries. During the last decade, a vast number of studies have been conducted to analyse the effects of the on going structural change. The process of population ageing started first in Scandinavian and Western European countries, gradually covering countries in Southern Europe and Central Eastern Europe (Grundy, 1996). Although currently we can observe convergences among these regions in this respect, the extent of the process of population ageing varies significantly by geographical area, which implicates numerous negative consequences, both economic and social ones. One of the most important economic consequences is undoubtedly shrinking and ageing of potential labour

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<sup>1</sup> Romania is included in the group of the Balkan countries mainly on historical and cultural grounds, although a part of its territory is located on the Balkan Peninsula.



force<sup>2</sup>. Demographers stress that since 2000, population has been gradually losing its ability to reproduce through natural population growth (balance of births and deaths), and the increase in its size has been due to intensive migration flows (van de Kaa, 2004; Jóźwiak, 2013). According to Coenen and Galjaard, demographic trends can have direct implications for labour market through three primary channels. These are labour supply, labour productivity, and labour demand (because of shifts in the structure of aggregate demand). It is generally recognized that ageing societies will face economic and social challenges. What will inevitably happen in the labour market is that the labour force will shrink as large numbers of workers retire and the characteristics of the labour markets change (Coenen and Galjaard, 2009). The current demographic situation is a consequence of processes that started, as was already mentioned, in mid-1960s in highly developed countries of Western Europe and Scandinavia, and in the 1990s in countries of Central and Eastern Europe (van de Kaa, 2001). Political and ideological changes such as improvement of living conditions, development of modern technologies and medicine caused changes in several areas that impacted the demographic situation in these countries (Peretto, 1998). Mechanisms of the above-mentioned changes, along with their consequences, are described by, among other things, the concept of the second demographic transition, which is helpful in explaining the causes of the increasing process of population ageing.

*Table 1: Overview of demographic and societal characteristics respectively related to Second Demographic Transition (source: Lesthaeghe, Surkyn, 2004, pp. 45-86)*

<b>Marriage</b>	<ul style="list-style-type: none"> <li>- Fall in proportions married, rise in age at first marriage.</li> <li>- Rise in cohabitation (pre- &amp; postmarital),</li> <li>- Rise in divorce, earlier divorce,</li> <li>- Decline of remarriage following both divorce and widowhood</li> </ul>
<b>Fertility</b>	<ul style="list-style-type: none"> <li>- Further decline in fertility via postponement, increasing mean age at first parenthood, structural subreplacement fertility,</li> <li>- Efficient contraception (exceptions in specific social groups),</li> <li>- Rising extra-marital fertility, parenthood within cohabitation,</li> <li>- Rising definitive childlessness in unions</li> </ul>
<b>Societal background</b>	<ul style="list-style-type: none"> <li>- Rise of “higher order” needs: individual autonomy, self-actualisation, expressive work and socialisation values, grass-roots democracy, recognition. Tolerance prime value.</li> <li>- Disengagement from civic and community oriented networks, social capital shifts to expressive and affective types. Weakening of social cohesion.</li> <li>- Retreat of the State, second secularisation wave, sexual revolution, refusal of authority, political “depillarisation”.</li> <li>- Rising symmetry in gender roles, female economic autonomy.</li> <li>- Flexible life course organisation, multiple lifestyles, open future .</li> </ul>

The consequences of the currently observed demographic trends are and will be of fundamental importance for the future macroeconomic and social situation, especially for the labour market. At

<sup>2</sup> Labour force (labour supply). Working age population actively participating in the labour market. For the purpose of this analysis, the working age is from 15 to 64 (after Eurostat).

this point, it is necessary to highlight the importance of migration for demographic processes. Migration processes can be also examined in the social and economic aspects. In the social context, migration has a demographic impact, not only by increasing the size of the population but also by changing the age pyramid of receiving countries. Migrants trend to be more concentrated in the younger and economically active age groups compared with natives and therefore contribute to reduce dependency ratios (Borjas, 2014; Kaczmarczyk and Okólski 2008). On the other hand, in the economic context, migrants arrive with skills and abilities, and so supplement the stock of human capital of the host country. More specifically, evidence from the United States suggests that skilled immigrants contribute to boosting research and innovation, as well as technological progress (Hunt, 2010). What is the demographic situation in the countries analysed and what it can possibly mean for the supply side of the labour market - these questions will be addressed further in this paper.

#### **4. DEMOGRAPHIC CHANGES IN THE SELECTED COUNTRIES OF CENTRAL AND EASTERN EUROPE AND THEIR IMPACT ON POTENTIAL LABOUR FORCE**

The population figure is a result of natural changes in the number of people (the number of live births decreased by the number of deaths) and net migration (the number of immigrants decreased by the number of emigrants and increased by statistical correction) (Holzer, 2003; Okólski, 2005). Let's look at selected demographic indicators presented in table 2.

*Table following on the next page*

*Table2: Selected demographic indicators for the selected countries of Central and Eastern Europe taking into account demographic projection for the period 1990-2060 (source: own work based on: Eurostat database, <http://ec.europa.eu/eurostat/data/database>, access: 19.10.2016)*

Countires	Demographic indicator						Dynamics indicators		
	Years						Change in the population figure		
	1990	2000	2010	2015	2030	2060	1990-100	2009-100	2015-100
<b>Total of population</b>									
EU 28	475 187 771	487 250 522	503 170 618	508 293 358	518 499 055	522 945 539	102,5	101,0	102,9
Bulgaria	8 767 308	8 190 876	7 421 766	7 202 198	6 478 705	5 477 666	93,4	97,0	76,0
Czech R.	10 362 102	10 278 098	10 462 088	10 538 275	10 778 136	11 081 326	99,2	100,1	105,1
Estonia	1 570 599	1 401 250	1 333 290	1 313 271	1 208 245	1 092 858	89,2	93,7	83,2
Croatia	4 772 556	4 497 735	4 302 847	4 225 316	4 087 043	3 704 650	94,2	93,9	87,7
Latvia	2 668 140	2 381 715	2 120 504	1 986 096	1 634 612	1 398 567	89,3	93,7	70,3
Lithuania	3 693 708	3 512 074	3 141 976	2 921 262	2 201 947	1 835 498	95,1	92,9	62,8
Hungary	10 374 823	10 221 644	10 014 324	9 855 571	9 679 364	9 165 291	96,5	98,4	93,0
Poland	38 038 403	38 263 303	38 022 869	38 005 614	37 525 745	33 293 791	99,9	99,8	87,6
Romania	23 211 395	22 455 485	20 294 683	19 870 647	19 003 562	17 440 757	87,4	97,9	87,7
Slovakia	5 287 663	5 398 657	5 390 410	5 421 349	5 314 025	4 574 335	101,9	100,6	84,4
<b>Natural change of population</b>									
EU 28	927 158	291 466	504 816	-135 183	-724 843	-1 410 446	31,4	-26,8	1043,4
Bulgaria	-3 428	-41 408	-34 652	-44 167	-42 445	-33 019	1207,9	127,5	74,8
Czech R.	1 398	-18 091	10 309	-409	-26 922	-28 096	-1294,1	-4,0	6869,4
Estonia	2 773	-5 336	35	-1 336	-4 892	-4 129	-192,4	-3817,1	309,1
Croatia	3 217	-6 500	-8 735	-16 702	-15 546	-16 795	-202,1	191,2	100,6
Latvia	3 106	-11 903	-10 259	-6 499	-11 139	-5 015	-383,2	63,3	77,2
Lithuania	17 108	-4 770	-11 444	-10 301	-16 389	-5 912	-27,9	90,0	57,4
Hungary	-19 983	-38 004	-40 121	-39 440	-36 281	-35 676	190,2	98,3	90,5
Poland	157 377	10 321	34 822	-25 613	-122 044	-179 581	6,6	-73,6	701,1
Romania	67 660	-21 299	-47 524	-75 655	-54 078	-64 967	-31,5	159,2	85,9
Slovakia	25 370	2 427	6 965	1 776	-19 322	-35 876	9,6	25,5	-2020,0
<b>Net migration</b>									
EU 28	721 368	833 111	769 568	1 897 836	1 244 057	1 036 681	106,7	246,6	54,6
Bulgaria	-94 611	0	-17 683	-4 247	-5,841	623	18,7	24,0	-14,7*
Czech R.	-58 893	-27 980	14 334	15 977	35 777	21 240	24,3	111,4	132,9
Estonia	-5 623	-3 194	-3 665	4 009	-2 189	8	65,2	-109,4	0,2
Croatia	6 406	-52 367	-4 255	-17 945	3 528	4 750	-66,4	421,7	-26,4
Latvia	-13 085	-16 428	-35 640	-10 640	-9 895	-1	272,4	29,8	9,4
Lithuania	-8 848	-20 306	-77 944	-22 403	-21 066	5	880,9	28,7	0,1
Hungary	18 313	16 658	11 519	14 354	20 936	14 014	62,9	124,6	97,6
Poland	-12 620	-19 669	5 027	-12 792	-903	11 566	-39,8	-254,5	-90,4
Romania	-86 781	-3 729	-48 100	-35 024	-24 656	2 397	55,4	72,8	-6,8
Slovakia	-2 322	-22 301	-4 929	3 127	2 464	2 403	212,3	-63,4	76,8

In the first period of analysis, i.e. 1990-2010, an increase in the total population figure was recorded only in Slovakia, mainly due to a positive birth rate. The other countries saw a decrease in the population figure. In the Czech Republic, Hungary and Poland, this decrease was mainly due to birth rate, whereas in Bulgaria, Estonia, Latvia, Lithuania, Croatia and Romania it resulted mostly from negative net migration. In the second period of analysis, i.e. 2010–2015, an increase in population figure was recorded in the Czech Republic, where it was due to positive net migration, while in Slovakia it was caused by positive birth rate. As far as a decrease in the population figure is concerned, a clear impact of negative birth rate can be seen in Lithuania, Latvia, Estonia, Romania and Hungary. In the case of Poland and Croatia, apart from the impact of negative birth rate, there is also a clear impact of net migration. Demographic projections show that an increase in the population figure is expected in the Czech Republic by 2060, mainly due to positive net migration. The other countries are expected to record a fall in the total population figure, mainly due to negative birth rate. It can therefore be concluded that in countries with lower impact of

migration on an increase or decrease of the total population figure the process of increasing population ageing will intensify, in particular in Poland, Romania, Slovakia and Estonia, to a greater extent than in countries where net migration affects the change in the total population figure more significantly. Of importance here is certainly the median age of immigrants coming to EU countries.<sup>3</sup> From the perspective of the labour market, it is important to analyse population structure by economic age groups, with particular reference to the dynamism of changes in these age groups over time.

*Table 3: Change in population structure by economic age groups taking into account demographic projection until 2060. (source: as in table 2, access: 28.10.2016)*

Countires	Population age structure by working age group [in%]						Dynamics indicators		
	Years						2010/1990	2015/2010	2060/2015
	1990	2000	2010	2015	2030	2060	1990-100	2009-100	2015-100
Percentage of pre-working age population (0-14)									
EU 28	19,5	17,2	15,7	15,6	14,9	15,0	88,2	99,4	96,2
Bulgaria	20,5	15,9	13,2	13,9	13,4	14,1	77,6	105,3	101,4
Czech R.	21,7	16,6	14,3	15,2	14,7	15,4	76,5	106,3	101,3
Estonia	22,3	17,9	15,1	16,0	14,7	15,2	80,3	106,0	95,0
Croatia	:	:	15,4	14,7	14,4	14,0	:	95,5	95,2
Latvia	21,4	18,0	14,2	15,0	14,2	16,3	84,1	105,6	108,7
Lithuania	22,6	20,2	15,0	14,6	14,7	17,8	89,4	97,3	121,9
Hungary	20,5	16,9	14,7	14,5	14,4	14,4	82,4	98,6	99,3
Poland	25,3	19,8	15,3	15,0	13,7	13,0	78,3	98,0	86,7
Romania	23,7	18,5	15,8	15,5	15,4	15,3	78,1	98,1	98,7
Slovakia	25,5	19,8	15,5	15,3	12,9	11,5	77,6	98,7	75,2
Percentage of working age population (15-64)									
EU 28	66,8	67,2	66,8	65,5	61,2	56,6	100,6	98,1	86,4
Bulgaria	66,5	67,9	68,6	66,1	62,3	54,1	102,1	96,4	81,8
Czech R.	65,8	69,6	70,4	67,0	63,1	56,3	105,8	95,2	84,0
Estonia	66,1	67,2	67,5	65,2	61,1	54,7	101,7	96,6	83,9
Croatia	:	:	66,8	66,5	61,5	56,5	:	99,6	85,0
Latvia	66,8	67,2	67,7	65,6	60,4	55,5	100,6	96,9	84,6
Lithuania	66,6	66,1	67,7	66,7	57,9	56,2	99,2	98,5	84,3
Hungary	66,3	68,1	68,7	67,6	63,7	56,2	102,7	98,4	83,1
Poland	64,7	68,1	71,1	69,6	63,7	54,1	105,3	97,9	77,7
Romania	66,0	68,3	68,1	67,5	63,8	55,8	103,5	99,1	82,7
Slovakia	64,2	68,8	72,1	70,7	65,7	53,3	107,2	98,1	75,4
Percentage of population outside of working age (65+)									
EU 28	13,7	15,6	17,5	18,9	23,9	28,4	113,9	108,0	150,3
Bulgaria	13,0	16,2	18,2	20,0	24,3	31,8	124,6	109,9	159,0
Czech R.	12,5	13,8	15,3	17,8	22,2	28,3	110,4	116,3	159,0
Estonia	11,6	14,9	17,4	18,8	24,2	30,0	128,4	108,0	159,6
Croatia	:	:	17,8	18,8	24,1	29,5	:	105,6	156,9
Latvia	11,8	14,8	18,1	19,4	25,3	28,3	125,4	107,2	145,9
Lithuania	10,8	13,7	17,3	18,7	27,4	26,0	126,9	108,1	139,0
Hungary	13,2	15,0	16,6	17,9	21,9	29,4	113,6	107,8	164,2
Poland	10,0	12,1	13,6	15,4	22,6	32,9	121,0	113,2	213,6
Romania	10,3	13,2	16,1	17,0	20,8	28,9	128,2	105,6	170,0
Slovakia	13,7	15,6	17,5	18,9	21,4	35,1	113,9	108,0	185,7

Analysing the data presented in table 3, a few important conclusions can be drawn. First, looking at people aged 0-14 and examining the period 1990-2010, we can observe a decrease in the share of this group of population in all the countries analysed. The biggest decrease was recorded in the Visegrad countries, except for Hungary and Balkan countries, whereas the lowest one in Baltic

<sup>3</sup> According to Eurostat data, people migrating to EU member states in 2015 were on average much younger than the population already living in their destination countries. As of 1st January, 2015, the median age of the population of EU-28 was 42. The median age of immigrants in EU-28 in 2014 was 28. Due to the limited size of this publication, a wider aspect of the impact of migration on the population age structure will be presented in a separate paper.

countries. Second, the period of analysis 2010-2015 saw a short-term increase in this group of population, mainly in the Czech Republic, Bulgaria, Estonia and Latvia. It is worth stressing that this increase was partially caused by implementation of procreation plans by baby boom cohorts from the late 1970s and mid-1980s. In the other countries, the downward trend in this group of population continued. Based on the projections data, we can expect the above-indicated trends to continue. Thus, the changes in the dynamism of the share of this group resulted, among other things, from the period when unfavourable demographic trends in population reproduction started in the different countries. It is worth stressing that the increasing life expectancy of Europeans along with the fertility rate below the generation replacement rate, as observed for several decades,<sup>4</sup> lead to a decreased number of people starting to be economically active, and consequently the shrinking of potential labour force, which is visible in the working age population group, where a downward trend has been visible in all the countries analysed since 2010. The biggest decrease in the share of working age population is predicted to occur in the Visegrad countries (Poland and Slovakia), whereas the lowest one in Baltic countries and Balkan countries. Third, looking at the period 1990-2015 and projections data, it can be concluded that all the groups of countries experienced an increasing process of population ageing. Among them, the highest increase was recorded in the Visegrad countries, except for the Czech Republic, whereas the lowest one in Baltic and Balkan countries, except for Romania. Thus, the observed demographic trends, though it might seem that they are similar, show clearly changing dynamism and intensity. The phenomenon of the shrinking of potential labour force can be also observed by looking at the value of old-age dependency ratio,<sup>5</sup> which is the ratio of the number of people aged over 65 to the total number of working age people.

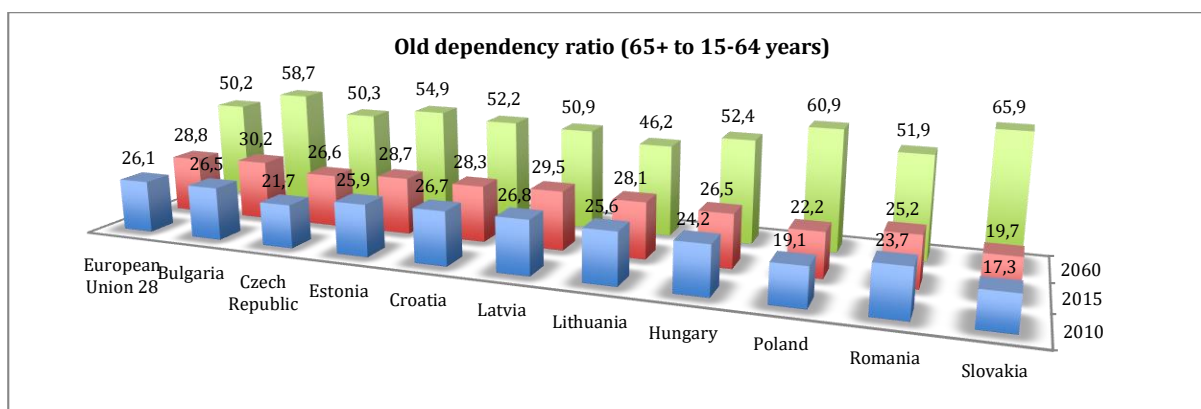


Fig 1: Old dependency ratio in selected EU countries between 2010 and 2060 taking into account demographic projection [in%] (source: as in table 2, access: 30.10.2016)

By means of old-age dependency ratio it is possible to determine the extent of the imbalance in the proportion of working age and post-working age groups, and indirectly also the level of burden on the working age population connected with the necessity of generation and distribution of generated GDP among the decreasing working age population and increasing population of senior citizens receiving pension benefits. Data in fig. 1 shows that the values of the old-age dependency

<sup>4</sup> Total Fertility Rate in EU-28 countries is 1.57 on average, and for a dozen or so years has remained below simple generation replacement level. (TFR<2.1) means that there is no generation replacement. However, the ratios for the different countries vary a little, so there is a noticeable diversification in the dynamism of demographic phenomena.

<sup>5</sup> Old-age dependency is the number of people aged 65 and over per 100 people aged 15-64.

ratio significantly vary in the different countries. For the period of analysis from 2010 to 2060, the highest values of this ratio are predicted to be mainly in the Visegrad countries, especially in Poland and Slovakia, while the lowest ones - in Baltic countries and Balkan countries, except for Bulgaria. It can be thus concluded that an increasing share of older people in population implicates a decreased share of population constituting potential labour force, where older age groups who successively move into the age group 65 and over are not compensated by people from younger age groups who enter the labour market.

#### **4. 1. Labour market participation of population**

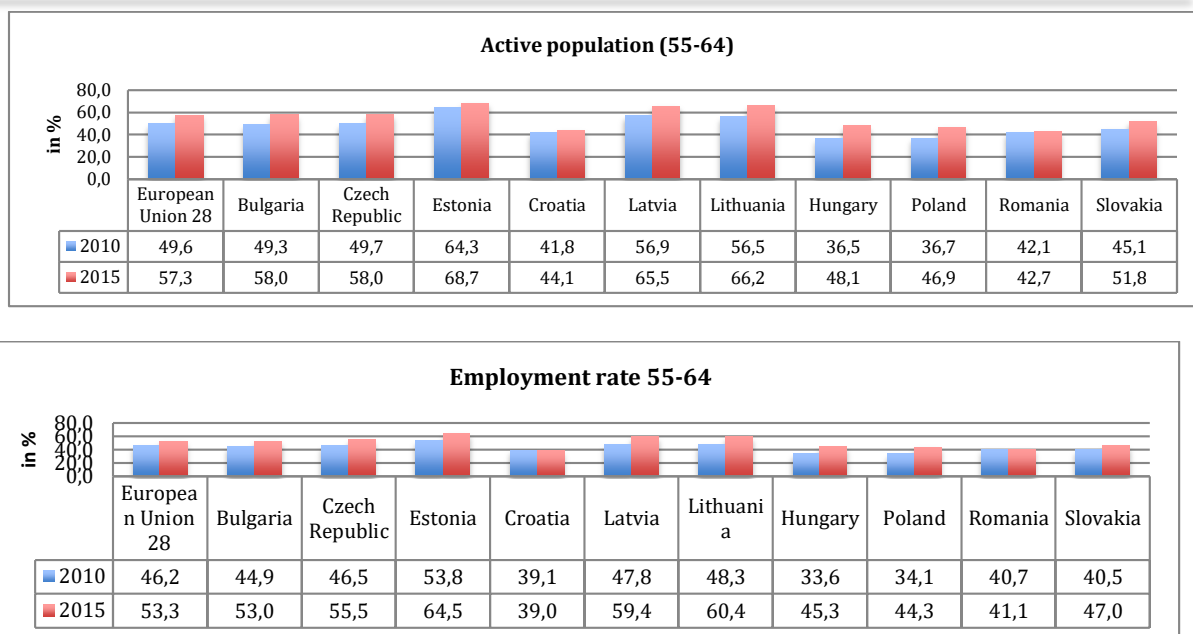
The observed changes in population age structure are so advanced that restoring demographic balance in the near future seems impossible. Population participating in the labour market represents real labour force in the economy. Increase in labour force depends not only on the level of working age population growth but also on changes in the labour market participation rate (Furmańska – Maruszak, 2014). Thus, labour market participation of population is determined, apart from effective demand for labour force resulting from the situation on the labour market and overall economic situation, by real wage level and other non-salary, employment-related benefits such as job satisfaction, prestige, working conditions (stability, friendly environment), working time organisation, social benefits for employees, etc. An important factor determining labour market participation is also the level of income other than from employment that can be obtained by working age people, e.g. early retirement pensions or other benefits, which make work less attractive. Of importance are also other factors such as consumption patterns existing in society, attitudes towards work, preferred family model and resulting attitude to women's participation in the labour market. In view of the increasing population ageing, it seems important to undertake activities aimed at counteracting and mitigating consequences of the above-mentioned process. Most EU countries implemented relevant pension reforms and undertook activities to support the policy of active ageing<sup>6</sup>, which resulted in longer working life, especially in older working age groups.

*Figure following on the next page*

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<sup>6</sup> Active ageing means helping people stay in charge of their own lives for as long as possible as they age and, where possible, to contribute to the economy and society. See more: <http://ec.europa.eu/social/main.jsp?catId=1062>





*Fig 2: Active population and employment rate from 55-64 in selected EU countries between 2010 -2015 [in%] (source: as in table 2, access: 5.11.2016)*

Data presented in figure 3 shows a clear increase in labour market participation in all the countries analysed, but with varying growth rates. It is worth stressing at this point that the process of labour force shrinking is accompanied by the process of ageing of this group. The highest values of the labour force participation rate in this sub-population are observed in Baltic countries and Visegrad countries, except for Poland, whereas the lowest ones in Balkan countries, except for Bulgaria. From the perspective of the economy, of importance are also employment rates, which are determined as the ratio of the number of the persons employed to the total number of people in a given age group (Gorzeń-Mitka, 2015; Lemańska-Majdzik, Okręglička, 2015). Increase in employment rates is consistent with the trend of the labour market participation rate. This data indicates that entrepreneurs are slowly beginning to become aware of the issues connected with consequences of ageing of potential labour force, as it is people aged 50 and over that constitute a particularly important group in the new demographic situation. Introduction of effective incentives for employers and older people to make it easier for the latter to stay on the labour market may lead to reduction of spending in these countries connected with payment of social benefits, and to improvement of the economic and social situation of this sub-population. It should contribute to the development of the service sector, especially for older people which is stimulating for economies.

## 5. CONCLUSION

The process of population ageing in EU member states, in particular in countries of Central and Eastern Europe, is one of the most important, long-term determinants of the development of the European Union. Eurostat's long-term forecasts indicate that if the current demographic trends continue, the number of people aged 65 and over in EU countries will increase by around 50% by 2060, while the number of working age people (15-64) will decrease by around 12%. As a result, there will be only two working age people per one retired person instead of four people as is today.

This is the most synthetic measure of the rapid increase in the share of older people in the EU population and a significant decrease in the share of young and working age people in the next decades. Analysis of statistic data has revealed that changes in the population structure by age, which indicate increasing population ageing, impact these countries on many levels. The impact of the observed demographic trends has been especially visible on the labour market, as the shrinking of potential labour force is a concern for almost all EU countries. Analysis of old age dependency has also shown an increasing process of labour force ageing. Despite clear convergences in this respect between the countries analysed we can observe differences in the intensity and dynamism of this process, which resulted, among other things, from the period when unfavourable demographic trends in population reproduction started in the different groups of countries. The analyses presented in this publication have also shown that in the context of unfavourable demographic trends, the period 2010-2015 saw an increase in population's labour market participation in the sub-population aged 55-64, which was especially visible in Baltic countries and the Visegrad Group countries, showing greater awareness of the consequences of the process of population ageing.

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## CHARACTERISTICS OF THE FINANCIAL MARKET FUNCTIONING WITHOUT A LEGAL BASIS - THE CASE OF KOSOVO

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### **ABSTRACT**

*State institutions in financial market introduce as participants, investors, users, regulators, and controllers. Legal adjustment and institutional administration of the said markets is indispensable and vital for the health and economic integration of each country.*

*It seems pointless, but in the legal aspect, although Kosovo has built a solid financial system, it has not completed the primary necessary legislation yet to adjust it as a genuine financial market, which shall be in the service of investors, intermediaries, capital costumers, etc. Lack of legislation, particularly law on securities, has made complex not only the purpose of implementation of the offer demand and the offer for financial market, but it has also produced negative effects on the functioning of the market economy.*

*Due to the lack of stock-market institution intermediaries are fragmented and concentrated only into bank organizations (commercial banks, investment banks, etc.), finds and investments, and other specialized institutions. In absence of national legal sources, Banks and the Ministry of Finance rely only in secondary legislation, habits uzans, and proven international bank experiences while applying them into internal turnover.*

*Relevant institutions should be aware that the development trend of international financial markets is rapidly progressing. Adjustment and completion of primary national legislation is a matter of urgency. Legal acts should rely and unify to proven regulatory and supervising standards.*

*Promotion of cooperation with similar institutions, exchange of experience, and participating in international organisms should be a priority, accompanied by intensive international cooperation due to the need of harmonizing with EU instructions and application of Stabilization-Association Agreement.*

**Keywords:** *law, market, instrument, financial, capital*

### **1. NTRODUCTION**

A sound financial system, as a whole, obviously serves as a central nervous system of a market economy, which provides to a country reliability for certain transactions, savings and investment of entities making them a critical funding source for the support the entire entrepreneurial activities. From the quality of establishment and its functionality depends the impact on economic growth and efficiency for transfer of financial resources to facilitate commercial transactions in the real economy. A sound internationally integrated and modern financial system cannot be established in a day considering the complexity of institutional components to be provided to allow such a system. A financial system, no matter how well it is established, cannot function without rule of law. Commercial transactions, beyond goods to goods exchange level, will never bloom without respecting contracts. There should also be widely trusted and reliable tools to be solved. Under the financial system, the financial market from the viewpoint of legal regulation, is a special but integrated system of specific legal rules implemented by financial markets and institutions for the way and certain actors operating in the market. These rules are generally set by legislature institutions, the government, the relevant national and international authorities for protection of investors, for organization of markets on regular basis and to promote financial stability. (Bikker

and Lelyveld 2003) Entirety of regulatory activities includes setting of minimum standards for the capital and running of these institutions, conducting regular inspections and investigating and prosecuting violators of law. "Regulation includes standards and governing commandments, supported by impellent sanctions, which require from private persons to undertake or adhere some specific actions" (. Richard B. Stewart, (2005: 113)

Considering that the legislation, institutions and approach of governments to regulate the capital market and the sectors of financial services in the last two decades the world has undergone evident rapid growth, respective Kosovo institutions, besides rhetoric do not have any agenda on this regard. Due to changes in economy and effects created by the global financial crisis, most of the European countries have experimented with different models of regulation and supervision to ensure good functioning of financial markets and to protect interests of customers, in order to identify a really successful and effective pattern, in accordance with national development circumstances. Financial markets have grown from year to year as a result of different companies operating in these markets (banking sector, the securities, insurance and pensions), which already provide their financial services and products across the globe. The need to be successful in the market and to increase the profits has made these companies to offer not only complex but highly sophisticated products worldwide. Indeed, the way until now, still not being able to talk about perfection in financial markets, has been long and difficult, not only seen by companies operating in these markets, but above all, by the states that have the obligation of creating laws and institutions in their function.

"In summary, the regulatory framework of financial services includes: laws, sub-law acts issued under and pursuant to law, general Principles of law, rules and guidelines issued by international financial market regulators, and guidelines and directives imposed by national authorities "(Pan E.J., .2012: 1915)

## **2. BACKGROUND – LEGAL BASE FOR REGULATION OF CAPITAL MARKET IN KOSOVO**

Kosovo has an interesting but also quite complex history of socio-economic and legal development. In the period 1945 - 1999, as an autonomous territory, with sometimes less and sometimes more self-governance, was under the jurisdiction of the former socialist Yugoslavia and Serbia. As such, it was one of the most underdeveloped parts of this country. Thus, in its territory a legal framework was implemented which regulated social- economic life including the capital market.<sup>1</sup> Indeed, the features of this social system were built upon the hybrid social-communist principles, subsequently resulting in a specific legal system, which at least in its form resulted to be more advanced in comparison with other social-communist countries. After World War II in the former Socialist Yugoslavia, there were continuously issued a series of systemic laws for internal regulation of the financial market that was distinguished from the external financial market system. For this purpose and in this segment, depending on the concept for the economic development pattern, Law on checks (1946), Law on bill (1946), Law on Securities (1989), the Law on the Stock, stock business and stock intermediaries (1994) etc , were issued. In this country special and general customs were also known which were inherited from the old Yugoslavia. There is no doubt that the financial

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\* Special Representative of the Secretary-General, in accordance with the authority granted by Resolution 1244 (1999) of the Security Council of the United Nations, dated 10 June 1999, considering Regulation no. 1999/1 of the Interim Administration Mission of the United Nations in Kosovo (UNMIK) on the Authority of the Interim Administration in Kosovo, dated 25 July 1999, in order to stipulate the applicable law in Kosovo issued Regulation no. 2000/59 on applicable law in Kosovo.



market is regulated in accordance with very narrow traditional channels (banks, saving banks), thus fulfilling the need to introduce securities which could be traded in medium financial markets. This model in the legal aspect has managed to formalize the money market and capital markets which managed to realize the function of mobility accumulation. (Zec M., & Radonjić O., 2012)

After the end of the last war (1997 - 1999), by placing Kosovo under the administration of UNMIK – based on Regulation no. 2000/59, Article 1, paragraph 1.1. on the applicable legislation in Kosovo the legal framework was determined respectively established. <sup>\*2</sup> The legal disposition (laws, dispositions, directives, regulations etc.) that define this framework were mainly based on the repeal of legislation issued by the Republic of Serbia from 22 March 1989 until placement of UNMIK - in June 1999 and reinstituting and implementation of the legislation which was in force before 22 March 1989, allowing the implementation the laws issued after 22 March 1989 until June 1999, if the later did not contain in itself any discriminatory elements and nature. In fact, all the legislation of this period that regulated the financial market formally has remained into force so far. This situation has remained the same even after the declaration of independence in February 2008 due to the fact that this market is not legally regulated yet (<http://www.md-ks.net/?page=1,8,653> ,. )

Currently in Kosovo the financial market is divided into two main segments: financial banking market and financial non-banking market, but as noted above, regulation and supervision of financial markets is almost non-existent. There is no legislation that regulates the matter of securities, bills of exchange, check, stock exchange, etc., There is no institution or agency of competence to independently regulate this market. Financial market is regulated by Law on Central Banks and Law on Microfinance banks and institutions and non-banking financial institutions. Another feature to consider is the fact that foreign banks (especially banks from EU countries) have gained a dominant position in the local banking system. They play a crucial role in the transformation of the banking system towards a more efficient and sustainable system.

Even though formally inherited legislation is still in force, it has not been replaced with other relevant legal acts, but even as such does not implemented. In these acts refer, only in rare cases, parties who have legal disputes for certain bank matters.

Despite the lack of a modern legislative framework for modern regulation of financial markets, this sector functions in a fragmented way and it is considered sustainable by economic experts. In its recent report on financial sustainability, the Kosovo Central Bank repeatedly points out that this sector is characterized by a satisfactory level of sustainability even though the assets of the financial sector grew with a slower trend. Economy experts have diametrically different views on this matter. Prof. Musa Limani points out that the financial sector in Kosovo is stable, as banks have had a tougher attitude towards credit policy and did not allow any disorder in terms of the financial market, but according to him, this stability can swing. "Based on the negative financial trends in Eurozone, considering Greece, Cyprus and other EU states facing financial problems they can be transferred in Kosovo, because 90% of financial assets in Kosovo banks are maintained by foreign banks from European countries. Any disorder to happen in finances in the financial market can be reflected in Kosovo ", while Prof. Mejdi Bektashi thinks "Currently, the banking sector in Kosovo is stable and it is a success story with its activities and other sectors. Currently we have 2 billion Euro deposits in 9 commercial banks in Kosovo which are strictly supervised by the Kosovo Central Bank " (<http://www.telegrafi.com/sektori-financiar-ne-rrezik>). However, Kosovo society and Kosovo academic area does not discuss on eventual negative effects reflecting the lack of law on securities.

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### **3. SIGNIFICANCE OF THE ECONOMIC MODEL FOR THE REGULATION OF THE FINANCIAL SYSTEM**

Modern economic systems generally have instituted two financial systems, the bank-based and market-based system. Many experts in the field have dealt with analyzing the two financial systems and draw conclusions about advantages and disadvantages. In its content market-based financial system creates the connection of creditors - investors with borrowers - business entities directly without mediation. Various companies, in order to provide sufficient funds for their activities, issue securities with debt or equity, and place them into market the place where they directly meet with investors. Whereas the bank-based financial system makes the transfer of surplus funds to business entities seeking funding sources, having as process intermediaries banking institutions. Often the idea is created that the less developed countries or developing countries are oriented towards bank-based financial system, while countries with developed economy are oriented towards market-based financial system (Ross Levine.2000)

So far in Kosovo no clear framework was provided for the creation of a financial system model. Mostly this market functions only on the basis of best banking practices and standards which are the result of the impact of activities that own from countries they have come from. This indicates that until now the country's economy as a whole is oriented towards a bank-based financial system. This paper does not tend to propose a development model of the financial system and pointed out due to the fact that lack of such modeled policies degrade the normative system of this segment. Therefore, the problem for doctrine of financial and banking law is exactly the uncertainty, respectively lack of economic - financial policies. Dilemmas grow deeper when the role of the Central Bank is generally regulatory and not at all innovative due to lack of legal regulation. In these circumstances, without a clear economic model, without real economic policies, etc., without regulatory institutions, it would be a mistake with serious consequences if competent institutions would deal with drafting the legislation to regulate the financial system.

It is world known fact that creation of well modeled policies that adjust to the culture and economic development of a country, directly determine the quality and effectiveness of legislation associated with institutional mechanisms of competence. It should be emphasized that these goals for our country should be implemented urgently. These goals should be objectified and operationalized in order for them to be treated and elaborated through a complex synchronization process for them to be in compliance with European Union standards for the financial system. This is necessary since Kosovo has entered the EU integration processes.

Given the experience of countries which have recently entered the EU, it is proved that the harmonization and approximation process of the legislation with that of the EU is really a hard work. In the legal aspect, real displacement of directives in the legislation is very complex, because directives themselves are not legislation, but are principles that should be included in the legislation. This is a very complicated work and quite logical to start early. Kosovo as a potential candidate for EU membership needs strong and comprehensive reforms. Indeed, this is not necessarily simply accepting the *acquis*. There is no doubt that the country has to make progress in this direction, but unfortunately *acquis* cannot be seen as a recipe which simply to be applied, but exactly a natural harmonization process of legislation is need.

Based on the actual situation, maybe we are right to say that we should not be an only financial market. Legal acts and sub-acts, capital restrictions, continue to keep us far from the region functioning as an only market. "Foreign investments are small, although we lack specific information on this point." Groups, C. and S. Kusic (2006: 6)

### **3.1. Legal regulation of the financial system in the financial market segment**

Institutional regulation of the financial system, especially in the segment dedicated to capital markets, depending on the models and policies outlined above, could be arranged in several ways. Being aware of the vulnerability and complexity of the economic system in the country in general, and by evaluating similar models in states in the region, the legal regulation, whether market or bank oriented, it should be institutionally based. The legal institutional base includes, provides and guarantees legal solutions of what are the entities that have legal capacity to engage in activities of financial transactions by creating a framework for the competent authorities with clear authorizations. "As such, it ensures that anyone who wants to engage in investment activities, should obtain the permission by the competent authority if they claim that they are sure that entity has the ability for investment" (Dirk Heremans 1999 950-951. The establishment process of the legal framework should be based on several principles relating to: decentralization, opening towards all economic agents, competition being present between systems and means; and freedom given to economic agents for risk exchange, liquidity, etc., being constrained only by the price (Zaho L., 2009). In respect of legislative technique, the process of legal regulation of the financial system in the financial market segment should begin by issuing the law on securities. Law subject should regulate and guarantee the establishment of a secure environment for investors of securities by establishing a Financial Supervision Agency, regulation of security market, and activities of entities involved in their marketing, as well as through control of public launching and trading of securities. For the law in question on security market, supervisory institution should be institutionalized which is approved by the Agency which will operate in accordance with provisions of the law "On commercial companies". Functionalization of security law imposes certain interventions in the Law on Commercial Companies by amending and supplementing it in respect of specialized formation registration such as Security Associations. These legal-business formations, which did not and do not exist are, inter alia, create opportunities for the unification of security intermediaries, regulate and facilitate the applications process in the Central Bank, help to strictly implement procedures for providing membership access, and organize trainings and exams for registered intermediates. Security Association have to respect specific rules regarding relations between the members of the Association of clients, official advertising, by giving advice and recommendations, and record keeping. These rules should have the power of law so that companies can be prosecuted if an economic entity produces a loss being the result of non-compliance with these rules. In our opinion it would be essential for Kosovo to create a legal basis for creating a stock market. Despite the poor economic situation, establishment and institutionalization of this base would have a positive impact not only psychological but will gradually begin to play its role for the capital market. In stock market trading procedures of bono treasury could begin as well as other instruments of money market. Actually in this institution the Share Registration Center could begin its activities.

Creation of the legislative and institutional framework are prerequisites for various forms of business investment to be enabled to be covered and organized by the following segments:

- 1) Security Association, the competence of which could be such as an intermediary security company, i.e. buyers and sellers of securities. The jurisdiction of this association may also be government obligations, corporate obligations, fixed capital, financial future and options, as well as financial corporations, and investment management.
- 2) Intermediary financial associations and regulation of manager's and brokers offices. This organization should provide a variety of independent intermediators who provide information about various investment activities (life insurance, credit funds, etc.)



- 3) Organization for investment regulation and management. Such an organization should strengthen the necessary investment managers, especially those who manage institutional funds and joint investment plans.
- 4) Organization to regulate life insurance and credit funds. Such an organization deals with the management of companies for life insurance and credit funds participating in investment management about insurance and credits.
- 5) Companies engaged in life insurance should necessarily have authority for their work in accordance with the regulations for operation of insurance companies and enterprises to carry credit funds and to get permission from the Security Association, etc.
- 6) The Association of Mediators in future markets regarding their contract authorization for trade businesses to act;

It is not necessary for investment enterprises to operate exclusively for acquaintances in the share market, but it is necessary to always provide information that supports investors.

As a result of all these normative solutions certain costs rise related to:

- ↳ creating a variety of professional expertise;
- ↳ processing issues for reserve funds likely to be used for compensation of losses by investors in cases when the state did not fulfill its obligations towards them.

The Ministry of Finance may exercise control of the financial sector by using three sectors (banking, securities and international finances).

#### 4. CONCLUSION

The globalization waves are reducing the boundaries between national and supranational levels. Under such processes most states related to financial systems do not implement a "country model", but tend to move toward implementing a supranational model based on increased financial integration, by taking into account a greater diversification of risk and by using most advanced instruments and systems for risk management. The financial system is the catalyst for the process and economic development so that they can take the appropriate shape and form. This definition clearly expresses the main role of the financial system on a country's economy. In the world today there are known two major orientations of the financial system, market-oriented and bank oriented financial systems. Numerous discussions of specialists in this field wanted to put one of these systems into focus in order to glorify and to set it as an example to be followed in order to have economic growth on the global level.

An important feature of financial systems in countries of Eastern Europe is rule of the banking system and relatively underdeveloped capital markets. Consequently, these countries have supported important reforms mainly in the banking sector. Important efforts have been made with the assistance of various international organizations to improve the legal and regulatory framework, and to implement and strengthen the capabilities of the national banking authorities.

The road that Kosovo is currently pursuing, unquestionably goes towards the development of a market economy. It also shows the eventual integration in the European Union and further in the global economy. Of course, sometimes this road will be difficult, but strong institutions can play a critical role in helping Kosovo to overcome difficulties. However, for about a decade in Kosovo it is talked about securities as something abstract, that often, either by financial institutions or by citizens, somehow reality is avoided and this topic is ignored, or it is mentioned with care very specifically thus causing confusion and fear as talking about something impossible or unattainable in the circumstances of economic development in Kosovo. Actually, some of the necessary infrastructure components are already consolidated, such as a central bank engaged for reforms and

a banking system that functions properly in a market economy. Other parts of institutional infrastructure will certainly need more time to develop. Culture or intangible elements are those that require more time. Citizens' trust in the financial system can be strengthened only when the system is well designed and easily operational. From the future view point, it may take years. It requires political will and great discipline to bring to a completion, but the benefits of this action to justify the effort. Among the more fundamental weaknesses of this system is the lack of a series of systematic laws which would enable to lay the foundations for the basis of a modern legal system for the financial market. In this aspect, Kosovo judicial doctrine highlights two issues. The first has to do with the treatment of legislation heritage which is legally into force since the former socialist Yugoslavia, these acts not being repealed nor replaced, and the second, lack of concrete institutional actions to create at least a security law. Above all, perhaps until now, domestic institutions have failed to clarify the economic model and its features that should present for the financial system in the country. Based on what was elaborated on the financial system, primarily related to the segment regarding security market, it turns out that at least three elements should be synchronized with special care and professionalism. First, a sustainable macroeconomic environment with a clearly defined model and features for the features of the financial system, to the extent macroeconomic developments affecting developments in financial market companies; secondly legal regulation for effective and secure supervision of specific markets and individual enterprises by regulatory and supervisory authorities; and thirdly, functional infrastructure of the financial market, which means banking companies, insurance companies, capital and pension market etc., ways of their behaviour in a transparent, competitive and functional market. These three components are in a complete interdependence and neither one of them is detached and cannot be a guarantee for a sustainable financial market. Therefore it is necessity for coherent and organized action of all institutions and centers responsible or concerned about these three elements.

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## CONTRADICTIONS BETWEEN THE SUBJECTS OF THE CONTRACTUAL RELATIONS IN THE REGIONAL AGRARIAN SECTOR

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### **ABSTRACT**

***Background:** The problem of food security is a priority for most Russian regions. The article discovers problems of contradictions between the subjects of the contractual relations in agrarian sector of Russian regions. The agrarian chain “farmers – manufacturers – wholesale merchandisers – retailers – ultimate consumers” is too long and complicated. Therefore, a great number of contradictions between subjects of this chain appear. This might be caused by such negative factor as behavioral opportunism, which causes extra costs. As a result, the last unit of the chain – the ultimate consumer has to pay all of transaction costs.*

***Method:** In this article we introduce the evaluation technique of behavioral opportunism level. This methodology can be used to measure the influence of behavioral opportunism on efficiency of contractual relations.*

***Findings:** Under developed technique we analyze the behavioral opportunism level of firms in Chelyabinsk Region (Russia). It is very different in different kinds of business. The result of this research is a new logistic model of the effective contractual relations in agrarian chain. To minimize all problems described in this article and to largely increase contractual relations efficiency, the regional government should give support to creation of a wholesale distribution center.*

***Improvements:** Building logistic centers can become an essential part of agrarian policy and a factor of an agrarian industry development. The logistic center is oriented to a cooperation with regional agricultural producers, including farmers, and also personal subsidiary farms. The main questions concern the organization of purchases of agricultural products on mutually advantageous conditions, that is also the organization of sales channels for producers, and also long-term contracts with peasant farms and cooperatives for questions of supply of landing material, mineral fertilizers and so on. Also logistic center can provide services in storage of products as the organization of modern high-technology warehouse farms isn't always available to small and average producers.*

***Keywords:** agrarian sector, contractual relations, behavioral opportunism, food security, transaction costs, transaction rent, contractual relations' efficiency.*

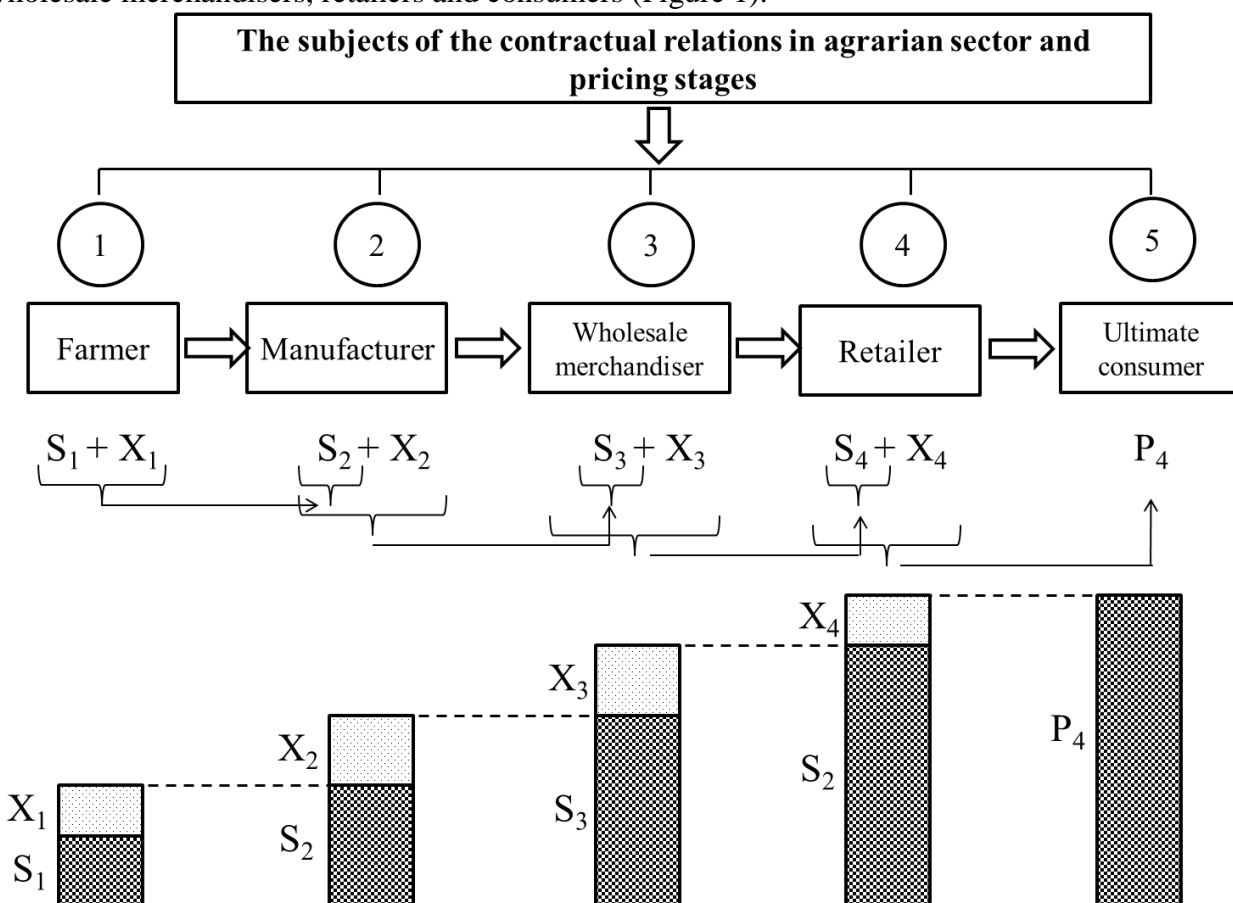
### **1. INTRODUCTION**

The economy of any state develops cyclically. The current situation in economic sector shows inefficiency of the liberal principle “laissez-faire”. Globalization and liberalization of the international market were gradually replaced with priorities of national security. From the standpoint of today's geopolitical situation, national security, including food one, becomes priority. Import substitution became the main direction in the sphere of food sector. Achievement of

regional food security is to make all national economy steady. The object of our research is the food security of Chelyabinsk region. The article discovers the problems of complexity, lack of efficient regulation at every step of the agrarian chain, which causes absence of fair competition and as a fact high price the consumer is obliged to pay.

The purpose of the research is development of an effective model that could optimize relations between all the subjects of the contractual relations, beginning with the farmer or the producer, finishing the ultimate consumer.

As for subjects of the contractual relations we mean the following faces: farmers, manufacturers, wholesale merchandisers, retailers and consumers (Figure 1).



**Figure 1.** The subjects of the contractual relations in agrarian sector and pricing stages

As for the *contractual relations in agrarian sector* we mean a special sort of the economic relations between, at least, two subjects concerning purchase and sale of foodstuff on the basis of developed institutes' system (Benz, Silova, 2015).

We define *contractual relations' efficiency* in agrarian chain as ability of these relations to satisfy economic interests of its relations' subjects. These relations base on distribution of ultimate agricultural product's price. In other words, the existence of optimum price – such price which harmonizes interaction between all the subjects of the agrarian chain, shows whether contractual relations effective or not (Benz, Silova, 2015).

Let's consider efficiency of the contractual relations through two categories – “transaction costs” and “behavioral opportunism”. We define *transaction costs* as costs leading to decrease contractual

relations’ efficiency in the agrarian chain “farmers – manufacturers – wholesale merchandisers – retailers – ultimate consumers”. In other words, it is the losses in welfare of subjects of the contractual relations in agrarian chain caused by imperfection of the institutional environment.

As for the first four units of the agrarian chain, the criterion of welfare of these subjects becomes selling price ( $P_1, P_2, P_3, P_4$ ). There’s only one working mechanism – «the higher the price, the better result”. If we speak of an ultimate consumer, the criterion of his welfare would be product’s utility. And the level of utility will be in inverse proportion to the price paid for a product. Thus, in practice the essential increase of prices on each link of the agrarian chain becomes the result of transaction costs.

We suggest new category – “*transactional rent*”. We define it as the income gained as a result of imperfection of a market mechanism redistributed in favor of one of contractors in the process of transaction while there are all bases to believe that this income has to belong to the second contractor on condition that the market is perfect.

The categories “transaction rent” and “transaction costs” are closely connected. Transaction costs of one subject become a transactional rent of another. This redistribution leads to deterioration of conditions for economic activity. The transactional rent negatively influences food production as conditions of economic activity for producers become worse. Process of redistribution of a transactional rent, on the one hand, is connected with imperfection of the market, and on the other hand, with lack of adequate state policy in agrarian sector. Imperfection of the market leads also to opportunistic behavior of subjects of the contractual relations.

Many works are devoted to a problem of opportunism. One of the founders of the theory of contracts and the contract relations is O. Williamson. He defines opportunism as "following own interests including by deception" (Williamson, 1985). He defines two forms of opportunistic behavior concerning the moment of making a contract: *ex ante* opportunism and *ex post* opportunism. Let’s define *opportunism* as abuse by subject of the situation for his ultra-enrichment. Certainly, the opportunistic behavior can be inherent for each subject in a contract chain. The opportunistic behavior in economic sense is reflected in increase of the ultimate product’s cost as each subject showing opportunism, appropriates additional part of product’s cost. As a result the ultimate price can be multiply increased. Therefore it is important to study the key sources of opportunism and to develop mechanisms of their elimination.

Let’s consider opportunism sources at the level of each possible participant of the contractual relations.

In authors’ opinion, the farmer’s or manufacturer’s opportunism can result in lower quality of the food they grow or produce. Trying to maximize production volume and decrease costs they use growth stimulants, aggressive fertilizers, which can harm consumers’ health. Routines of rationalization are the base of this behavior.

As a rule, we can observe the high level of opportunism at a stage of retail sales. Sometimes a retailer works as some kind of monopolist, as retailers can act in collusion and as a result form cartel. Therefore they dictate the maximum price of purchase at the producer or the wholesale marketer.

As a result, farmers become hostages of the price enforcement and often have to sell their products to manufacturers even below cost value. However, at further stages the price increases several times.

Peters I.A. notes the following stages of opportunism in agrarian sector (Peters, 2011):

1. At a stage the making contracts – between merchandisers and agricultural producers when more powerful and informed party (as a rule, merchandisers) tries to make the contract on conditions, favorable to itself.

2. At a stage of performance of the contract – between retailers (or merchandisers) and producers in connection with presentation by retailers the overestimated, unreasonable requirements (payment of bonuses, etc.), violation of terms of payment; from producers – in connection with violation of delivery time, completeness of the range, poor quality of production, violations in registration of documentation.

3. Within the created integrated structures – the unfair behavior of the integrator when using the agricultural organizations is exclusive as a source of raw materials and receiving additional profit, and also uneven distribution of the income.

Thus, further in the article we'll define *behavioral opportunism of the agent of a contract agricultural chain* as the abuse by the corresponding agent of the market situation (exclusive or dominating) which results in excess growth of the price of the realized product.

## 2. CONCEPT HEADINGS

The purpose of this research is to reveal main contradictions in contractual relations in agrarian branch of economy. That will help in creating an effective regional policy and obtain food security for population.

Excess growth of the price of ultimate products becomes the result of opportunism of contract chain's agents. To develop an evaluation technique of behavioral opportunism level, it is necessary to determine the level of excess growth of the price.

The standard agrarian chain is shown at Figure 1. We can see that the realization price of  $i$ -agent becomes, some kind of, prime cost for the  $i+1$ -agent:

$$C_{i+1} = C_i + X_i, \quad (1)$$

where  $C_i$  – prime cost for  $i$ -agent,

$X_i$  – trade profit for  $i$ -agent,

$C_{i+1}$  – prime cost for  $i+1$ -agent.

As a result the ultimate consumer buys production at the price of  $P_4$ :

$$P_4 = C_4 + X_4, \quad (2)$$

where  $P_4$  – the ultimate price,

$C_4$  – prime cost for retailer,

$X_4$  – trade profit for retailer.

As the studied chain consists of five subjects, the number of price growth stages is, at least, four. Let's consider that the trade profit at each stage includes both a normal level, and an extra level:

$$X_i = X_i^{norm} + X_i^{extra}, \quad (3)$$

where  $X_i$  – trade profit for  $i$ -agent,

$X_i^{norm}$  – normal trade profit for  $i$ -agent,

$X_i^{extra}$  – extra trade profit for  $i$ -agent.

Let's consider that the behavioral opportunism of each of four contractual relations' subjects (apart from the consumer) is evident in a possibility of realization the product at the price containing an extra trade profit.

Let's enter the coefficient of behavioral opportunism  $k_{op}$  and coordinate it to the level of an extra trade profit  $X_i^{extra}$ .

Besides, we consider that the extra trade profit includes extra transaction costs. In turn, they are also a source of opportunism of mentioned subjects.



Therefore, with growth of opportunism level the contractual relations efficiency will be reduce. That's why, this efficiency of the contractual relations will be inversely proportional to opportunism level is reduced:

$$k_{ECR} = \frac{1}{k_{op}}, \quad (4)$$

where  $k_{op}$  – the level of behavioral opportunism,  
 $k_{ECR}$  – the level of the contractual relations efficiency.

We present the table of an assessment of the extra profit level, using the coefficient of behavioral opportunism and the coefficient of contractual relations efficiency (Table 1).

**Table 1.** Determination of the coefficient of behavioral opportunism and the coefficient of contractual relations efficiency

№	Extra trade profit to the Price, % ( $X_i^{extra} / P_i$ )	The level of behavioral opportunism ( $k_{op}$ )	The level of the contractual relations efficiency ( $k_{ECR}$ )
1	0	0	max
2	1 – 5	1	1
3	6 – 10	2	0,5
4	11 – 15	3	0,33
5	16 – 20	4	0,25
	...	...	...

**The Source:** Evaluated by authors.

In practice to determine the level of an extra trade profit, as well as the level of all trade profit in general, is rather difficult. Therefore, we offer to determine the mentioned rates through calculation of ratio on sales ( $ROS$ ). The simplified formula of its calculation looks follows:

$$ROS = \frac{PF_{gross}}{TR} = \frac{Q \cdot (P - C)}{Q \cdot P} = \frac{P - C}{P} = \frac{C + X - C}{P} = \frac{X}{P} = \frac{X^{norm} + X^{extra}}{P}, \quad (5)$$

where  $ROS$  – ratio on sales,

$PF_{gross}$  – gross profit,

$TR$  – total rent,

$Q$  – quantity of product,

$P$  – price,

$C$  – prime costs,

$X$  – total trade profit,

$X^{norm}$  – normal trade profit,

$X^{extra}$  – extra trade profit.

Thus, through excess ratio on sales over normal level we can find the level of behavioral opportunism and the level of contractual relations efficiency using the Table 1.

### 3. RESULTS

The assessment of contractual relations efficiency in the agrarian chain should be carried out for each link of the chain separately. To receive a total assessment of contractual relations efficiency, it is necessary to put the received values.

The analysis of each link separately allows to make a conclusion about which stage of the agrarian chain is characterized with the highest level of opportunism and transaction costs and consequently, the lowest efficiency of contractual relations.

We accept that 5% of a trade profit as a normal level. According to the Russian president V. V. Putin, trade profitability in 5% is a normal level. What occurs in practice – we give a number of examples. We'll consider the enterprises of Chelyabinsk Region (Table 2).

**Table 2.** Ratio on Sales of Chelyabinsk enterprises

№	The sector (Kind of Business)	The Number in Agrarian Chain	Ratio on Sales (ROS), %		
			2012	2013	2014
1	Cultivation of cattle	1	18,8	16,8	21,1
2	Vegetable growing	1	39,5	63,7	43,1
3	Cultivation of grain and leguminous crops	1	8,3	5,1	8,6
4	Production of bread and flour confectionery of incontinuous storage	2	24,8 – 29,1	22,3 – 28,1	12,7 – 35,0
5	Production of flour from grain and vegetable crops and ready flour mixes and dough for pastries	2	11,4	9,6	8,3
6	Production of chocolate and sugary confectionery	2	14,9	13,5	11,2
7	Wholesale trade in sugar and sugary confectionery, including chocolate	3	2,3 – 8,4	2,8 – 8,5	5,6 – 8,9
8	Wholesale trade in other foodstuff	3	1,6	0,1	0,2
9	Unspecialized wholesale trade in the frozen foodstuff	3	0,0	12,3	17,8
10	Retail trade in products from meat and fowl	4	4,5	3,8	4,2
11	Large retailers	4	14,1 – 17,1	15,2 – 17,9	14,3 – 18,8

**The Source:** According to the Financial Reporting of the enterprises.



The selective analysis shows that it is impossible to make a well-defined conclusion concerning at what stage of the agrarian chain we can see the highest level of opportunism. Unusually, but in a number of sectors at the level of the first link of the agrarian chain extremely high level of opportunism is observed. In Chelyabinsk region it is possible to refer the cultivation of cattle and vegetable growing to such sectors. Here the level of ROS reaches 63%. By the technique, stated above, the level of behavioral opportunism reaches 13 units. However, if we consider another sector – cultivation of grain and leguminous crops, then here ROS is within norm. Abuse isn't observed.

As for the second link of the agrarian chain, here the situation is different. If we say about small producers, then in view of the strengthened competition they don't manage to overstate the realization price since they have no exit to large markets. Small producers have to adapt to the conditions which are laid down by retailers.

If we say about large plants, for example, in Chelyabinsk region there are only several such plants producing bread. This market demonstrates much higher level of profitability, and, therefore, the higher level of opportunism.

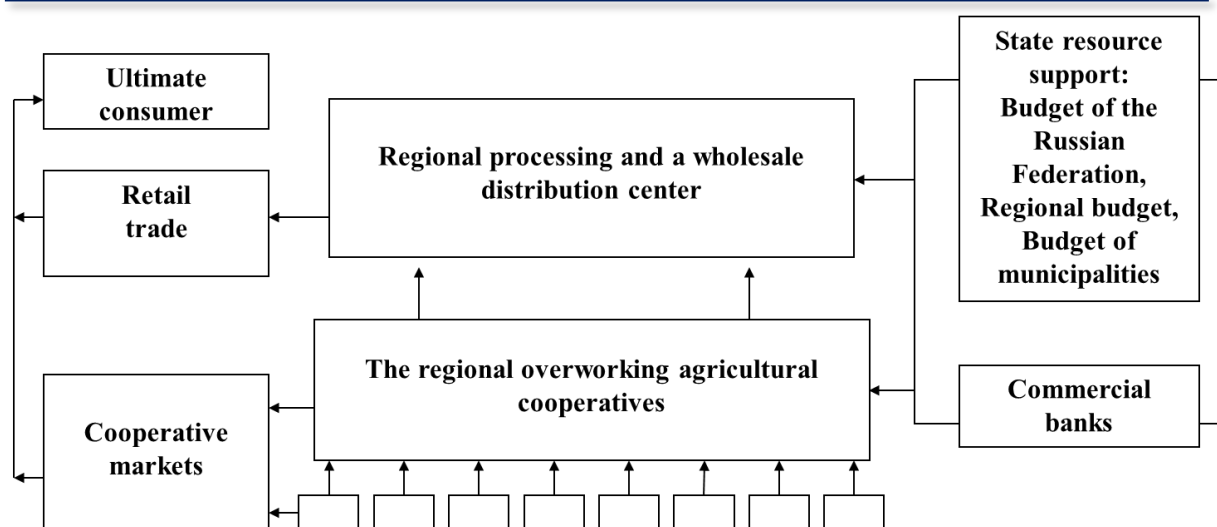
Initially, when we started the food security of the region research, all problems seemed quite transparent: as a rule, wholesale and retail enterprises most dictate the terms, buy products from farmers and producers at low prices and sell at extremely inflated prices. In practice everything is more difficult. Again, if we say about small or medium business, then profitability of sales is absolutely low here. From the table 2 we can see that wholesale trade makes no more than 8-9% of revenue. And even retail trade isn't extremely profitable. The situation is different with large retailers – here profitability of sales reaches 20%, and it already exceeds normal level.

In view of the fact that it is always easier for large enterprises "to survive", nevertheless, small producers also shouldn't leave the market. Often such farmers realize better and ecologically safe products. This fact indicates negative side of the competition. On one hand, existence of the competition doesn't allow to overstate the product price. But on the other hand, if this competition is diverse (i.e. both the small and large enterprises are presented at the market), then such competition "squeezes out" from the market small producers, and already large retailers have a possibility of manifestation of opportunistic behavior.

As we come to a conclusion that personal subsidiary farms can't be dismissed in any way, it is necessary to create such logistic model which would allow to counterbalance the rights of both small, and large enterprises. The example of such model is represented at Figure 2.

There have to be several wholesale distribution centers in order to prevent monopolization of the market (model represented in Figure 2). And localization of such centers can be based on the territorial principle.

*Figure following on the next page*



**Figure 2.** Logistic model of agricultural consumer cooperation

#### 4. DISCUSSIONS

Contractual relations as a scientific category appeared in economic science quite recently. However, scientists started to pay attention to the nature of contracts long ago. Smith, A. in his classical political economy divided all forms of interactions between economic agents (and this is a term of “contract”) into commodity and labor. As a basis of all relations he distinguished exchange (Smith, 1776). With the emergence and development of private property, the liability of worker to give a part of produced product to the owner appeared. On this basis labor relations arise. Marx, K. is another significant author of classical political economy. Despite the fact that he doesn’t use the category of contract, the sources of contractual theory’s origin can be found in his scientific papers. In particular, he defined the method of contractual relations’ registration – agreement. According to Marx, K. exchange is a strong-willed act during which one seller appropriates someone else’s goods and alienates his own (Marx, 1867). Economic relations serve as the basis of contractual relations (so called “strong-willed relations” by Marx, K.). Contracts can be fixed legislatively or not. Thus, the works of Marx, K. mark out informal elements in contractual relations.

In order to discover the evolution of basis for contractual relations theory, we use the works of Marshall (neoclassical theory). Marshall, A. explored much more complex form of contractual relations, which includes resellers between the ultimate consumer of goods and its producers. According to Marshall, A., we consider owner and manager as two separate objects in research of the production organization and management of a firm. As well as Smith, A., Marshall, A. marks out labor division and, in particular, significant role of businessmen in management. Businessmen, according to Marshall, A., represent a particular class of entrepreneurs, who have special functions. On the one hand, businessmen can be considered as highly skilled subjects of production process, on another hand – as resellers between workers and consumers (Marshall, 1890 – 1891).

So, the sources of contractual theory’s origins are laid in many different scientific papers of classical and neoclassical schools. Nevertheless such category in science didn’t exist for a long time.

“Contract” and “contracting” as economic categories were introduced in science by institutional theory. The new institutional theory becomes widespread in the 1970’s. McNeil, I. introduced three

forms of contracts: classical, neoclassical and relational. Being more lawyer than an economist, he studied the legal side of a contract. In particular, he considered contracts as “mini-society with an array of norms beyond the norms centered on exchange and its immediate process” (Campbell, 2004).

Williamson, O. paid attention to economic nature of contracts and contractual relations. He developed the cognitive map of contracts with different types of contractual relations’ management. And he describes “efficiency branch”, based on transaction cost economy and decrease of opportunism level (Williamson, 1979).

As for Russian scientists, Auzan, A., Bendukidze, K., Benz, D., Kozlova, E., Kudryashova, E., Kuzminov, Y., Oleynik, A., Popov, E., Silova, E., Tambovtsev, V., Shastitko, A. and Yudkevich, M. research problems of contractual relations. For example, Benz, D., Kozlova, E., Silova, E. show interconnection between opportunism, quality of corporate institutes and imperfection of contractual relations (Benz *et al.* 2014).

But the problem of agrarian contractual chain’s length is not sufficiently researched in economic literature. Most scientific studies on this problem are just empirical. The authors suggest that this problem should be studied more fundamentally. By the end of the XX century the problem of food security became the priority for many scientists. It can be explained by the fact of unprecedented growth of planet population, especially in developing countries that cause numerous energy crisis and environmental problems.

Conway, G. and Barber, E. in their book “After green revolution” define food security as the guaranteed access for all inhabitants to food products enough for healthy and active life at any time. And, according to some researchers, the major factor limiting this access is inaccessibility of energy, especially it concerns developing countries. The authors, mentioned above, see the solution in the state policy, directed to support agro-industrial complex, fight against poverty and birth rate regulation (Conway, Barbier, 1990).

According to Russian scientists Gorbacheva, A. and Kupchenko, A, the food security can be characterized as ability of a country to produce enough of food (Gorbacheva, Kupchenko, 2014). Food also has to be of satisfactory quality and safe for life and health of the population. The government has to pay more attention to low-income population. These authors mark out the following components of food security: physical availability of food; economic availability of food; safety and quality of the food.

Above-stated authors study the problem of food security. But they don’t pay attention to the problem of contractual relations’ imperfection in agrarian branch. So, the problem of agrarian contractual chain’s length with its transaction costs and opportunism is not studied.

The problem of agrarian contract chain is marked out by Russian scientists Zinich, A. and Stukach, V. (Zinich, Stukach, 2011). However, these authors study only one agent’s behavior in agrarian market – country farms (small organizational forms).

The category of transaction costs was introduced in scientific use by Coase, R. in 1937. Coase, R. defined them as “costs of using the price mechanism”, “costs of transaction exchange in open market”, “market costs” (Coase, 1937).

Dalman, K. classified transaction costs for informational costs, negotiating and making-decision costs, costs on control and enforcement (Shastitko, 2001).

Russian scientists also devoted many works to exploration of transaction costs’ nature. For example, Shastitko, A. consider transaction costs as “resource expenses (money, time, labor and so on) for planning, adaptation and control over implementation of individual obligations in the process of alienation and assignment of property rights and freedoms, stated in a society” (Shastitko, 1997).

The new institutional theory also paid attention to the problem of behavioral opportunism. For example, Jensen, M. and Meckling, W. studied such factors of contractual relations' efficiency as informational asymmetry and behavioral opportunism (Jensen, Meckling, 1998). These factors lead to contract incompleteness and Hart, O. with Moore, J. confirmed this in their researches (Hart, Moore, 1988).

Thus, we can find out that many authors pay attention to the studied questions. The novelty of the presented research consists of three parts. First of all, we study the efficiency of contractual relations in agrarian branch. Secondly, we try to make a contractual relations' efficiency assessment technique. And thirdly, we approve this technique and theoretical categories, introduced in scientific use on the base of agrarian branch. And besides, we connect questions of food security, contractual relations' efficiency, a problem of over-sized transaction costs and behavioral opportunism.

## 5. CONCLUSION

Today the problem of food security becomes more and more critical. The last year's growth rate of food prices advances growth rates of the population income. Last year the real income of population even reduced. Also the quality of produced food falls, which means that not just food becomes inaccessible for the population in quantitative parameter, but the sufficient quality of this food starts being inaccessible for the population. These two problems are of critical meaning for the modern world.

The problem of food security isn't exclusively political or technological one. Its economic component is based on contradictions of subjects of a contractual chain. The key reason of imperfection of the contractual relations in the Russian agrarian sector is the low level of competition among agrarian enterprises. The opportunism level, which is a key factor of low contractual relations efficiency, is extremely high for the producers having a dominant position on the market. In Chelyabinsk region such sectors are production of bread and meat. And these are key industries.

To liquidate all problems described in this article and to largely increase contractual relations efficiency, the regional government should give support to creation of a wholesale distribution center. Besides, it is necessary to create the corresponding standard and legal base. Such center would allow solving a number of problems: to simplify control of the prices from the state; to make products more available to the ultimate consumer; to help small farmers and personal subsidiary farms find stable sales markets; to lower factors of opportunistic behavior.

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## THE NECESSITY OF ONLINE AND OFFLINE SALES INTEGRATION

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### ABSTRACT

*Nowadays, retail is not competitive if not accompanied by appropriate internet service which will promote and sell products. Many stores which can be seen in the city centers and shopping malls have their own websites with integrated online stores, where with a few clicks of the mouse consumer can select, order and receive desired product. Retailers can improve their profits if integrating their classical, conventional store chains with online store. This kind of integration will improve retail sales, and increase credibility and availability to larger number of consumers on the internet than in reality. Since the retail no longer takes place exclusively in the stores due to the development of technology and internet which is evident in the growing trend of purchasing products online, it was necessary to examine the necessity of online and offline sales integration. Therefore, the main focus of this research is the integration of online and offline sales, new technologies impact on retailers and their adjustment to the new situation. In this paper hypothesis according to which online and offline integration is necessary for successful business is argued. We have done thorough analysis of retail trends when it comes to previous research results, analysis of online sales advantages and disadvantages and have shown that integration of online and offline retail is necessary for business development.*

**Keywords:** *retail, consumer behavior, sales trends, online sales, store perception*

### 1. INTRODUCTION

Nowadays, technological development changes society and world in general on a daily basis. Informatization and computerization of society is visible at every step, and have rapidly changed the way of doing business. Today it became common to buy products on the internet, pay online and get ordered product in a couple of days on your home address. There are various internet services dealing with the sale of products such as Amazon, eBay, Alibaba and others. A company is not competitive if not having its own website through which will present its products and services to the consumers and even sell them. Internet service is implemented in almost every sphere of people life. It was only a matter of time before the traditional way of selling through stores will move to remote servers that can be accessed using a computer or mobile device via the internet. Many serious traders had to adapt their business to new technologies. If we take into consideration internet services such as eBay, Amazon and Alibaba, we need to recognize that this type of companies are purely online services providers, they don't have their physical stores. Such companies do not have stores where purchase can be done in a conventional manner.

Today retail is not competitive if not accompanied by appropriate internet service which will promote and sell products. Many stores which can be seen in the large cities centers and shopping malls have their own websites with online stores (web shops) where with a few clicks on the mouse customer can select, order and receive desired product. If classical conventional store has online store as well, it will improve retail sales, increase credibility and availability to larger number of consumers on the internet than in reality. Therefore, the main focus of this research is the integration of online and offline sales, and the impact of new technologies on companies engaged in retail and their adjustment to the new situation. Since the retail no longer takes place exclusively in the stores due to the development of technology and internet which is evident in the growing trend of purchasing products online, it is necessary to examine the necessity of online and offline sales integration. In order to examine our hypothesis according to which online and offline integration is necessary for successful business, we have done thorough analysis of retail trends when it comes to previous research results, analysis of online sales advantages and disadvantages and have shown that integration of online and offline retail is necessary for business development.

## 2. THEORETICAL BACKGROUNDS AND HYPOTHESIS DEVELOPMENT

The importance of online and offline sales integration is supported by previous research. We have used data from various researches done in different time periods in order to show development in online sales. According to Levin, Levin and Heath (2003) survey, online methods are preferred over offline for the search and compare step while offline is greatly preferred over online for the final purchase step for most product categories. Table 1 provides information on the consumer preferences divided into steps performed by the consumer buying on the internet. Recognized steps are search for a product, product price comparison in a variety of vendors, and its own purchases. Thus, in many circumstances, consumers would prefer to log on to the internet to look at their possible choices, compare those choices on their various features, but prefer to make the final purchase at a retail location (Levin, Levin and Heath, 2003).

*Table 1. Online/Offline Shopping Preferences at Each Step for Each Product (Data are % who prefer online)*

	Airline Tickets	Books	CDs	Clothing	Computer Software	Electronic Products
Search	92,5%	50%	55%	22,5%	80%	50%
Compare	95%	47,5%	37,5%	15%	77,5%	52,5%
Purchase	52,5%	12,5%	12,5%	5%	42,5%	12,5%

*Source: Levin, Levin and Heath (2003), Journal of Electronic Commerce Research Vol.4. No.3*

Moreover, Levin, Levin and Heath (2003) survey shows that consumers see online shopping sources as better for shopping quickly and having a large number of selections. Consumers believe that it is quicker to shop online than it is to visit a physical retailer and that they have access to more products with a greater range of features online (Levin, Levin and Heath, 2003). Consumers have tendency to better evaluate pleasures when shopping in stores due to the fact that products can be physically seen and taken away immediately if purchased. Mentioned facts underline the importance of the physical aspect of the experience when purchasing strengthens the importance of offline stores rather than online stores.

According to Levin, Levin and Heath (2003) survey shown in Table 2 it can be concluded that it is possible to make product classification. Certain products that need to be physically touched or "physically tangible products" such as clothing, sports equipment, products for health and beauty have an advantage in offline sales. The traditional way of purchase of such products is still very widespread because customers want to feel, try and see the products before buying. While products such as books, multimedia and electronic products which consumers don't need to try and feel before buying have an advantage in online sales because the purchase is much simpler and faster.

*Table 2. Mean Attribute Importance Ratings (1-10 scale) for Each Product*

	Enjoy Shopping	Shop Quickly	Large Selection	Best Price	See-Touch-Handle	Personal Service	Speedy Delivery	No-hassle Exchange
Airline Tickets	3,70	7,23	7,10	9,05	2,23	6,10	7,05	7,63
Books	6,00	5,05	8,30	7,68	7,30	6,33	7,63	8,05
CDs	5,78	5,58	8,93	9,03	6,25	5,70	7,83	7,98
Clothing	7,25	5,60	8,50	8,15	8,60	7,40	7,23	8,98
Computer Software	4,18	6,60	7,40	8,55	4,43	7,43	7,00	8,33
Electronic Products	5,40	5,60	8,28	8,78	8,15	7,40	7,18	8,43
Health & Grooming	4,30	6,43	7,30	7,63	7,30	6,35	6,83	7,18
Sporting Goods	5,70	5,33	8,18	8,63	7,73	6,80	6,93	8,40

*Source: Levin, Levin and Heath (2003), Journal of Electronic Commerce Research Vol.4. No.3*

According to Heckmann, Kestello and Scgmaus (2012) online sales is presented as a necessity in today's world. The ability to integrate online and offline sales enables retailers to offer the required products. Many retailers have lost a large share of the market due to the Amazon and other similar internet services companies. The development of various distribution and sales channels integration enables survival on the market. The number of sold smartphones in 2011 for the first time in the history exceeded the number of computers sold. Smartphones and tablets represent a change in the traditional computing what was previously known. People today spend almost as much time on the Internet using smart phones and computers as watching television. Traders who understand the importance of quality of integration of different sales channels have good position to be better than the competition.

In traditional, offline stores the most important factors affecting the sales used to be quality of the product and quality of staff followed by the price, while in the digital era those factors are the



diversity of choice, transparency, credibility, improved service, ability to process orders at any time, access to product transparency and customers evaluation and review. Nowadays, there is increased trend that manufacturers sell products directly, without intermediaries. One of the main examples is Adidas, which after opening its new stores in Russia shut cooperation with retail partners in that country. Most of the information about products and services which customers were able to find only in stores today can be found on the internet search engines and social networks. In 2011, almost 10% of total trade in Western Europe was done through the internet. It is noted that products which customer don't need to try before buying, such as music and books are better sold online rather than in offline stores. Mobile devices, appliances and clothes still have a great potential to increase the share of online sales. The percentage of 10% of online sales represented as a turn-over rate is taken as relevant when evaluation online sales success. When products within certain categories reach this percentage, their impact on the Internet is becoming too big to be ignored by both, consumers and sellers. After crossing this percentage, the leading company in a particular product category needs to start development of different sales and distribution channels. Further growth in online sales is expected in following years if we look at the most recent data of retail trends in eight European countries which together accounted 81.3% of total sales in Europe published in the research performed by the Centre for Retail Research (2016).

*Table 3. Online sales growth in Europe*

Online Retail Sales	Online Sales (£ bn) 2015	Growth 2015	Online Sales (£ bn) 2016	Growth 2016	Online Sales in euros (bn) 2016
UK	£52.25	16.2%	£60.04	14.9%	€71.05
Germany	£44.61	23.1%	£52.77	18.3%	€62.45
France	£30.87	17.0%	£36.02	16.7%	€42.63
Spain	£8.15	18.6%	£9.68	18.8%	€11.45
Italy	£6.35	19.0%	£7.42	16.9%	€8.78
Netherlands	£5.94	16.8%	£6.92	16.5%	€8.19
Sweden	£4.17	15.5%	£4.85	16.4%	€5.74
Poland	£4.33	21.0%	£5.10	17.8%	€6.03
Europe	£156.67	18.6%	£182.80	16.7%	€216.32

*Source: Centre for Retail Research (2016), Online Retailing: Britain, Europe, US and Canada*

As shown in Table 3, online sales continue to increase. In the last two years, all developed European countries have increased the amount of goods sold over the Internet at a minimum of 13.5%. The largest growth of more than 20% in online sales in 2015 is recorded in Germany and Poland. It is important to notice that the growth of online sales does not only depend on the willingness and ability of consumers to buy via Internet, but also on the economic growth of the country, the unemployment rate and similar economic parameters that directly affect the purchasing power of the population of a country. However, the most important is the continued growth that indicates the great potential of online sales, but also the necessity of multiple distribution and sales channels integration in order to be competitive on the market.

## **2.1. Online sales advantages and disadvantages**

An online sale has become a very important part of today's consumerist society. For better understanding of consumer habits and the factors that affect the decision on purchase via the internet, it is necessary to analyze the advantages and disadvantages of online sales.

Global trends indicate that with the technological development in recent year's online sales has become common for younger generation that grew with information technology, as well as working population which has less time for conventional way of buying as a result of busy lifestyle.

Main online sales advantages:

- **Time Saving** - If the consumers know exactly what they are looking online sales will save a significant amount of time. With just a few mouse clicks in a few minutes the consumer can reach the desired products, order the same and continue to engage in other activities.
- **Prices Comparison** - One of the main advantages of online sales is the possibility of selecting the best deals with only a few mouse clicks. The consumer can easily compare the price of the desired product in different online stores. Also, there is many specialized web services that allow comparison of prices of a particular product in different online stores. Such price analyses allow significant savings of time and money. The customer is no longer in a position to physically visit a variety of stores and compare prices in order to make purchase decision.
- **Transportation Costs** - If the purchase is performed online, there is no need for consumer to drive to the store location. Buying over the Internet does not require any driving which results in transportation and time savings.
- **Variety of Choices** – It is much easier to find the product, size and style that the customer likes in online. It can also be very easy to determine whether offered product is available. Online sales does not restrict customers geographically since it can be bought in stores around the world via computer with access to the Internet with a few clicks of the mouse, and therefore the quantity and variety of products is much higher than those physically available.
- **Working Hours** - Online stores do not have working hours. Customers can at any time choose a product that they like and buy it.
- **Waiting Time** - If the purchase is performed via the internet, it is not necessary to wait for the order at the cash register or turn in front of the cabin to try out the products and wait if crowded. There is no waiting if purchasing products online.

Depending on the consumers habits, especially the once who have not grown up with information technology, the key disadvantage of online sales is lack of physical contact. Since the technology continues to progress, it is not excluded that some technological solutions will resolve identified deficiencies of online sales and the positive trend of online sales growth will continue.

Main online sales disadvantages:

- **Delivery Cost** - Delivery to the desired address is usually additionally paid. Shipping costs depend on the size and weight of the product. Many online stores offer free shipping option, but only if the cost of orders exceeding a predetermined minimum price. Delivers costs, especially for bigger and heavier products can make the online purchase unaffordable.
- **Immediate Satisfaction** - When buying in physical store customer can try and enjoy the product immediately, this is not the case when buying online which can consequently lead to customer dissatisfaction once the product is delivered. Also, it takes some time that the product arrives at the desired address, and it can take a few days or weeks, depending on distance and delivery preferences.

- **Senses** - When buying online consumer cannot see and try out desired product. Many consumers prefer buying clothes and shoes in stores because they can feel the material, try the right size and see the desired product in live. For a lot of consumers this is the biggest drawback of online sales, since the existence of a particular product in a virtual reality does not inspire the same sense of security as a product that can be felt, seen, tried and smelt.
- **Personal information** - Some consumers are concerned about the potential security risks of storing and sharing personal information data and credit card number when buying online. Although such a risk exists as well in physical stores, many consumers consider online sales as additional security risks which are not willing to take.
- **Human Factor** - When buying online, there is no seller who will introduce the product, try to persuade the customer to buy, and give some advice and opinion about the product. In today's fast moving world the lack of human interaction is present in all spheres of life. Although some consumers see lack of communication and the development of interpersonal relationships as advantage, the principle itself and the lack of interaction of the human factor is taken as a disadvantage. It does not develop the specific relationship between buyer and seller, which is normally created in physical store.
- **Professional Support** – Online sales has customer support correspondence services (live chat), but in many cases technical and professional support to consumers is not available.
- **Products Quality** – The consumer can notice an error or malfunction of the product only when the product arrives. Although it is possible to pack the product and send it back in exchange for a new product or a refund, the cost of sending product back increase product price.

From advantages and disadvantages analysis can be concluded that an online sale is not completely superior over physical stores. However, if together with local physical store there is a possibility of online sales as well, the retailer leverages the best of the virtual and the real world. Such integration of online sales with offline sales in nowadays time of globalization, supply and demand as well as the competitiveness of products and services is almost inevitable.

## 2.2. Internet service providers' examples

Specialized internet services providers are websites which offer to the customers a variety of services. The most popular internet service used by most internet users is Google, search engine that allows its users to find required information in a short period of time with extraordinary precision. The purpose of the internet service is facilitating the use of the internet and improving the user experience. With time internet services developed and nowadays internet services providers sell products via internet, such as eBay and Amazon. There are also internet services like jeftinije.hr and crnojaje.hr. Jeftinije.hr is the internet service provider which allows users to compare prices of the desired product in different online stores. Crnojaje.hr is the internet service provider which allows users to purchase products with special low price offers.

Amazon is the US company that is engaged in online sales and is the biggest internet reseller in the US market. Amazon started first as an online bookstore, then expanded the business to sell DVDs and CDs, possibility to download films, music and audio books, software, computer games, and similar. It also sells electronics, clothing, food, toys and jewelry. Amazon has become a major player in the US market when it comes to online sales, and is still growing on a yearly basis. The main characteristic of the Amazon, is buying products from companies or other stores on the

Internet. Amazon with its mechanism guarantees originality, origin and quality of products. The main reason for the constant growth of sales via Amazon is increased number of Internet users. Amazon is aware that constant discounts and actions attract new customers and retain old ones, and the latest innovation involves the delivery of the product within 30 minutes using the drone. Amazon has developed a subscription or Amazon Prime service that loyal customers can buy at \$50 per year, and which includes various benefits such as free shipping, discounts, free Kindle books and similar.

eBay is the internet service provider that provides online auction services of buying and selling. It works like internet marketplace, where users sell products to other users through the mediation of eBay. The original and main website is in the US, while there are many sites in other countries such as Australia, Austria, Belgium, Canada, China, France, Germany, India, Italy and many others. eBay customer confidence is gained with guarantee refund in the event of fraud, which has greatly affected the popularity of the service. Payments on eBay and Amazon are made via PayPal, which is the safest and fastest method of payment around the world. eBay buyers and sellers through PayPal enjoy hundred percent protection against potential fraud, since if the customer does not receive product, PayPal returns the money paid.

Moreover, there are various internet service providers which offer services for product prices comparison in different stores, and provide a more detailed insight into the price movement of a particular product. In order to make online stores more natural, designers and developers have made internet services fairly simple and easy to manage. On many websites you can see the categories that classify products such as for example clothes and shoes with couple of different categories such as men, women and children and sub categories that allow selection of specific types of products (shoes, shirt, jacket, accessories, etc.).

### **3. DATA AND METHODOLOGY**

To test our hypothesis we have conducted interview based research with consumers from the Republic of Croatia. The survey instrument was designed in a way to demonstrate the influence and relevance of online sales. Selected consumers were asked about the frequency and purpose of using computers in order to see how frequently the potential Croatian consumers use computer and for what purposes, the frequency of online purchases in order to see how often Croatian consumers use online stores and what type of products they usually buy, and decision drivers which are important to Croatian consumers when making purchasing decisions via the internet.

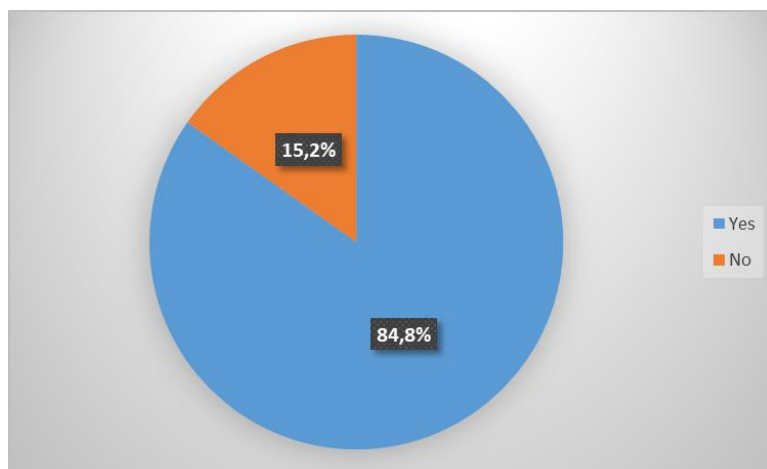
Our Survey was conducted online on 100 people. Considering 100 interviewed people, who were willing to take a moment of their time to fulfill the questionnaire, majority was middle-aged (28-32 years). To be more specific 34% were in the group between 28 and 32 years, 24% were in the group between 32 and 40, 17% were in the group between 24 and 28, 12% were in the group above 40 years, 8% were in the group between 20 and 24 years, and 5% were in the group between 15 and 19 years.

The instrument of a survey was a questionnaire which contained ten questions. In the first question, the respondents had to indicate which group of age they belong, age groups were set from 15-19, 20-24, 24-28, 28-32, 32-40 and over 40. In the second question, respondents had to answer whether they use computer on a daily basis with yes or no. In the third question, respondents had to answer whether they purchase via the Internet, offered answers were yes and no. In the third

question, respondents had to state for which purposes they use computers, possible answers were for work (work, college, school), information (news, newspapers), interaction through social networks, computer games and more. In fifth questions, respondents had to state how often they purchase on the internet, possible answers were once a year, once every three months, once a month and more. In sixth questions, respondents had to state what they usually buy online, possible answers were clothing and footwear, books, music and video games, fashion accessories, airline tickets, electronics and more. In the seventh questions, respondents had to mark what is most important for them when purchasing online, possible answers were security transactions, product price, product quality, delivery cost, delivery time and more. In the eighth question, respondents had to answer which online services they use, possible answers were eBay, Amazon, Alibaba, njuškalo.hr, asos or others. In the ninth question, respondents were asked about key decision drivers when selecting the product, possible answers were product price, customer reviews, the reputation of online store, and delivery cost. In the last question, respondents were asked whether they purchase from Croatian web shops, possible answers were yes and no. Survey instrument has been created in order to prove importance of online sales and necessity of online and offline sales integration.

#### 4. RESULTS

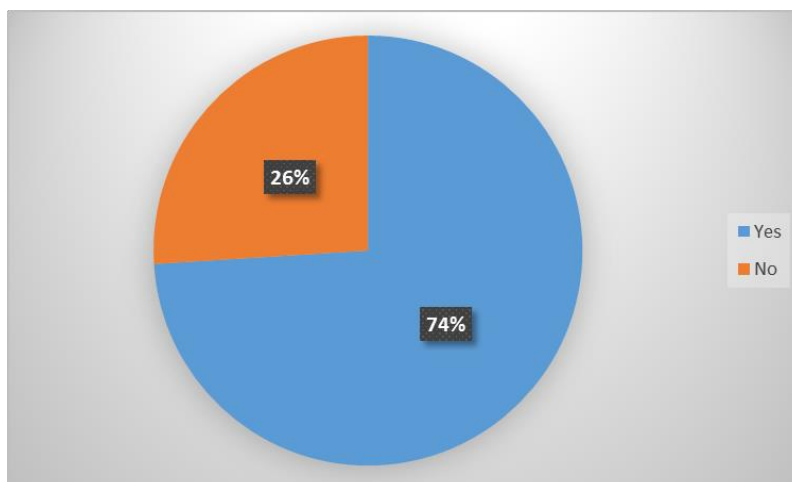
As can be seen from the Chart 1, the results of questionnaire show that the majority, 84.8% of respondents, use computer on a daily basis, while only 15.2% of them don't use computer on a daily basis. This high percentage indicates nowadays computerization of society, especially among young people who have grown up in the period of digitalization and computerization. Computer has become indispensable tool for communication, work, leisure, education and similar.



*Chart 1: Frequency of using computers (author's research)*

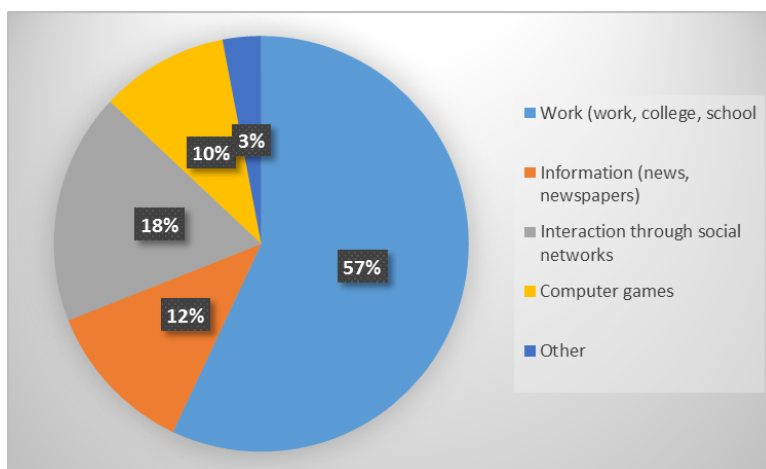
From Chart 2 can be concluded that 74% of respondents perform online purchases, while 26% of them do not buy online. Almost 75% of respondents use computers on a daily basis, and if we scale this data to the number of computer users both in Croatia and around the world, it will give us a very large online market potential. Such a market as opposed to the classic market often is not conditioned by geographic location of consumers. The best example is the internet service providers such as Amazon and eBay, which sell their products almost all over the world. Even if we reduce the number of consumers purchasing online, there is still an extremely large number of potential consumers.





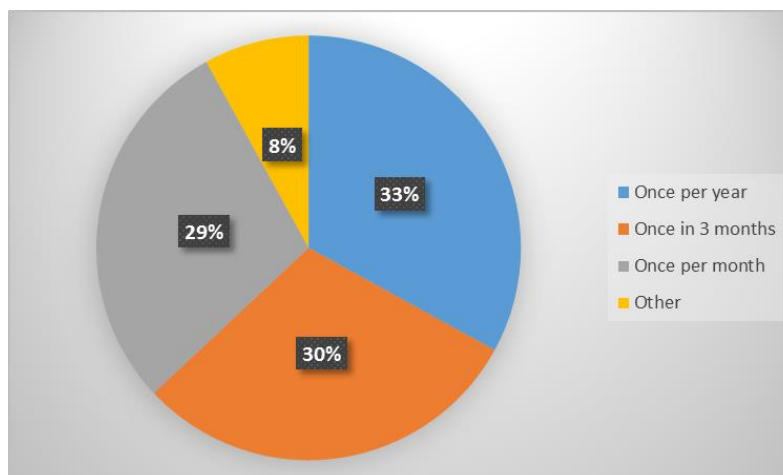
*Chart 2: Online Sales (author's research)*

As shown on Chart 3, 57% of respondents use computer mainly for work. Furthermore, 18% of respondents use computers in order to interact through social networks, which indicate a large distribution and use of computers. This is why social networks are a powerful tool for marketing, sales and communication with a large number of potential consumers in a particular area. Moreover, economic potential of social networks is huge and can be used for online and offline sales integration due to the fact that integration is not complete if it is not accompanied with high-quality commercial content on social networks.



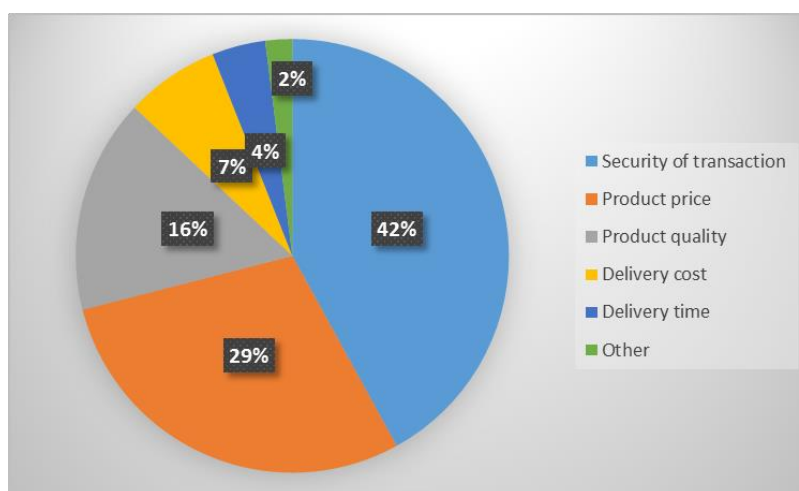
*Chart 3: Reasons for using internet (author's research)*

Chart 4 shows that 29% of respondents purchase at least once a month via internet which is quite frequent. Furthermore, 30% of respondents purchase on a quarterly basis via internet which is not so often, while 33% purchase one a yearly basis which is very rare. It can be concluded that 59% of respondents represent serious buyers who quite often buy online. If we take into account the statistical data, and the fact that online sales will grow rapidly, it can be concluded that more than 70% of respondents will frequently buy online in the future. The results of the survey questions indicate the importance of the internet as a distribution and sales channel of products due to the fact that a large number of potential customers buy and intend to buy online in the near future.



*Chart 4: Online sales frequency (author's research)*

If we look at survey data related to type of product usually purchased online, it turns out that respondents mostly buy clothes and shoes, 50% of them. Moreover, clothes and shoes together with fashion accessories make 69% of respondents buying habits. It can be concluded that fashion industry products are most frequently purchased online even though consumers buy online a variety of product categories, and if satisfied with previous experience they will continue to purchase diverse category of products. Furthermore, data showed that for respondents when using online stores, security of transaction is the most important, due to the fact that 42% of respondents indicated security of transactions as the main criteria when performing online purchase. Security of transactions is followed by product price since for 29% of respondents product price is the most important criteria. As shown on Chart 5, it turned out that delivery time, delivery cost and product quality are not so important to respondents when purchasing online. Results are very much in line with the activities eBay and other similar internet service provider are performing when it comes to discount price strategy of the products which can be purchased on their web pages.



*Chart 5: Online sales frequency (author's research)*

Moreover, survey pointed out that respondents mainly use eBay when purchasing online since 62% of respondents purchase through eBay. Most similar internet service whose credibility rival that of

eBay is Amazon, which is the second most popular internet service among respondents. Furthermore, 23% of respondents use Amazon, while 32% of use Croatian online stores. Additionally, it can be concluded that the most important criteria for online sales is the product price and transaction security, and both of named conditions are better acknowledged by eBay than their competitors.

Product price is key item decision maker when purchasing online, due to the fact that consumers mainly prefer online shopping due to affordable prices. It is important to notice that under the same pricing conditions, consumers will choose nearby physical store over online stores due to delays in product delivery and inability to try and experience the product before buying.

## 5. CONCLUSION

Technological progress is continuously changing world in every field of science. The technology gradually integrates with every aspect of the life of modern man, and outlines the way of modern man thinking. The purpose of technology is to make human life as simple as possible such as the purchase from warmth of our homes via the internet. Comfort and ease of this method of purchasing and product selection for many consumers is attractive and acceptable, especially for the younger generation. Already for a long period of time automation has been gradually increasing, particularly in manufacturing. It is just a matter of time before the same starts happening in the service sector. From an economic point of view robots are much cheaper and more cost-effective than humans who are predisposed to errors. The main example of automatization in service sector are self-service cash registers presented in many supermarket chains and Amazon drones which enables quick and easy products delivery with almost no cost for resources.

It is just a matter of time before automation and technology development will completely change the stores, especially if taking into account the fact that the internet has already significantly changed the way of purchasing. The integration of online and offline sales is an inevitable step of most retailers caused by technological progress. Moreover, in the near future we can expect complete disappearance of the conventional stores with shelves and exhibited products. As shown in theoretical part of this paper it can be concluded that loyalty rewards in terms of various discounts which primarily include lower products prices encourage bigger online purchasing rather than buying same product in store. Combination of independent website and the official website of the social network allows customer reviews and feedback as well as low-cost promotion, which contributes to the credibility, while action in the form of free shipping over a certain amount and discount on online purchase emphasize online shopping. Over a long period of time this reduces logistics costs and employees compensation. Retailers are still not aware that the integration of online and offline sales can have a direct impact on revenue growth and market competitiveness, and attract different groups of consumers.

Information technology development is intensively changing all aspects of human activities, including the retail sector. The development of specialized stores with interactive content that can adapt to each consumer needs is already in full swing around the world. It is just a matter of time when exhibited products will be replaced with a touch screen and other technological devices which adapt products to each consumer while taking into consideration individual consumer requirements through monitoring consumer habits and purchase history.



Our empirical research, which was conducted by interviewing a large sample of respondents, points out the necessity for online and offline sales integration. Due to the fact that majority of respondents purchased via the Internet, it can be concluded that consumers use benefits of online sales in significant and statistically relevant number. Furthermore, consumers when buying online usually buy fashion industry products since the majority of the respondents answers that they mainly purchase fashion industry products. Following the results of the empirical research, it can be concluded that the internet now plays an important role which cannot be ignored, especially if one takes into account the continuous growth of sales via the Internet. Successful retailers must integrate online and offline sales and therefore implement development of an online store in their business plans. Through different sales channels a company can increase competitiveness and growth, and bigger success on the market will be guaranteed.

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## BARGAINING AGENDA IN PUBLIC AND PRIVATE MONOPOLY

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### ABSTRACT

*In a public/private unionised monopoly, the common wisdom concerning the bargaining agenda in state-owned enterprises can change dramatically. Although the efficient bargaining (EB) agenda is considered more efficient than right-to-manage (RTM), the public/private monopolist always prefers RTM. Contrary to the assertions of the established literature, the private monopoly may be socially preferred over the public one, especially when the government highly considers workers' welfare. Moreover, a conflict of interest regarding the preferred agenda arises between the parties: despite the government's efforts to manage public firms to taking care of workers and consumers, it chooses the bargaining agenda against those agents' interests.*

**Keywords:** *Efficient bargaining, Firm-union bargaining agenda, Public and private monopoly Right-to-manage*

### 1. INTRODUCTION

Collective bargaining takes on a crucial role in labour-management relations within the public as well as in the private sector of the economy. The course of action defining the union-firm bargaining is essential both for labour market regulations and the configuration of production activities in industries that can be characterized by the presence of private and public monopolies (state-owned enterprises, henceforth SOEs). The present paper aims to clarify some element of controversy in the labour-management relations and negotiation process, which are indispensable for the suitable functioning of labour and product markets, and to assess the social welfare consequences. In particular, this paper analyses the bargaining agenda selection (right-to-manage, RTM, vs. efficient bargaining, EB) in a public/private unionised monopoly and the subsequent effects on firm profits, union utility, consumer's surplus and overall social welfare. These subjects are relevant in Continental Europe, most notably in Germany, as well as in countries that have experienced/are experiencing a transition process from former communistic/centrally planned state-oriented toward liberal/free-market-driven economies. Germany ranks first among European countries with regard to the importance of state-owned assets (in terms of capital worth)<sup>1</sup> and, recently, the interest for the public ownership seems to have increased. In fact, the State of the Lower Saxony holds at least 15% of Volkswagen AG, granting 20% of the group's voting rights (Volkswagen AG, 2015). Moreover, in Germany, unions have a sufficient presence, notably in the

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<sup>1</sup> This primacy is in part due to the heritage of state-owned enterprises by East Germany and to the public banking system managed at the provincial Länder level.

public sector.<sup>2</sup> Concerning the former communistic/centrally planned economies, the question is of relevance in the privatisation process, when sectors of the economy previously dominated by SOEs experience the transfer of the ownership of state property to private business because, besides the reform of the corporate governance and elimination of protections, also interventions regarding labour are crucial to improve economic efficiency. According to an OECD (2014) report, countries such as Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland and Slovenia, despite the ambitious privatisation programmes undertaken in recent decades, still present large SOEs dominating several economic sectors, most notably in industries considered of “strategic importance”, such as coal and chemicals, transportation, and utilities (electricity and gas, telecommunications). For example, Slovenia counts for 39 SOEs with a 10% weight of employees over the total dependent employment, Hungary represents 371 SOEs (5%), Estonia 53 SOEs (4.5%), and the Czech Republic 125 SOEs (4%). Croatia shows even more remarkable figures: 584 SOEs account for 68% of the GDP (Hamh, 2013). Noteworthy is the fact that those countries have a sufficient unions’ presence, especially in the public sector (Armingeon, 2006). Previously, scholars have investigated whether SOEs pay higher wages than identical privately-owned firms and the long-run effects of privatisation on wages and market equilibrium (De Fraja, 1993; Haskel and Szymanski, 1993; Bárcena-Ruiz and Garzón, 2009). More recently, Ishida and Matsushima (2009), Andaluz (2011) and Choi (2012) have examined the effects of wage regulation for civil servants employed in the public sector and the issue of whether there is a preferable Cournot or Bertrand competition in a mixed private-public duopoly when unions are present, respectively. However, none of those papers performs an analysis of the bargaining agenda in a public monopoly. The reference framework of the present article is a classic unionised monopoly. The issue of the bargaining agenda selection has been investigated in a private oligopoly context (Bughin, 1999; Buccella, 2011; Fanti, 2014, 2015). Such papers focus on the strategic effects played by different bargaining arrangements on the firms’ oligopolistic competition. Recently, Fanti and Buccella (2016a,b) have studied this subject in a private monopoly with managerial delegation and consumption externalities. These papers have shown that, also in the private monopolistic context, the choice of the bargaining agenda is relevant for monopolists and society. The early literature considering the comparison between public and private monopoly (and oligopoly) outcomes includes De Fraja and Delbono (1987, 1989, 1990) and, with regard to wage comparisons, De Fraja (1993). The present work closely relates to the latter contribution. On one hand, it extends De Fraja’s model to the EB case. On the other hand, it broadens the aim of De Fraja’s work, which mainly focuses on the relationship between public and private wages and the effects of privatisation on wages. The current study analyses the choice of alternative bargaining agendas in public and private monopoly firms and compares the equilibrium outcomes not only in terms of relative wages but also of the various agents’ relative welfare and social welfare as a whole. The main results of the paper are as follows. With regard to the endogenous choice of the bargaining agenda, the negotiated wages are identical under both private and public monopolies, regardless of the agenda. The profits are always higher under RTM; however, in public companies, profits tend to be negative when the weight of the union in its objective function becomes sufficiently high during both RTM and EB negotiations.

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<sup>2</sup> The union density in Germany is at 18.0%, and the DGB, the main trade union confederation in 2012 established affiliation with 6.15 of the 7.4 million trade union members, virtually all from the public and former-public sector (Fulton, 2013).

Conversely, the union's utility and consumers' surplus are always higher under EB. More interestingly, the RTM agenda always emerges as the sub-perfect equilibrium with private as well as public monopolies. A priori, this result with regard to the public monopoly is not expected, because workers and consumers prefer EB. However, the overall social welfare with RTM is always larger than with EB negotiations, even if the EB arrangement benefits workers and consumers more than the RTM. The rationale for this finding is that, compared to the RTM agenda, EB negotiations have an extremely negative impact on profits that overcome the positive effects of the union's and consumer's welfare. By contrast, challenging the conventional wisdom, in the case of private monopoly, the overall social welfare under RTM may be higher (lower) than EB, provided that the political weight of the union is adequately low (high) and the reservation wage and the union bargaining power are sufficiently high (low). These findings imply that a conflict of interests between unions and firms exists also in the case of public firms, despite the fact that the latter takes care also of the union's welfare. Moreover, there are always conflicting preferences between the government and consumers.

Upon comparing public and private monopoly outcomes, another interesting finding emerges. Although the private monopoly only takes care of its own profit while the public one cares for the overall welfare, social welfare may be higher in the former case (provided that the political weight of the union, the reservation wage and the union bargaining power are sufficiently high). Rather paradoxically, this finding implies that a government that is extremely sensible to the union's welfare should prefer a private monopoly, while the union and the consumers prefer a public monopoly. In fact, at the heart of the idea (even a political one) that the government must own and manage a public firm is to achieve a social welfare higher than in the presence of a self-centred private monopoly.

However, this longstanding cornerstone does not deal with the existence of labour unions and the different bargaining agendas. The finding of the current paper regarding social welfare arises precisely due to the effects of the presence of a labour union and reverses the well-established results shown early by De Fraja and Delbono (1987, 1989), obtained in monopolies without unions in which, “As the intuition might suggest,  $W_M$  [i.e. the social welfare in the public monopoly case] is greater than the welfare in all other cases” (De Fraja and Delbono, 1989, p. 305). Thus, if “la raison d'être” of a public firm is to achieve the highest benefits for workers and consumers, this paper obtains an antipodal result: a welfare-maximizing government prefers a private monopoly.

Even more striking is that the more “left-wing” the government is oriented (i.e. in the sense that it strongly cares about workers' welfare), the more preferred the private monopoly is. The remainder of the article is organized as follows. Section 2 presents the basic ingredients of the model, while Section 3 analyzes the union-firm bargaining problem in the context of a private monopoly, and Section 4 re-examines the subject in the presence of a public monopoly. Section 5 deals with a discussion of the comparative statics of the two scenarios. Finally, Section 6 summarizes the key findings and implications and suggests directions for future research on the subject.

## 2. THE MODEL

Let us consider that there is only one firm in the market producing goods. The standard inverse demand function the monopolist faces is

$$p = a - \beta q \quad (1)$$

where  $p$  and  $q$  are the price and quantity of goods, respectively. Assuming that the production function is  $q = \sqrt{L}$  (e.g. De Fraja, 1993),<sup>3</sup> where  $L$  is the employment, the monopolist's profit function is:

$$\pi = (a - \beta q)q - wq^2, \quad (2)$$

where  $w$  is the wage per unit of output. We assume that the monopolistic firm is unionised and the union members are sufficiently large to meet the firm's labour demand. We consider the two typical negotiation models of the trade-union economics (Booth, 1995): 1) the Right-to-Manage model (RTM) (e.g. Nickell and Andrews, 1983), in which wages are the outcome of negotiations between firms and unionised labour. However, once wages are set, the firms have the right to choose the employment levels, and 2) the efficient bargaining model (EB) in which the union and the firm bargain simultaneously regarding wages and employment (or, more realistically, hours of work) (e.g. McDonald and Solow, 1981; Ashenfelter and Brown, 1986; Manning, 1987a,b). The union has the following utility function:

$$V = (w - w^\circ)L, \quad (3)$$

where  $w^\circ$  is the reservation or competitive wage. Recalling that  $q = \sqrt{L}$ , (3) becomes:

$$V = (w - w^\circ)q^2,$$

that is, the union's objective function is to maximise the total rent. The firm can be state-owned or private-owned. The social welfare is given by a weighted sum of consumers' surplus (CS), profits, and union's utility whose analytical expression, following De Fraja (1993), is:

$$SW_{PUB} = CS + \pi + mV \quad (4)$$

in which the parameter  $m \in (0, 1]$  is the weight attached to the union's utility, assumed exogenously given, as detailed in the next section.

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<sup>3</sup> As De Fraja explains (1993, p. 462, footnote 8), the rationale for the assumption of decreasing returns to scale technology resides in the fact that a simple functional form characterised by constant average and marginal cost leads to the undesirable result that, if private and public firms have the same cost, then only the public firm produces all the output, crowding out the private one from the market.

### 3. PRIVATE MONOPOLY

Let us begin by illustrating the case of private monopoly firm<sup>4</sup> under the cases of RTM and EB.<sup>5</sup>

#### 3.1. RTM institution

Proceeding backwards, with RTM negotiations, the monopolist solves the profit maximisation problem at stage 2, obtaining the output as function of the wage

$$q(w) = \frac{a}{2(\beta + w)}. \quad (5)$$

At stage one, the monopolist-union bargaining unit selects  $w$  to maximize the following generalized Nash product,

$$\max_{w, \text{r.t. } w} N = (\pi)^{1-b} (V)^b = \left[ (a - \beta q)q - wq^2 \right]^{1-b} [(w - w^o)q^2]^b, \quad (6)$$

where  $b$  represents the union's bargaining power. After substitution of (5) in (6), standard maximisation techniques<sup>6</sup> lead to the bargained wage:

$$w_{PRI}^{RTM} = w^o(1 + b) + b\beta \quad (7)$$

and, consequently, the equilibrium output is

*Table 1: Equilibrium outcomes, private monopoly (Authors' own calculations)*

	profits	union utility	consumer's surplus	social welfare
RTM	$\pi_{PRI}^{RTM} = \frac{a^2}{4(w^o + \beta)(1 + b)}$	$V_{PRI}^{RTM} = \frac{a^2 b}{4(w^o + \beta)(1 + b)^2}$	$CS_{PRI}^{RTM} = \frac{a^2 \beta}{8[(w^o + \beta)(1 + b)]^2}$	$SW_{PRI}^{RTM} = \frac{a^2 [2b(w^o + \beta)(m + 1) + 2w^o + 3\beta]}{8[(w^o + \beta)(1 + b)]^2}$
EB	$\pi_{PRI}^{EB} = \frac{a^2(1 - b)}{4(w^o + \beta)}$	$V_{PRI}^{EB} = \frac{a^2 b}{4(w^o + \beta)}$	$CS_{PRI}^{EB} = \frac{a^2 \beta}{8[(w^o + \beta)]^2}$	$SW_{PRI}^{EB} = \frac{a^2 [2b(w^o + \beta)(m - 1) + 2w^o + 3\beta]}{8(w^o + \beta)^2}$

<sup>4</sup> In the rest of the paper, the subscript PRI (PUB) denotes the private (public) monopoly.

<sup>5</sup> We note that the equilibrium outcomes of the Simultaneous EB equal those of the Sequential EB for both private and public monopoly (the straightforward demonstration is omitted here for economy of space).

<sup>6</sup> All the details about analytical derivations are available upon request from the authors.



$$q_{PRI}^{RTM} = \frac{a}{2(w^o + \beta)(1+b)} \quad (8)$$

Using (7) and (8), the other equilibrium outcomes, summarised in Table 1, are easily obtained.

### 3.2. EB institution

Under EB, the private monopolist-union bargaining unit simultaneously selects at the first stage  $w$  and  $q$  to maximise the following generalised Nash product

$$\underbrace{\max}_{w, r.t. \ w, q} N = (\pi)^{1-b} (V)^b = \left[ (a - \beta q)q - wq^2 \right]^{1-b} [(w - w^o)q^2]^b, \quad (9)$$

From first-order conditions of the EB game, the following system is obtained:

$$q(w) = \frac{a(1+b)}{2(\beta + w)} \quad (\text{contract curve}), \quad (10)$$

$$w(q) = \frac{qw^o(1-b) + b(a - q\beta)}{q} \quad (\text{rent sharing curve}), \quad (11)$$

The solution of the system (10)-(11) yields

$$q_{PRI}^{EB} = \frac{a}{2(w^o + \beta)} \quad (12)$$

$$w_{PRI}^{EB} = w_{PRI}^{RTM} \quad (13)$$

from which the other equilibrium outcomes, reported in Table 1, are obtained.

## 4. PUBLIC MONOPOLY

Consider next a public monopoly firm. The government instructs the public monopolist to maximise the social welfare in which the weight on the union's utility is less than one. In the words of De Fraja (1993, p. 460) the rationale for this assumption is that “there may be political reasons why an increase in union utility is not considered as positive an occurrence as an increase in the profit accruing to the Treasury or as a reduction in the price of the good”. In the following sections, we investigate the cases of RTM and EB.



Table 2: Equilibrium outcomes, public monopoly (Authors' own calculations)

	profits	union utility	consumer's surplus	social welfare
RTM	$\pi_{PUB}^{RTM} = \frac{a^2 \left[ 2bm(2w^\circ + \beta) - 2w^\circ(1+b-m) - b\beta \right]}{2(1-m)(2w^\circ + \beta)(1+b)^2}$	$V_{PUB}^{RTM} = \frac{a^2 b}{2(1-m)(2w^\circ + \beta)(1+b)^2}$	$CS_{PUB}^{RTM} = \frac{a^2 \beta}{2(2w^\circ + \beta)^2(1+b)^2}$	$SW_{PUB}^{RTM} = \frac{a^2}{2(2w^\circ + \beta)(1+b)}$
EB	$\pi_{PUB}^{EB} = \frac{a^2 [2w^\circ(b+m-1) + b\beta]}{2(2w^\circ + \beta)^2(1-m)}$	$V_{PUB}^{EB} = \frac{a^2 b}{2(2w^\circ + \beta)(1-m)}$	$CS_{PUB}^{EB} = \frac{a^2 \beta}{2(2w^\circ + \beta)^2}$	$SW_{PUB}^{EB} = \frac{a^2(1-b)}{2(2w^\circ + \beta)}$

#### 4.1. RTM institution

At stage 2, the public firm maximises the social welfare function in (4). The maximisation problem yields the following output function:

$$q(w) = \frac{a}{\beta + 2[(1-m)w + mw^\circ]} \quad (14)$$

At stage 1, under RTM, the public monopoly-union bargaining unit selects  $w$ , to maximise the generalized Nash product

$$\max_{w.r.t. w} N_{PUB} = (SW_{PUB})^{1-b} (V)^b = \left\{ \frac{\beta q^2}{2} + (a - \beta q)q - wq^2 + m[(w - w^\circ)q^2] \right\}^{1-b} [(w - w^\circ)q^2]^b \quad (15)$$

where  $b$  is the union's bargaining power. Inserting (14) in (15), the maximisation leads to the wage

$$w_{PUB}^{RTM} = \frac{2w^\circ(1+b-m) + b\beta}{2w^\circ(1-m)} \quad (16)$$

and, substituting back (16) into (14), the equilibrium output is

$$q_{PUB}^{RTM} = \frac{a}{(2w^\circ + \beta)(1+b)} \quad (17)$$

Using (16) and (17), the other equilibrium outcomes are easily obtained and reported in Table 2.

#### 4.2. EB institution

Under EB, at the first stage, the public monopoly-union bargaining unit simultaneously selects  $w$  and  $q$  to maximise the following generalised Nash product,

$$\max_{w, r.t. \ w, q} N_{PUB} = (SW_{PUB})^{1-b} (V)^b = \left\{ \frac{\beta q^2}{2} + (a - \beta q)q - wq^2 + m[(w - w^\circ)q^2] \right\}^{1-b} [(w - w^\circ)q^2]^b \quad (18)$$

From the first-order conditions of the EB game, the following system is obtained

$$q(w) = \frac{a(1+b)}{2m(w^\circ - w) + (\beta + 2w)} \quad (19)$$

$$w(q) = \frac{2qw^\circ(b+m-1) + b(\beta q - 2a)}{2q(m-1)} \quad (20)$$

whose solution is

$$q_{PUB}^{EB} = \frac{a}{2(w^\circ + \beta)} \quad (21)$$

$$w_{PUB}^{EB} = w_{PUB}^{RTM} \quad (22)$$

from which the other equilibrium outcomes are directly obtained, as reported in Table 2.

## 5. COMPARISON OF EQUILIBRIUM RESULTS

This section studies the agenda selection under the different firm's ownership and the related welfare effects. First, we show the choice of the agenda and compare whether and how wages, quantities, profits, union's utility and social welfare differ between the two analysed bargaining institutions. Second, we compare private and public outcomes.

Let us define the following differentials:  $\Delta x_i = x_i^{RTM} - x_i^{EB}$ ,  $x = \pi, V, q, SW$ ;  $i = PRI, PUB$ .

### 5.1. Private Monopoly

**Result 1.** *Wages are identical under RTM and EB<sup>7</sup>; the profit under RTM is always higher than EB, while the union's utility and consumer's surplus are always higher under EB than RTM; SW under RTM may be higher (lower) than EB, provided that  $m$  is sufficiently low (high) and  $w^\circ, \beta, b$  are sufficiently high (low).*

$$\Delta \pi_{PRI} > 0, \Delta V_{PRI} < 0, \Delta q_{PRI} < 0, \Delta SW_{PRI} \begin{matrix} > 0 \\ < 0 \end{matrix} \Leftrightarrow m \begin{matrix} < \\ > \end{matrix} \frac{2b^2(w^\circ + \beta) + (\beta + 2w^\circ)b - 2\beta}{2b(w^\circ + \beta)(2+b)}$$

*Proof:*

**Corollary 1.** *A private monopoly always chooses an RTM arrangement.*

<sup>7</sup> Given that in a monopoly there is no strategic interaction in quantities (i.e. employment), simultaneous or subsequent bargaining over wages with respect to the employment choice obtains the same wages; thus, the analysis of De Fraja (1993, p. 461) on the wages paid by the public and private monopolist under RTM holds true under EB as well.

While the finding concerning profits, union and consumer is expected, the result that the overall social welfare can be larger under RTM than EB is unexpected. However, if the weight attached to the union’s utility in the social welfare is adequately low, the profit gains under RTM are large enough to outweigh the relative losses for union and consumers in the overall social welfare evaluation.

## 5.2. Public Monopoly.

**Result 2.** *Wages are equal under RTM and EB; although the profit tends to be negative when  $m$  tends to be sufficiently high under both agendas, this is always significantly higher under RTM than EB,<sup>8</sup> and the profit differential in favour of RTM increases with the union’s increasing power. As in the case of the private monopoly, the union’s utility and consumers’ surplus are always higher under EB, while SW is always higher under RTM negotiations.*

*Proof:*  $\Delta\pi_{PUB} > 0, \Delta V_{PUB} < 0, \Delta q_{PUB} < 0, \Delta SW_{PUB} > 0$ .

**Corollary 2.** *Although interested also in the consumer and union’s well-being, which are larger under EB than RTM, a public monopolist always chooses the RTM agenda as the private firm.*

In line with the intuition, Result 2 states that the public monopoly incurs large profit losses when it bargains also over employment, especially when both the union’s utility is highly evaluated in the social welfare function and the union’s power is large. In fact, given the identical bargained wages under the two agendas, a larger production (and, therefore, a lower price for the goods) in the product market under EB than RTM leads the margins for the public company to decrease or, more precisely, causes the losses to increase. On the whole, lower production levels under RTM paying identical wages as in the EB case would guarantee lower total costs for the public monopolist.

The intuition behind Result 2 and Corollary 2 is that the EB arrangement causes an extremely negative effect on profits which more than counterbalance the positive effect on the union’s and consumer’s welfare. As a consequence, a public monopoly firm behaves like a private one in the choice of the bargaining agenda, despite the utility of the union may have in its objective, at the limit, the same weight of the profit. Therefore, we can conclude that both private and public monopolies prefer the RTM bargaining agenda.

## 5.3. Comparison between private and public monopoly outcomes under the RTM agenda

The finding that the RTM agenda arises regardless of whether the firm is public or private poses some relevant questions. As the conventional wisdom believes, does public monopoly obtain the highest social welfare under RTM? How does the agenda selection affect the well-being of each single agent? To discover the answer, let us define the following differentials:

$$\Delta x^{RTM} = x_{PRI}^{RTM} - x_{PUB}^{RTM}, x = w, CS, V, SW.$$

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<sup>8</sup> For instance, when  $a = 1, w^o = 0, \beta = 1$  and  $b = 0.5$ , profits under RTM are negative for  $m > 0.5$ , while those under EB are always negative.

**Lemma 1.** *Wages in the private monopoly may be higher than in the public monopoly, provided that  $w^\circ$  is sufficiently high. An increase in  $m$  unambiguously lowers the reservation wage threshold, while an increase in  $\beta$  decreases it if the union’s political weight is high enough.<sup>9</sup>*

$$\text{Proof: } \Delta w^{RTM} \underset{<}{\overset{\geq}{0}} \Leftarrow w^\circ \underset{<}{\overset{\geq}{w^{\circ\circ}}} = \frac{(1-2m)\beta}{2m}; \quad \frac{\partial w^{\circ\circ}}{\partial m} < 0, \frac{\partial w^{\circ\circ}}{\partial \beta} \underset{<}{\overset{\geq}{0}} \Rightarrow m \underset{>}{\overset{<}{2}}.$$

**Result 3.** *Both consumers’ welfare and unions’ utility are higher under public monopoly.*

*Proof:*

$$\Delta CS^{RTM} = -\frac{a^2 \beta^2 (4w^\circ + 3\beta)}{8(2w^\circ + \beta)(w^\circ + \beta)^2(1+b)^2} < 0; \quad \Delta V^{RTM} = -\frac{a^2 b^2 [2mw^\circ + \beta(m+1)]}{4(1-m)(w^\circ + \beta)(2w^\circ + \beta)(1+b)^2} < 0.$$

The rationale for this result is straightforward. The private monopolist selects the employment level, taking into consideration only its labour demand. On the other hand, the public monopolist has a broad objective function, which leads it to hire a larger number of workers. As a consequence, the industry output and the consumer surplus (which is directly linked to output levels) in the presence of a public company are larger than with a private one. Concerning the union, from Result 3 it is evident that the positive effect of employment on its utility is always larger than that of wages. In fact, the union utility differential is always negative, even when the wage paid by the public company is lower than that of the private one.

**Result 4.** *The private monopoly is more efficient than the public one when  $b$ ,  $m$ , and  $w^\circ$  are sufficiently high and  $\beta$  is sufficiently low<sup>10</sup>.*

*Proof:*

$$\Delta SW^{RTM} \underset{<}{\overset{\geq}{0}} \Leftarrow w^\circ \underset{<}{\overset{\geq}{w^{o*}}} = \frac{\beta[b(1-3m) + \sqrt{b}\sqrt{b(1+m)^2 + 4m}]}{4bm}; \quad \frac{\partial w^{o*}}{\partial m} < 0; \quad \frac{\partial w^{o*}}{\partial b} < 0; \quad \frac{\partial w^{o*}}{\partial \beta} > 0.$$

From Lemma 1 and Result 4, it can be easily checked that, in the relevant parameter space, it holds that  $w^{o*} > w^{\circ\circ}$ . Therefore, if the reservation and, consequently, the bargained wage are sufficiently high, the private monopolist restricts its output to such a level that the increase in the final price guarantees profits which more than offset the losses of consumers and the union.

As demonstrated, the answers are not univocal. However, a surprising conclusion is that a private monopoly may be more efficient than a public one, with the private monopolist capturing all efficiency gains. More interestingly, this occurs when the union is strong, but also its utility is highly considered by the government. Moreover, there is a conflicting view between the government on the one side and workers and consumers on the other side with regard to the preferred bargaining agenda.

## 6. CONCLUSION

The present paper has investigated a key aspect of labour union-firm management relations; i.e. the choice of the bargaining agenda, in the context of a public/private unionised monopoly. The paper has focused on the impact of different agendas, namely RTM and EB, on profits and overall

<sup>9</sup> We refer to De Fraja (1983, p.461) for a thorough analysis of why the wage paid by the public monopolist may be lower than that which a private monopolist would pay.

<sup>10</sup> It is easy to observe that this interesting result is due to the presence of a union. In fact, without unionisation, the established result of De Fraja and Del Bono (1989) holds true (see also footnote 1).

social welfare. In particular, we have found that wages are identical under RTM and EB, the profits are always higher under RTM, and the union's utility and consumer's surplus are higher under EB, regardless of whether the industry is a private or a public monopoly. Challenging the conventional wisdom, the analysis has found that, under unionisation, the RTM is the preferred negotiation agenda both for the private and the public company, although the economic theory considers the EB agenda more efficient than the RTM one.

Moreover, in contrast to the established literature, we have found that, under RTM, the private monopoly may be socially preferred to the public one, provided that the union's weight, the reservation wage and the union's bargaining power are high enough. Noteworthy, we have also found that, rather paradoxically, the private monopoly is socially preferred to the public one when the government attaches high weight to the unions' welfare in its object function. Moreover, a conflict of interest on the preferred bargaining agenda emerges between the government on one side and the workers and consumers on the other side. Also, this result presents the characters of a paradox: in fact, despite the fact that the government manages public firms precisely because it is concerned about the interests of workers and consumers, it selects the negotiation agenda against the interest of those economic agents.

To facilitate analytical tractability, the model presents some limitations. For example, we have used specific functional forms to define the demand schedule and the union utility. We have considered only the output choice with homogenous goods in the product market. The findings in the paper are also far from being exhaustive. A direct step would be to develop the research toward a mixed duopoly with price competition and heterogeneous products. Moreover, the strength of the present results can be verified in an extended game framework where R&D investments, managerial delegation, externalities in consumption and capacity choices are also taken into account.

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## LIBERALIZATION OF MOTOR THIRD PARTY LIABILITY INSURANCE AND ITS IMPACT ON THE INSURANCE MARKET OF SERBIA

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### **ABSTRACT**

*Statistics indicate that motor third party liability (hereinafter MTPL) represented more than one third of total premiums paid in 2015. In the same year, Government of Serbia decided to increase prices on predefined MTPL by 40%. The government, by this step, largely saved the insurance market. Currently in Serbia, there are 18 insurance companies. MTPL forms more than 50% of the total business in most of these insurance companies. But the public is increasingly speculated and discuss about the liberalization of prices for MTPL. In other words, they want that the insurance companies would be able to independently define premium for this type of insurance. MTPL insurance is concluded during a "technical inspection", so through entities where drivers must be verified each year by the technical condition of the vehicle. These technical inspections are affordable and convenient, especially due to the fact that it is financed by commissions from the sale of MTPL. The fears of experts on insurance and on the economy are: the liberalization of the MTPL may causes the collapse of insurance market or it may happen that the insurance entities begin to merge and begin to create a monopoly at this market. According them, the main cause would be a price war that ultimately damages the clients of insurance companies because they will not have to pay damages. The fears do not stop only at the insurance market. Some forecasts say that due this process, the overall economy of Serbia can run into problems and to poor liquidity. In this article we want to confirm or deny public concern about the problems that could occur due the liberalization of MTPL. First of all we will build on the analysis of the experiences from the Slovak insurance market and from the other V4 countries. This article will focus on the analysis of insurance market; we will identify opportunities and applications in the Serbian insurance market. We will examine the current situation in the Serbian insurance market, its historical development and perspectives.*

**Keywords:** *insurance, motor third party liability, price, Serbia, Slovakia*

### **1. INTRODUCTION**

Serbian insurance market ranks among the poorly developed markets, which are Europe's concerns. Insurance covers only 2% of GDP. If we compare this situation with the European Union countries, there is the share of insurance 7% or more. In addition, the growth in GWP (Gross Written Premium) is very slow. Without a life insurance and motor third party liability (MTPL) increase done by the state, this increase should not exceed 2% per annum. The average premium per insurance policy is decreasing (life insurance), which is caused by stagnating economies and the war insurers. Serbian market is characterized by a large number of insurance companies, which have a negative impact on the market. Very high competition prevents an increase in GWP through constant dumping prices. Analysis of the state of the market in recent years is not very promising



for Serbia. One insurance company has already lost a license from the National Bank of Serbia (NBS) and some other insurance companies left the market. Precise statistics and estimates of state-owned companies with signet insurance contracts do not exist. It is estimated that the share of state-owned companies is over 30%. For example, the largest state-owned company is also the largest payer of insurance, exactly 18 million EUR per a year.

After the democratic changes that occurred in early 21st century, it was expected that the Serbian insurance market would be grow rapidly. The arrival of several foreign insurance companies supported mentioned assumption (e.g. Generali, Grawe, Unipol, Uniqa ...). Expectations were not nearly confirmed a rise in the last 10 years does not exceed 40% of GWP. The GWP of Serbia is about EUR 670 million including both life and non-life insurance. GWP of Slovakia, which has about 2 million inhabitants less, is more than 2 billion per year. Based on the above facts, the Serbian insurance market can be regarded as a highly undeveloped, but very potential for the future.

MTPL nowadays constitutes almost half of the GWP of non-life insurance in Serbia. It means that its impact on the insurance market is huge. It is important for the government to exercise caution when they want to change the legislation. Several insurance companies have more than 70% of total premiums directly from MTPL and are highly dependent on this type of insurance. National Bank of Serbia (NBS hereinafter) really pushes the insurers to reduce the share of the total portfolio MTPL premiums. Insurance companies fail to meet the requirements of the NBS, due to a slowly evolving market.

The price of insurance defined by Serbian government and it is not possible to avoid the legislative specific rules. According to the Law on compulsory insurance in the transport sector, government directives and guidelines of the NBS, the MTPL insurance is specified and there is determined bonus-malus system. Insurance companies are required to strictly keep the rules.

Fears of experts who deal with insurance, but also the companies themselves mainly concern the MTPL market liberalization. Fears are constantly increasing. This is mainly due to the stagnating market of other insurance type. In case of decreasing MTPL prices, insurance companies may face financial problems. Mentioned case involves particularly the insurance companies, which are highly dependent on the analyzed insurance type. Then clients will feel their financial problems, because insurers will not have sufficient funds for the payment of damages. Experts believe that if MTPL liberalization occurs in the market, the price war will begins and insurance companies will try to attract customers with cost. They can increase their market share. Marketing costs and commissions will increased, which will additionally burden on the insurance sector.

## **2. METHODOLOGY AND DATA**

The research is processed by using a wide scale of the scientific methods and procedures. The specific range of methods was based on the research needs of the individual parts. The intention is to follow the logical continuity of this paper, the correctness and the adequacy of information and data. One of the research parts is focused on the definition and the determination of the insurance and the MTPL. This section is prepared by using the analytical method and the synthesis. We analyzed scientific publications and scientific articles, papers by various authors (e.g. Šlahor – Majerčáková - Barteková (2016), Janać, J. – Mariak, V. (2013), Roštárová (2015), Roštárová – Rentková (2016), Komorník – Majerčáková (2016), Janać (2009), Košík (2007), Jovanović (2015)). Empirical research has been elaborated and it is based on the case study. We analyze the

situation in Serbia, in connection with the legislation. On the basis of the analysis, we compare the situation in Slovakia before and after liberalization and demonopolization.

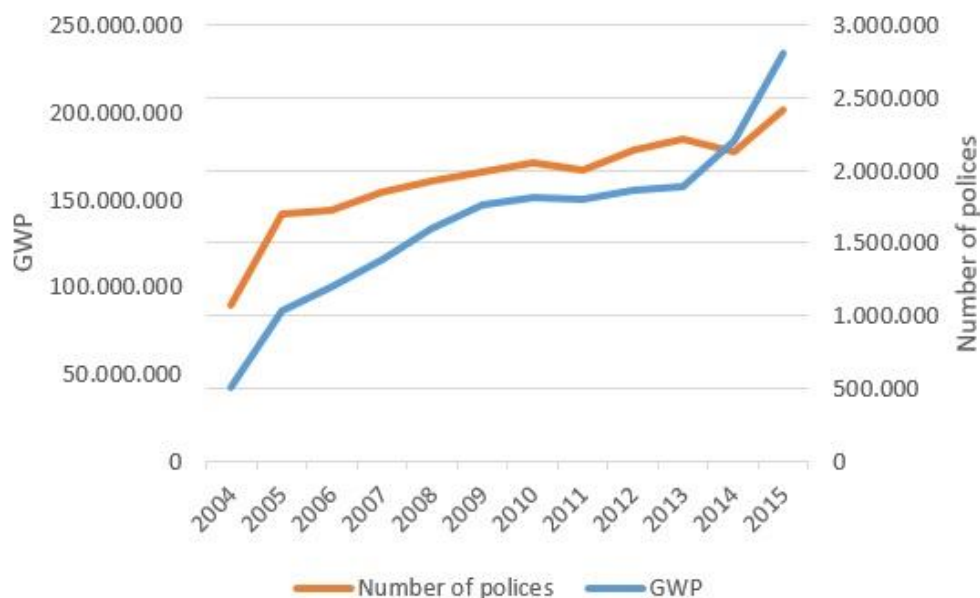
Article represents the basis of the planned long-term research which expected the use of more scientific methods such as mathematical modeling which will give more accurate results.

### 3. SERBIAN MTPL MARKET

The total annual sum of insurance in Serbia is 670 million EUR. 35.6% is created by MTPL. Next followed by property insurance, hull insurance and other types of non-life insurance. Life insurance is the least developed type of insurance. Even at present, the situation in Serbia is bad. Less than 5% of population has a life insurance contract. However, the life insurance sector recorded the largest increase and it is expected that within five years the GWP of life and non-aligned. Compared to the V4 countries, more than 70% of the population has a kind of life insurance.

In addition, there is an increase of signed contracts MTPL (more cars). In July 2014 there was a raise of the minimum tariff prices MTPL. This brought an increase in premiums of more than EUR 50 million. This value does not mean a lot for developed and economically advanced states, but the Serbian market represents an increase of almost 10% in non-life insurance. The most appropriate comparison would be with the year 2013, due to changes in premiums in mid-2014. We may keep a record premium growth of 33% compared to premiums written. Premium growth is due to the increase in the number of vehicles that we see through the increase in the number of closed MTPL. In 2015, it was concluded MTPL 288,582 more than in 2014.

Figure 1. The comparison of MTPL increasing and the number of insurance contracts (authors' work according to own research and www.nbs)

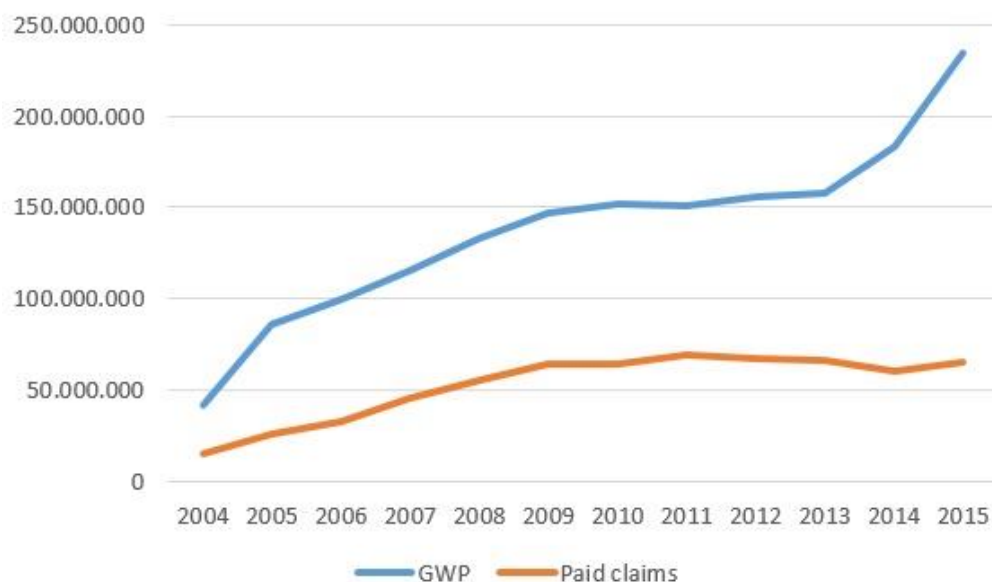


The loss ratio remained at the same level of 33% of the increase in insurance could be used for purposes other than the payment of damages. We can expect an increase in the loss ratio in the future, mainly due to the increase in the value of vehicles and their spare parts. According to the

experience of the V4 countries, we can expect that the increase will be caused by the ever increasing compensation for personal injury of passengers.

MTPL sale works through technical inspection of vehicles (TPV) as well as through insurance agents (the employees of insurance companies, independent agents - entrepreneurs and insurance intermediaries). Today, there are over 1300 technical inspections of vehicles in Serbia. The vehicle insurance can be sold during them. Exact statistics are not known, but it is estimated that almost 70% of MTPL can be sold through mentioned sales channel. For comparison, 161 TPV currently operate in Croatia and only 280 in Turkey. Some insurance experts claim that it is necessary to prohibit the sale of TPV through MTPL. Experts call for stricter regulation of the sale of MTPL market. On the other hand, TPV holders are concerned. The main problem is the lack of resources for their normal functioning, unless they are able to earn commission on MTPL sales. Huge market TPV competition led to the minimization of prices for technical inspection. We can prove a number of examples, when TPV provide the services to verify the technical competence of the vehicle free of charge. The only income comes from the sale of MTPL.

Figure 2 Comparison of liquidated damages, GWP and MTPL (authors' work according to own research and [www.nbs](http://www.nbs))



The law on compulsory insurance in the transport sector in paragraph 45 commands the maximum commission of 5% of gross premiums. The aim of the Act was to ensure a competition between sales channels and a balanced competitive environment. Whereas the third insurance market consists of MTPL only, this obligation of insurance are met and they are still looking for additional ways to motivate sales and distribution channels to prefer a particular insurance company. MTPL price is clearly a fix set by the State. There is no alternative to motivate sales networks than through commissions. It is estimated that the average reward per sale is higher than 5%. It can be received through marketing, rental and so on. The average fee for other types of insurance is around 20%, so that it is difficult to believe that the sales network will be sold MTPL for 5%.

Insurance Act permits in Serbia only by an entity selling insurance policies. Insurance policies can be sold by:

1. Insurance companies
2. The insurance agent - traders
3. Insurance agents - a limited liability company or joint stock companies
4. Insurance intermediaries (brokers)
5. Other special licenses granted
6. Other legal entities in accordance with pre-defined and restrictive rules.

TPV have the right to sell licensed insurance as the insurance agents. In most cases only they sell MTPL. They generate an additional income and bring competitive advantage and higher profits. This type of business has become lucrative. It attracted several entrepreneurs before today's state of the price war.

Besides TPV, there are more and more agencies that specialize in handling documentation regarding registration of cars. The Agency provides clients a free TPV and also the MTPL insurance policy. If their only business is an administration in restoring registration of the vehicle and it will charge less than \$ 10, it's almost impossible to establish this business. It is clear that they earn money from the sale of MTPL insurance.

Fleet car insurance also has its role in the insurance market. It is still greater, because of the growth in the number of cars registered in the company. Companies are trying to optimize fixed costs, and one of those costs is certainly insurance. As an example of a company that owns 80 trucks. The average insurance for a truck is 1300 EUR including MTPL insurance, hull insurance and CMR insurance:

1. MTPL and costs of registration - 690 EUR per year
2. Hull insurance - 370 EUR per year
3. CMR insurance - 240 EUR per year.

In cases where the company owns 80 trucks, general insurance is € 104,000 per year. Each percentage savings includes savings on fixed costs. CMR and MTPL insurance are applicable to third parties. The quality of cover is not essential for the company owner (although should be), who creates an additional pressure on the price of insurance. It is common for insurance companies to provide discounts on other types of insurance negotiated by the firm. In this particular case kasko (ully-comprehensive motor vehicle insurance) has come to a level of 230 EUR per year insurance for one truck with trailer (CMR 170 EUR annual premium).

Other insurances than MTPL are getting to levels below current standards. It causes a negative technical result of insurance. The total paid damages for hull insurance were 4,251,274,000 RSD in 2015. Total premiums written were 5,984,490,000 RSD. It follows that 71% of written premiums is created by damages. The commission for brokers is 20%. If we count the 20% brokerage commission, marketing costs and overheads together, insurance companies operate at a loss. Insurance companies are not capable of limiting the decline in premium per insurance unit. They try to reduce the coverage for hull insurance, which contributes to clients' dissatisfaction. The whole problem starts at MTPL and strong competition in the field of insurance.

#### **4. MTPL REGULATORY FRAMEWORKS**

Three laws directly affect the MTPL insurance in Serbia. There is a number of government and NBS decisions, namely:

1. Insurance Act - defines general insurance market and operators' behavior in this market.
2. The law on compulsory insurance in transport - defines the right area MTPL.
3. The law on transport safety - marginally defines MTPL.
4. The decision of NBS in the lowest price MTPL
5. Decision NBS bonus-malus system.

All measures, regulations and laws including MTPL aim to define exactly MTPL and prevent a disloyal competition. Things work differently in practice, there is a need for tighter controls carried out by the NBS.

The law on the compulsory insurance in transport distinguishes four types of insurance:

1. Insurance of vehicle owners – MTPL
2. Insurance of passengers in public transport from the consequences of the accident
3. Insurance of aircraft owners from liability to third parties and passengers
4. Insurance of owners of boats.

MTPL Act defines all the formalities related to the insurance claim settlement and the way to record back with insurance.

We can say that the law on compulsory insurance in traffic is clear and well-conceived. The legislation could change in individual acts that define the TPV and their work. Appropriate selection would be a tightening of the market rules. TPV should be primarily concerned with safety in traffic and not with the selling of insurance. A regulated TPV price TPV may help that goal. It would be necessary to define clearly the sales channels of insurance and to prevent income from the sale of insurance to those who should have their income from other activities ( i.e. from those for which they are registered).

#### **5. THE MTPL MARKET IN SLOVAKIA AND IT'S HISTORICAL CHANGES**

The market with a compulsory insurance for damage caused by motor vehicles (hereinafter referred to as MTPL) was until 2001 the monopoly of the Slovak Insurance Company. Adoption of the Act. 381/2001 Coll. The market has evolved and in 2002. It began to write its history without a monopol. Seven insurance companies started to offer this type of insurance (Allianz - Slovenská poisťovňa, a. s.; Česká poisťovňa - Slovensko, a. s.; ERGO poisťovňa, a. s.; Generali Poisťovňa, a. s.; Komunálna poisťovňa, a. s.; KOOPERATIVA poisťovňa, a. s.; UNIQA poisťovňa, a. s.).

Huge business opportunities occurred when the market was demonopolized. Insurance companies faced a particular risk, because they were entering uncharted territory. Insurance companies felt the critical need for a guarantee fund. They did not know the suitable level of financing. The Guarantee Fund pays compensation for the uninsured or unidentified drivers. Neither former State Slovak insurance company did not have exact figures how many drivers were moving around Slovakia. A comparison with police databases did not exist. It was therefore necessary to begin to estimate the amount of the guarantee fund only "by an estimate".

Another much more serious and still actual threat, is the risk of long-term commitments from third

party liability insurance (MTPL). These long-term commitments lack a sufficient historical statistics, so they are difficult to predict. During the liability insurance (which is also the PDP) the complexity of the situation is in the fact that the insurance company finds any harm done to the client during the period of insurance conditions both on property and personal health. Their injuries in the form of long-term health problems are a clear example that often does not show immediately after the accident. If an insured person replies on broken two years later, still she has the right to compensation for damage caused to him."

After initial problems in 2004, the price war among insurers began. It was caused as a result of the objective of obtaining the greatest number of clients. This brings MTPL (Motor Insurance) to a negative technical result and certain market players start to think about this type of insurance. Slovak economic reforms and the continuous increase in the number of motor vehicles have resulted in progress in the sector. Insurers believe that clients can easier obtain if they have already concluded MTPL. This assumption proves to be wrong.

The situation is not different on the MTPL market as it was 5 years ago. Moreover, it creates an additional price pressure caused by the growing influence of insurance intermediaries low price MTPL insurance presents as its main sales argument.

## **6. RECOMMENDATIONS FOR POLICY OF SERBIA AND THE SERBIAN INSURANCE LAW**

We formed seven recommendations for MTPL legislative framework:

1. The liberalization of markets should run in a sufficient advance. Insurance companies and sales networks need enough time to prepare.
2. The liberalization will bring lower MTPL prices L, which would be necessary to limit by the functioning bonus-malus system and a single database of claims,.
3. In addition to lowering prices, we can expect an increase of marketing costs and cost of obtaining the client (commissions).
4. To increase the MTPL commission of 5% to 15%, necessary to abolish insurance companies and sales channels for the speculation of additional expenditure on the acquisition of the client.
5. Before starting the liberalization, firstly to raise initially MTPL premiums. Then the subsequent decline will not affect the quality of the settlement of claims.
6. State-set TPV prices.
7. Clearly define who and under what conditions can sell MTPL insurance.

In addition to legislative changes, it is necessary to prepare for the liberalization of the insurance company. Therefore, we present the several recommendations:

1. Focus on profitable types of insurance with smaller market shares.
2. Establish a clear strategy and action plan in the event of market liberalization MTPL.
3. The share of MTPL insurance in the portfolio should not exceed its share of the total market. It is difficult to change it, but the way leads through innovative life insurance and non-life insurance products.
4. Deal with the most innovative and profitable type of insurance.



## 7. CONCLUSION

Serbia's insurance market is highly dependent on the MTPL market development. Therefore, it is more than important to decide on strategic changes very carefully. The question arises whether the liberalization of the market MTPL is really necessary? If it is necessary, we can find another question – to what extent? But perhaps the more important question is: What are the expectations of such liberalization?

We cannot answer to the first question but we can say that, at this point, liberalization does not bring an increase in premiums or better protection for the final consumer - the client. Serbia's path to the European Union will cause the market liberalization of MTPL. The question is: How the liberalization will be applied in practice? We can take Slovakia as an example; we can observe the liberalization of the insurance and also the demonopolisation. Positive and negative impacts of this change can be identified. Therefore, it is important to establish clear rules.

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## MULTIPLE CRITERIA PERFORMANCE ANALYSIS: THE COMPARISON OF TELECOMMUNICATIONS SECTORS IN NORTH AFRICA

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### **ABSTRACT**

*In North African countries (Algeria, Morocco, Mauritania and Tunisia), a considerable improvement of the situation of the telecommunication operators has been noticed during the nineties. The evolution in these countries was very different depending on their economic policies, their effort of reorganization of their telecommunication sector and their technological change. These differences will be exhibited and analyzed by comparing the operators' performances over a decade (1992–2001). Our approach is based on the Promethee II method and the software ARGOS, a multiple criteria analysis is performed, taking into account a larger scope of analysis. This method of analysis provide the two dimensions of performance for Promethee : that are the service to the community and the enterprises performances, often in conflict.*

**Keywords:** *case study, multiple criteria decision aid, Promethee, African telecommunications reforms, dynamic performance analysis*

### **1. INTRODUCTION**

Since the beginning of the eighties, the telecommunications sector knew two great evolutions: a fast evolution of technology on one part, and several policies implying regulatory reforms, the liberalization and the privatization on the other part. These evolutions differ according to countries and to their development levels. If the developed countries knew very early the waves of liberalization, privatization, and globalization of their economies, it is only at the end of this 20th century that the African public companies knew these phenomena, since they remained for a long time the kept hunting of the authorities.

Some arguments were advanced to explain this tendency and why these companies kept a level of financial profitability and/or productivity which is generally regarded as very low, if not poor [12, 14]. The economic opening by the liberalization for the services market and the deregulation of the communication infrastructures sharpened the appetite of the principal telecommunications operators of the zone OECD [9, 15] and privatization has become common across Africa [8]. And, even if there are still very strong disparities between the various countries of the zones North Africa and Middle East, a true explosion shocked the telecommunications sector during these last years. The number of private fixed lines knew or will know a clear increase (up to 67% between 1999 and 2007 according to IDATE). First operators on Internet made their appearance.

The national markets were opened to the competition and the services of mobile telephony have been developed.

Let us concentrate ourselves on Maghrebian telephony. We are interested in the regulatory reforms in five countries: Algeria, Libya, Mauritania, Morocco and Tunisia [17]. Like other developing countries in Africa and elsewhere, the Maghreb countries have modified seriously their lawful

frameworks for attracting foreign private investors and they have recently opened their telecom networks to the competition and the privatization: the state monopoly of the telecom is finished.

All of them have reorganized, at the end of the nineties, their set of legal rules for facilitating the needed foreign investment and settled different control authorities, Libya still being penalized by its past behaviour, reprobed by the international community.

In the comparison of the four other countries, appeared several differences in terms of reforms and of key macroeconomic and sector's figures, these differences may be considerable in terms of macro economy and demography : the comparison of telecom performances must then lay upon ratios and productivities, rather independent of the sizes differences.

We shall focus this paper on quantitative method in view of comparing performances of the telecom Maghrebian sectors.

The Section 2 will present the multiple criteria ranking by the method Promethee II included in the software ARGOS.

This analysis highlight the evolution of the productivities and the service and enterprise performances of four countries sectors among the five quoted in the previous paper : Algeria, Morocco, Mauritania, Tunisia, since it was impossible to obtain the corresponding figures for Libya.

## **2. MULTI-CRITERION ANALYSIS BY PROMETHEE OF THE TELECOMMUNICATIONS PERFORMANCES OF THE MAGHREBIAN OPERATORS**

### **2.1. Data and ratios presentation**

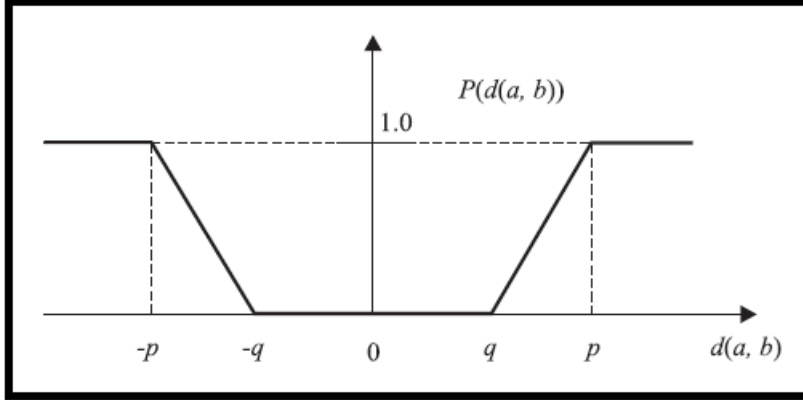
The data concerning the telecommunications operators in the four Maghrebian countries during the period 1992–2001 are gathered in Table 1 hereafter while on Table 2, we computed ratios being free of the rates of money changes and inflation.

### **2.2. Recalling the Promethee II method**

Multiple criteria methods are well known in the literature [6, 16, 19]. One of the best known method is the second release of Promethee II by Brans *et al.* [1]. The Promethee II method is an outranking multiple criteria device that provides a preorder of items by making pair wise comparisons of these items (telecom sectors in our case), first for each criterion, and then for all criteria. The final ranking is obtained according to the decreasing order of the preference flows of the items. Among the six kinds proposed by the method, we used only one kind of criterion: the pseudo-criterion with a linear preference between the two thresholds (Fig. 1).

*Figure following on the next page*

**Fig. 1.** The linear pseudo-criterion used in Promethee :  $P(d) = 0$  if  $|d| \leq q$ , there is indifference;  $P(d) = 1$  if  $|d| > p$ , there is a strong preference;  $P(d) = (|d| - q) / (p - q)$  else, there is a weak preference.



Let  $a$  and  $b$  stand for two items and let  $d(a, b)$  be the difference of their evaluations on a criterion  $c$ . We assume that a positive  $d(a, b)$  corresponds to a preference for  $a$  over  $b$ . The preference function  $P(d(a, b))$  is assumed to take the value 1 as soon as the preference is strong (= clearly stated), i.e., when  $|d| > p$ , the preference threshold, and is assumed to take the value 0 when an indifference between  $a$  and  $b$  is decided, since their evaluation difference does not reach the threshold  $q$ . Between these two decisions, a weak preference is expressed and  $P$  linearly increases with  $d$ .

Thus, this criterion states that  $a$  is surely preferred to  $b$  when  $P(d(a, b)) = 1$ . For the sake of simplicity, let us write  $P_c(a, b) \equiv P_c(d(a, b))$  : the preference function for the criterion  $c$ .

The method defines then a multi-criteria preference index as the weighted average of the preference functions  $P_c$  for all criteria. In our application, we considered that the three criteria of each point of view had the same weights. In a decision aid context, there is a subtle aid to supply to the deciders for the choice of weights attributed to the criteria (for instance, the software visual decision and, in some respect, ARGOS present a special aid for this allocation of weights). In a context of multiple criteria analysis where no stakeholders are considered, the choice of weighting must be neutral if no socio-economic consideration indicates a special weighting. This is the reason why we have adopted everywhere the same weights of criteria, families and dimensions of performance.

The index  $\Phi(a, b)$  is computed by the next equation :

$$\Phi(a, b) = [P_1(a, b) + P_2(a, b) + P_3(a, b)] / 3. \quad (1)$$

This index is called the (multi-criteria) preference flow of  $a$  over  $b$ . We are more confident that  $a$  is preferred to  $b$  according to all criteria of the considered family, when the flow value is closer to 1. Of course,  $a$  is surely preferred to  $b$ , when the unanimity of criteria is in favour of  $a$ , and  $\Phi(a, b) = 1$  then.

At this stage, Promethee proposes to build a graph on the set  $K$  of considered items : its nodes are all of the compared items :  $a, b, c, \dots$  of  $K$ ; the arcs joining two items are valued by  $\Phi(a, b)$  and  $\Phi(b, a)$  for a pair  $(a, b)$ . Then, the method computes two flows for an item  $a$ :

$$\begin{aligned}\Phi^+(a) &= \sum_{b \in K} \Phi(a, b) : \text{the leaving flow;} \\ \Phi^-(a) &= \sum_{b \in K} \Phi(b, a) : \text{the entering flow. (2)}\end{aligned}$$

One may interpret the leaving flow as a multi-criteria force of preference of  $a$  on the other items in  $K$ , and the entering flow as a multi-criteria preference weakness of  $a$ .

In Promethee II, a balance of flows is completed, delivering a net preference flow for each item  $a$  on all of the others items and for all criteria of the family:

$$\Phi(a) = [\Phi^+(a)] - [\Phi^-(a)] : \text{the net flow in favour of } a. (3)$$

Usually, by ranking the net flows in a decreasing order, we obtain the preference ranking of the items, the positive flows being associated to the dominating items and the negative ones to the dominated ones. An important point is that we did not divide the flows by  $(n-1)$ ,  $n$  being the number of items in Eq. (2), like in the classical method, in order to point out the maximum number of possible dominances.

### 2.3. Methodology of the multi-criterion analysis at three levels

In order of analyzing by a multi-criterion method the performances of the telecommunication sectors in the four Maghreb countries, we took as a starting point the work [7]. Authors based their analysis on two dimensions of performance of the public companies: namely the effectiveness of the public service and the efficiency of those in terms of using resources. These authors constituted a hierarchy at 3 levels of the selected criteria. Here we have initially incorporated 3 basic criteria to constitute a coherent family and that for 4 families, which are then gathered into two dimensions of analysis. Table 2 presents this hierarchy and the preference and the indifference thresholds of the adopted twelve pseudo-criteria.

According to the first dimension described as technical-economic, we aim at collecting the performance of the sector from the points of view of the user in technical terms and of the economic health of the sector : they will be the two families : economic and lines.

This first dimension is a general performance function measuring the importance of the (public) service given to the user and to the country by the telecom sector. The second dimension evaluates the physical and financial enterprise performances of the set of companies of the telecom sectors; this is done by countries and they are entitled under the names of family: traffic and income. We adopted only one type: the linear pseudo-criterion (with two thresholds of decision), since this type fits well less reliable data than usual and avoids a strong preference for a small variance. The first threshold ( $q$ ) is the limit between a decision of indifference between two actions and a decision of weak preference.

For the calculation of multi-criterion preference flows of all sectors, we used software ARGOS [5], which has the advantage of being able to treat directly two levels of hierarchy of criteria. Recall however that the multi-criterion flows are not reduced in an interval  $[0,1]$  in this software, as it was in the original Promethee method. Table 2 synthesizes the criteria and the families with their thresholds. The second column indicates the thresholds  $q$  which mark the end of an indifference

between two operators due to the weakness of the differences in evaluation between these two operators on a same criterion; a third column indicates the thresholds  $p$  and a last column shows the preferable direction (max or min) for each criterion.

**Table 1- Multi-criterion data representing the networks of 4 countries of Maghreb.**

*(Continues on the next page)*

Networks of the country	Years	Outgoing total traffic [minutes] (1)	Personnel (full time) (2)	Principal lines (3)	Teledensity* (4)	Income [USD] (5)	Investment [USD] (6)	Population (*1000) (7)
Algeria	1992	118 014 368	19 208	962 247	36.627	245 192 307	173 397 435	26 271
	1993	78 289 000	22 712	1 068 094	39.715	287 066 381	148 479 657	26 894
	1994	79 000 000	18 492	1 122 409	40.820	250 114 090	108 528 237	27 496
	1995	84 332 632	18 423	1 176 316	4.921	224 464 960	77 465 379	28 060
	1996	93 040 368	18 554	1 278 142	44.743	227 506 849	128 493 150	28 566
	1997	157 712 352	18 817	1 400 343	48.213	224 345 867	98 631 086	29 045
	1998	121 282 248	18 230	1 477 000	50.056	287 248 893	146 305 754	29 507
	1999	143 415 168	17 809	1 600 000	53.422	290 821 691	114 465 975	29 950
	2000	151 837 328	17 900	1 761 327	57.965	305 607 228	105 465 311	30 386
	2001	209 191 000	17 900	1 880 000	60.968	361 642 061	96 464 646	30 836
Morocco	1992	102 577 360	11 484	654 000	25.600	563 700 234	257 611 241	25 547
	1993	125 073 168	12 632	827 000	31.724	500 537 634	193 655 913	26 069
	1994	130 011 616	13 396	1 007 000	38.621	550 108 695	269 130 434	26 074
	1995	129 986 000	14 626	1 128 000	42.373	659 367 681	312 412 177	26 621
	1996	129 343 496	14 772	1 208 000	44.461	695 183 486	197 591 743	27 170
	1997	149 570 000	14 208	1 300 528	47.261	683 001 049	180 797 481	27 518
	1998	181 000 000	14 150	1 393 355	50.316	773 541 666	131 666 666	27 692
	1999	219 500 000	14 068	1 471 000	52.786	867 857 142	237 346 938	27 867
	2000	245 000 000	14 511	1 425 000	49.643	1 128 880 526	221 072 436	28 705
	2001	270 000 000	16 200	1 191 335	40.841	1 415 929 203	229 209 687	29 170
Mauritania	1992	4 357 334	400	6 750	3.262	25 830 173	1 401 815	2 069
	1993	4 277 511	410	7 499	3.531	20 428 772	3 294 429	2 124
	1994	4 503 822	456	8 426	3.865	24 081 566	9 443 275	2 180
	1995	4 127 943	451	9 249	4.135	24 936 425	12 391 153	2 237
	1996	4 889 159	443	10 204	4.444	27 444 978	17 431 861	2 296
	1997	5 475 163	456	13 045	5.535	29 720 118	12 683 569	2 357
	1998	6 300 266	454	15 030	6.213	28 278 862	5 565 577	2 419
	1999	8 078 267	480	16 525	6.655	2 880 974	4 095 269	2 483
	2000	9 029 041	720	18 969	7.445	25 230 202	4 830 423	2 548
	2001	9 800 000	600	25 199	9.640	26 905 588	4 462 846	2 614



Tunisia	1992	68 767 000	7 500	374 848	44.329	200 000 000	126 136 363	8 456
	1993	69 392 000	6 314	421 362	48.679	194 000 000	129 000 000	8 656
	1994	80 000 000	6 432	474 253	53.978	218 811 881	121 782 178	8 786
	1995	87 529 704	5 800	521 742	58.217	262 105 263	134 736 842	8 962
	1996	94 052 984	5 975	584 938	63.984	296 907 216	198 969 072	9 142
	1997	97 903 000	6 221	654 242	70.821	326 126 126	138 738 738	9 238
	1998	115 000 000	6 421	752 180	80.576	350 877 192	156 140 350	9 335
	1999	140 000 000	6 567	850 381	89.892	378 151 260	104 201 680	9 460
	2000	164 000 000	7 011	955 131	99.638	400 729 927	159 124 087	9 586
	2001	174 000 000	7 400	1 056 209	108.887	475 694 444	212 500 000	9 700

\* This column is expressed in: –/1000 inhabitants.  
Sources: Algeria – Ministry for the Post and Telecommunication (MPT); Morocco – National Office of the Post and Telecommunications (NOPT); Mauritania – Office of the Post and Telecommunications (OPT); Tunisia – Tunisia Telecom.

**Table 2 - Ventilation of the criteria according to the families and dimensions, the thresholds.**

Dimensions, families, criteria	Threshold <i>q</i>	Threshold <i>p</i>	Criterion direction
<b>Technical-economic evaluation</b>			
Economic family of criteria:			
– traffic part for 1000 inhabitants = (1)/(7)	500	5000	Max
– traffic(*1000 min)/sector income = 1000*(1)/(5)	10	100	Max
– investment part for 1000 inhabitants = (6)/(7)	500	5000	Max
Lines family of criteria:			
– teledensity = (4)	5	50	Max
– number of lines/ number of personals = (3)/(2)	2	20	Max
– number of lines/ sector investment = (3)/(6)	1	100	Max
<b>Sector performance evaluation</b>			
Traffic family of criteria:			
– traffic/number of lines = (1)/(3)	20	200	Max
– traffic/number of personals = (1)/(2)	100	1000	Max
– traffic/investment = (1)/(6)	0.25	1	Max
Income family of criteria:			
– sector income/number of lines = (5)/(3)	200	2000	Max
– sector income/number of personals = (5)/(2)	1000	5000	Max
– sector income/sector investment = (5)/(6)	2	8	Max

**Source : calculation of Karim Sabri from ARGOS results.**

**Table 3 - Promethee II preference flows of general performance dimensions by sub-periods for telecommun four Maghreb countries.**

Years	Algeria		Morocco		Mauritania		Tunisia		Balances
	Enterprise performances	Service	Enterprise performances	Service	Enterprise performances	Service	Enterprise performances	Service	
1992	-32	12	-5	-1	60	-39	-22	27	0
1993	-27	-6	-2	6	30	-38	-2	39	0
Before change	-59	6	-7	5	90	-77	-24	66	0
1994	-27	-6	-3	7	30	-38	1	36	0
1995	-24	-3	-9	3	28	-37	5	37	0
1996	-30	-1	-10	-5	32	-32	7	39	0
1997	-20	4	-14	-1	28	-40	5	38	0
During change	-101	-6	-36	4	118	-147	18	150	0
1998	-30	2	-3	-3	32	-40	2	40	0
1999	-31	-1	-5	2	32	-41	5	39	0
2000	-19	1	7	-6	9	-36	3	41	0
2001	-22	7	9	-11	15	-35	-2	39	0
After change	-102	9	8	-18	88	-152	8	159	0
Total	-262	9	-35	-9	296	-376	2	375	0

Source: calculation of Karim Sabri from ARGOS results.

**Table 4 - Promethee II preference flows of performance by families of criteria by sub-periods for telecom in four Maghreb countries.**

Years	Algeria					Morocco					Mauritania					Tunisia					Balances
	Traffic	Income	Economic	Lines	Total	Traffic	Income	Economic	Lines	Total	Traffic	Income	Economic	Lines	Total	Traffic	Income	Economic	Lines	Total	
1992	-14	-18	7	5	-20	-3	-2	-6	5	-6	30	30	-23	-16	21	-12	-10	21	6	5	0
1993	-12	-15	-6	0	-33	-1	-1	-1	7	4	6	24	-21	-17	-8	6	-8	28	11	37	0
Before change	-26	-33	1	5	-53	-4	-3	-7	12	-2	36	54	-44	-33	13	-6	-18	49	17	42	0
1994	-15	-12	-7	1	-33	-3	0	0	7	4	10	20	-20	-18	-8	8	-7	26	10	37	0
1995	-10	-14	-4	1	-27	-6	-3	-2	5	-6	8	20	-18	-19	-9	8	-3	24	13	42	0
1996	-15	-15	-1	0	-31	-6	-4	-9	4	-15	12	20	-13	-19	0	9	-2	24	15	46	0
1997	-5	-15	4	0	-16	-9	-5	-6	5	-15	9	19	-20	-20	-12	5	0	23	15	43	0
During change	-45	-56	-8	2	-107	-24	-12	-17	21	-32	39	79	-71	-76	-29	30	-12	97	53	168	0
1998	-15	-15	4	-2	-28	-3	0	-8	5	-6	14	18	-20	-20	-8	5	-3	23	17	42	0
1999	-17	-14	0	-1	-32	-10	5	-1	3	-3	20	12	-21	-20	-9	8	-3	21	18	44	0
2000	-6	-13	-1	2	-18	-4	11	-5	-1	1	8	1	-16	-20	-27	2	1	22	19	44	0
2001	-9	-13	1	6	-15	-5	14	-5	-6	-2	15	0	-16	-19	-20	-2	0	20	19	37	0
After change	-47	-55	4	5	-93	-22	30	-19	1	-10	57	31	-73	-79	-64	13	-5	86	73	167	0
Total	-118	-144	-3	12	-253	-50	15	-43	34	-44	132	164	-188	-188	-80	37	-35	232	143	377	0

Source: calculation of Karim Sabri from ARGOS results.

### 3.4. Interpretation of the results of the multiperiod and multi-criterion rankings

According to Table 2, we got three levels of analysis of the performances of the telecom sectors in Maghreb for every year 1992 to 2001. At the upper level, we obtained Table 3 that is the aggregation of preference flows of Table 4, that are the four applications of Promethee II to the data of Table 1 for each family of criteria, taking into account the ventilation and the thresholds of Table 2. Each cell of Table 4 contains a multi-criterion net preference flow (multiplied by ten for more readability) indicating how much the corresponding country sector dominates the other ones in this family, if it is positive. A negative flow indicates how much the sector is dominated by the others in its family. For instance in 1992, the Mauritanian sector dominates the 3 other sectors in traffic and income (the flow is then  $+30/10 = +3$ ). All other figures results of flows additions, vertically or horizontally. The horizontal total additions give zero, since the flows of dominating sectors are exactly compensated by those of the dominated ones.

Let us interpret some figures of Tables 3 and 4. For instance we shall compare the first line representing the year 1992 and the last line of the year 2001. In these lines, we observe first the traffic performance, remembering that the traffic family will synthesize 3 criteria that are the ratios where the importance of traffic is reported respectively to the number of lines, to the number of personals and to the investment. These 3 ratios can be considered as 3 measures of productivity in terms of traffic produced by the available resources of each sector in lines, manpower and capital variation. In 1992, we observe that Mauritania has a positive flow of 30 while Morocco, Tunisia and Algeria have the three negative flows  $-3$ ,  $-12$  and  $-14$  respectively.

For understanding well these figures, we must remember that we proceed to a multiple criteria comparison of *relative* performances of the 4 sectors and that the sum of these four figures is zero (at the rounding close) – the balance of flows by family and by line should be zero. By obtaining a high positive preference flow of 30, we see that the telecom sector of Mauritania in 1992 is dominating the other 3 sectors of Morocco, Tunisia and Algeria in terms of its capacity to produce good ratios traffic/resources.

The Algerian and Tunisian sectors have relatively weak ratios.

Nine years later in 2001, the situation of this family is quasi similar except for 2 observations: if the dominance of the Mauritanian sector (a flow of 15) on the 3 others still exists, its importance has been divided by 2, while the Tunisian sector is now second in the ranking for this family. Let us consider for these two lines 1992 and 2001, the relative performances in terms of production of income with these same resources, i.e., the family of income.

In 1992, the situation of the four compared sectors is nearly the same for this ratio income/resources: Mauritania has the same dominance (30) and the ranking is identical; this is not a surprise since a higher traffic for given resources should generally produce a higher income. However, it must be observed that the Moroccan sector has reached the Mauritanian sector performances in 2000 with a flow of  $+11$  in 2000 and  $+14$  in 2001. This disparity of performance of the Moroccan sector in terms of traffic and income could be explained by an increasing of the price paid by minute in this sector since 2000. This tendency of a better relative financial performance of the Moroccan sector is perceptible during all the sub-period 1998–2001 that follows the phenomena of privatization of this sector.

If we aggregate the flows of the 2 families for obtaining the flows of the general enterprise performance showed in Table 3, we are not surprised that the Mauritania's sector is still considered more dominating in 1992 with a mark of 60. Since the traffic and the income ratios reported to the same resources are normally highly correlated, it seems that there is some kind of double counting in these aggregated flows in this dimension of enterprise performances. This potential double counting tends to disappear when a differential of prices marks the compared sectors like in the years 2000 and 2001.

Until now, we can summarize our analysis by observing that the Mauritanian sector has higher ratios of traffic and income than the 3 other sectors but that this relative better performance is no more true with respect to the Moroccan sector that becomes the best or equivalent in terms of income and not in terms of traffic at the end of the period 1992–2001. The last observation that the Moroccan sector has relatively progressed in terms of income but not in traffic ratios may leave us with the supposition that the privatization was not so favourable to the consumer who will pay a relatively higher unit price.

So it is useful to observe the other general objective of a telecom sector : **its capacity to supply some public ser-vice**, measured here by the production of lines by 1000 inhabitants and by used resources in terms of manpower and investment for the family lines, and measured for the family economic by the traffic and the investment of the sector reported to the number of 1000 inhabitants or to the sector income. As the theory announced it, there may exist some conflict between the two general objectives of the enterprise performance and of the public service, although the relative excellence of a sector would be to be very good in the two dimensions. Clearly this kind of relative excellence is not reached by any Maghrebian telecom sector. Indeed, we observe on Tables 3 and 4, that the Mauritanian sector, that is the best in terms of enterprise performances, is also the worst in terms of service to the consumers and to the economy, and that for all the period 1992–2001. This result is no more astonishing if we recall that the Mauritanian telecom sector is still little developed.

From a very general point of view, by looking at the total of flows for the whole period at the bottom of Table 3, we read the following figures for the service: Tunisia 375, Algeria 8, Morocco –10 and a very low score of –374 for Mauritania!

This clearly means that the Tunisian telecom sector produced the relatively best service in Maghreb and the Mauritanian one the relatively worst. For the other dimension of enterprise performances, it is also clear that the Mauritanian sector was the best with a score of 297 and the Algerian one was the worst with a mark of –261. The general rankings according to each of these 2 dimensions and together are thus:

*Table following on the next page*

**Table 5- The general rankings according Enterprise performances dimension and Service technical-economic dimension.**

<b>• Enterprise performances:</b>	
1. Mauritania (296), 2. Tunisia (2),	3. Morocco (–35), 4. Algeria (–262);
<b>• Service technical-economic:</b>	
1. Tunisia (375), 2. Algeria (9),	3. Morocco (–9), 4. Mauritania (–376);
<b>• Together:</b>	
1. Tunisia (377), 2. Morocco (–44),	3. Mauritania (–80), 4. Algeria (–253).

Source : calculation of Karim Sabri from ARGOS results.

Finally, let us observe that the Tunisian telecom sector is the sole sector having a positive preference flow for the two dimensions for all the period (2;375): it is not so far from a relative excellence in Maghreb.

### 3. SYNTHESIS AND CONCLUSION

According the Promethee II multiple criteria comparisons of the four countries, taking into account the two general objectives of a utility enterprise : the performances of the enterprises in the sector, on one hand, and the service given to the community, on the other hand. According to these two classical dimensions, we observed, without a great surprise, that the leader in enterprise performances : Mauritania’s sector becomes the last ranked in service. This is some confirmation of the theoretical hypothesis that it is difficult to be the best or even good in both dimensions, which are often in conflict. However, the Tunisian sector is close to the relative excellence, by being largely the best in service and the second in enterprise performances. More details were obtained in decomposing these two general objectives, each one into two families of criteria. For the first dimension : the enterprise performances, the productivities of the resources were declined in terms of traffic and of income of the telecom sectors. Of course, these two kinds of ratios are mainly different by the unit price of the traffic : when the countries tariffs are constant or have the same moves, both ratios produce the same moves. So, the Mauritanian sector practiced a strong unit prices decrease from 1995 to 2001 while a small unit prices rise was observed in Morocco since 1998. These corresponding “bad” income performance move for Mauritania and “good” income performance move for Morocco were indeed a benefit for the Mauritanian consumers and a loss for the Moroccan ones, since both traffics increased in the same periods. For the second dimension : the relative service progress in lines productivity was observed for the service leader, i.e., the Tunisian sector of telecom. In terms of evolution of the relative positions of the different sectors, we tried to observe the impact of regulatory and competition changes on these countries relative positions: the main conclusion for these moves through the three subperiods of analysis is that only small changes of ranks were observed revealing the weak influence of the technological and lawful changes on the relative positions of the telecom operators in Maghreb.



This latter conclusion, in turn, can be explained by two hypotheses: either the differences in technical and legal evolutions are too weak or these differences have not yet produced all their effects.

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## DETERMINANTS OF A CAREER PATH CHOICE BY GENERATION Y: THE MARITIME UNIVERSITY STUDENTS' PERSPECTIVE

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### ABSTRACT

*Generations in the workplace has been the topic of scholar research and discussion among practitioners (Zopiatis et al., 2011, p. 1) for many years. However, one of the biggest challenges for many organizations in the coming years will be attracting and retaining a big number of employees, who are now joining the workforce and replacing the older workers who retire. In the time of increasing demand and tightening labour supply the emerged characteristics and expectations of the new generation of employees seem to be critical. If young employees find a job and feel that it meets their expectations, it is possible that they will be more likely to invest in it, to a considerable extent their specific skills and knowledge so that they perform the job well. On the contrary, lack of employees' engagement and poor performance as its consequence may contribute to a loss in the firm's profits and a decrease of its competitiveness in the contemporary market. In the light of the above arguments, it is not surprising that Generation Y, as the latest generation entering the workforce (Zopiatis et al., 2011, p. 2), still requires empirical analysis, especially that it may bring to the workforce quite distinct characteristics and may create interesting changes in attitudes and behaviours (Smola and Sutton, 2002, p. 381). Therefore, identifying and understanding well - young people's work – related expectations seem to be of high importance in designing the work context in a way which meets the specific criteria important to young people. As Kong et al. (2015, p. 148) stated: "meeting young talents' career expectations is an important step in enhancing their job satisfaction and working enthusiasm". When employees are satisfied with their job, they are more likely to engage; work engagement in turn, may enhance their job performance and affective commitment to the organization (Karatepe et al., 2014, p. 20). Thus, to attract and keep the young and qualified employees for a longer period, today's organizations need to re-think and develop human resource management (HRM) practices that will be working in synergy with the expectations of the youngest generation, who are increasingly entering the workforce now. On the basis of the above, the aim of this study was to explore Gdynia Maritime University students' expectations towards their future work in maritime transport as officers of the merchant navy. The research problem was to find an answer to the following questions: What are young people looking for in their future jobs? And what motivates them to work? Understanding young people's expectations towards their future work may help employers to design jobs, improve working conditions and modify compensation packages in a way that will enhance their efforts in successful attracting, managing and maintaining well-qualified employees for longer. The data was collected from the first-year students of two faculties of Gdynia Maritime University: the Faculty of Navigation and the Faculty of Marine Engineering. Thus, students participating in this study were a part of Generation Y, whose work expectations may have marked them out from the previous generations of employees. Although the results cannot be generalized, the findings of this*

*study revealed that high wages/ salaries, a clear division between working time and free time as well as opportunities to visit different parts of the world are the most important motivators in the process of choosing studies in a maritime university. The research value of this study may result from the fact that it addresses the issue of a need to do more research on Generation Y, because as the youngest and the fastest growing generation in today's workforce, it has not received yet much empirical analysis. Implications for the theory and practice, and directions for future research are also provided and discussed in this study.*

**Keywords:** career choice, career motivation, Generation Y, maritime university, seafarers

## 1. INTRODUCTION

It is emphasized that current demographic changes have a potential to cause a great managerial concern (Solnet et al., 2012, p. 37). It is not surprising then, given the fact that the largest diversity of generations is represented in today's workplace more than at any other time in history, that with this diversity come new challenges (Glass, 2007, p. 98).

Although people from different generations are working side-by-side (Gursoy et al., 2013, p. 40), Generation Y as the largest pool of young people in the job market today (Twenge et al., 2010, p. 1120), is described as more demanding than previous new employees have ever been (see Solnet and Hood, 2008, p. 61). Their motivation and how they engage in a job differ in comparison with older employees (Kim et al., 2009, p. 548). Therefore, managers should recognize and understand young people's job-related expectations and be willing to change their HRM practices in the context of new requirements of those entering the workforce.

Therefore, the aim of this study was to explore Gdynia Maritime University students' expectations towards their future work as merchant navy officers. The research problem was to find an answer to the questions: What are young people looking for in their future jobs? And what motivates them to work?

There are at least three reasons that justify the undertaken research problem:

*First.* Generation Y employees have been described as quite different than previous generations entering the workforce (Solnet et al., 2012, p. 38); they possess different work values and job requirements (Kong et al., 2015, p. 150). These differences cause that young people may view the workplace in quite different, new ways (Kong et al., 2015, p. 150)

*Second.* Taken the specific characteristics of Generation Y, there is a need to work with, engage, and manage Generation Y employees differently than previous generations (Wong et al., 2008, p. 878). Particularly, redesigning incentives that inspire and motivate this new generation is challenging (Solnet et al., 2012, p. 47). Moreover, these young employees are not very loyal and if they are not happy, they are going to be “out of there” (Gursoy et al., 2008, p. 453).

*Third.* As the youngest and fastest growing generation in today's workforce, Generation Y has not yet received much empirical analysis (Twenge et al., 2010, p. 1119).

Therefore, findings of this study may enrich the knowledge of Generation Y as future and provide useful guidance for practice, and trends in further research.

## 2. GENERATION Y CHARACTERISTICS IN THE CONTEXT OF CHALLENGES FACED BY EMPLOYERS TODAY

The term generation refers to “people who were born and raised in the same general time span” (Gursoy et al., 2013, p. 41), and has been defined as an “identifiable group that shares birth years, age, location and significant life events at critical developmental stages” (Kupperschmidt, 2000, p. 66). Each generation that is entering the workforce brings with it its own and unique values and perspectives connected with work and work environment (Zopiatis et al., 2011, p. 1). Generation

Y as the youngest generation in today's workforce (Park and Gursoy, 2012, p. 1196; Twenge et al., 2010, p. 1119) may also bring its own set of changing values (Smola and Sutton, 2002, p. 380).

Generation Y sometimes called Gen Y (Solnet and Hood, 2008, p. 60; Twenge and Campbell, 2008, p. 862; Glass, 2007, p. 99); GenMe, (Park and Gursoy, 2012, p. 1196; Twenge et al., 2010, p. 1118), Millennials (Twenge et al., 2010, p. 1118; Gursoy et al., 2013, p. 42; Twenge and Campbell, 2008, p. 862; Park and Gursoy, 2012, p. 1196; Glass, 2007, p. 99); iGen or nGen (Twenge et al. 2010, p.1118) is described in some sources (e.g. Gursoy et al., 2013, p. 42; Gursoy et al., 2008, p. 450) as the demographic cohort born between the years 1981-2000.

Generation Y grew up with technology, computers and Internet as a significant part of their lives (Wong et al., 2008, p. 880; Gursoy et al., 2013, p. 42). They are said to be the first who were born into the wired world (Sola and Sutton, 2002, p. 365), additionally with rapid economic, technological and social changes (Kwok, 2012, p. 233). These all circumstances may influence their work values, attitudes and behaviours making them enjoy the challenge of new opportunities (Wong et al., 2008, p. 880). Generation Y brings with them lots of positive skills and traits to the workforce (Kim et al., 2009, p. 548). Thus, there is no doubt that they should be treated as valuable members of the organization. Among the comments made by the interviewees in Zopiatis et al. work (2011, p. 5) Generation Y employees, were perceived as more spontaneous, technology savvy, embracing innovation and change easier than others, they were also more energetic and productive and aware of new trends in the market.

This generation is also described as self-centred and demanding (Maxwell et al., 2010, p. 53). Learning and development is extremely important to employees of Generation Y (Solnet et al., 2012, p. 46). Younger generations want also immediate recognition through the title, praise, promotion and pay (Gursoy et al., 2013, p. 47). Good wages, interesting work, advancement and development are thus strongly important to them (Grobelna and Marciszewska, 2016). They seek out creative challenges (Armour, 2005) and are more likely than the older generation to show “outside-of-the-box-type behavior” (Gursoy et al., 2013, p. 45). They challenge conventional norms (Gursoy et al., 2013, p. 45) and believe that rules are made to be broken (Gursoy et al., 2008, p. 453).

Although they are hard and ambitious workers and can “put much of themselves” into their work (Gursoy et al., 2008, p. 453), Generation Y employees are perceived as working more for themselves rather than for the company; they are less loyal and obliged to the organization (Zopiatis, 2011, p. 5). They work to live (Twenge et al., 2010, p. 1122; Gursoy et al., 2013, p.47) and are seeking a balance between their personal and work life (Gursoy et al., 2013, p. 46). The study results of Gursoy et al. (2013, p. 46) showed, that Millennials were likely to be the ones with the least attachment to the work. It can be said that life outside the work seems to be much more important to them than anything at work (see Gursoy et al.2013, p. 46). They also place a great emphasis on leisure time (Twenge et al., 2010, p. 1131).

Based on the above, it is not surprising, that if the job does not meet their expectations they do not hesitate to leave it. Lack of long-term commitment may be a significant challenge for today's employers, especially that young people do not stay in a job for too long , “(...) they believe in their own self-worth and value enough that they are not shy about trying to change the companies they work for” (Armour, 2005).

Summing up, the organizations value employees who are creative, who are willing to try different things and explore new work processes (Twenge and Campbell, 2008, p. 869). Yet, to attract and retain such young employees and benefit from their unique skills and abilities, at the same time understanding their work attitudes and motivators should be of great importance as a significant, current topic for further empirical examination.

### 3. METHODS OF RESEARCH

The data was collected using a questionnaire survey. Respondents were requested to fill in the questionnaires during designated teaching time agreed with lecturers. The purpose of the study was explained, students were also informed that their participation was voluntary. They were also assured of confidentiality and anonymity of their participation in this study.

The research was conducted among first-year students of Gdynia Maritime University. Two out of four faculties of GMU were selected: the Faculty of Navigation and the Faculty of Marine Engineering. The choice was dictated by the desire to check what made students choose the studies, upon completion of which they will be able to start their professional careers as merchant officers. The research was undertaken two years ago and three groups of students were tested:

- (1) Faculty of Navigation, in 2014, the number of students: 109 (WN2014);
- (2) Faculty of Marine Engineering, in 2015, the number of students: 153 (WM2015);
- (3) Faculty of Navigation, in 2015, the number of students: 113 (WN2015).

The partial results of the research concerning different groups were discussed in several publications - in particular the results related to: (i) knowledge of the specifics of maritime labour, knowledge of education offers of maritime universities (Skrzeszewska, 2015, pp. 973-988), (ii) the comparison of knowledge of problems of the labour market with regard to jobs at sea among Polish and Croatian students (Skrzeszewska, Milić Beran, 2016a, pp. 312-320, Skrzyszewska, Milić Beran, 2016b, pp. 577-606). The part of the study, the results of which are presented below, has the qualitative character. Its main goal was to find key factors of a choice of career paths associated with the sea. Students in open questions had an opportunity to independently formulate relevant to them characteristics associated with the work at sea. They were asked also to prioritize their preferences.

### 4. RESULTS

The study was conducted among students present at the university on the day the survey was carried out. These were students of the above listed years and Faculties. Only 5% of respondents were women. Most students belonged to the age group 20-21 (89%), the older students (up to 24 years old) accounted for less than 3%, the younger (19 years old) - 1%. 7% of respondents did not answer the question concerning the year of their birth. Students who participated in this study constitute a part of the larger entity of Generation Y. The results obtained were surprising in relation to the number of motivators indicated by the student - slightly more than 10% of respondents did not give any reason why they would be willing to start work at sea. Less than 90% mentioned one reason, 75% - two reasons and only a half of the students surveyed identified three factors that influenced their choice of studies and future work. The most commonly chosen motivator for studies necessary for future work at sea were "high wages/ salaries", followed by "nature of work at sea", "the world exploration" and "job security". The essence of these motivators will be discussed together with the results of the study. To check whether the choice of factors was not conditioned by membership to any particular group of students, a nonparametric test was used for more than two independent groups – the Kruskal-Wallis test. Such testing was indispensable, because in case of potentially the same experience for one group, the results achieved in this group might strongly influence the results of the whole probe. Consequently, this could lead to concerning the students choosing to work at sea as a future career path. The following hypothesis test was adopted:

$$H_0: F_1(x) = F_2(x) = \dots = F_k(x);$$

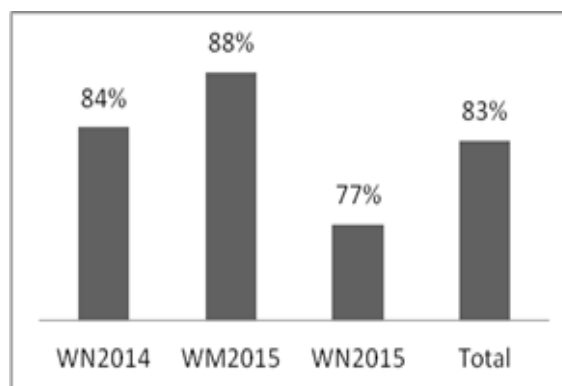
$$H_1: \exists m \neq n; m, n \in [1:k] F_m(x) \neq F_n(x);$$

wherein  $F_i(x)$  is the cumulative distribution characteristics of the  $x$ -the group.

The factor "high wages/ salaries" was indicated in each of the questioned groups as the most common (Fig. 1). The statistics of the Kruskal-Wallis test (Table. 1) indicate that the choice of "high wages/ salaries" as the most preferred motivator was not linked to membership to any particular group of respondents.

*Table 1: Kruskal-Wallis Test (own elaboration)*

	High wages/ salaries
Chi-Square	3,000
df	2
Asymp. Sig. (2-sided)	,2231



*Figure/Chart 1: Percentage indicating "high wages/ salaries" as a determinant to choose studies as the way to work at sea (own elaboration)*

Students pointing out to high earnings, added that working on the land will not provide so quickly such a level of earnings as offered by work at sea at the beginning of their career. They stressed the fact that the relatively quickly achieved level of wages/ salaries will allow and make it easy for them to become financially independent. It is interesting that for a big number of students, high wages/ salaries were the only motivation to study and in future to pursue a career at sea. Officers from the Central European countries, including Poland, receive a monthly salary which ranges from a half of the annual GDP *per capita* (the lowest-ranking officers) to the amount corresponding to the annual GDP *per capita* (the highest-ranking officers) (Drewry, 2014, pp. 43-60; World Bank, 2016).

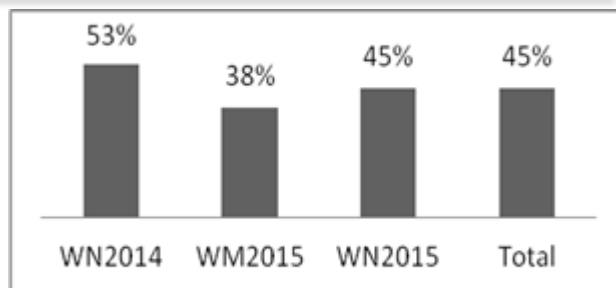
The second most frequently indicated determinant was the "nature of work at sea" (Fig.2. Tab. 2). As  $\chi^2 = 0.000$ ;  $p = 1.000 > 0.05$  there is no reason to reject the null hypothesis - preferences as to the choice of studies because of the nature of work are not derived from a particular, specific group of respondents. Students indicated many aspects of the uniqueness of organization of work at sea, as compared with organization of work on the land. It was important to precisely separate working hours from free time. In practice, there are many solutions used in distribution of work time and leisure time. The most commonly used are two solutions: time at sea and on the land is equal (in the case of longer contracts - up to 4 months) or time on the land is half of the time at sea (contracts for 6 or 8 weeks).

*Table following on the next page*



Table 2: *Kruskal-Wallis Test (own elaboration)*

	Nature of work at sea
Chi-Square	0,000
df	2
Asymp. Sig. (2-sided)	1,000



Figure/Chart 2: *Percentage indicating the "nature of work at sea" as a determinant to choose studies as the way to work at sea (own elaboration)*

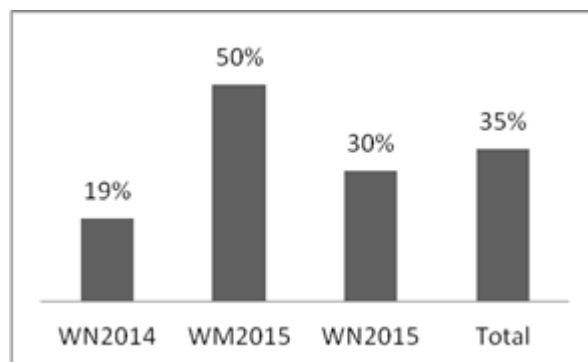
It was often emphasized that the time at sea, even when intended to relax, could not be regarded as "truly" free time. Only after returning home, time for relax is actually the time off work. The time without a risk of sudden call to do something, without having to stay after working hours, without an unexpected business trip, etc. The students thought it was important to precisely define a career path. As the respondents stated: "anyone who properly applied for the job, gains experience and fulfils the formal requirements, knows exactly what position, after what time, they should/ can expect".

Within the current legislation obtaining the diplomas certifying higher qualifications of merchant officer takes 12 - 24 months of work at sea (depending on the position) (IMO, 1978; Rozporządzenie MłR, 2014). Students due to a lack of experience, did not take into account the fact that obtaining a higher diploma does not mean automatic promotion - this depends on many factors. Writing about the nature of work, some students pointed to an important aspect of responsibility. The ship positions do not merge - competences do not overlap. This means that each crew member carries a great responsibility for safety of the crew, or cargo on the ship.

Another motivator to work at sea is a possibility to travel while working (Fig. 3, Tab. 3).

Table 3: *Kruskal-Wallis Test (own elaboration)*

	World exploration
Chi-Square	2,000
df	2
Asymp. Sig. (2-sided)	,2231



Figure/Chart 3: *Percentage indicating "the world exploration" as a determinant of the choice of studies as the way to work at sea (own elaboration)*

The parameter test statistic  $\chi^2 = 2.000$ ;  $p = 0.2231 > 0.05$  indicates that there is no account on which we can reject the null hypothesis - preferences as to the choice of studies because of an



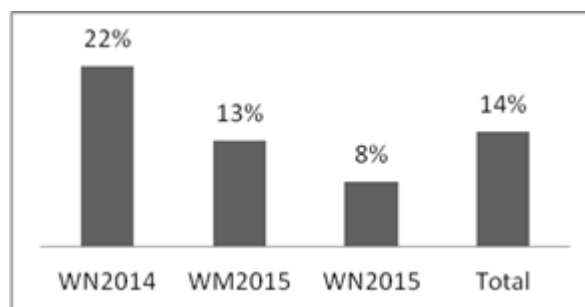
opportunity to travel and "the world exploration" are not derived from a particular, specific group of the students surveyed.

Students who have not yet had any vocational training at sea, perceive work at sea through the prism of stories, literature, and finally - stereotypes, as a job which creates many opportunities to explore remote corners of the globe. Some of the respondents associated the issue "learning about the world" with employment on ships with multicultural crews, which creates a possibility to get to know other nations, customs and religions. The choice of this factor fits perfectly into the image of representatives of Generation Y as shown in literature. A generation that is open to new challenges, is mobile, has no limits in changing residence and appreciates diversity.

The last of the factors which was identified in this population more often than by every 10th respondent was "job security" (Fig. 4, Tab. 4). The parameter test statistic  $\chi^2 = 3,000$ ;  $p = 0.2231 > 0.05$  indicates that there is no basis to reject the null hypothesis - preferences as to the choice of studies due to "job security" are not derived from a particular, specific group of the students surveyed.

Table 4: Kruskal-Wallis Test (own elaboration)

	Job security
Chi-Square	3,000
df	2
Asymp. Sig. (2-sided)	,2231



Figure/Chart 4: Percentage indicating "job security" as a determinant of the choice of studies to open the way to work at sea (own elaboration)

This motivator was indicated by the students who were well acquainted with organization of the labour market of jobs at sea. It was confirmed by additional comments on the shortage of merchant navy officers, observed for more than two decades (European Commission, 2011). Officers deficiencies relate primarily to officers coming from the developed countries - well-educated, highly competent. Shortages in officers are observed first of all in Western European countries - even those that are perceived as the maritime countries (UK, Denmark), USA, Japan. This is a consequence of prosperity and high average earnings in these economies. Young people do not want to work at sea, because in the rich countries differences between earnings on the land and at sea are far smaller than in Central and Eastern Europe, Asia or Africa (Drewry Maritime Research, 2014, p. 41, Deloitte Global Services, 2011, pp. 1-20).

## 5. IMPLICATIONS AND CONCLUSION

Taking into consideration the sample of undergraduate students from Gdynia Maritime University (Poland), findings of this study offer important contribution to better understanding of young people's expectations towards their future work. The main results of this study showed that even a choice of a job, so specific as work at sea, requiring separation from the loved ones - is made by representatives of Gen Y on the basis of the following function reasons: high wages/ salaries, clear

separation of working time and free time, opportunities and challenges of learning about the world, other nations, cultures etc. Although the results of this study cannot be generalized, they should be viewed as some insight into Generation Y management theories and perceived as a guide for future research. By understanding well the expectations of the emerging workforce, employers may be more able to provide tailor-made HRM practices, starting from recruitment as the first stage of a comprehensive process of employees searching (Dolot, 2014, p. 61). However, to manage young employees effectively, organizations should - ensure that - all candidates are individuals who fit into the organizational culture and specific -job characteristics. Thus, it is important to focus not only on an individual's skills and knowledge, but also on the whole person including, among other aspects, her/his general disposition to work in the industry (Solnet et al., 2012, p. 45). By developing effective HRM practices, which are in line with young people's job expectations, the organizations demonstrate commitment to their entering workforce, having in mind the fact that “Gen Y employees' organizational commitment will be directly related to the level of commitment they perceive the organization has in them personally”, as Solnet and Hood (2008, p. 64) proposed in their study. Therefore, managers should promote awareness and understanding among young generations entering the workforce today and develop human resource management strategies that aim to recognize and utilize the talents of well –educated and industry - trained graduates. Additionally, educators and practitioners should cooperate to provide undergraduate students with broad and well–developed consulting programmes to support them in their career decision and to guide them in building up positive perception of work in the industry they are educated for. Therefore, both good practice experiences should be offered as an obligatory part of the curriculum, and a clear picture of the career development should be provided by practitioners. This research has also opened several directions for future studies. First, it is underlined that “selecting the right person for the right job” (Lee-Ross, 2003, p. 268) is of high importance, particularly in jobs demanding true enthusiasm, passion, interest and kind of sacrifice from its candidates, therefore personality traits as a factor determining the career choice are also recommended for future investigation. Second, the future research should also focus on changes in job expectations that can be created by graduates entering the workforce. It is important to remember that after several years of experience and moving up the career ladder, the work values less influential at first may become more important later (Chu 2008, p. 327). Therefore, it is recommended to extend the research and continue it among members of Generation Y with different working experience and job positions. Third. It is important not to overlook individual differences that may exist between individuals of the same generation, especially that there are only the few studies that examine demographic heterogeneity within the Millennials (Ng et al., 2010, p. 281). Thus, including more individual variables to explain the work-related expectations of the young is proposed for the future investigation. As a conclusion note, to be competitive in today's market, employers need to understand and respond to work-expectations of Generation Y. This study holds the potential for helping today's managers to be more effective in their efforts to attract, motivate and retain well-qualified employees, which is a pivotal in such industries as shipping, where the competitive advantage is attained through people.

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## INFORMAL ECONOMY AND THE FEAST OF SACRIFICE: INFORMAL JOBS SPECIFIC TO THE SACRIFICE RITUAL OF EID ELKEBIR IN CASABLANCA

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### ABSTRACT

*Everywhere in the Muslim world, the feast of sacrifice (Aïd Adha) is of paramount importance owing to its religious and ritual characteristics as well as its social and economic dimensions. The main concern of the present study is the contemporary changes of this specific type of religious feast witnessing the increasing emergence of informal jobs related to this fundamental religious event; an event which is currently oscillating between religion, rituals and the thriving of informal work. The present paper seeks to identify and understand the changes this feast has undergone, impregnated with the emergence and development of informal jobs. In fact, Aïd Adha keeps running the economic activities of a large number of unemployed people or people living in precarious and unstable conditions in the city of Casablanca.*

*More than 2 million sheep are slaughtered during this feast, which resulting in the circulation of an important, formal and informal cash flow.*

**Keywords:** *Casablanca, Economy, Informal, Precarity, Ritual, Sacrifice feast*

### 1. THE SACRED DISTORTED BY THE CRISIS

Researchers in social sciences are agreed on the fact that religion is the most primitive social phenomenon. According to Emile Durkheim, everything is, in principle, part of religion. This theory was developed by the father of French sociology in his famous book entitled « The Elementary of The Religious life ».

« As we have progressed, we have established the fact that the fundamental categories of thought, and consequently of science, have religious origins. We have seen that the same holds true for magic and consequently for the different processes which have issued from it. On the other hand, it has long been known that up to a relatively later time of evolution, moral and legal rules have been indistinguishable from ritual prescriptions. Therefore, to sum up, we can say that nearly all the great social institutions were born of religion.<sup>2</sup> »



Durkheim continued his thesis by stating that “only one form of social activity has not yet been expressly attached to religion \_economic activity”<sup>1</sup>.

Today, because of the financial crisis and violence in the labor market, economy plays a crucial role on the sacred day of sacrifice in Muslims. This feast has now become dynamic. Constraints and obligation have made it necessary for men to leave the sacred, its practices and obligations to the extent that the economic dimension has become dominating in this sacred feast.

First, let us start by defining what a sacrifice is. For this purpose, we adopt Hubert and Mauss’s definition. « Sacrifice is a religious act which, through the consecration of a victim, modifies the condition of the person who accomplishes it or the condition of certain objects which the- said person is interested in. »<sup>2</sup>

It should be remembered that the feast of sacrifice is not compulsory, but simply recommended. It concerns a (Sunna) that ended up as a necessity.

The feast of sacrifice does not only have a religious connotation, but also has ritual origins that go far as far back as the pre-Islamic era. In this connection, the Holy Koran does not make any reference to the necessity of sacrifice. Instead, the feast ( L’aïd) marks the end of pilgrimage in Mecca that takes place every year on Dhou Al Hijja 10th of the Muslim calendar.

Within time, one can notice the gradual disappearance of certain aspects of this religious practice, to the extent that we now see only the spectacular and superficial aspects of this feast.

For example, one can note the disappearance, in certain people, of feast-related practices, such as the words or expressions said during the slaughtering, the fact of giving the poor a third of the sacrificed animal as a sign of mutual aid and charity, etc.

In this respect, let us cite late King Hassan II’s injunction to Moroccan people in 1996 to renounce sheep sacrifice<sup>3</sup>, and which was amply obeyed.

The feast of sacrifice was the subject matter of a number of anthropological and historian studies. Thus, the Moroccan anthropologist, Abdellah Hammoudi, in his book entitled: « The Victim and its marks. An essay» on the Sacrifice and Masquerade in the Maghreb»<sup>4</sup>, analyzes the celebrations and rituals that accompany Aïd al-Adha in all its dimensions. In fact, many of the ritual practices that go along with this feast are now anchored in the Moroccan folk culture.

Through his study, Hammoudi further makes it clear that the bleeding beast constitute the beginning of a ritual cycle that ends 30 days later after the Achoura ceremony, known for alms or charity giving, eating of dry fruit and the sale of toys for children. The sacrifice, then, marks the end of the past year and the Achoura marks the coming of the New Year.

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<sup>1</sup> Ibidem

<sup>2</sup> Jean-Paul Colley, « Le sacrifice selon Hubert et Mauss », *Systèmes de pensée en Afrique noire*, 2 | 1976, 23-42

<sup>3</sup> Speech by Late Hassan II during the feast of sacrifice in 1996 « There shall be no compulsion in religion ". *Our grandfather The Prophet, Peace and Prayer Be Upon him, had accomplished the Sacrifice on behalf of his Oumma, as is reported in the Sunna, according to which the prophet, while , scarifying two big sheep, had said: " This one is form me, the other is on behalf of my Oumma. By complying with the tradition of God’s Messenger Peace and Prayer Be Upon him, and by following his behavior, we invite our dear people to refrain from accomplishing the sacrifice ritual d’Al-Aïd this year. We will do it, if God wills, on behalf of our people, by accomplishing the sacrifice for ourselves and for every member of our people. By so doing, we will be faithful to the Sunna of our Prophet and the precepts of our chariaâ. »*

<sup>4</sup> Abdellah Hammoudi, « The Victim and its marks. An essay» on the Sacrifice and Masquerade in the, Edit Seuil, 1988



He stresses that other ceremonial activities impregnated by games; laughter and din (noise) go along with these religious celebrations. And according to Moroccan religions, seven days following the feast of sacrifice, there is a ceremony called « the Boujloud », i.e., skin bearer, also called « Bou-l-Btayn » or “Bilmawen” in Berber. During this ceremony, people wear masks, laugh and are, sometimes, allowed to break the rules of the two religious feasts. Incidentally, these celebrations remind us of carnivals that take place in many European and Euro-Mediterranean countries.

The historian Nicolas Michel<sup>5</sup>, moreover, examines the production relationship inside the tribe « Kabila », where economy is extremely precarious and fragile to the extent that it intensely poses the problem of subsistence. Therefore, there appear many community and solidarity ritual forms of behavior, namely, inter alia, the « mudd Sidi Bel’abbas », which is the first measure of grain destined for the poor. Nicolas Michel analyses the dimension of the relationship between economy and religion in pre-colonial Morocco. We, for our part, attempt to go further by evoking another economic method, mainly informal, which has been increasingly fast growing during the feast of the Sacrifice in the last few years...

We have done moved from a purely religious practice, where people sacrifice sheep if they can afford it, to a societal practice in order to « to keep up with the Jones », where people wear masks and transgress established codes of such a religious feast, and where certain impoverished and disadvantaged people prioritize profit making and survival rather than sacrifice.

Incidentally, the feast of « sheep » involves scarifying other animals rather than « sheep »: some people slaughter a she-goat, others prefer an ox ... We also witness an overshadowing of and detraction from the characteristics of the animal of sacrifice, namely its color ...

Also, the act of scarifying in the city differs from that in the countryside<sup>6</sup> to the extent that one can evoke different slaughtering ways.

The explosion of economic interests goes along with a reduction of religious morals, characterizing this feast. Faced with financial or economic inability, people sign up for a loan, sell their cars, furniture or real estate to buy the sheep of sacrifice.

While some professional activities slow down, or even stop during the days of the feast (especially, activities related to real estate, crafts, groceries) given that people working in these occupations travel up to over a hundred kilometers to celebrate the feast properly with members of their families<sup>7</sup>, there emerge never –ending , seasonal informal jobs.

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<sup>5</sup> Nicolas Michel, *Une économie de subsistances, Le Maroc précolonial, Institut Français d’archéologie orientale, Textes arabes et études islamiques. 35 /1, 1997*

<sup>6</sup> Anne-Marie Brisebarre, Maisonneuve & Larose, *La fête du mouton. Un sacrifice musulman dans l'espace urbain*, 2002, P 79

<sup>7</sup> Holidays lasting for ten days, twenty days or even a month.

## **2. HETEROGENEOUS INFORMAL JOBS RELATED TO THE FEAST OF SACRIFICE**

The number and importance of informal jobs increase considerably during the feast of sacrifice in the city of Casablanca. This religious feast brings about direct and indirect seasonal jobs. Ten days before the feast, during the day of the feast and 3 days subsequent to the feast. Such jobs are often practiced by non-professionals.

Our field observation and our experience during the days of the feast have made it possible for us to bring out the following informal jobs:

- Sheep transporter: on shoulders, motorcycles, carts ...
- Sheep slaughtering: this act is carried out by a professional (the butcher) accompanied by one of his sons or brothers. We also find non –professional old men who are used to slaughtering sheep accompanied by one or two young men..
- Roasting of the sheep’s head and legs. Prices vary between DH 20 to DH 30 depending on the size and volume of the head and legs.
- Sheep Skin collector « Btana »: they move along the alleys of the city, riding a donkey or on foot dragging a small cart and shouting loudly.

People then call them from their roofs and throw the sheep skin « Btana » to them. Nowadays, People get rid of the Btana, whereas in the past they used them to make interior sheepskin decoration articles or rugs.

Collectors, then, put them in a visible area in the street or sell them for DH 5 a piece. « Souf » (wool), is removed and « jald » (leather) is used for craft purposes.

The jobs of making such products, it should be noted, have almost disappeared. In the past, women used to wash them immediately after slaughtering the sheep then put them in salt for about two weeks before putting them in sunny places to dry and, later on, use them as furniture. Such practices have disappeared given the sharp decrease in prices of furniture and carpets.

Currently, people try to get rid of whatever is considered as a surplus, since they are looking for quick and easy-to-get things. Such changes in social practices underlie the thriving of informal activities during the “Aid”.

- Knife sharpening: men and young boys from various neighborhoods in the city, or even from different neighboring cities. During our field observation, we met a knife sharpener from the city of Ben Guérir. These non-professionals make between DH1000 and DH 1400 per day.

- Seller of accessories of the feast of sacrifice: charcoal, straw, ropes, onions, small barbecues, braziers...

- Beggars of the feast:

Beggars knock at people's doors to ask for charity, which, on the day of the feast, comes in the form of meat. The collected meat is, then, sold by these beggars.

People have recourse to practitioners of these jobs even if they know they are not professionals and that they can make mistakes during service provision.

### **3. CHARACTERISTICS OF URBAN PRECARITY OF INFORMAL JOBS OF THE FEAST OF SACRIFICE**

The interviews we have been able to conduct with people practicing these informal jobs and activities during the feast of sacrifice show that they are satisfied and happy with their jobs. They never complain about them nor consider them as something bad. They never mention the word humiliation, although we noticed this trait during our observation and interviews.

- Practitioners of these jobs seize the opportunity of the feast to make some money. They work all day to have their tools ready and show their innovative ways of work, as if they were in competition with each other.

-This concerns momentary activities with quick gains.

- They are humiliated in their jobs, often by sarcastic comments on the part of others..

- Most activities are practices of the past.

- Impoverished and disadvantaged people look for any work opportunity in order to make money, although this is always at the expense of their celebration of the religious feast and the activities related to it: visiting relatives...

- These activities generate gains for the unemployed and modest-level people, as they (activities) make it possible for them to meet their and their families' needs in the subsequent months.

### **4. CONSLUSION**

Authorities turn a blind eye to these informal jobs. Is it a sign of tacit approval of an activity, which, although illegal, seems to be the only solution, at least for the time being, to enable young people living in precarious and unstable conditions to meet their needs?

In fact, authorities do not intervene as long as no harm is caused. Starting a fire is, thus, tolerated. Resellers and middlemen (Chanaka) fuel speculation and cause prices to go up to the detriment of not only citizens' purchasing power but also the interests of livestock farmers.

Today, we are face to a religious feast, which, in the Moroccan popular culture, has turned into an economic opportunity where illegal activities and informal jobs have become common and fully established practices.

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## CASE STUDY OF THE USE OF MEANS OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR EXECUTION OF DAILY BUSINESS OPERATIONS BY ENTREPRENEURS IN SLOVAK REPUBLIC

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### ABSTRACT

*The emergence and rapid development of information and communication technologies revolutionized the way of life known so far and created completely new unknown possibilities. Several tedious, manual, repeating and boring tasks became automated and are carried out so smoothly and efficiently that it leaves a vast amount of time to exploit previously lost creative and innovative ideas constantly generated by any human mind. Nowadays cutting edge technology combines several gadgets into one small handy device: phone, camera, computer etc. The compact intelligent helper always present at our side - the smart phone, becomes an indispensable prerequisite for an entrepreneur or managerial professional in today's digital era of turbulent dramatic changes and multicultural global business environment. A smart phone provides a small bundled mobile office managed by the entrepreneur himself/herself thus allowing him/her to react to expected and unexpected events immediately after notification from everywhere and not to be limited by the office hours. This paper deals with research carried out among entrepreneurs and managerial professionals aiming to discover the importance of smart phones in real business environment and the perceived impact of such devices on the performance and execution of daily business operations. Sample included entrepreneurs and managerial professionals of small and middle sized companies who participated in this research through survey consisting of questions concentrated on activities carried out in virtual environment accessed through cell phones, advantages and drawbacks of these ICT means. The research findings showed that the phone usage is no longer limited to phone calls; on the contrary, written communication through electronic mail communication and other messaging applications are becoming more frequent. However, traditional phone call conversation is preferred for business communication. The research findings showed also gaps between the possibilities and the actual uses of cell phones to execute the business operations.*

**Keywords:** *Business Operations, Globalization, Mobile Gadgets, Information and Communication Technology, Virtual Environment, Virtual Collaboration*

### 1. INTRODUCTION

Humans communicate ever since they exist (Gonçalves, Ferreira, Gonçalves, Putnik, and Cruz-Cunha, 2014, pp. 3-5). People have natural tendency to collect, share and mutually exchange information among themselves. Throughout the history, humans have been developing various methods and channels for communications (Dávideková, Greguš and Bureš, 2016, in press). With the emergence of the digital technology, the information and communication technology (ICT) was

developed and irreversibly revolutionized our lives. No other previous technology that has existed so far has had such an immense global impact as ICT (Al-Rodhan, 2011, p. 18). It changed every aspect of our lives: the way people work, communicate, learn, spend time, and interact (Jorgenson and Wu, 2016, pp. 383-385).

ICT allow real-time communication and collaboration across practically any distance (Dávideková and Hvorecký, 2016, pp. 283-284). ICT interconnects individuals from the most remote locations and farthest corners of the world and assembles them in a common virtual space that is accessible to everyone creating an augmented reality. By establishing this virtual working space, ICT bolstered the productivity more efficiently than any other former technology (Hidalgo-Peréz, O’Kean Alonso and Rodríguez Lopéz, 2015, pp. 450-451). The development of ICT enabled overcoming large geographical distances, raised the amount of storable knowledge into very large data volumes and made it accessible from everywhere at any time, it notably cut down the execution times of conducted tasks, extended the space and augmented the environment for collaboration and excessively increased the rate of information interchange around the globe (Dávideková and Greguš, 2016, pp. 102-107). ICT enabled the knowledge and expertise acquired during millennia to be instantly globally accessible to broad public, to each one individual on the planet through the means of ICT in the virtual environment (Dávideková and Greguš, 2016, in press). Current ICT has made it possible to quickly find and distribute information (Ogbomo and Ogbomo, 2008, pp. 1-2). If it is compared with the past, when it took us a long time (days, weeks, months, years) to share information, today it takes, in reality, only fractions of seconds, to share some information with a broad public (Dávideková and Hrdličková, 2016, pp. 151-155). Today when the world is being shaped through abrupt instant and discontinuous changes it is essential to get information at an instant pace for a timely reaction. The real time requires such a technology that enables sharing and receiving information quickly (Ivanochko, Urikova and Greguš, 2014, pp. 515-518).

Another significant impact factor of current business environment is globalization that evokes immense pressures on the competitiveness of business organizations struggling to succeed in the environment full of competing rivals. ICT and in particular the mobile technologies provide powerful tools extensively fostering the inter- and intra-enterprise collaboration and economizing the cost effectiveness at the same time (Ivanochko, Urikova and Greguš, 2014, pp. 310-315).

The dominant technology drivers, mobile cellular and telecommunication technology (Kumar, Stauvermann and Samitas, 2015, pp. 102-104) together form a technology that represents the high tech little wonder of our time: the smart phone.

The smartphone integrates several technologies into one small device that can accompany us everywhere thanks to its tiny dimensions and small weight. Smartphones are considered handheld computers rather than traditional phones (Ahn, Wijaya and Esmero, 2014, pp. 9-11). These very powerful devices can be used in many innovative ways (Guenaga, Mentxaka, Eguiluz, Romero and Zubia, 2012, pp. 1-3). These representatives of publicly accessible most advanced technology incorporate a variety of individual devices into one small equipment: phone, computer, camera, music player etc. (Dávideková, 2016, p. 314-316). Smartphones now carry an email client, Web browser, GPS functionality, desktop synchronization tools, as well as organizer functions such as diary, contacts, notepad and a voice recorder (Charlesworth, 2009, pp. 32-33).

Smartphones penetrate many facets of our everyday life through the broad utilization they offer (Wang, Xiang and Fesenmaier, 2014, pp.1-4).

Nowadays a smartphone that became commonly owned by a broad public gained much better input-output capabilities than the average individual home appliance through the synergy of all integrated services (Nichols and Myers, 2006, pp. 60-63). The pace of smart phones expansion among broad public in just five years since their introduction achieved immense explosive



dimension that took for example to fixed-line phones 31 years (Monhyung, 2010, p. 79). One of the significant factors that had a large impact on the omnipotence of the smart phones besides the integration of all the individual gadgets into one device is the bundle of applications that comes with it. Mobile applications are built in set of software programs that run on a smart phone and provide added value for the end user by performing certain tasks (Islam, Islam and Mazumder, 2010, pp. 72-74). Smart phones and mobile apps are user friendly, inexpensive and easy to use incorporating services from various fields including support of business operations like word processors, email clients, organizers etc. Therefore, smart phones enable boosting of business opportunities through their endless support and possibilities.

The aim of this paper is to identify the actual uses of a smart phone in business environment. In other words, which communication types and channels represent the most frequently used features of a smart phone among business professionals and which feature is being perceived as an added value with the highest importance.

This paper is organized as follows: Methodology selected and used for conducted research is depicted in section 2. Sample examined during the research analysis is briefly characterized in section 3. Section 4 provides research findings are presented followed by brief insights. Research results arising from conducted research are reviewed in the conclusion.

## 2. METHODOLOGY

This section briefly depicts the chosen methodology used for the execution of the performed research. Furthermore, this part discusses the selected collection technique including the explanation of its preference.

The case study of the use of means of ICT for daily business operations was carried out in form of a complex survey consisting of several interrogative sections. Inquiries included in the questionnaire aimed to concentrate on various aspects of cell phone uses among participants. Questions were of various types: open and closed questions, assignment of importance categories, etc.

The first part of the survey dealt with characteristics of respondents related to their further grouping and categorizing for more detailed comparisons. This may show different tendencies in distinguished groups of participants. Among such attributes belong:

- Age,
- Gender,
- Educational background,
- Income level,
- Employment status, etc.

More detailed analysis of individual separate groups of respondents may identify the most affected group of professionals by a specific influencing factor.

A preselection of the sample was done based on the second part of the questionnaire related to:

- Phone device possession,
- Cell phone types in use.

Next section of the survey concentrated on the types of uses of the ICT mean by the respondents:

- For which activities the end users consisting of entrepreneurs and managerial employees are using their mobile gadgets for.

This interrogative part intended to highlight the mobile phone feature that is of highest importance for examined group of users represented by investigated sample.

Next objective of this section was also:

- To identify the variety of activities for which the phone is used for by the respondents.

Findings of such a research investigation may help for further future conceptual model proposals of efficient utilization of a mobile phone devices by execution of daily business operations and activities.

Furthermore, such a research may stress the gaps between the possibilities offered by the modern information and communication technology means and the actual practical utilization among business professionals.

The findings may highlight the need and necessity of additional services and features of future mobile phone gadgets that would provide the implementation of missing activity processing possibilities to the designated group of entrepreneurs and managerial professionals.

Last survey section dealt with following aspect:

- Subjective perception of the importance of a cell phone device for the survey participant accompanied by his/her reasoning.

This part aimed to clarify perceptions of mobile phone devices through subjective assessment of its features constituting the most important services with greatest added value for the end users. This intends to highlight the most favored and valued feature and service of this tiny gadget showing direction of further innovation fields of this cutting-edge technology that may be mostly appreciated by the consumers.

### 3. SAMPLE

For the convenience of the reader, this section deals with more detailed description of a variety of attributes characterizing the research sample participated in the survey.

The research aimed to examine individuals in business world who are mostly relying on mobile information and communication technology by their profession: namely entrepreneurs who are frequently travelling to meet with their customers and contract partners and often work at client side; and managers whose position includes communication and availability by definition. Entrepreneurs alike managers work with people and coordinates activities of their subordinates in order to achieve the goals (Dávidková, Dávidková and Greguš, 2015, pp. 20-21). ICT enables coordination across boundaries to achieve new levels of efficiency and productivity and opens up a new possibilities for increasing value through better communication and information sharing (Li and Lin, 2006, pp. 1641-1644).

To meet the designated group for interrogation, the research was conducted on a business conference dealing with innovation in business environment driven by technology development. The survey was completed by individuals attending the business conference providing insights on new technology trends and opportunities in daily business activities and operations. The participating individuals consisted of entrepreneurs and management professionals employed in various companies.

*Table1: Proportional Sample Coverage of Gender Categories (Source: Survey)*

<i>Male</i>	<i>Female</i>
<i>87%</i>	<i>13%</i>

The disproportions between the male and female groups can be explained by the unequal occurrence of the genders in given professions, in particular, the management positions are mostly occupied by men as well as the entrepreneurial path is more often chosen by men than by women.

Table 2 depicts the age categories of available sample and table 3 shows the diversity of respondents according their employment status. As it can be seen, the sample fulfills the designed group: 12% entrepreneurs and 82% employed on managerial position.

*Table2: Proportional Sample Coverage of Age Categories (Source: Survey)*

<i>Year category</i>	<i>1-25</i>	<i>26-35</i>	<i>36-46</i>	<i>47-59</i>	<i>60 and more</i>
<i>Sample differentiation in percentage</i>	<i>0%</i>	<i>25%</i>	<i>31%</i>	<i>38%</i>	<i>6%</i>

*Table 3: Proportional Sample Coverage of Employment Status Categories (Source: Survey)*

<i>Employment status categories</i>	<i>Sample diversity in percentage</i>
<i>Unemployed/Part time or seasonal employment/Student</i>	<i>0%</i>
<i>Full time employment</i>	<i>82%</i>
<i>Entrepreneur</i>	<i>12%</i>
<i>Retired</i>	<i>6%</i>

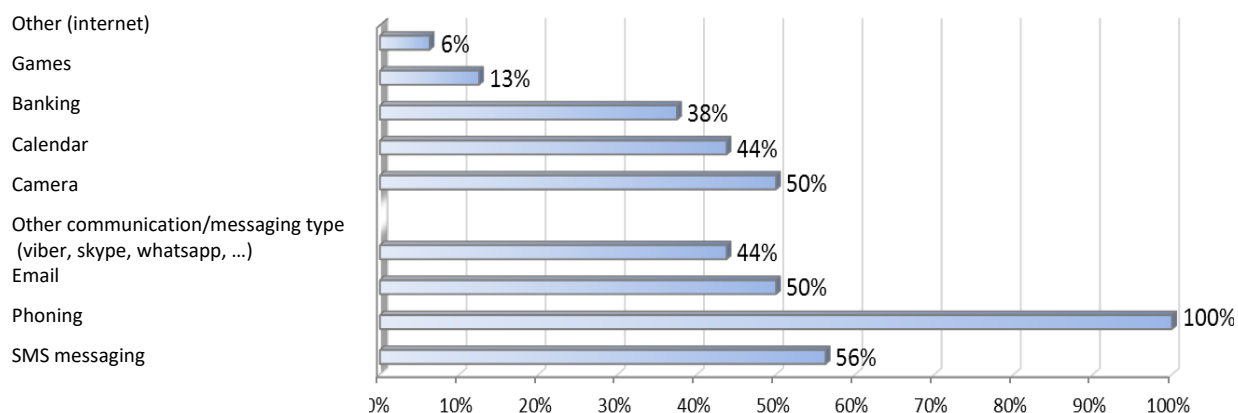
Further preselection of the sample was done by the premise of smartphone ownership/possession. This condition was fulfilled by 94% of all respondents. Therefore, the collected data is being considered as representative for the purpose of conducted research.

#### 4. RESEARCH FINDINGS AND DISCUSSION

For the convenience of the reader the research findings are divided into separated subchapters followed by corresponding discussion.

##### 4.1. Types of most frequently used services provided by smartphone

Smart phones incorporate a variety of separate appliances. The synergy of all these gadgets integrated into one powerful device enables innovative ways for its use (Guenaga, Mentxaka, Eguiluz, Romero and Zubia, 2012, pp. 1-3). Smartphones dispose of phone, email client, web browser, camera, GPS functionality, computer and organizer features (Charlesworth, 2009, pp. 32-33; Dávideková, 2016, p. 314-316). Yet, how are these features of these mobile tiny wonders utilized? The answer for this question provided by the respondents is depicted in fig.1.



*Figure 1: Types of Most Frequently Used Services (Source: Survey)*

The phoning is being used by all survey participants, what represents the main purpose of a mobile phone device. Various types of messaging (SMS, messaging clients over internet) are being used by up to 56% and email client is utilized by 50% of respondents.

The low use of games (only 13%) shows that the entrepreneurs and managers perceive their smart phone more than a powerful business tool than a playful utensil.

The use of smart phone for the service of a camera (50% of respondents) may indicate also the use of the feature instead of office appliance like scanner or fast notebook, where shooting a photo is much faster than writing it down.

#### 4.2. Most frequent communication channel

Variety of communication channels integrated in a smart phone includes oral (phoning) and written (messaging) communication as well as the visual conversation in form of a video chat. Written conversation is the only one of mentioned types that allows asynchronous communication. The most associated embodying of it in virtual environment depicts the email. A synchronous version of written communication represents the instant messaging, that facilitates written communication between users in real time.

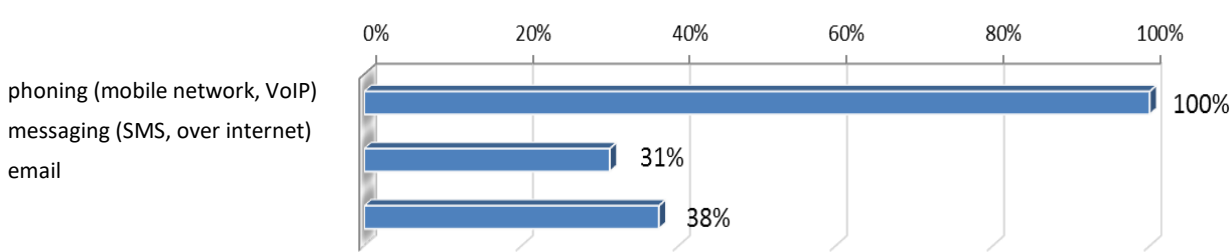


Figure 2: Most frequent communication channel for work issues (Source: Survey)

If compared to the communication in private life that is mostly executed orally and visually, the preferred communication in business environment is written conversation. The results of the survey depicted in fig. 2 and 3 surprisingly show that the entrepreneurs are using oral conversation (phoning) more frequent in business activities than in private life: Phoning was used by 100% in work issues and only 88% in private issues.

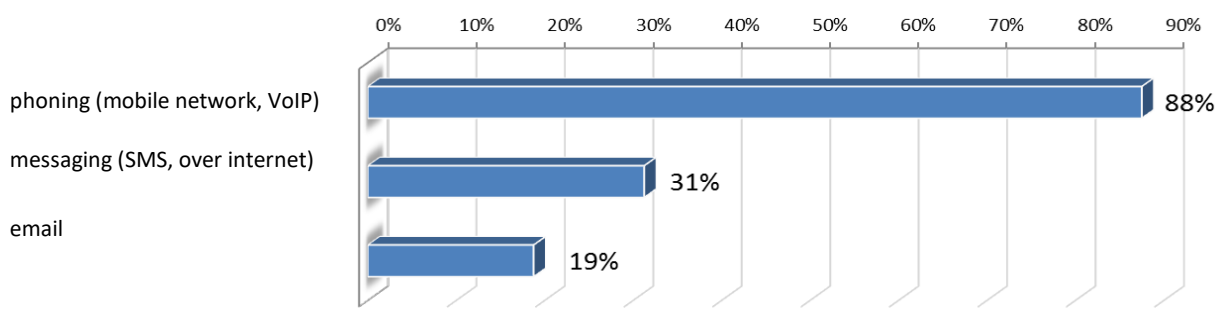


Figure 3: Most frequent communication channel for private issues (Source: Survey)

#### 4.3. Response time

Today's world is characterized by dramatic turbulent changes shaping the business environment (Achrol, 1991, pp. 77-93). The omnipotent availability of smart phone services for contacting a

person allows a fast response to an impulse provided by the technology. The technology mirrors the current need of instant response to the dramatic and turbulent changes through its features and possibilities (Ivanochko, Urikova and Greguš, 2014, pp. 515-518).

As depicted in fig. 4, from 19% to 62% of all survey participants respond to information received through emails or messaging immediately after receiving. This fast and instant reaction enables faster processing in a business operation and enables the shortening of the task execution (Dávideková and Greguš, 2016, pp. 102-107) bolstering the productivity and efficiency on this way (Hidalgo-Peréz, O’Kean Alonso and Rodríguez Lopéz, 2015, pp. 450-451).

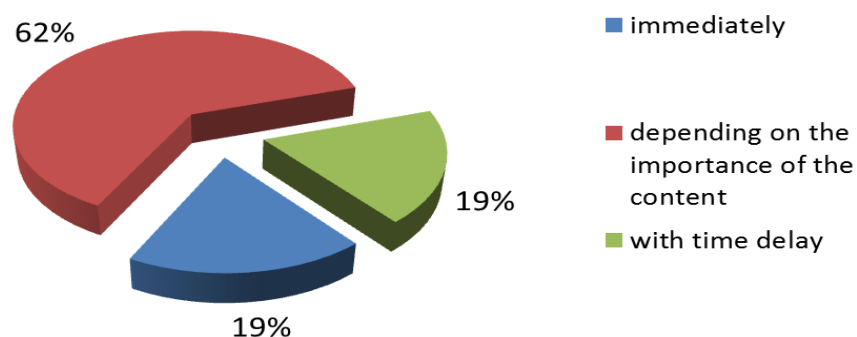


Figure 4: Time to Response to a Message/Mail by Respondents (Source: Survey)

#### 4.4. Reasons for the preference of a smart phone perceived by respondents

Through all the possible and innovative applications of a smart phone device, the powerful invention found its place in every aspect of our lives. Boasted by the immense utilization, smartphones penetrate many facets of our everyday activities (Wang, Xiang and Fesenmaier, 2014, pp.1-4).

The research team aimed to address the awareness of the end users of the utilization of smart phones. In other words, why do they choose this appliance and not the traditional phone? The answer to this inquiry may highlight the most valued attribute of it the customers appreciate at most.

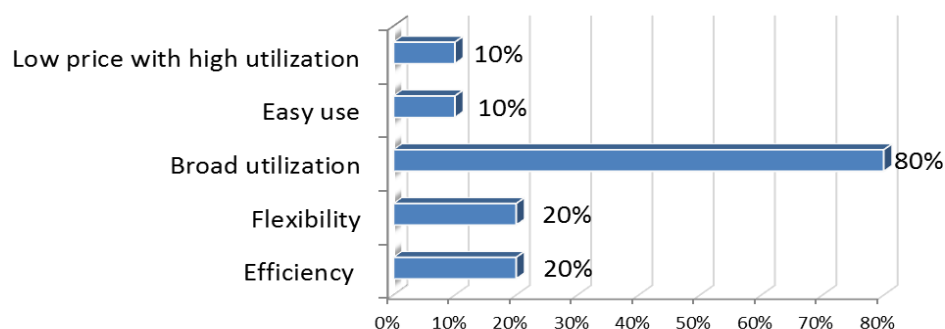


Figure 5: Reasons for Use of Smart Phone (Source: Survey)

The most appreciated added value of a smart phone in comparison to a traditional phone is the broad utilization of it through the applications it provides at hand. This could be also expressed through the formulation: “*incorporates everything I need*” provided by one of the respondents. As interesting can be seen the fact, that no of the respondents submitted the dimensions, size and weight of the handheld computer. The answers to this inquiry can be taken as unconscious

perception of the smart phone importance for the end users that is directly addressed by the subsequent subsection.

#### 4.5. The significance of a smart phone perceived by respondents

The ubiquitous technology that combines so many appliances in one powerful device (Nichols and Myers, 2006, pp. 60-63) became indispensable for many users, especially young generation became nearly inseparable from their phones (Porath, 2011, pp. 86-99). Smartphone, the all-rounder, fosters any activity through the offer of several features and services enabled by integrated applications and connection to the internet. The smart device mediate the access to everything we need:

- It represents the source of information provided via connection to the internet: notifications, searching the web, emails, etc.
- It enables oral conversation through phone call connection and written communication via messaging or emails.
- It facilitates visual communication through video call.
- It allows entertainment in form of playing games, watching videos or playing music.
- It develops and enriches the skills and knowledge through information or e-learning.
- It makes it possible to shoot and share photos: to keep records of experiences, to take fast notes, to make a copy of a document...

The device represents a very useful utensil that is so small, handy and light that it can be always at hand. All its features can be integrated in execution of business operation. Respondents appointed their smartphone as an essential work tool for business world (fig. 6).

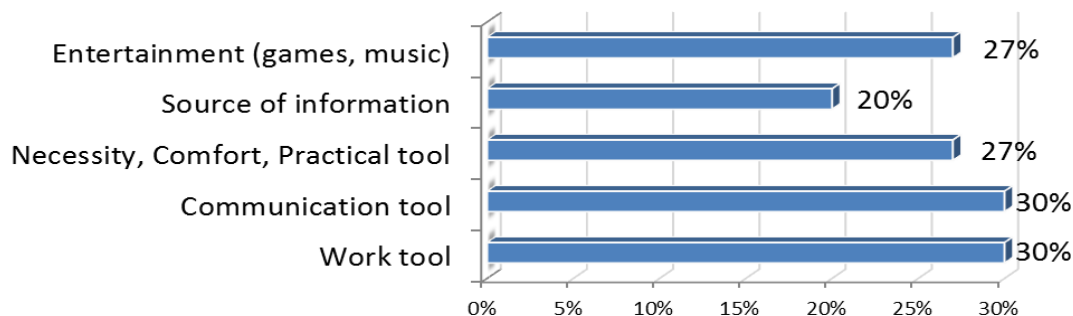


Figure 6: The Perception of Smart Phone by Respondents (Source: Survey)

## 5. CONCLUSION

This paper deals with some aspects of the mobile information and communication technology that are enriching our lives in every facet. The emergence of smart phones, the tiny powerful devices that incorporate a bundle of individual handy appliances into one handy gadget, creates new opportunities of innovative utilization of smart phones in business environment. Through the omnipotent availability and unlimited reachability and connection, the smart phone fosters the shortening of processing cycles and operations in business activities. It allows to instantly react to important issues even outside the regular office or working hours.

The research described in this paper conducted in form of a complex survey among business professionals included identification of most frequently used features of smart phones aiming to determine the most appreciated added value on end user side. The assessment of the smart phone importance was done directly by interrogating the respondents and evaluating their aware responses as well as indirectly by assessing their answers to inquiries dealing with communication channel uses and response times as the communication represents the most important facet of business



operation. The conducted research represents an explorative examination of the actual use of smart phone potential in actual business practice.

The great possibilities of smart phone utilization represent object of continuous research endeavors of many researchers around the world. The theoretical use of smart phones synergic features that provide augmented working environment are being researched in countless publications. However, the actual uses of these devices by the entrepreneurs and managers in practical business life are still limited. Gaps between the theoretical and practical utilization provide a large room for improvement, innovations and support of science towards the business world. Despite these gaps, the smartphone denotes an essential work tool for business professionals already today (fig. 6).

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## INVESTMENT CRITERIA OF THE SUCCESSFUL START-UP ACCELERATORS

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### ABSTRACT

*Start-ups are a part of SMEs, but there are specific due to their global potential, innovative idea, scalable and repeatable business model. There is an increasing rate of SMEs and Start-ups in recent years. It is clear that Slovakia has a high innovation potential and significant development begins in the area of Start-ups. Accelerators and incubators are deeply connected with Start-ups. Mentioned institutions offer financial and nonfinancial support to Start-up projects. Moreover accelerators are a source of venture capital and their fund chosen projects. Strategic and project management in accelerator has specific traits and rules. Founders and owners of accelerators are often experienced entrepreneurs, business angels, moreover venture capital funds or even governments. Business accelerators invest venture capital in Start-up members of their acceleration program. Mentioned institutions use several investment criteria which often differ. The US and UK accelerators use several metrics and schemes, but there are new trends in investing to Start-ups in newer institutions and in several countries.*

*In the following publication we analyze processes in accelerators and their investment criteria. We will focus on acceleration programs, investment decision-making, and a business model scheme. The research will be based on case study of real Slovak accelerator operating in conditions of Slovak ecosystem and data collected within well-known global accelerators. The result of the publication will be the list of relevant criteria useful for Start-up accelerators in Slovakia or all over the world which want to value their investment properly.*

**Keywords:** *accelerator, Start-up, investor, venture capital, investment criteria*

### 1. INTRODUCTION

The research in Start-ups of the Slovak Republic is still an innovative topic about which there is just a small amount of scientific publications. This article provides valuable information about the issue of accelerators and incubators. Start-up accelerators occur worldwide and use a variety of performance metrics and investment criteria. Some accelerators operate as private companies, non-state-owned enterprises and non-profit companies. Acceleration programs are not standardized and vary between different accelerators in different parts of the world.

### 2. LITERATURE REVIEW

In recent years, the business environment has undergone several changes including financing new business ideas. It has today several new modern forms. In the US, the support of Start-ups through

incubators belongs to the traditional type of assistance to new businesses. Incubators are generally institutions providing non-financial support to projects in their incubation programs. The greatest amount of financial support in recent years has been provided in the form of venture capital, which we will discuss in the next part of the paper. Venture capital is already in some cases of financing projects in the initial stage of the idea or just the sketch of business model. Accelerators are mixed forms of the incubator and venture capital, because they provide financial support to members of the acceleration program.

## **2.1. Accelerators**

Business Accelerator is an intense (typically three-month) sales program that includes mentoring, training activities, networking and focusing on fast-growing companies that at the end of the program will present your idea to investors. Usually, the entrepreneur moved into shared office space with other new founders and for some time under the control of consultants and experts that accelerated the growth of their future business. (RENTKOVÁ, K. – ROŠTÁROVÁ, M., 2016, p. 1945). In exchange for professional consultancy and link to the investors who will provide them with venture capital accelerator gets a share in future company.

Term accelerator can determine the organization to which business Start-ups enter and leave it as a group of people who passed through a well-defined and time-bound exercise program. It usually takes from three to six months. At the end of their program Start-up accelerator will provide a financial support for the implementation of business plans by the Slovak Business Agency definition and take into account the earlier practice of the US accelerator. Provision of capital may occur at the beginning of the acceleration program, which may have different lengths. (SBA, 2014)

## **2.2. Venture Capital**

Venture capital is defined as a source of financing for new businesses. Venture capital funds pool investors' cash and loan it to Start-up firms and small businesses with perceived, long-term growth potential. (Rentková et al., 2015). Venture capital is the most important way of funding Start-ups that do not have access to their own capital. Described capital entails high risk and potentially high returns for the investor. There are several types of venture capital and they differ in Start-up's stage and amount of investment. Individual investors usually invest mainly one type of capital. (SBA, 2014)

Venture capital is aimed primarily at companies which are unable to raise funds for initiating and developing a common external source (eg. Bank loans). Venture capital consists of two types- private equity capital and venture capital. Some authors consider private equity capital and venture capital as synonymous. The publication of the two terms distinguished.

Pre- seed capital is used for financing of ideas and research projects with the goal of building a successful company around it in later stages. Pre- seed start-up are working on the business model and description of value creation for future customers. (KOTTULOVÁ, J., MITKOVÁ, E., 2016, p. 340)

Seed capital represents sources used for market research and all activities before company's establishment. Investor finances the testing of investee's entrepreneurship with seed capital. Seed financings may be directed toward product development, market research, building a management team and developing a business plan (RENTKOVÁ, K. – ROŠTÁROVÁ, M., 2016, p. 1945). A genuine seed-stage company has usually not yet established commercial operations - a cash infusion to fund continued research and product development is essential. These early companies are typically quite difficult business opportunities to finance.

Start-up capital is applied to overlap initial costs including purchase of new machinery and equipment, purchasing of technologies, development of technologies, initial costs for marketing etc. Start-up capital is used for financing of start-up for the first two years of operation. (MILLER, P.- BOUND, K., 2011, p. 10)

### **2.3. Investment criteria**

Investment decisions are based on its importance rank among the company. The main objective of the investment decision is the differentiation of projects that will be realised in the company and therefore will have to invest resources and vice versa exclusion projects, unsuitable for investment. Success of individual projects is for business prosperity. This is a priority strategic decision-making nature in line with corporate strategy, strategic goals and contributing to their implementation.(VALACH, J. et al. 2010, p. 14) Investment projects increase the total value of an organization that is the subject of selection criteria and evaluation of mentioned projects. The investment can be explained as an activity to increase the amount of tangible and intangible assets of the company.

Among the specifics of investment decisions compared to the general economic activity we should include: (KOMORNÍK et al., 2015, p. 35)

- Long-term decision making on average within 5 to 10 years
- Increase of the risk of initial expectations of return the company
- Capital-intensive operations associated with high initial investment exceeding possibilities of individual or economic entity
- Difficult coordination of participants of the investment process
- The use of new technologies, products, processes or know-how
- Possible serious consequences for infrastructure and ecology

Start-ups belong to forms of small and medium enterprises. Making an investment decision about Start-ups can be based on the theory of investment decision-making in enterprises. There are three basic criteria for financial investment decision as following: (BREALEY et al., 2008, p. 11)

1. The financial profitability of investments, respectively, completely all net income that the investor will receive from the time of the capital injection until the final investment income.
2. The risk rate of investments is measured by the level of risk associated with the possibility that the expected revenue achieved. For the calculation of investment risk is used variance and standard deviation from the mean income of the investment.
3. The liquidity of your investment, which is directly related to the rate of cash received in the sale of the object of investment, typically securities.



In practice, the criteria with a maximum value can often be prevented. Achieve maximum yield is not possible with minimal risk and high liquidity level. On the other hand, with low risk and with maximum liquidity can be achieved only small revenue. For example, profitability ratios reflect the return on investment and are one of the most common ways of measuring it.

Šlahor distinguish following basic methods of evaluation of investment projects: (ŠLAHOR, L., BARTEKOVÁ, M. 2016, p. 1350).

1. Maturity of the project or Discounted Maturity
2. Net Present Value
3. Internal Rate of Return or Modified Internal Rate of Return
4. Profitability Index

The payback period of the project is a static method of assessing capital investment and the simplest form of measuring the economic efficiency. The payback period is the time it takes for cash proceeds settled cash outflows related to the project. For a given period, the investment will repay itself from the income it generates and entrepreneur has a zero profit. If we compare multiple projects, we will give a priority to those which have a shorter payback period. The time factor is neglected in calculating the payback period. On the other hand the discounted payback includes time as an important factor and reduces the value of the future cash flows of capital costs expressed discount rate raised to specific years of the project life, where cash flows are created. When calculating the net present value of a project must find the present value of each cash flow generated in each time period, so cash receipts and expenditure. The declared value of the discounted cash flow includes an invested capital. (VALACH, J. et al. 2010, p. 14)

Profit Net Present Value of the project is the the sum of project discounted cash flows. If the result is positive, then the project should be accepted and implemented. In case of a negative net present value of the project it should be rejected. When we compare more mutually exclusive projects, we take one that has a higher positive net present value. (ŠLAHOR, L., BARTEKOVÁ, M. 2016, p. 1352)

Internal rate of Return of the project is therefore the expected return. If the internal rate of return greater than the cost of capital invested is often represented by a weighted average cost of capital, the project adds value to owners and can be realized. (ZIKMUND, M., 2010, p. 11). Profitability Index or Rentability is equal to the present value of the project income and the present value of the project costs. The project is acceptable if the profitability index greater than 1.0. The larger the index value profitability, the higher the value of the project.

Productivity, investments, return on capital employed and return on invested capital in the long term is determined by using profitability indicators. It is a term that refers to total investment earnings. This is a basic indicator measuring investment. The profitability of the company needs to know the financial analysis in analyzing ratios. Profitability is often used in decision- making about activities excluded from the company or vice versa, if the business plan on future activities. And profitability is often a part of the incentive component of remuneration management. (ZIKMUND, M., 2010, p.11). Return on investment is a popular indicator that rather than within the corporate ratings used for assessing individual investment projects. The company calculates it for potential investors and actual shareholders who want to find out what is the return on investment. It is

calculated by dividing the profit or loss for the current period and investment amount. (KOMORNÍK et al., 2015, p. 35)

The decision to invest in a new project often means more business opportunities for the company and its management. Each project or Start-up, which expands business opportunities for the enterprise means certain options with a positive value, also called managerial option. If the project has a positive value managerial option, its value for the owners and management is higher. The net present value calculated from the discounted revenue and expenditure of the project is higher too. (ŠLAHOR, L., BARTEKOVÁ, M. 2016, p. 1350).

## **2. METHODOLOGY AND DATA**

In the practical part of the publication we will focus on the analysis of business accelerators and investment criteria they use during decision-making about new Start-up projects. We use the method of comparison when comparing acceleration programs, investment decision criteria and the business models of three selected accelerators. Objects of research are: world-famous business accelerator Y Combinator, TechStars and Slovak accelerator Flemio. The research will be based on case studies of accelerator Flemio, operating in the Slovak Start-up ecosystem. The author conducted accelerator in its scientific research and also has, in view of her job position, a direct impact on strategic decisions accelerator and thus access to the necessary information. Also we will use data collected from other accelerators surveyed through a questionnaire survey and secondary analysis of statistical data provided by the University of Berkeley. The output will be a list of relevant investment criteria applicable for accelerators in Slovak and global conditions that wish to accurately assess their investment.

## **3. RESULTS**

Y Combinator is referred as the oldest business accelerator focused on Start-up projects. It was founded in 2005. It is located in Silicon Valley, California. It became a model for accelerators in the America, Europe and worldwide. Y Combinator invests twice a year a smaller sum of money to a large number of Start-ups. In the last cycle he has invested over 120 thousands of dollars into 107 projects. Acceleration program ends with a Start-up presentation to investors at Demo Day. In 2011, investors Yuri Milner and Ron Conway offered investment of 150 000 dollars for each Start-up, which has undergone the program of Y Combinator. A mentioned remarkable validation of the business model helped founder Paul Graham to create an Y Combinator brand. The company has changed into the world's best known accelerator. (Y Combinator, 2016)

An original feature is undoubtedly the way of investing in batches, respectively series. In one year Accelerator invests in two series, each with a separate cycle. Accelerator supports a large number of Start-ups in one cycle. The method of funding helps to develop synergies between Start-ups that are in various stages of the life cycle and they can assist each other.

Since the founding Y Combinator in 2005 the institution has supported more than 1,173 projects. Accelerator earns about 2 million per year only from successful exits.

The main objective of acceleration program is to successfully pass the initial stage of Start-up life cycle and to help Start-up to build something that is sufficiently exceptional, so that the project will receive funding for the achievement of other milestones. In addition to the main goal of the accelerator it focuses on the process of negotiation with investors and the acquirers. Much emphasis

is placed on guidance in communication or initial presentation to investors including the negotiation about shares and taking decisions on acquisitions.

Y Combinator accelerator program offers members the financial resources. They need to cover their expenses during the running of the program. The investment is historically at an average of 20,000 dollars. The initial stage of the project life cycle has several phases according to the type of project. Ycombinator provides venture capital for the very first milestone. Start-ups are later introduced to investors who can finance other phases.

Accelerator TechStars now operates in four cities in the United States. It inspires and supports a network of associates in different countries. Currently it produces the entire ecosystem to help entrepreneurs build their businesses. David Cohen and Dale Felt created the accelerator TechStars in Boulder, Colorado, with hope to transform and strengthen Start-up ecosystem in the region in 2007. Today accelerator TechStars supports along 762 Start-up projects, of which 90% were successful. (TECHSTARS, 2016)

The targets of Techstar can be summarised as the investment assessment and the ecosystem improvement. TechStars is currently known for its numerous exits, and as the only accelerator ever prove the multiple exits. Techstars Start-ups received investment in 75% of cases. Then they could continue in life cycle after the succesful completion of acceleration TechStars and a presentation to investors.

TechStars was originally founded to improve Start-up ecosystem in the US, but founders are trying to improve an ecosystem worldwide via the huge network built from accelerators, investors and mentors, called Startup network.

TechStars provides investment into Start-ups in its program. Accelerator has funded more than 800 projects. The connection with future capital is a crutial benefit for the members of the accelerator program. Investors can provide capital for next stages of Start-up life cycle.

Flemio is currently the youngest accelerator in Slovakia. It was established in 2014, but the first beginnings of the idea have already occured in 2013. The Flemio concept has evolved from the decisions of business angels and Start-up enthusiasts to help talented people and transform their ideas into real business. Flemio currently has ten internal employees and five Start-ups. It's a small accelerator working according to the scheme of American accelerator. Acceleration program lasts one year and the aim is to create a Start-up from surviving firms prepared to obtain finance from venture capital investors with a return on your investment within two years.

Flemio is very uncommon, because only this accelerator focuses on ideas and Start-ups at the very beginning of the initial stage. It is original not only in the Slovak Republic, but also within neighboring countries. It is innovative in the personal mentoring access and in the support of Start-ups. Flemio supports projects through creating a prototype and negotiating with investors. (ROSTAROVA, 2015, p. 239)

Flemio is focused on the information technologies sector, such as previous accelerators. The focus is logically chosen by the experience of the founders. Accelerator was closer dedicated and invested in various projects. Today, the accelerator is trying to more specialize in software products in

comparison with hardware Start-ups. A minimum viable product is easier to define and to create. The accelerator is a private company and its objective is to generate profit. The goal is not a priority because the main objective is to build functional and independent companies.

Slovak Start-ups ecosystem is specific and very immature in comparison to the US but also to the countries of Western Europe. Flemio whole team wants to work on improving the ecosystem in Slovak region, as well as on engaging in scientific activities in the field of Start-ups. Flemio tries to implement projects that will enrich the ecosystem.

The owners of the accelerator provide cofinancing to Start-ups. The accelerator provides investment mainly through human resources that work on the project. Investment amount is variable and ranges between 20,000 and 100,000 euros. The accelerator is involved in covering the travel and entertainment expenses, but does not pay wages to founder of Start-ups. Flemio is a small accelerator that provides incubation of a maximum of five projects per year. The initial acceleration program lasted one year, but for now passes accelerator for a new business model and the acceleration program lasts six months.

### 3.1. Investment criteria of research sample

In the theoretical part of the article we have identified several ways of evaluating potential investments. For these criteria TechStars and Y Combinator use internal rate of return and the payback period.

Management option is used by the management of all surveyed accelerators and reflected always in the focus of the accelerator program. TechStars and Y Combinator emphasize the synergies between the selected projects to each other. Both accelerators under its brand form a network of companies that are able to work together to test their products to make your subcontractors and so on. The net present value of Start-up projects is very difficult to identify in advance. Accelerators are not using it as an investment criterion, as well as in their successful projects it is very different. Similarly profitability index is not a predictable indicator of Start-ups.

Internal rate of return, according to the statistics of accelerators averaged 13.3 percent. The questionnaire survey reveals that this example in the case of Y Combinator's internal rate of return of investment in recent years from 23 to 25 percent.

Table 1: Financial results of accelerators (authors' work according to own research and  
www.seeddatabase.com)

Financial result	Value
Average investment	\$20,000
Average share in projects	6%
Average number of projects/ year	20
Investment/ year	\$400,000
Revenue of investment/ year	\$1,400,000
Payback time	3,5 years
Internal Rate of Return	13,35%

Payback period is estimated at five years, when Start-ups pass through all stages of their life cycle. Both studied accelerators - Y Combinator and Techstars- however, indicate an average payback time of 3.5 years. Table 1 is prepared on the basis of research performance accelerators at the University of California, Berkeley. It captures the average results of test elements 186 accelerators in different countries.

#### 4. CONSLUSION

In this article we examined the institutions called Start-up or business accelerators. We have defined a business accelerator as an institution that provides the same benefits to Start-up project in financial and non-financial forms, such as investment, working space, mentoring, education, etc., in exchange for equity stakes in Start-ups. We analyzed the acceleration programs of three accelerators and Y Combinator, TechStars and Flemio. They are different institutions, but it is possible to find many links between their programs. For accelerator Flemio can be based in comparison to world leaders Y Combinator and TechStars advised to focus more on building its brand. It will bring its portfolio of projects many important contacts and the possibility of obtaining additional investment. It is harder to tap into investment companies and build your brand internationally for Slovak accelerator, but Flemio has a right direction. We focused on investment criteria of Start-up accelerators. The theoretical part of the article summarized that for projects account their profitability, risk and liquidity. We have defined risk capital, which is associated just with Start-up projects and investments of accelerators. Just venture capital is characterized by a higher risk and a higher expected return compared with other forms of capital. It is quite challenging to find out all the investment criteria of accelerators, but we were able to identify the most frequently used. Target value internal rate of return is 13, 35 percent according to the different samples of examined accelerators. Annual investment in the project would return 3.5 times. The optimum share of Start-ups is 6 percent, with an aliquot amount of investment is 20 thousand dollars. It is necessary to note that the results are the average and individual results vary considerably within accelerators. Table investment criteria and the case studies of TechStars and Y Combinator provide clear guidance for Flemio and future worldwide successful accelerators.

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# A HYBRID GENETIC ALGORITHM FOR AIRLINE CREW PAIRING OPTIMIZATION

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## ABSTRACT

*Airline operational problems associated with flight scheduling, aircraft scheduling and crew scheduling are usually solved in two phases: crew pairing and crew rostering and management of irregular operations. Each problem has its own complexities. This study examines the crew pairing problem, one of the most comprehensible problems encountered in airline planning. The study aims to generate a set of crew pairings with minimal cost, covering all flight legs and fulfilling legal criteria. Drawing from the previous studies which seek to solve the crew pairing problem through genetic algorithm, the present study proposes a hybrid genetic algorithm approach. To test the algorithm, optimal crew pairings have been generated by making use of the flight data obtained from an airline company operating in Turkey.*

**Keywords:** *Airline crew pairing, Set covering, Genetic algorithm, Heuristics*

## 1. INTRODUCTION

The airline industry widely utilizes operations research techniques since the 1950s (Barnhart and Talluri 1997). Operations research models have had an enormous influence on operations and planning within the airlines industry. The fundamental airline problems can be classified as operational and planning problems. The airline crew scheduling problem is one of the most important planning problems by all airline companies because the total crew cost, including salaries, benefits and expenses is the second largest cost, after the fuel cost, for airlines. (Bazargan, 2004). Unlike the fuel cost, a large portion of flight-crew expenses can be controlled (Anbil, 1992; Pavlopoulou et al., 1996; Desaulniers et al., 1997; Klabjan et al. 2001; Barnhart and Cohn 2004; Kohl and Karisch 2004; Deng and Lin 2011). Also airline crew scheduling problem is an NP hard which means it cannot be exactly solved in a reasonable computation time (Klabjan et al., 2001; Ekenback, 2002; Barnhart et al., 2003; Souai and Teghem, 2009; Deng and Lin 2011; Zeren and Ozkol 2012; Azadeh et al., 2013; Aydemir-Karadag et al., 2013; Deveci and Demirel 2015).

The airline crew scheduling (ACS) is generally divided into crew pairing problem and crew rostering (or crew assignment) problem. In this paper, we focus on the first stage of the crew pairing problem. The aim of the airline crew pairing problem (CPP) is to generate a set of minimal cost crew pairings covering all flight legs. We present a two stage model for the airline CPP. These stages are crew pairing generation and optimization. The model has been formulated as set covering problem. In this study, we have applied an evolutionary algorithm, including genetic algorithm (GA) and a hybrid genetic algorithm (HGA) with integrated local search for solving the crew pairing problem.

## 2. RELATED WORKS

There have been several genetic algorithms based on meta-heuristics studies in the literature for the crew scheduling problem. In these studies generally SP (set partitioning) or SC (set covering) are considered for solving the crew pairing optimization problem. Beasley and Chu(1996) proposed a genetic algorithm-based heuristic for non-unicost set covering problems. Levine (1996) presented a hybrid genetic algorithm which consist of a steady-state genetic algorithm and a local search heuristics. Ozdemir and Mohan (2001) studied a genetic algorithm applied to a flight graph presentation that represents several problem-specific constraints. Kerati et al. (2002) demonstrated how to solve the global airline crew scheduling problem by a genetic algorithm method. Kornilakis and Stamatopoulos (2002) used a two phase procedure for crew pairing problems. Chang (2002) utilized a genetic algorithm for aircrew-scheduling model. Souai and Teghem (2009) presented a methodology is based on a hybrid genetic algorithm. Azadeh et al. (2013) proposed a particle swarm optimization (PSO) algorithm synchronized with a local search heuristic for solving the crew scheduling problem. Moreover, two other hybrid algorithms based on GA and ant colony optimization (ACO) algorithms have been developed to solve this problem. Zeren and Ozkol (2012) examined a new solution of the crew pairing problem using genetic algorithms. An overview of previous work on relevant genetic algorithm studies is provided in Table 1.

**Table 1:** An overview of some previous studies using genetic algorithm in airline crew scheduling problem.

Author (Year)	Crew Pairing	Crew Rostering	Problem Type	Application	Flight Data	Data Access	Airline/ Country	Formulation
Beasley and Chu (1996)	x	-	-	Random generated	-	Private	-	SC
Levine (1996)	x	-	-	Real	-	Private	-	SP
Ozdemir and Mohan (2001)	x	-	Daily	Real	-	Private	-	-
Kerati et al. (2002)	-	x	-	-	-	Private	-	-
Kornilakis and Stamatopoulos (2002)	x	-	Monthly	Real	2100	Private	Olympic Airways	SC
Chang (2002)	x	x	Weekly	Real	about 700	Private	Taiwan	-
Souai and Teghem (2009)	x	x	Daily	Real	up to 631	Private	-	SP
Zeren and Ozkol (2012)	x	-	Monthly	Real	714	Private	Turkish Airlines	SC
Azadeh et al. (2013)	x	-	Daily	Random generated	25, 50, 100 and 150	Private	-	-

## 3. AIRLINE CREW PAIRING PROBLEM

Crew pairing problems seek to find the crew pairing with minimum cost which would meet the needs of each flight leg on the schedule. Flight schedule is used as an input at this stage. Then, duties and pairings are generated according to the rules laid down by airline companies, Directorate General of Civil Aviation (DGCA) and the Federal Aviation Administration (FAA). Fig. 1 shows the duties and crew pairings generated in line with the flight legs used in the flight schedule. The following definitions are used in addressing the crew pairing problem (Bazargan, 2010):

**Duty:** A working day of a crew may consist of a few flight legs. The period of a duty is determined by FAA regulations as well as by individual airline company rules or crew unions. For example,

one of these rules: airline pilot or cabin crews cannot total fly more than 8 hours and total duty time 14 hours in a 24-hour period.

**Sit connection:** A connection during duty is called a sit connection times. Generally, airlines consider minimum and maximum sit connection times, generally between 30 minutes and 3 hours (sometimes 4 hours).

**Rest:** A connection between two duty period is called to as rest, layover or overnight connection.

Fig. 1 shows a pairing that begins and ends at the IST Airport, a local airlines crew base in Turkey. This figure represents an illustration of a pairing that consists of two duties and two-day crew pairing, showing duty periods, sit time within duty periods, brief, debrief, overnight rests, and sign-in and sign-out times. According to this figure, a crew pairing is a sequence of duty period separated by overnight rest. Generally rest expenses between duty periods: the crew is staying overnight, away from their home base, and thus, the airline has to pay for their per diems, taxi fee, hotel, food, and so on. The first duty period contains three flight legs while the second duty period contains three flight legs and. Both pairing and duty period must observe with FAA, the crew unions, airline company rules and government. The decision rules is provides a legal pairing.

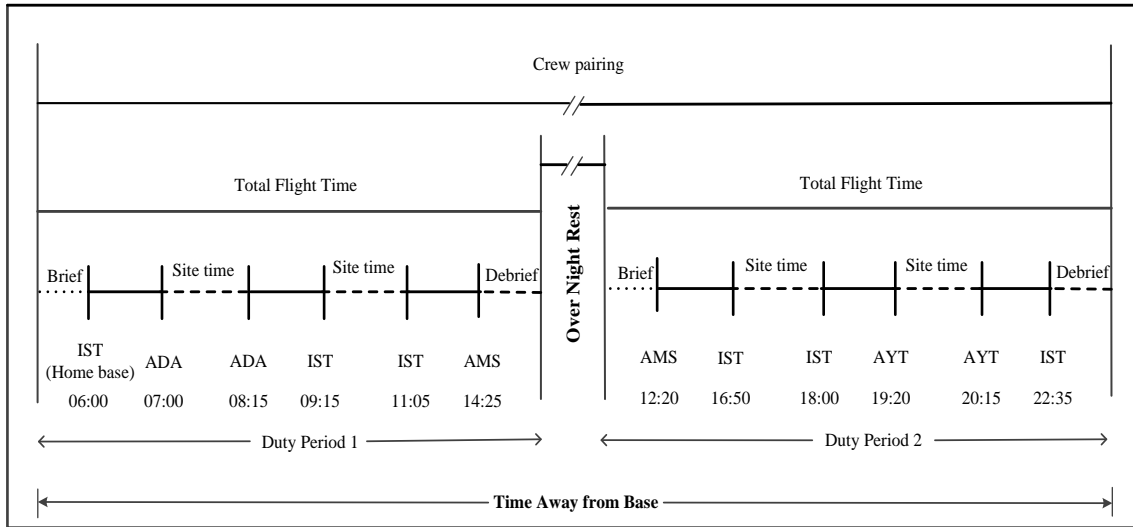


Figure 1: Example crew pairing with IST airport as crew base.

**Deadhead:** Deadhead is a flight in which cabin crew fly from the airport where their last flight duty ends not as crew members but as passengers to the airport where they will perform their new flight duty.

#### 4. PROPOSED METHODOLOGIES

The main purpose of the crew pairing problem is to minimize the total cost of assigning crews to flight legs. The proposed methodology consists of two stages: (1) Crew pairing generation (2) Optimization. In the first stage, all legal crew pairings are generated using the set of flights. A depth-first search algorithm is employed for pairing generation. This algorithm searches in the space of all possible subsets of all flight legs (Kornilakis and Stamatopoulos, 2002). In the second stage, minimum cost crew pairing that covered all the flights at the flight schedule is selected

among the legal crew pairings. The evolutionary algorithms are used in order to solve the CPP. The schematic diagram of the proposed methodology for crew pairing problem is shown in Fig. 2.

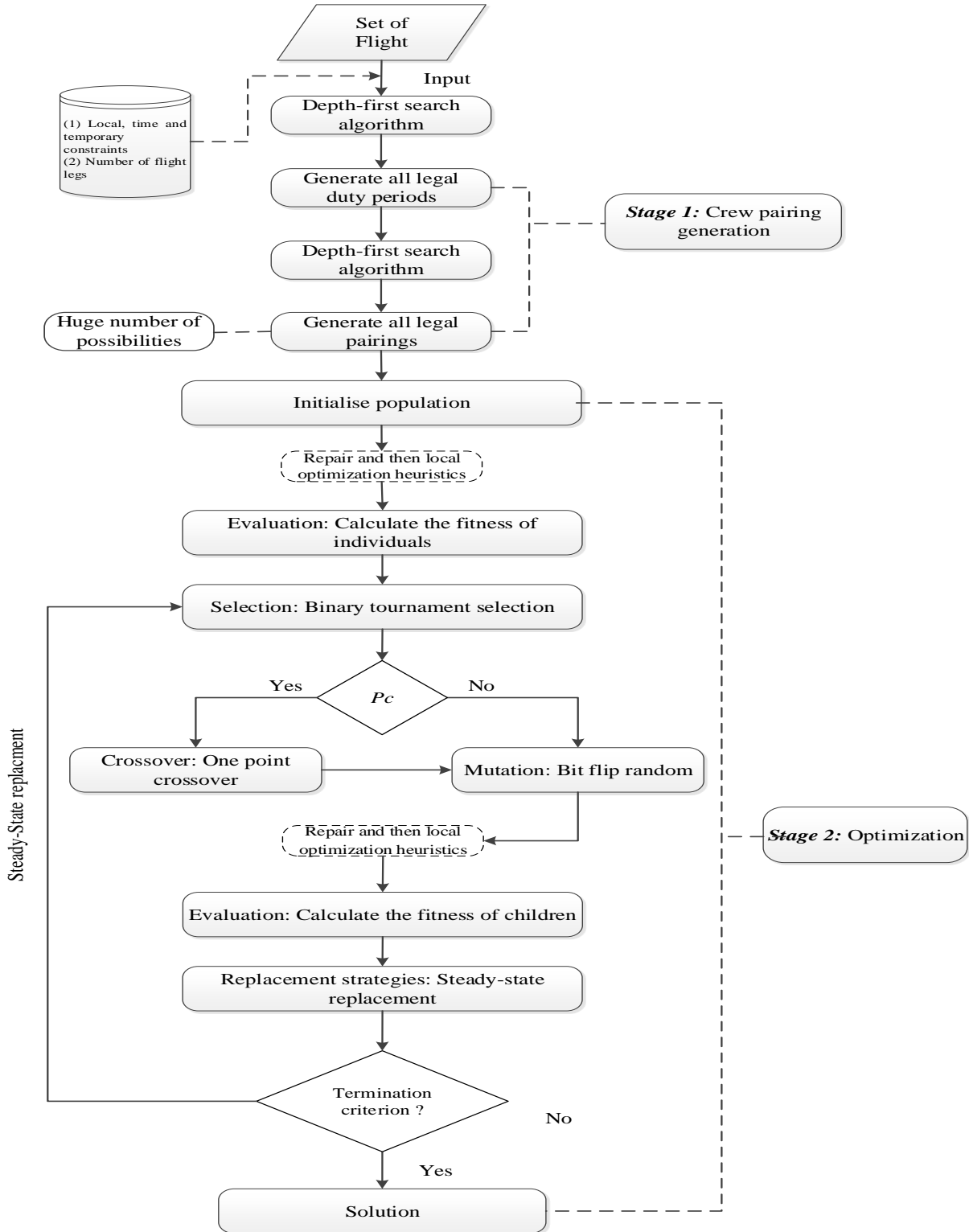


Figure 2: The stages of the proposed methodology.

Population initialization is the first phase of genetic algorithm. In this phase, a random population is created that contains N chromosome. Fitness value of a chromosome equals to the objective function of the problem (Demirel and Deveci, 2016). Fitness function adopted in this study is explained below.

$c_j$  = cost of pairing  $j$

$$\text{Fitness function (Min)} = \sum_{j=1}^p c_j x_j \quad (1)$$

Subject to;

$$c_j > 0$$

$$x(j) \in \{0,1\} \quad \forall j \in P$$

$$x(j) = \begin{cases} 1 & \text{if pairing } j \text{ is selected,} \\ 0 & \text{otherwise,} \end{cases}$$

Following the selection of parent (ancestor) chromosomes that will generate new offspring, they are sent to genetic operators called parent selection, crossover and mutation operators. These operators play an important role in terms of the diversification of chromosomes. Binary tournament selection is adopted in this study as it delivers a better performance when compared to other types of selection operators. One point crossover is utilized in this study. The mutation operator ensures that the algorithm is not stuck at a local optimum, chromosomes in the generation do not repeat themselves and diversity in the population is maintained. We are adopted in bit-flip mutation for this problem. An operator system in which a random gene is altered (bit-flip) is showed in this study.

Child chromosomes generated after crossover and mutation processes are not guaranteed to be feasible. The method suggested by Beasley and Chu (1996) is applied to repair potential non-feasible chromosomes. Non-feasible chromosomes mean the state of non-coverage of all flights. A chromosome must be covered in each leg of flight.

$$\frac{\text{Cost of crew pairing}}{\text{Number of non covered flights included in crew pairing}} \quad (2)$$

A local optimization step is incorporated in order to render the solution algorithm more effective. This algorithm is a local optimization process which ensures that fitness of a chromosome is not impaired once it is made feasible even when it is omitted from the solution set of redundant crew pairings (Beasley and Chu, 1996). Last step of genetic algorithms is population replacement. In this approach, two children are generated in each iteration. Then, this child chromosome replaces the worst individual in the population.

## 5. EXPERIMENTAL RESULTS

In order to examine the performance of the proposed one genetic algorithm and a hybrid genetic algorithm, we have used the crew pairing problem which contains four different instances. Parent selection is performed using binary tournament selection with a tour size of 2. The population size is set 30. The crossover probability is set 0.8. The each generation of an EA, only two children are

generated. It replaces the worst individual of the parent population. The results that were obtained from every two algorithm is given at below Table 2. This table shows the average and best fitness values obtained by each method over 30 runs of four instances, with the best of the two methods average fitness given in **bold** and best fitness given in **underline**.

**Table 2:** Performance comparison of genetic algorithm and hybrid genetic algorithm based on average fitness and best fitness obtained from 30 trails for each instance.

Ins,	Flight Legs	Pairings	Standart Genetic Algorithm		Hybrid Genetic Algorithm	
			Average	Best	Average	Best
1	149	4307	44982.5	42783	<b>43778.4</b>	<u>41895</u>
2	208	6711	62024.2	59948	<b>60210.5</b>	<u>56360</u>
3	371	9194	117475.8	112370	<b>114567.2</b>	<u>104985</u>
4	506	11116	167366.4	160312	<b>164243.3</b>	159145

When this graphic is examined, it is understood that best algorithm is hybrid genetic algorithm among these two algorithms.

## 6. CONCLUSION

In this study, some studies at the literature were examined with the aim of solving the problem of crew pairing and a hybrid algorithm was developed for a robust and effective study of the recommended algorithm. We present an approach for the objective minimum cost in airline crew pairing problem. This problem was solved in two stages. At the first stage of the problem, legal crew pairings were formed in accordance with legal restrictions of DGCA (Directorate General of Civil Aviation in Turkey) and special restrictions determined by the airline company. At the second stage, lowest cost crew pairing that covered all the flights at the flight schedule was selected among the legal crew pairings. This selection was done with different evaluationary algorithm. This study compares the performance of two evaluationary algorithms, including Genetic Algorithm (GA) and Hybrid Genetic Algorithm (HGA) for solving the crew pairing problem. It was proved that it was the best hybrid genetic algorithm.

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## GAME THEORY AND ITS APPLICATION IN ANALYSIS OF RELATIONSHIP BETWEEN EDUCATIONAL SYSTEM AND LABOUR MARKET

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### **ABSTRACT**

*Game theory presents a set of interactions which are used in order to bring optimal strategies. It has been recognized and developed in many natural, social and humanistic sciences during the 20th century, with a special contribution from John von Neumann and John Nash. This paper deals with game theory application in the relationship between educational system and labour market, which are not sufficiently coordinated in Croatia, though the problem is recognised by relevant Croatian institutions. Croatian Government, Ministry of Science, Education and Sport, and Ministry of Labour and Social System outline several goals in their most important documents. One of them is the need for harmonisation between educational system and labour market as an important condition of an effective educational system, more productive labour market, and for launching of a number of positive trends in economy. This paper aims at presenting available strategies and finding optimal ones by using game theory. The analysis is based on assumed values which means that solutions are not specific. It demonstrates the perspective and meaning of game theory as a method of making optimal strategic decisions for both dominant partners of the Croatian Government.*

**Keywords:** *game theory, educational system, labour market, strategy*

### **1. INTRODUCTION**

Game theory presents a set of interactions which create analytic base for making decisions, often in risky and indeterminate conditions. When decisions include more participants and have big influence on specific community, all strategies in game theory have to be presented and analysed in detail in order to find optimal solution that will bring the biggest benefit or the smallest damage to players and community. Formal establishment of game theory is the publication of the book "Game theory and economic behavior", written by John von Neumann and Oskar Morgenstern in 1944. The problem presented in this paper refers to harmonisation of the educational system and labour market needs, while the subject of research is game theory and its application in the process of harmonisation of the educational system and labour market in the Republic of Croatia. The goal

of this paper is to find the optimal strategy to enable higher employment rate, especially for young people, and greater competitiveness and efficiency of the entire Croatian economy. The hypothesis assumes that bringing the optimal strategies in process of harmonisation of the educational system and labour market, and making proper allocation of funds can improve development of Croatian economy because of oriented knowledge, motivation, and preparedness of employees, especially the young ones, to work.

## 2. BASIC FEATURES OF GAME THEORY

Game theory is a scientific discipline which describes different conflict situations and finds appropriate models for their solution. The number of participants is at least two, and the beginning of the game is a moment when one or more players choose one of the available strategies. Strategy is a set of instructions with guidelines what to do in every possible situation during the game. It depends on the expected result of the interaction. The move presents the best alternative between possible alternatives of each player. (<http://userwww.sfsu.edu/langlois/ShortGameTheoryCourse.pdf>). Set of a larger number of moves makes the initial stage of the game. After the first move in the game, the result is a specific situation, which determines who is going to make the next choice, and what are the alternatives. The structure of the game is determined by four elements: the identity of the players, the rules, the result, and payoff. The whole game is based on two assumptions: rationality and general knowledge (Sharma, 2015, referenced by Jadreškić, Cerović, Crnković Stumpf, 2015, p. 3).

### 2.1 The most important concepts and types of game theory

The components of game theory are players, strategies, moves and the presumption of the rationality of each player. There are several concepts and types of games, very important in game theory:

**Nash's equilibrium** – the basic premise is that any change or selection of a new strategy influences the choice of another player or players. Players in Nash's equilibrium make the best possible decision, taking into account the decisions made by other players.

**Prisoner's dilemma** – the model of the game played by two players with two available strategies. The winning strategy is noncooperation. The game is described as a dilemma of two prisoners accused for the same crime (Keček, 2013, p. 80).

**Dominant and dominated strategy** – if some strategy is the best for one player, despite of the potential moves by other players, then it is the dominant strategy. Dominated strategy is a strategy that is obviously bad for the player, despite of the potential moves by other players.

**Pareto's optimal result** – a game solution where the result of one player is better only if the result of another player is worse.

**Game of coordination or assurance** – model of the game similar to prisoner's dilemma, but the winning strategy is cooperation.

Except the listed ones, there are more concepts and models of game theory, like tragedy of commons, the battle of sexes, games based on the number of participants, interests, on the amount of available information, payoffs etc.

### 2.2 A short review of the development of game theory

The first traces of game theory date back to the 3rd century BC, when Chinese philosopher Sun Tzu published the book called "The art of war". In the 19th century economists Cournot and Bertrand developed duopoly games as forerunners of noncooperative strategic games (Drašković, 2005, p. 170). However, the formal establishment of game theory is the publication of book "Game theory and economic behavior" written by John von Neumann and Oskar Morgenstern in 1944.

The authors analysed matrix game with two players and the sum zero, which means that the profit of one player must be equal to the loss of the other player. The Second World War influenced the development of game theory because military strategies were trying to be modeled by it. Shortly after the Second World War, John Nash appeared and popularized game theory with his discoveries. Considering the fact that during the period from 1994 to 2012 even ten economists and scientists won the Nobel prize for economy for their research in game theory, we can conclude that game theory has become one of the most successful branches of economy.

Other important researchers in game theory are Lloyd Shapley, Martin Shubik, R. J. Aumann, Thomas Schelling, Robert Axelrod and Ariel Rubinstein.

### 3. APPLICATION OF GAME THEORY IN THE EXAMPLE OF EDUCATIONAL SYSTEM AND LABOUR MARKET IN CROATIA

In this chapter we analyse the relationship between educational system and labour market, as well as the influence of Government on their harmonisation. In Croatia, the relationship between these two departments is not harmonised. First the game is played by two players, but after the first analyses, the Government will enter the game as the third player. All information will be complete. The sum will not be zero, and the game will be presented as matrix. The model of game theory that is going to be used is the game of coordination.

#### 3.1 The analyses of educational system and labour market in Croatia

The problem presented in the game is reallocation of resources for the goal realization. There are two players: the Ministry of Labour and Social System (MLSS) as a representative of the labour market, and the Ministry of Science, Education and Sport (MSES) as a representative of the educational system. Assumptions are as follows: for both Ministries the Croatian Government made specific, equal budgets for the realisation of the goal, in accordance with responsibilities of both Ministries. The goal of MLSS is the regulation of the labour market and meeting its needs, while the goal of MSES is forming educational programs and providing enrollment quotas for high schools and faculties. Because of limited resources, neither of the two ministries has sufficient amount for meeting their needs. Both ministries have two options – mutual cooperation or noncooperation.

The first Nash's equilibrium and the optimal strategy is **mutual cooperation**. In that case each Ministry will allocate, in agreement, a part of its budget for harmonisation of the educational system and labour market, which will result in a high-quality and effective educational system with highly qualified work force, who will be able to find job immediately after finishing the wanted level of education. Except directly by harmonisation of high school and study programs, as well as enrollment quotas, common goals are realized by grants, supports for businesses, and by improving the system of professional practice.

*Table following on the next page*

**Table 1:** Matrix of available strategies for MLSS and MSES

<div> <div>MLSS (A)</div> <div>MSES (B)</div> </div>	Cooperation (part of budget)	Noncooperation (A manipulates with resources for the goal realization)
Cooperation (part of budget)	Harmonisation of the goals of both Ministries	A wins B loses
Noncooperation (B manipulates with resources for the goal realization)	A loses B wins	Unequal reallocation of resources; partially or no goal realization

Source: Authors' interpretation

All these changes make faster improvements on the labour market. Also, because of mutual cooperation between MLSS and MSES, and sufficient funding, there is no need for funds that are planned for some other measures in each ministry.

The second possible Nash's equilibrium can, but also doesn't have to be, **mutual noncooperation**. Both ministries can decide not to cooperate because of different reasons: reallocation of funds for some other purposes, strong self-interests, political interests of individuals, insufficient awareness about benefits of cooperation, incompatibility of common programs, lack of communication etc. The results might be: MSES would invest funds to reform the educational system, and also would partly harmonise the educational system with labour market needs by its own research, analyses and assessments. On the other hand, MLSS would invest funds to support employers, first of all small and medium enterprises, who make up more than 80% of all employers in Croatia, so they could employ people and implement active employment measures. Both departures would partly encourage economic activity, which could have positive effect on the entire economy, especially on GDP growth.

On the other hand, the worst result of noncooperation would be complete dereliction of the goal realization. That means that both ministries would think that they don't need to harmonise educational system and labour market. Consequently, the economic activity wouldn't be encouraged, and the unemployment rate wouldn't be lower. The strategy which is the best for one player and the worst for another player in the one in which one ministry would like to cooperate, and the other ministry wouldn't like to cooperate. The ministry which wouldn't like to cooperate actually wants that the other ministry has greater responsibility for goal realization and sets aside bigger part of it's budget for the goal realization. For both ministries in this situation the most important thing is to have the biggest possible amount of information for finding the focal point (the desired point of action). Focal points for both ministries would be formed at the end of mandate, before new elections. For the 'winner' ministry the focal point is noncooperation, because in that way it makes the biggest benefit for itself, and allocates budget for the whole ministry by itself. Still, for the 'loser' ministry the focal point is noncooperation too, because it reallocated bigger part of its budget for the goal realization, but the goal isn't reached because of the lack of interest in cooperation of the other ministry. If the Government wouldn't punish the 'winner' ministry for its behaviour, the 'loser' ministry could conclude that noncooperation would payoff more, and will reallocate the budget for some other purposes.

The worst result of this strategy would be if one ministry wouldn't like to cooperate, but the other ministry wouldn't take responsibility for the goal realization, which means that both ministries now wouldn't want to cooperate. Although this situation is similar to already mentioned situation in



which both ministries don't want to cooperate, the difference is that now one ministry wants to cooperate, but doesn't want to sacrifice bigger part of budget for the goal realisation because of noncooperation of another ministry. This situation will probably cause a serious conflict in the Government, which may result in economic decline, economic and social crisis in the country, loss of the voters' trust, and potentially in the decline of Government and in early elections. In this serious situation, focal point for both ministries is cooperation, because potential problems will show that the realization of the goal is possible only by cooperation. Besides goal realisation, cooperation will cause stabile government and greater credibility with voters.

### 3.2 Involvement of the Government in the analysis

The Government presents the leader in the game, while MLSS and MSES are its satellites. In this game the cooperation is more cost effective, and the reason is that each player will be punished or awarded by the leader. In game theory that means that after the first game, *tit for tat* strategy will follow, and the consequences of that strategy will depend of the players' behaviour.

**Table 2:** Matrix of the punishing or winning points for satellites

MLSS (A) \ MSES (B)	Noncooperation (punishment)	Cooperation (prize)
Noncooperation (punishment)	A = -10 B = -10	A = -10 B = 20
Cooperation (prize)	A = 20 B = -10	A = <b>10</b> B = <b>10</b>

Source: Authors' interpretation

Nash's equilibrium is in point (10,10), which presents cooperation. That is also the dominate strategy. Both satellites will get the winning points by cooperation, and both will achieve the desired level of action that will bring them both the greatest benefit, so-called *win-win* situation. This level of activity must be followed by synergistic activity and, as clearly mutual benefits are, the common perspective will be better for both satellites and the goal realization will be easier. The optimal strategy is strong and successful cooperation of all players in the game because that is the only way for the complete realization of the goal with high return on investment and Government support. That will provide an incentive to the overall economy and increase the prosperity of all citizens of the Republic of Croatia.

## 4. CONCLUSION

Game theory studies interactions between rational players who create strategies that bring the biggest benefit in specific conditions to all players in the game. Firstly, game theory is explained in general, then its main components are explained, and finally, the application of game theory models in a cooperative game is presented through an example of the analysis of the educational system and labour market in the Republic of Croatia. Cooperative type of game presupposes cooperation between every player included in the game. In the first analysis the players are MSES as a representative of the educational system, and MLSS as a representative of the labour market. In the second analysis Croatian Government enters the game as a third player and a leader in the game with two satellites. In both analysis the optimal strategy is mutual coordination of all players.

This analysis is carried out to show the importance of game theory and a wide range of its possibilities. The goal of this paper is not directed at making any decisions related to educational



system and labour market, but rather to emphasize the possibility of making decisions by using game theory. All information in the analysis are based on assumptions about rationality in game theory and are not empirically proven.

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## ONLINE PROMOTION OF SMALL HOTELS OF THE ADRIATIC REGION IN CROATIA

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### ABSTRACT

*In Croatia tourism can be considered as major generator of economic activities and as well as an employment base for many unemployed professionals. The promotion of tourism in Croatia has been described in many professional and scientific papers, discussed in many conferences and public television. This paper describes online promotion of small hotels of Adriatic region in Croatia. In order to attract and increase number of visitors, small hotels need to improve its online position on the tourist market, while online advertising has been gaining importance because of constant growing number of Internet users and technical progress of online technology. The aim of this paper is to analyse and describe the possibilities of online promotion of small hotels at the Adriatic region in Croatia.*

**Keywords:** *small hotels, tourism, online promotion, Croatia*

### 1. INTRODUCTION

NUTS II region classification has been set up according to criteria by EUROSTAT for the area of the entire EU and accession countries, it is necessary for efficient tracking of use of funding from EU Structural funds. Even though it is only a statistical division, that is without elements of management character or a division of non-administrative type, the recent division of the Republic of Croatia into two statistical regions – Continental and Adriatic Croatia, has stirred up the wider public on the area of Slavonia and Baranya, that is on the part of current Central and Eastern (Pannonia) Croatia. The main reason for this division is the possibility of withdrawal of funds with a smaller co-financing rate, bigger choice of development priorities and the most generous grants of Objective 1. Convergence for the entire area of the Republic of Croatia until the year 2027, as claimed by sources from the relevant ministry of regional development and EU funds (Bošnjak & Tolušić, 2012, p. 79). In Adriatic region there are seven counties: County of Istra, Primorje – Gorski kotar County, Lika – Senj County, Zadar County, Šibenik – Knin County, Split – Dalmatia County, and Dubrovnik – Neretva County. This paper will be focused on giving advice how to improve online promotion in small hotels of these seven counties.

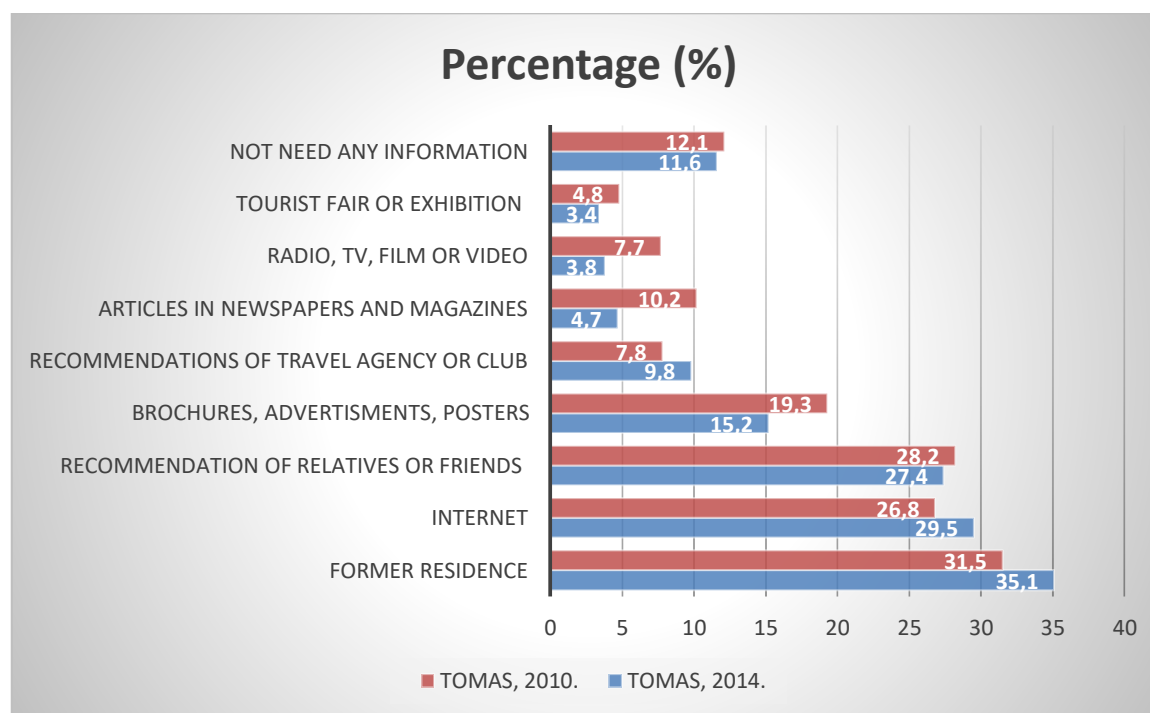
### 2. THE IMPORTANCE OF ICT IN THE CROATIAN HOSPITALITY

ICT plays a major role in tourism, travel, hospitality, and the hotel industry (Chevers, 2015, p. 24.). Some studies have highlighted the importance of ICT in the tourism and hospitality industry (Andrić, 2007; Šerić, Gil Saura, 2012; Sigala, 2003; Pitoska, 2013). Adoption of ICT technology is a critical success factor in enhancing hotel performance if we look in terms of internal measures like productivity and revenue, and also as customer satisfaction if we take a look on external measures (Sirirak, Islam, & Khang, 2011). ICT is also viewed as a strategic resource/asset (Aziz, Bakhtiar, Syaquif, Kamaruddin, & Ahmad, 2012) and a core competence in the hospitality/hotel industry, because it has the potential of providing business value and enhancing competitiveness

(Bethapudi, 2013; Richard, 2013; Sirirak et al., 2011). Some researches consider ICT as a key factor in competitiveness, because it reduces transaction and operational costs (Bojnec & Kribel, 2004; Buhalis & O’Connor, 2005; Buhalis & Kaldis, 2008). Implementing ICT in the hotel industry also decreased costs, greater productivity, increased revenues, improved service quality, and improved guest satisfaction (Aziz et al., 2012). ICTs are becoming a key determinant of organizational competitiveness and productivity, allowing the tourism industry to increase its market share and boost its capacity to launch new innovations (Aramendia-Muneta & Ollo López, 2016, p. 88).

World Tourism Institution (2008: 1) defines that “the purpose of e-marketing is to exploit the Internet and other forms of electronic communication to communicate with target markets in the most cost-effective ways, and to enable joint working with partner organisations with which there is a common interest”. The following chart shows the importance of online promotion in tourism. It can be seen that the percentage of tourists from almost 27% in 2010 to 30% in the survey of 2014, which are using internet as a source of information when traveling on holiday.

*Chart 1. The source of information when tourists decide to come in Croatia*



*Source: Attitudes and Expenditures of Tourists in Croatia – TOMAS 2010., & 2014., Institute for Tourism, Zagreb, 2010., 2014.*

The following table shows the importance of constant improvement of the content of web pages, as a percentage of 41.5% from 2010 and 51.3% from 2014, shows exactly that the official website of the tourist boards extremely important in their use of information on the selection of destinations.

This is another indication that the Internet is an essential medium in communicating and attracting tourists to Croatia.

*Table 1. The source of tourist information by type of website*

Source of information	Percentage (%) TOMAS, 2010.	Percentage (%) TOMAS, 2014.
Web site of tourist board (national, regional, local)	42.0	36.7
Web site of accommodation	41.5	51.3
„Online“ tourist agency (OTA)	35.4	33.6
Social media (Facebook, TripAdvisor, Instagram, Twiter...)	30.1	38.6

*Source: Attitudes and Expenditures of Tourists in Croatia – TOMAS 2010., & 2014., Institute for Tourism, Zagreb, 2010., 2014.*

We can see that the Web pages of private accommodation and social media (Facebook, TripAdvisor, Instagram, Twiter etc.) are relevant source of online promotion of accommodation in Croatia. Therefore, managers of small hotels must use both ways to improve online promotion.

### **3. PROMOTION OF SMALL HOTELS IN CROATIA**

#### **3.1. Short overview of hospitality industry in Croatia**

The development of the hotel industry in Croatia began in the sixties of the twentieth century, when the systematic construction of hotels started. Regards to the organizational structure and the average size of hotel facilities, the present Croatian hotel industry is characterized by certain specifics (Razović, 2014, p. 643). According to accommodation facilities statistics in Croatia, hotels make only about 13 % of the total number of tourist beds in Croatia. Therefore, we can see that Croatia is not a dominant destination focused on the hotel guests. The most numerous share of tourists who come in Croatia stay in apartments, private accommodation 49 % and camps 22 %.

*Table following on the next page*

*Table 2. Accommodation facilities in Croatia by type (on 31st August 2015.)*

Accommodation type	Number of accommodation facilities in 2015.	Percentage (%)
Hotels and apart-hotels	135.322	13.1
Tourist resort	30.836	3.0
Apartments	15.371	1.5
Camps	227.568	22.1
Private rooms	512.583	49.8
Spas	2.510	0.2
Resorts	2.749	0.3
Hostels	11.692	1.1
Other accommodations	88.550	8.6
Uncategorized facilities	2.131	0.2
TOTAL	1.029.312	100

Source: Ministry of tourism, (<http://www.mint.hr/UserDocsImages/TUB2015HR.pdf> ;access: 15.11.2016. )

The hotel industry all over the world has been facing constant changes: from innovations in the offer structure and marketing to modifications in the human resources management and the applications of new technologies and design. These trends have resulted in increasing forms of cooperation in the hospitality industry, particularly among small entrepreneurs. The role of strategic alliances in increasing competitiveness in today's globalised tourism system is best analysed on the very case of small tourism service suppliers. Small and family-run hotels (SFH) are a particularly important and vital part of the tourism offer in a great number of European countries and play a much more significant role than in Croatia. The numerous flaws and problems SFH encounter in doing business can be eliminated by the very processes of strategic alliances (Vlahov, 2014, p. 24). The hotel industry in Croatian tourism is not yet the dominant force because the accommodation offer is fragmented (large number of private accommodation), disorganized and oriented on holiday seasonal business. The hotel offer in Croatia is mostly mid-level quality and the structure of the hotel product has not been developed. A large part of hotel business in Croatia is performed through hotels that have 100 to 200 rooms (3 star hotels), that were built in the sixties and seventies of the twentieth century for mass, undifferentiated market (Razović, 2014, p. 644).

### **3.2. The development of small hotel business in Croatia**

As a dominant contributor in many economies the hotel industry is employing thousands of people and generating huge revenue annually and is currently the fastest growing economic sector in the world (Bethapudi, 2013; Paryani, Masoudi, & Cudney, 2010). Croatian law defines hotel as the unit that is obliged to provide accommodation and breakfast, and can provide catering and other services (Pravilnik NN/63/13 čl. 3. i 6.). According to (Galičić et al., 2005, p. 14) hotels can be classified according to different criteria, such as by the size of the capacity and number of employees, although there are no fixed definitions for 'small hotel' in the tourism literature (Arunothaipipat, 2011, p. 90). Buhalis & Main (1998) have set the definition of Small and medium-sized hospitality organizations (SMHOs) are less than 50 rooms and employ fewer than ten people. Small and family hotels in Croatia are able to answer the needs of the modern tourist in the most appropriate way by developing a new tourism product based on authentic experience, top quality and warm welcome of the local residents and entrepreneurs in the autochthonous surrounding and its rich cultural heritage. In the long run stimulating mutual cooperation and other types of strategic alliances among these businesses contributes to their increased competitiveness and of Croatia's

tourism system as a whole (Vlahov, 2014, p. 25). Tourist demand recently has begun discovering the specific qualities of accommodation and stay in family hotel. In relation to large hotel capacities, family hotels have evident advantages, among which are more immediate relationship with guests, family atmosphere, hospitality and willingness to please the host and satisfy the needs of their guests-tourists (Razović, 2014, p. 654). The next table presents the SWOT analysis of family hotels in Croatia.

*Table 3. SWOT analysis of family hotels in Croatia*

<b>Strength:</b> <ul style="list-style-type: none"> <li>- Defined institutional framework</li> <li>- Tenderers associated through their own association</li> <li>- On-line booking system of members of the association</li> <li>- Larger number of specialized objects</li> <li>- The increasing offer quality</li> <li>- The attractiveness of microlocation</li> <li>- Attractiveness of destination's macro environment</li> <li>- Value for money</li> <li>- Individual access towards guest</li> <li>- Hospitality and 'warmth'</li> </ul>	<b>Weaknesses:</b> <ul style="list-style-type: none"> <li>- High indebtedness</li> <li>- The lack of working capital</li> <li>- Development of small family hotel industry</li> <li>- insufficiently accompanied by credit institutions</li> <li>- Low profitability</li> <li>- Legislation overnorming</li> <li>- Specificity of activity not recognized by institutions</li> <li>- Insufficient recognizability of brand</li> <li>- Large seasonality of business</li> <li>- The lack of trained personnel</li> <li>- Uneven offer quality</li> </ul>
<b>Opportunities:</b> <ul style="list-style-type: none"> <li>- Long-term favorable trends of demand</li> <li>- A more pronounced segmentation of demand</li> <li>- Tourism development in rural area</li> <li>- Development of cycle tourism</li> <li>- Development of 'soft adventure' tourism</li> <li>- Growing interest in "culture of life and work" products</li> <li>- Offer thematisation</li> <li>- Growing demand for alternative 'lifestyle' accommodation</li> <li>- Growing demand for "green accommodation"</li> <li>- The availability of EU funds / programs</li> <li>- Modern forms of promotion</li> <li>- 'Niche Marketing'</li> <li>- Direct Marketing</li> <li>- Establishment of clear spatially planning determinants of new construction</li> <li>- Private-private and public-private cooperation</li> </ul>	<b>Threats:</b> <ul style="list-style-type: none"> <li>- Unselective system of incentives towards small family hotel industry</li> <li>- Non-transparent business environment</li> <li>- The level of fiscal and parafiscal taxes</li> <li>- Corruption at the local level</li> <li>- Loss of interest in family business</li> <li>- The image of cheap summer 'sun and sea' tourist destination</li> <li>- Underdeveloped system of destination management</li> <li>- Management of Croatian tourism development in accordance to interests of large capital</li> </ul>

*Source: Institut za turizam Zagreb, Nacionalni program razvoja malog obiteljskog hotelijerstva, 2013, p. 7., referenced by Razović, 2014, p. 655.*



Modern tourists are well informed and know what they want. Nowadays, they prefer flexible, special, different accommodation facilities in which they feel like they are at home. In these small hotels tourists want to feel relaxed and establish a friendly and direct relationship with its host. Hotels must meet the needs of tourists is usually defined as a small family hotels, so in this paper as a small hotel category it will be used the data from the website of National Association of Small and Family Hotels in Croatia (NASFH).

Table 4. Number of small and family hotels in Adriatic region by category

Region/Hotel category	**	***	****	*****	Total
Istra region	1	13	8	0	22
Kvarner region	0	5	12	2	19
Zadar region	0	9	4	0	13
Šibenik region	0	4	6	0	10
Split region	0	14	24	0	38
Dubrovnik region	0	6	4	0	10
<b>Total</b>	<b>1</b>	<b>51</b>	<b>58</b>	<b>2</b>	<b>112</b>

Source: Croatian National Association of Small and Family Hotels, (<http://www.omh.hr/>, access: 15.11.2016.).






















Trends in modern tourism demand and needs of tourists certainly require some changes in the structure of accommodation, particularly in the hotel industry. One of the possible changes is the increasing role and importance of the family hotel industry in the overall offer of accommodation in Croatia (Razović, 2014, P. 644).

### 3.3. Online promotion in Croatian hospitality

The impact of ICT (Information Communication Technology) hotel and hospitality industries has been widely recognized as one of the major changes in the last decade: new ways of communicating with guests, using ICT to improve services delivery to guest etc. (Nwakanma et al., 2014, p. 170). Online promotion enables tourism businesses to narrow down the target audience they want to offer their products and/or services to and whose age, sex, location, as well as some less commonly sought personal data such as hobbies or activities, they want to determine. Targeted marketing produces better results because it focuses on markets that businesses are interested in, and because of more effective allocation of advertising budget. Targeted advertising is a breakthrough in advertising because it allows tourism businesses to focus on specific audiences, i.e. social network users, and offer them products that would stir their interest and induce them to visit a destination. Tourism operators can base their activities on preferences, interests, hobbies, and demographics of social network users (Biloš et al, 2015, 45). Given the common characteristics, Internet significantly affects the activity of the primary selection value (Spremić, 2004, p. 258). Nitu & Bakucz (2014, p. 125) considered relationship between small hotels in the area and online marketing, where the research showed that use of the Internet had clear advantages and improved overall performance. Pranić et al. (2014, p. 56) research shows that over 90% of Croatia's hotels have their own website suggests that their owners/managers recognize the importance of online presence. However, they claim that hoteliers in Croatia are not taking full advantage of the Internet as a marketing tool.

Pilepić et al. (2015) claim that there are different ways for potential tourists to find the hotel where they want to spend their vacation. Figure 1 will show the channels that consumers use to find hotels on the Internet, and that (Strauss et al, 2006, p. 2) information technology is applied to the traditional marketing practice. Owing to rapid development of technology and distribution of content and information through e-marketing techniques and tools, all participants in tourism are able to achieve strong market penetration (Biloš et al, 2015, p. 40).

Figure 1. Key channels consumer use to find hotels on the Internet

Brand Sites	Travel Sites	Search Engines	Email	Social Media
Brand Loyalty	Deals, Travel Agency	Destination, Activity, Events	Deals & Getaway	Friends and Referrals
				
				
				
				
				
				
				

Source: Pilepić et al., „Online hotel's sales strategies with emphasis on web booking“; *Journal of Technology Research* (2327-5359) 6 (2015), January; 1-12.

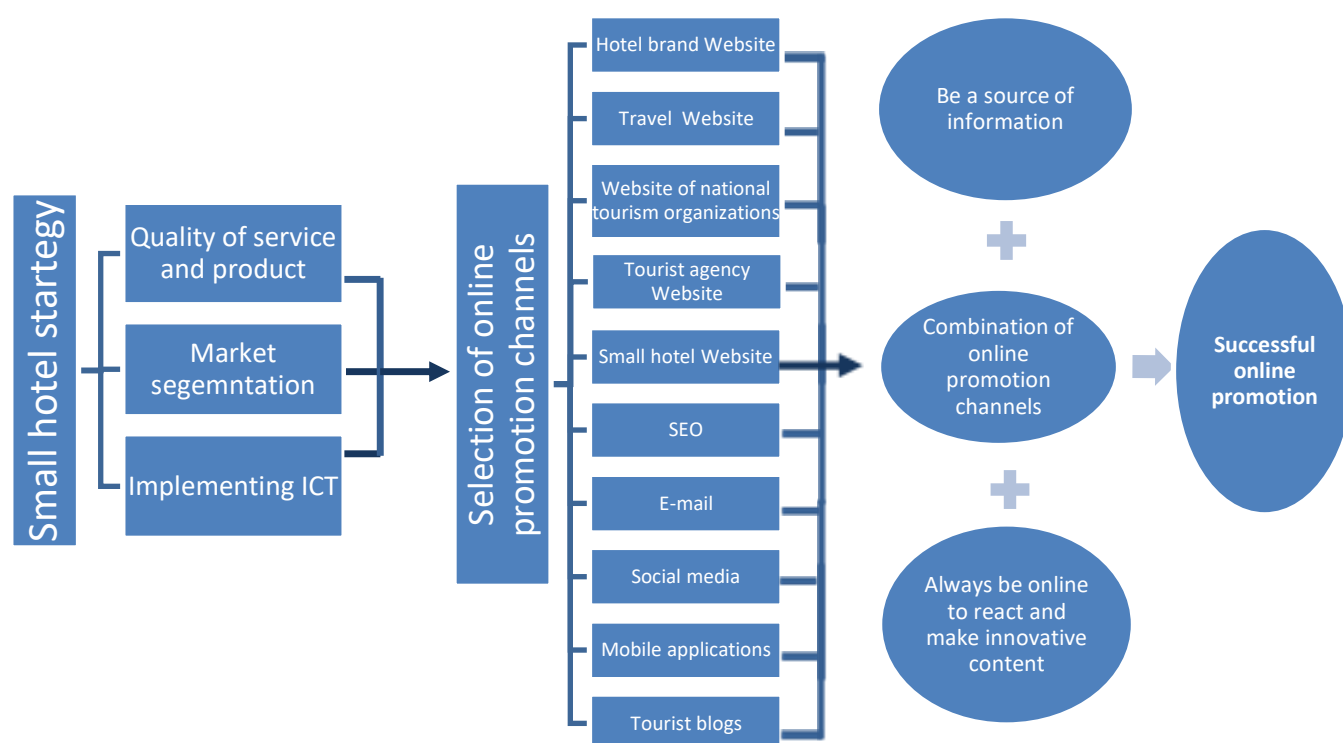
A general conclusion can be made that e-marketing is complemented with traditional activities and is closely related to the development of new technologies, seeking to implement traditional activities of the marketing mix via network. The development of new information distribution channels is part of the current Web 2.0 Internet technology such as e-mail, RSS, blog, forums, social networks and currently one of the fastest growing trends – use of mobile applications. Tim O'Reilly defines the term Web 2.0 as the business revolution in the computer industry caused by the move to the Internet as platform, and an attempt to understand the rules for success on that new platform (O'Reilly, 2006, referenced by Biloš et al, 2015, p. 39-40).

#### 4. SUGGESTIONS FOR ONLINE PROMOTION OF SMALL HOTELS IN THE ADRIATIC REGION IN CROATIA

According to estimates by the Berlin ITB, now tourism and travel industry in the world consume only small amounts on marketing through social networks and the Internet in general, and this ranges from below 10 to the highest 25% of the total funds for promotion. There is a growing interest and the impact of tourism bloggers, as well as tourist applications for mobile devices (from which in the last two years was made the biggest move), among which is one of the popular TripAdvisor. The big trend, and a powerful new tool for the tourism sector, is a combination of GPS with interactive city guides for smart phones. Passengers are increasingly a destination for holiday and business travel are selected by searching the web and social networks, and this combined with the discounts offered on portals, which brings more favorable terms / cost travel (<http://www.bug.hr/mreza/tekst/ict-turizmu/95940.aspx> Access: 9.11.2016.). The increasing

presence of the Internet in daily lives has resulted in the Internet an essential media in marketing communication. To gain competitive advantage in the demanding tourist market, it is important nowadays for a hotel company to have its own website, promote its products through social networks and mobile applications, use e-mail as a channel of communication with its business partners and customers, and apply all available information-communication technology (ICT). It needs to provide all information for potential clients in one place at any time of day, from anywhere in the world. That can be possible by using innovative ways of communication and by adapting business operations to demanding requirements of the modern tourist market. This imposes the innovation of practices and the implementation of new technologies in business processes. Therefore, there is a need for awareness about the necessity of applying ICT in the hotel business (Lončarić & Radetić, 2015, p. 15).

Chart 3. Potential model of implementing successful online promotion in small hotels



Source: Author research

For better online promotion small hotel must choose strategy in order to have good quality of tourist service and product. Next step is implement ICT in its business process. After that market segmentation (define target group) hotel must select the combination of online promotion channels: Hotel brand website (NASFH), Travel website, Website of national tourism organizations, Tourist agency website, Small hotel website, SEO, E-mail, Social media, Mobile applications and Tourist blogs. The important thing to have on mind is to be a source of information for tourists (for every question they have) and not to forget to be always online to react, to see comments, positive and negative reactions. Also, it is important to create and put innovative content in order to attract tourist attention.

Small hotels and large hotels have different audiences. Their potential guests follow different behaviour patterns when it comes to searching for and booking accommodation. While the small hotel audience relies more strongly on offers and recommendations via platforms such as TripAdvisor, laterooms.com, lastminute.com, Groupon, Facebook, and blogs, the large hotel audience tends to be loyal to hotel brands, they are encouraged to visit the brand's website where they are rewarded with points and savings. Small hotels should understand and embrace this difference, there is plenty of room for successful digital marketing campaigns no matter the size of the property, as long as it's placed and marketed correctly. Small hotels don't have the same marketing budget large hotels do. Sometimes there is no marketing budget at all. It's important that small hotels take advantage of every opportunity they can get to promote the property, starting from digital marketing. There is plenty that can be done when it comes to organic SEO and digital marketing, it's more time consuming than paying a company to take care of everything but it can be done. If there is no budget, look for small hotels that have achieved what you would like to achieve and don't be afraid to ask for advice. Other hoteliers can become your friend and mentors, you can help each other too because two properties are never the same, each can be marketed differently. Maybe what you do best is their weakness and what they do best is yours. (Source: <https://www.reviewpro.com/blog/small-hotel-marketing/> , Access: 8.11.2016.)

## 5. CONSLUSION

Marketing shows its importance in every kind of tourist and hotel industry, since it presents itself as a tool that contributes to better management of hotel operations also help in defining appropriate strategies for their development, with the main objective, the increase in financial results. Thus, the thought of marketing and promotion strategy should be developed in a planned, staffed and structured to provide the enabling hospitality company to move the market in better condition that can ensure greater market share, making it possible to take the product or service to customers and potential customers. Marketing and promotion should define a set of actions for internal and external communication that can be put into practice by allowing hotel companies diversified forward messages with the aim of showing and raising awareness of the company, its products and services with ultimate goal of causing consumers consumer desire (Pereira & Almeida, 2014, p. 93).

If small hotels want effective promotion they are obligate to be innovative in modern communication and use Internet, social networks, mobile communications and applications in order to improve the online promotion. Therefore, even the tourism industry is not much more different from many others industries who see the inevitability of new technology through which the small hotels in the Adriatic region in Croatia are seeking new and improved ways of doing promotion in this modern world of global tourism market.

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## ENVIRONMENTALISM IN ALBANIA: LEGAL AND INSTITUTIONAL MANAGEMENT OF ENVIRONMENTAL PROBLEMS

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### **ABSTRACT**

*This study will deal with the most distinctive moments in the history of environmentalism, the characteristics of this phenomenon, the stages of its development and also its dimensions, consequences in environmental situation, etc. The history of Albanian environmentalism starts during the 50-year period of communism, focusing mostly on the attitude of state and the attitude of community towards environmental issues during this period. Moreover, the relation of environmentalism as a process with the political system is seen in the conceptual context. There are a great number of environmental problems inherited by the communist regime such as: pollution from hard industrial activities, complete lack of urban wastes recycling, overuse of natural resources in use of intensive farming, soil erosion, etc. A particular attention will also be paid to the analysing of the factors and the conditions that bring low scale of the citizen's awareness on environment problems. In this context, we will be dealing with the legal framework regarding environmental issues and the protection of environment in the period of communism and post communism, concerning mostly the functioning of the environmental agencies, environmental groups, civil organizations and their activities, legal support that the Albanian government guarantees to the environmental movements etc.*

*As a reaction to severe environmental consequences of centralized economic development before the 90's, but also during the transition period in Albania, political attention to the environment and its protection has been substantial.*

**Keywords:** *environment, management*

### **1. INTRODUCTION**

Albania is located in the South-eastern Europe, on the Southwest of the Balkan Peninsula, in an area of 28.748 square kilometres. It is bordered by Montenegro to the Northwest, with the Republic of Kosovo to the Northeast, and Greece and Macedonia in the Southeast and East. The Republic of Albania holds a favourable geographical position. It is situated on the coasts of the Adriatic and Ionian seas, part of the Mediterranean basin, positioning Albania as a bridge between the Apennine Peninsula and the Balkan Peninsula. In addition, Albania is one of the cross-points with the most important international road transport nodes, where the most important infrastructure corridors link with Europe, the Mediterranean to the Balkans up to Asia. The Republic of Albania has a general boundary line of about 1094 km, of which 657 km are land borders, 48 km dividing line through the rivers and 73 km through lakes. Albania has a typical Mediterranean climate, with some continental influence in the north and east of it. Albania is situated in a hilly and mountainous terrain. The average altitude of the relief reaches up to 708 meters, or 2 times higher than the European average. Albanian Alps represent the highest forms of relief, while the highest peak is

the mountain of Korab in Northeast Albania (2751m). The population of the Republic of Albania is approximately 3.8 million people and the population density reaches up to 110 inhabitants / km<sup>2</sup>. The most important urban centres are the cities of Shkodra, Lezha, Durres, Elbasan, Fier, Vlora etc. Albania has considerable natural resources. It has plenty water resources such as rivers (about 152), lakes (about 247), water resources and coastal lagoons (about 15,000 hectares) etc. Albania ranks first among European countries in terms of the amount of water per capita (over 13,000 m<sup>3</sup> per capita / year). The country's main rivers are Drini, Mati, Erzeni, Shkumbni, Devolli, Osumi Vjosa. The lakes are known mainly for special values in tourism, recreation and they have a great importance in the production of fishery products. Albania has got the biggest lake of the Balkan peninsula, Lake of Shkodra (with an area of 368 km) and the deepest lake, Lake Ohrid (with the area of 363km). The most important activity in tourism and fishing are the coastal lagoons and wetland areas which are known for their particular ecological and economic values. The coastal area covers 25 percent of the territory, and the area of marine protected areas (MPAs) represents 35 per cent of the protected area (PA) in the country.



Figure 1: Natural Resources, Fishery and Aquaculture Activity (Xhafa S., 2013)

Resources in natural gas and oil in the Northwest, minerals, such as: iron, nickel, chromium and copper mining in the Northeast, support the processing industry. Albania holds about 437 million tons of oil, 800 million tons reserves of coal, 57 million tons of chromite reserves, 13 billion m<sup>3</sup> gas reserves, 69 million tons of copper reserves, 300 million tons of reserves of Ferro - nickel, 13 million tons of bauxite, 108 million ton dolomite, phosphorene 54 million tons and 500 million tons of rock salt. (Department Policy and Mining Development, Ministry of Industry and Energy, Republic of Albania)

Numerous forests, with major ecological value, are largely distributed on the Northeast and Southeast of the country. They occupy about 36% of the territory or 10300 km<sup>2</sup>. (Agency of Forest Administration, Ministry of Environment, Republic of Albania)

Albania is rich in a variety of environments with natural, recreational values and wonderful landscapes as protected areas (about 798) which make up about 10% of the surface area or 299,798 ha of the territory. They represent national parks, natural monuments, areas managed, protected water and ground landscapes etc.

Cultural assets are also numerous. Albania ranks among countries with an ancient history of civilization. It is the residence of one of the most ancient peoples in the Balkans, Illyrians. Among the most important assets with the perennial cultural history is Durrësi, Butrint, Berat, Gjirokastra protected by UNESCO.

*Figure following on the next page*

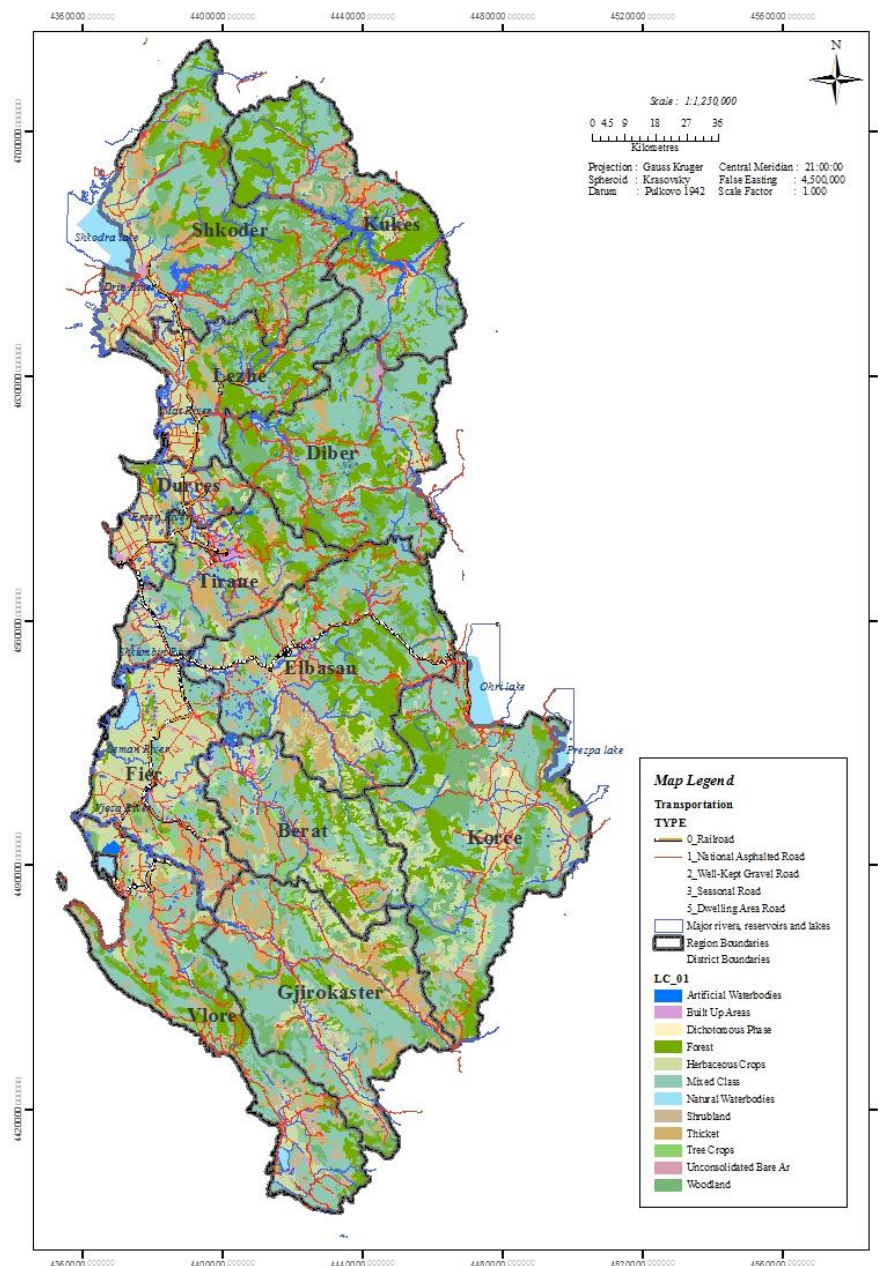


Figure 2: Natural Recourses and Biodiversity. (Xhafa S., 2013)

## 2. HISTORY OF ENVIRONMENTALISM IN ALBANIA

In this part we will focus on the most distinctive moments in the history of environmentalism, some characteristics of this phenomenon, the stages of environmental development and its dimensions, consequences in environmental situations, etc. The history of environmentalism starts during the 50-year period of communism, the attitude that the state and the community had towards environmental issues, and also the relations of environmentalism as a process with political system, all seen through the conceptual context.

In this context, we will focus on the legal frameworks regarding environmentalism and its protection in the period of communism and post communism, over the functioning of the



environmental agencies, environmental groups, civil organizations and the activities that they include. We will also take into consideration the legal support that the Albanian state guarantees to the environmental movements etc.

## **2.1. History of environmentalism in Albania**

In this part we will focus on the most distinctive moments in the history of environmentalism, some characteristics of this phenomenon, the stages of environmental development and its dimensions, consequences in environmental situations, etc. The history of environmentalism starts during the 50-year period of communism, the attitude that the state and the community had towards environmental issues, and also the relations of environmentalism as a process with political system, all seen through the conceptual context.

In this context, we will focus on the legal frameworks regarding environmentalism and its protection in the period of communism and post communism, over the functioning of the environmental agencies, environmental groups, civil organizations and the activities that they include. We will also take into consideration the legal support that the Albanian state guarantees to the environmental movements etc.

During the communist regime, the environmental issues, as well as many other issues were treated as problems that needed self-reliance solutions. Different from what happens these days, attitudes towards natural resource management were seen as a subject for human activities to benefit from. On the other hand, there was not considered any value in the context of the content and the role that human activities have in the natural balance. Consequently, it is clear that the people's awareness about the value of environmental initiatives for its protection were weak and insignificant. In these conditions we cannot speak of genuine environmental movement since protests of any kind were prohibited and punishable by law.

The first environmental movement in Albania dates back to 1991, supported by the non-profit organizations for environmental issues, that originally laid the activity in the capital town, and then in other cities like Durres, Vlora, Shkodra and Korca.

Environmentalism in this period took place as a general protest against the communist regime in general. It was asked for changes in the political and economic conditions in the country where environmental issues were not considered with priority, but they had a peripheral place in governance.

During the transition period, Albania inherited environmental problems of the communist regime, which came as a result of a lack of proper management of economic activities. In this context, it was noticed more pollution, mainly caused by heavy industries; it was also noticed a poor policy functioning in socio-economic development, limited interest and vulnerable responsibility of treating environmental problems, etc. There are a great number of environment problems inherited by the communist regime, listed as follows:

- pollution from hard industrial activities, hence the creation of the first environmental hot spots in abandoned industrial areas with high pollution through toxic substances;
- contamination from the military or mining industry. Although there is no precise official data there are notable specific areas of pollution.

The economics and political changes after 1991 as well as the free initiative in the economy and population movement resulted in misuse of the territory as well as on the informal shares for the residential and economic functions. This situation was followed by a series of environmental problems such as: intensive deforestation and biodiversity loss; overuse of natural resources in use of intensive farming, soil erosion etc.; fragmentation and degradation of natural ecosystems; complete lack of the urban wastes recycling; pollution from urban waste and industrial emissions

that contaminate the soil.

In response to these problems, in 1993 the government adopted the first National Action Plan for the Environment, where it set several short-term priorities related to the environment such as: monitoring of industrial and urban pollution; stopping the illegal logging of forests; rehabilitation of environmental spaces of Albanian coast; defining preventive measures against soil erosion.

At the beginning of the transition period, they developed important steps in terms of governance of these problems, initially through the structuring and functioning of the Environmental Protection Committee. This committee can be considered the ancestor of the legal bodies functioning in the central government level, the respective representatives in local government. Such structures have a decision-making role today for issues related to the protection and renewal of the environment, preventing pollution and minimizing the environmental degradation in the Ministry of Environment, Forestry and Water Management.

Over time, regional structures were established for the protection of the environment and pollution management, which built extensive relationships to coordinate and cooperate with other actors and international and interregional factors mostly, neighbouring and European countries. The need to solve environmental problems is inherited from the past, but there are also those created from informal use of the territory in this period, opened new ways to the initiatives to design development programs and environmental protection strategies, as well as action plans to solve environmental problems in all contexts.

During the first decade of transition, the environmental movement took place in the form of critical attitudes regarding activities that impair the quality of the environment, of individuals who descended from the political class, university, representations of foreign environmental institutions, public companies, journalism etc. conveying concepts and a new mentality about the environment. This process was also supported by the work of environmental organizations and groups from civil society, which appeared for the first time shortly after the political and economic changes of 1991. At this time appeared the first groups of students to react on nature protection and the quality of urban and rural environment, as a form to ensure sustainable lifestyle for future generations.

Albanian environmental groups appeared for the first time after the overthrowing of the totalitarian regime when the conditions were favourable for civil society organizations.

Such initiatives also found legal support, in the beginning and also later through secondary comprehensive and inclusive legislation for the environment, in which it was clearly defined the role and responsibilities of main actors in the field of environment. The main actors were the public agencies, civil society with public interest and NGOs, the business and various investors, etc. During the first years of transition there were established the first environmental NGOs mainly in Tirana, such as The Association for the Preservation and Protection of the Natural Environment of Albania (PPNEA) with major interest in conservation and sustainable development, wildlife management, landscape conservation and in local sustainable development in general.

In 1993, this association organized a campaign to protect the Botanical Garden from illegal constructions, raising awareness of the public community about environmental issues.

All this panorama in integrating the role of various actors in the solution of environmental problems in Albania, define the front lines of the institutional cooperation through the formulation of the common policies and strategies for overcoming common challenges as well. Such a successful enterprise led to a clearer definition of the responsibilities of each actor, equalization tools and practices to be followed in environmental assessments, etc.

According to the Albanian Constitution of 1998, it was constituted the right "to be informed on the environmental situation and its protection" and "to participate in decision making processes".

The main issues currently receiving the most attention of all actors are: climate change and



biodiversity loss;

Changes in interactions between natural and human systems have affected urbanization, and this was reflected in reports which respectively evaluate how ‘nature penetrates society’ and ‘society penetrates nature’.

At the end of the first decade of transition, the environmental movement extended to the whole country through nice NGOs activity, mainly in cities like Shkodra, Korca, Pogradec, Elbasan, Fier, Lezha and Kruje. In this period are counted about 52 NGOs in Albania.

In this period most of the goals of the protests and environmental movements, failed to meet expectations, given that Albania was a developing country. This led to the idea of supporting initiatives of free construction and economic use of the territory, praising little environmental criteria in this context. However, organized public protests in 1999 against the stock, provided the construction issued by the National Council of Territory, in the Park of the city, reached the aimed goals regarding environmental issues.

However, in this period, compared with the period that follows, the public support for the environmental movement was weak, although environmental problems were numerous and directly affecting public health and quality of life, such as soil and water pollution, illegal construction, destruction of public areas.

Ministry of Environment was created in September of 2001, which determined the institutional responsibilities related to environment, in order to build strategies to enforce policies and legal obligations towards environment, also in raising the environmental scale of awareness in Albania. In the second decade of transition, environmental movements took place and were led by Ekolevizja movement, EDEN Centre, REC etc. which were involved in public protests against the Italian project ENEL for the construction of an industrial park in Porto Romano, in Durrës. This protest reached its goals. The protest was against the impacts in environment that the building of this park would have had. It was also reflected the ideas of use of the specific technologies for catching carbon emission from the plant. Throughout industrial developments in park, it was expected to be released 6 to 7 million tons annually.

## **2.2. Legislation framework**

In the past 20 years of the post-communist period, the environmental legislation was one of the most dynamic elements of change. During the transition, the Legislation related to the environmental issues, was improved in terms of the specifications directly on specific issues, as well as in terms of completeness being integrated with other laws that have an impact on the environment and are a factor in the quality.

This legislation is based on:

- The Constitution of the Republic of Albania. In other words, its structure is based on the inclusion of regulations, laws and general laws, the Council of Ministers' decisions, directives and guidance to ministries, etc. thus complying to the European standards.
- Standards and principles of the EU, drafted under the assistance of foreign experts and specialists with the aim to be one step closer to the European Union. The work done for the Environmental Standards is part of the Dansk Obligations in the framework of the Stabilization and Association Agreement. However, the legal framework is generally harmonized with the European Union legislation.
- European and international conventions which Albania has ratified, to respond effectively to the needs of the contemporary politics of environmental protection, sustainable development and integration of Albania into the European Union.

*Table1: Some of the laws drafted and approved during the first decade of the transition period  
 (www.qbz.gov.al)*

Law no.	Content	Approval
7662	Concerning the plant protection service	1993
7665	Concerning the development of tourism priority areas	1993
7722	On conservation of the stock of medicinal ether-oleaginous and naturally tanniferous plants,	1993
7664	Environmental protection	1993
7875	On protection of wild fauna and hunting	1994
7917	On Pastures and Meadows	1995
8302	On Forest Revenues	1998
3318	On Leasing the Agricultural land, Forests, Meadows and Pastures that are Property of State	1998
7908	On Fishery And Aquaculture	1995
8093	on Water Sources	1996

The country's efforts to protect natural resources and to support the process of prevention of environmental problems. During the recent years there have been made only 4 drafts, 19 Governmental Decisions, 7 regional Plans for the management of remnants and there have been concluded 10 Plans for the management of the protected Areas.

Legal priorities have supported and integrated the process of evaluation time overall environmental impacts on the ground, preventing and reducing negative impacts on the environment.

*Table2: Some of the laws drafted and approved during the second decade of the transition period  
 (www.qbz.gov.al)*

Law no.	Content	Approval
8094	Public disposal of waste	2000
8905	Protection of the marine environment from pollution and damage	2002
8897	Protection of air from pollution	2002
8934	Environmental protection legislation	2002
8990	Environmental Impact Assessment	2003
9010	Environmental management of solid waste	2003
9115	Environmental treatment of waste water	2003
9108	For chemical substances and preparations	2003
9103	Protection of trans- boundary zones in lake areas	2003
9385	Forests and forestry service	2005
9537	The management of hazardous waste	2006
9700	Protection of the environment from trans- boundary impacts	2007
9774	For assessment and management of environmental noise	2007
9946	For Natural Gas Sector	2008
10006	For protection of wild fauna	2008
10253	For Hunting	2010
10463	For integrated waste management	2011
10433	For environmental inspection in the Republic of Albania	2011

Environmental legislation in Albania continues to be an intensive process associated with the improvements in:

- quality of life and public health;
- rational use of natural resources;
- prevention of environmental pollution from urban wastes, industrial, hospital, construction, agricultural and livestock products, hazardous substances (substances and chemicals, etc.); and rehabilitation of environmental damage;
- protection of marine and coastal environment from pollution and damage from human activities that threaten water quality, biodiversity, human health, and hinder the normal development of economic and human activities on the environment;
- conservation of biological balances in freshwater ecosystems and trans-boundary waters, by encouraging the development of economic activities in compliance with the principle of sustainable development etc.

In this period, the legal basis was improved also through regulatory norms, decisions of the council of ministers of which the most important were:

- The Regulation on the prevention of negative impacts on health and the environment of the construction activity, where physical and legal persons are required to have permits, authorization or environmental consent when in construction activities.
- Regulations for emissions and noise in mobile systems (the roads) regarding permissible values of environmental pollution substances and the methods to control them.
- Decision of the Council of Ministers on the rules and procedures for the importing of wastes for treatment, use and recycling
- Decision of the Council of Ministers for approval the codes of the Albanian classification of waste.
- Decision of the Council of Ministers to create the national natural resource agency
- Decision of the Council of Ministers for the adoption of the red list of flora and fauna
- Decision of the Council of Ministers for adoption of this common strategy on Environment
- Decision of the Council of Ministers on the rules and procedures for the design and implementation of the national program of environmental monitoring etc.

Republic of Albania also is a party of:

- Convention on Environmental Impact Assessment in the Trans-border Context (Espoo, Finland) ratified on 04.10.1991
- Convention on protection and use of water streams and international lakes (Helsinki 1992) ratified on 05.01.1994
- Convention on Climate Changes (UNFCCC) ratified in 1994
- Convention on Biological Diversity (Rio de Janeiro 1992) ratified on 10.11.1996
- Convention of Wetlands of international importance, in particular as habitats of water pollution (The Ramsar Convention) ratified on 29.03.1996
- Convention of trans-border impact of industrial accidents ratified by Law 8216, dated 13.05.1997
- Convention on control of trans-border transportation of hazardous waste and their disposal (The Basel Convention) ratified by Law No. 8216, dated 13.05.1997
- Convention on preservation of wildlife and natural European habitats ratified by Law No. 8294, dated 02.03.1998

- Convention on fight against desertification in those countries that suffer severely from dryness and desertification, in particular in Africa ratified by Law No.8556, dated 22.12.1999.
- Convention on Access to information, Public participation in environmental decision making and Access to justice in environmental matters (The Aarhus Convention) ratified by Law No. 8672, dated 26.10.2000.
- Convention on protection of marine environment and coastal area of Mediterranean Sea (The Barcelona Convention) ratified by Law No. 8690, dated 26.10.2000
- Convention of preservation of wild animals' migrant species ratified by Law No. 8692, dated 16.11.2000.
- Protocol of Kyoto for carbon sequestration

The aforementioned legislation is largely harmonized with relevant EU directives in this field. This has opened the way for Albania to integrate in Global and Regional Environmental Initiatives, in international Plans and Strategies, Becoming signatory party in International Environmental Conventions, Protocols and Agreements. Also Albania quickly became involved in the process of Implementation in Important Environmental projects supported by powerful Foreign Donors.

During the period 2007-2013 the EU has funded over 120 million EU legal framework for the fulfilment of the subject environment in Albania. With laws passed during these years it could be said that the legal framework for the environmental protection in Albania is completed.

One of the biggest achievements in Albanian legislation is the law "On Environmental Protection", for the right to information.

Another important law for the environment is that of Baseline Environmental Impact which reflects Directive 2011/92 / EU (Environmental impact assessment) law which obliges all those who are to undertake the interventionist activities on Albanian territory to do feasibility studies for the excessive influence that may have in the future this activity on the environment.

### **3. ENVIRONMENTAL ISSUES, GOVERNMENT AND SOCIETY**

The consequences of the serious environmental transition period as a result of informality in the territory led to increased political attention to the environment and its protection, through the creation and implementation of structures for environmental protection according to a series of agreements and international programs to protect the environment. Discussing environmental issues, solving the problems that affect the environment and ensuring the sustainable development, requires the commitment of a series of institutional actors, ranging from central and local authorities, non-governmental organizations to ordinary citizens and legal entities specialized in this area of the community to the community.

- National Environment Agency, created by the Albanian government in 1998 is under the responsibility of the Prime Minister. Its objectives are: undertaking of the environmental initiatives and their implementation, setting state pollution standard and policy coordination with other authorities responsible for environmental protection.
- Local government bodies are the main actors in the environmental management and protection, which guarantee its quality through the applicability of the Law No. 8934, dated 5.09.2002, "On environmental protection. One of the main tasks of these bodies is the development of local plans for the protection of the environment. Today local government has more legal powers directed in institutional and managerial level regarding environmental problems (management of waste, inspectorates mayoral control of the

territory, forest management) are the powers delegated (landfills, treatment plants sewage, etc.) . Other state policies also play an important role in the environmental structures such as the Ministry of Agriculture and Food, the Ministry of Transport, The Ministry of Economy and Privatization, The Ministry of Public Works, The Ministry of Health, the National Water Council, The Institute of Public Health, The Institute of Hydrometeorology, the Council of Territory and Land Institute.

- Inspectorate of Environment and Urban Environment Inspectorate, which depend on the Ministry of Environment, exercises the monitoring of functions in specific subjects and to their activities, with the right of deciding on the punitive measures in accordance with the rights and duties stipulated in the environmental legislation
- Regional Environmental Agencies are specialized bodies for the protection of the environment, depending on the Ministry of Environment, Forestry and Water Management. They function at regional level, serving as a medium between central institutions and regional offices. They have a co- operative role in drafting local environmental plans, ensuring the implementation of Law on protection of the environment, the environmental authorizations for local activities, but also in the preparation of regional environmental reports.
- Local government as an actor with the role of enforcement. Local government and local bodies are (institutions directly related to the environment protection) Local government institutions caring for the disciplining of public services in the collection of waste disposal within the perimeter of the administrative territory shall guarantee the hygiene and health requirements of community life and take responsibility of any risk to pollution of air, water, soil and subsoil. Municipalities have full administrative, service, investment and its regulatory functions specified in environmental legislation and national and regional policies on the environment. Municipal police as a local government structure with general duties and functions, detects and prevents the environmental pollution. The implementation of the new administrative-territorial division gives more competencies in the context of the territory that will be managed by new units.
- Non-profit organizations. There are about 100 environmental organizations in Albania, 10 of which active. Most of the environmental NGOs are concentrated in Tirana, for example Ekolevizja, Institute for Environmental Policy, Eden Centre, EPER CENTER, etc.
- Albanian Geological Survey which is responsible for monitoring of the radon, monitoring of the surface, underground and marine's water quality, risk assessment and soil pollution.
- Institute of Public Health which is responsible for monitoring the emission rates, toxicological investigation of biological material, food quality control, radio ecological investigation, noise and vibration monitoring
- Agency for Environmental Protection which is responsible for the water quality particularly at river mouths and populated areas.
- Universities, as actors of proposing specific solutions for specific environmental problems. Among those most involved are Polytechnic University, Agricultural University, University of Tirana etc.

One of the largest environmental movements of the last decade was the one opposing the request from the UN for the dismantling of the Syrian chemical arms in Albania. One of the most known environmental movements of the last decade was that against the UN claim to dismantle chemical weapons of Syria in Albania. The UN Security Council Resolution 2118, according to its

responsibilities and to a predetermined time term, obliged Syria to demolish its chemical armament and factories of armament production. In October 2013, Albania, Belgium, Norway and France were considered as countries that could accept Syrian arms. The possibility of their dismantling in Albania caused a large public reaction where many actors, as well as the community, valued it as a great impact on the environmental pollution which would consequently damage public health. In November 7 groups of Albanian environmentalists including The Alliance Against Waste Import organized a manifestation in front of Prime Minister Office opposing the coming of the Syrian chemical arms. Such situation culminated on November 12. 2013 with massive demonstrations in front of the Prime Minister's Office and in front of The American Embassy. This initiative was also spread in social media through an online petition against bringing Syrian chemical arms in Albania. Facing such protest, the Albanian government decides to oppose the US proposal for dismantling Syrian chemical arms in Albania.

#### 4. CONSLUSION

Albania has demonstrated progress on management of environmental problems but still too many efforts are necessary to be taken, especially for the implementation of the environmental legislation. In Albania, it is necessary to increase the scale of awareness towards the environment through the following actions:

- a more efficient organizing of environmental information, a more practical and specific cataloging of the environmental problems for special areas of environmental protection from different central and local actors.
- composing and planning of strategies which serve to fully introduce to the community the environmental state and concrete measures towards facilitations and improvements against anomalies, especially in the ecosystems under the special protection.
- encouragement and support to the research groups in biological and environmental fields towards the strengthening of the infrastructure for performing environmental evaluations, also the increase of the cooperation among them, even internationally.

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## EXTENDING OUR UNDERSTANDING OF CONSUMERS' EWOM BEHAVIOR: GENDER AND GENERATION DIFFERENCES

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### **ABSTRACT**

*Electronic word-of-mouth (eWOM) has become one of the primary and preferred information sources for consumers in the process of evaluating alternatives and purchasing online. However, not all consumers have the same behaviors in eWOM. By using a sample of 524 consumers, this study compares the eWOM behavior of Generation X and Y together with gender differences. Results show that, although males' and females' behaviors are strikingly similar, there are significant differences in eWOM behaviors between Generation X and Y consumers. Few differences were found between Gen X and Y in eWOM experience, credibility of eWOM, consumer susceptibility to interpersonal influence (CSII), eWOM effect and positive valence eWOM behavior. However, no differences were observed in negative valence eWOM behaviors of Gen X and Y. In closing, theoretical and managerial implications for marketing theory and managers are discussed while important limitations are recognized.*

**Keywords:** *eWOM, eWOM behavior, Gender, Gen X, Gen Y*

### **1. INTRODUCTION**

Most of the time it is not possible to satisfy the entire consumer market with one product or service because there are many different groups of potential buyers with similar needs or characteristics or that display similar behaviour. These groups are known as market segments and each segment seeks a unique set of benefits from the product or service purchased (Stone & Desmond, 2007, p. 173-174). That's why companies identify smaller segments in large and heterogeneous markets to offer better products and services that match their unique needs efficiently and effectively (Kotler & Armstrong, 2008, p. 185).

The main segmentation variables for consumer markets can be grouped under four headings; geographic, demographic, psychographic and behavioural. Also, age and gender, which are included in demographic variables, are two of the main segmentation criteria (Kotler & Armstrong, 2008, p. 186; Stone & Desmond, 2007, p. 175).

Marketers are interested to define and classify the age structure of consumers globally and use three main and successive generations for this aim. “Baby Boomers” are the first of these generations whose dates of birth are between 1946 and 1964. Demographers termed this generation because of the population-boom period following the end of World War II (in 1945) (Shimp, 2007, p. 99-106). The two generations that followed are accepted as X generation for those who were born between 1965 and 1979, and Y generation for those who were born between 1980 and 1999 (Crampton, Hodge, 2009, p. 1). Nowadays, when considering that members of the baby boomer generation are

retiring and that members of Generation Y have been entering the workforce, determining the characteristic differences between those two generations (X and Y) in particular is important for marketers (Reisenwitz & Iyer, 2009, p. 91). At the same time, it is possible to see from numerous academic research results that some perceptual and behavioural differences exist between female and male consumers. For example, Bakewell and Mitchell (2006, p. 1299) found that men are likely to have different decision-making styles to women while the Garbarino and Strahilevitz study (2004, p. 773) reported women's higher risk perceptions in online shopping as against men's. Contributing to this research field, this study focuses on the impact of gender and generation differences in how people use and impress with eWOM. We examine gender and generational differences in terms of eWOM behaviours.

## 2. LITERATURE REVIEW

For marketers, the purpose is to predict and direct the behaviour of the individuals involved in those groups by means of determining the differences between demographic groups like age or gender. In fact, marketers want to direct the individuals in the target group to buy or indulge in behaviours like sharing messages that promote other individuals to buy. Consumer reports of unqualified opinions about brands and products offer a strong advantage in competition, so much so that there exists a marketing approach called Word-of-Mouth (WOM) marketing that provides and encourages those shares. In this marketing approach, companies seek to identify influential individuals who are early adopters, vocal and curious and with a large network of acquaintances, and try to bring their new products to the attention of these influentials. In this manner, these influentials act as unpaid salespeople who are much more persuasive than any advertisement or salesperson (Kotler, 2003, p. 185). The Internet, which provides consumers with access to all kinds of information easily and allows them to share that information with large numbers, brings power to classical WOM and causes the emergence of the new term electronic word-of-mouth (eWOM). eWOM, which is more accessible and more powerful than the classical WOM (Akyüz, 2013, p. 159), possesses unprecedented speed of diffusion and enables multi-directional exchanges of information between communicators and receivers (Cheung & Thadani, 2012, p. 468).

There are various behaviours that are related to or define eWOM in the literature. Some of those behaviours, which underlie the scope of this research, are; using experience of eWOM, perceived eWOM credibility, consumer susceptibility to interpersonal influence (CSII), eWOM effect (Park et al., 2011, p. 75-76; Maria et al., 2016, p. 1088; Akyüz, 2013, p. 106-161), positive valence eWOM and negative valence eWOM (Goyette et al., 2010, 11).

Many other marketing scholars conducted studies aspiring to contribute to the understanding of this new term and behaviour from different viewpoints, and some of those studies were related to gender and age variables. Strutton et al. (2011, pp. 559) claimed there are structural differences between the X and Y Generations regarding the media that are used to spread e-WOM messages. They suggested that Generation Y is more heavily engaged with social networking media while Generation X is more reliant on email. Besides, San-Martin et al. (2015, p. 1) suggested that there are some significant differences between age groups while Strutton et al. (2011, p. 582) highlighted that generational differences are blurred in e-WOM behaviours. Thus, we hypothesised that:

*H<sub>1</sub>: Generation Yers show a higher level of eWOM behaviour than Gen Xers.*

Also, there are many studies in the literature that found distinct differences between genders in the matter of evaluating eWOM messages. According to Kim et al. (2011, p. 401–404) men's use of online reviews depended on their level of expertise while expertise isn't a factor for females. In

spite of this finding, Fan and Miao (2012, p. 178) claimed that involvement is the only factor on perceived eWOM credibility for male customers, while expertise, involvement, and rapport have significant effects on females' perceived eWOM credibility. Again, according to Kim et al. (2011, p. 399), women are more likely to read reviews for the purposes of convenience and quality and for risk reduction. In accordance with this, Abubakar et al. (2016, p. 702) emphasised that the risk perception of females in online shopping is higher than males, and thinks that this may be one reason why females are more affected by the brand image of eWOM than males. Furthermore, there are controversial findings in previous studies concerning gender and generational differences in eWOM communication. For instance, Maceli et al. (2015, p. 288) revealed that females are more likely to tell others about their buying processes, while Cataluna et al. (2014, p.23) found that males give more importance than females to recommendations in case of analyzing and purchasing the search goods on the Internet. Regarding the relevant literature and objectives of the present research, we hypothesised that:

*H<sub>2</sub>: There is a significant difference between males and females in terms of eWOM behaviours*

Last, according to the main hypotheses and the six identified eWOM behaviours, we developed six sub-hypotheses for each main hypothesis.

### 3. METHOD

We use a cross-sectional survey to determine the eWOM behaviour of consumers from Gen X and Y and whether there are significant differences in term of their gender. Items used in this study to measure research variables have been compiled from different studies. Using experience of eWOM, perceived eWOM credibility, consumer susceptibility to interpersonal influence (CSII), and eWOM effect were measured with items adapted from Park et al. (2011, p. 75-76). However one item for CSII was deleted because its factor loading is less than 0.5. We measured positive valence eWOM using six items and negative valence eWOM with two items which were adapted from Goyette et al. (2010, p.11). All construct were measured using a five-point Likert scale, ranging from “1=strongly disagree to 5=strongly agree”. In the last section of the questionnaire, socio-demographic variables such as gender, age, income, weekly time spend on Internet and online shopping and frequency of online shopping were measured. Data for this study were collected using face-to-face questionnaire. We collected data from online consumers who are in Gen X and Gen Y who had experience with online purchase in last three month. A total of 600 questionnaires presented to the potential respondents by using convenience sampling technique in Izmir, the third biggest city in turkey. 578 of them were completed, resulting in a 96.3 percent response rate; 510 usable responses were used for analysis, due to missing data or non-qualified responses. A confirmatory factor analysis (CFA) was then performed to verify the validity and reliability of constructs. After, we run Kolmogorov-Smirnov and Shapiro-Wilk tests to check normality of data. In order to test hypotheses and sub-hypotheses we used Mann-Whitney U tests. The proportions of male and females were very similar with 51.6 percent of females. Our sample consists of 51.6 percent of Gen Y and 48.4 percent of Gen X. Of the participants, most of them (76.4%) had annual personal income levels of less than €10,000. Respondents' Internet usage ranged from 1 to 100 hours in a week with an average weekly Internet usage of 29.51 hours. They shop 2.78 times average in the last month on Internet shopping and spend approximately €70 on online shopping in a month.

## 4. RESULTS

### 4.1 Reliability and Validity

Regarding reliability of variables, Cronbach’s  $\alpha$  coefficients and composite reliability (CR) values were measured. Items used to measure variables, item and variable means, standard deviations, factor loadings, average variance extracted (AVE) and reliability values are shown in Table 1.

*Table 1: AVE, CR, CA, item mean, standard deviation and factor loading values of the variables*

Variable	AVE	CR	A	Item	Item mean	SD	Factor loading
Using experience of eWOM (UEeW) (M=3.22)	0.598	0.880	0.877	I always read online reviews written by others	3.39	1.16	0.652
				I always write down online review by myself	3.03	1.19	0.886
				I always share my knowledge and information	3.14	1.17	0.828
				I always read online consumer reviews when I was shopping	3.52	1.09	0.679
				I always write down online consumer reviews when I was finishing my shopping	3.03	1.18	0.795
Perceived eWOM credibility (PeWC) (M=3.02)	0.648	0.902	0.907	I believe the online review which been read a lot	2.97	1.17	0.756
				I believe the online review which is believed by others	2.82	1.14	0.786
				I believe online review is important	3.14	1.10	0.841
				I believe online review is credible information	3.04	1.06	0.873
				I believe online review is written with responsibility	3.08	1.07	0.764
CSII (M=3.38)	0.587	0.739	0.734	I like listening advices before shopping	3.51	1.11	0.704
				Others’ advices are important for my shopping	3.25	1.08	0.824
eWOM effect (eWE) (M=3.08)	0.751	0.900	0.898	I will buy things because online review is positive	3.06	1.07	0.851
				I rely on online reviews when I purchase	3.04	1.05	0.910
				Online review affects my purchase decision crucially	3.13	1.12	0.837
Positive valence eWOM (PVeW) (M=3.41)	0.572	0.889	0.895	I recommended this company	3.49	0.99	0.793
				I speak of this company’s good sides	3.50	0.96	0.807
				I am proud to say to others that I am this company’s customer	3.28	1.09	0.790
				I strongly recommend people buy products online from this company	3.07	1.12	0.725
				I mostly say positive things to others	3.59	0.97	0.706
				I have spoken favourably of this company to others	3.52	0.95	0.709
Negative valence eWOM (NVeW) (M=3.10)	0.566	0.722	0.830	I mostly say negative things to others	3.47	1.11	0.791
				I have spoken unflatteringly of this company to others	2.74	1.18	0.711

AVE: Average variance extracted; CR: Composite reliability;  $\alpha$ : Cronbach’s alpha; SD: Standard deviation; M: Mean

As shown on Table 1, all item loadings were significant ( $p < 0.001$ ) and both Cronbach’s alpha and composite reliability values ranged from 0.72 to 0.91, greater than the recommended value 0.70. Thus, the reliability analyses indicated a good reliability of the measures used in the research.

Validity of the measures was assessed using a confirmatory factor analysis (CFA). CFA provided evidence for good fit between the measurement model and the data ( $\chi^2=715.12$ ;  $df=207$ ;  $\chi^2/df=3.45$ ; GFI= 0.89, AGFI=0.86, IFI=0.93, NFI=0.91, CFI=0.93, RMSEA=0.067). Convergent validity was examined by using CR and AVE values. As it can be seen from Table 1, all CR values were higher than 0.72, AVE values were higher than 0.56, item loadings investigated significant, and exceeded 0.5 which means the convergent validity is established. For discriminant validity, we compared the square root of the AVE score of each construct with its cross-correlation with other constructs. As presented in Table 2, all AVE scores surpassed the squared correlations which indicate the discriminant validity was achieved.

*Table 2: Discriminant validity*

Variable	1	2	3	4	5	6
<b>NVeW (1)</b>	<b>0.752</b>					
<b>UEeW (2)</b>	0.424	<b>0.773</b>				
<b>PeWC (3)</b>	0.531	0.682	<b>0.805</b>			
<b>CSII (4)</b>	0.543	0.464	0.649	<b>0.766</b>		
<b>eWE (5)</b>	0.541	0.523	0.716	0.741	<b>0.867</b>	
<b>PVeW (6)</b>	0.696	0.416	0.470	0.493	0.545	<b>0.756</b>

*Notes:* The diagonal elements in bold represent the square root of AVE  
 NVeW: negative valence eWOM; UEeW: using experience of eWOM; PeWC: perceived eWOM credibility; CSII: consumer susceptibility to interpersonal influence; eWE: eWOM effect; PVeW: positive valence eWOM

## 4.2 Hypothesis Testing

Before testing hypotheses, a test of basic assumption is usually performed to choose the appropriate statistical test. We run Shapiro-Wilk and Kolmogorov-Smirnov tests to check the normality of data. We found that all significance levels are lower than 0.05. It means all variables in research are shown non-normally distribution. Therefore, we use Mann-Whitney U test which is a kind of nonparametric test to compare males' and females', Gen Xers and Yers eWOM behaviors. The statistical analysis is carried out by using SPSS version 23.0. The significant (p) values <0.05 are considered as statistically significant.

The results of tested hypotheses are presented in Table 3. All hypothesized relationships between gender and eWOM behaviors of Xers and Yers were found statistically non-significant. Although, males' using experience of eWOM and intent to share negative eWOM messages were found higher than females and females' perceived eWOM credibility, CSII, eWOM effect and intent to share positive eWOM messages were higher than males, these differences were not significant. Therefore, H<sub>1</sub> was not supported. However we found some significant differences in eWOM behaviors of people in terms of their generation. More specifically, one of our sub-hypothesis of H<sub>2</sub>, H<sub>2a</sub> which predicts the significant differences between Gen Xers and Gen Yers using experience of eWOM, was supported. Gen Yers have more using experience of eWOM than Gen Xers. With respect to H<sub>2b</sub>, perceived eWOM credibility of Gen Yers is higher than Gen Xers. Sub-hypothesis H<sub>2c</sub> examined the difference between Xers and Yers in CSII, which was also found to be higher in Yers than Xers. Similarly H<sub>2d</sub>, Yers was found to be more impressed by eWOM than Xers. Finally, H<sub>2e</sub> and H<sub>2f</sub>, which predict the differences between generations in spreading both positive and negative valenced eWOM were supported. Gen Yers intent on spreading and talking about their experienced by using eWOM more than Xers.



*Table 3: eWOM behavior in terms of gender and generational differences*

Variables	p	U	Mean Rank		p	U	Mean Rank	
			Male	Female			Gen X	Gen Y
Using experience of eWOM (H <sub>1a</sub> -H <sub>2a</sub> )	.526	31430.5	259.75	251.51	.003*	27578.0	235.65	274.14
Perceived eWOM credibility (H <sub>1b</sub> -H <sub>2b</sub> )	.439	31197.5	250.31	260.38	.009*	28139.0	237.92	272.01
Consumer susceptibility to interpersonal influence (H <sub>1c</sub> -H <sub>2c</sub> )	.665	31772.5	252.63	258.19	.001*	26596.0	231.68	277.87
eWOM effect (H <sub>1d</sub> -H <sub>2d</sub> )	.580	31569.5	251.81	258.96	.001*	26239.5	230.23	279.23
Positive valence eWOM (H <sub>2e</sub> -H <sub>2e</sub> )	.359	30959.5	249.34	261.28	.036*	29005.5	241.43	268.71
Negative valence eWOM (H <sub>1f</sub> -H <sub>2f</sub> )	.657	31754.5	258.44	252.74	.234	30537.5	247.63	262.89

\*: Statistically significant differences in  $p < 0.05$  (Mann-Whitney Test)

Additionally, we analyzed the differences between males' and females' eWOM behaviors separately in two generations in order to investigate gender differences thoroughly. We found significant differences only in Gen Yers two eWOM behaviors. CSII ( $U=7191.5$ ;  $p=0.018$ ) and intent to spread positive valence eWOM ( $U=7313.0$ ;  $p=0.032$ ) were found to be higher in females than males.

## 5. DISCUSSION AND CONCLUSION

Studies in the literature, which explain the eWOM behaviours of consumers, reveal that behaviours of eWOM vary according to the various features of consumers. There is no doubt that examining the eWOM behaviours of consumers in terms of demographic features like gender and generation will bring a detailed point of view to the topic. In this study, behaviours that are accepted as eWOM behaviours like using experience of eWOM, perceived eWOM credibility, consumer susceptibility to interpersonal influence (CSII), eWOM effect, positive valence eWOM and negative valence eWOM are examined in terms of whether they differentiate according to the gender and generation of consumers or not.

There are three remarkable fields of interest in the results. First, when the frequency of the exhibiting behaviours is examined, it is determined that the behaviour of positive valence eWOM spreading is exhibited more commonly than negative valence eWOM spreading. In addition, it is determined that consumers' response to eWOM and their trust in eWOM is at the middle level, and even if the CSII level is higher, transforming the eWOM effect is less frequent. Second, our results showed that male consumers' using experience of eWOM is more than that of females. This finding is consistent with Kim et al. (2011, p. 403), and reveals the fact that males generally make and spread more eWOM reviews. Thus, one can deduce that businesses choose males as the primary target group in studies about eWOM. In any case, while negative valence eWOM spreading is higher in males, positive valence eWOM spreading is higher in females. This finding is partially parallel to the opinion of Maceli et al. (2015, p. 288) that female intentions of talking about the shopping process is more than those of males. This is because in an acquired experience of buying, satisfying the expectations when one has bought before is a situation that can be called routine. In those kinds of routine situations, the lower sharing of males in comparison to females can be interpreted as they are less willing to have those types of shares, and they only do it when they have to. Results show that females not only have positive share intentions but also perceived eWOM credibility, levels of CSII and eWOM effect are higher than those of males. The finding of eWOM effect seems inconsistent with the finding of Cataluna et al. (2014, p. 23) that males attach more importance to recommendations in the Internet environment. When these two findings are



evaluated, it is revealed that although males attach more importance to eWOM than females, they might be behind females in terms of transforming the information they got in the eWOM process to buying behaviour. Therefore, businesses choosing females as the primary target group while conducting eWOM activities considering that they are more effective in transforming the eWOM effect into buying and thus may cause more successful eWOM results. However, that the differences between genders are not at a level that can be scientifically accepted necessitates being cautious while making such deductions.

Also, when the eWOM behaviours between X and Y generations are compared, significant differences are detected. Results reflecting eWOM experiences, perceived eWOM credibility, CSII positive valence eWOMs and influenced by eWOMs of consumers in the Y generation come out at significantly higher levels in comparison to Generation X. Our results support the age differences and provide strong evidence to crystallise the uncertainty stated by Strutton et al. (2011, p. 582). However, we did not find significant differences in negative valence eWOM behaviour between Generation Xers and Yers. These findings reveal that eWOM is a much more effective tool in reaching consumers from the Y generation, and show that a business that targets the Y generation should take the eWOM topic more seriously. In conclusion, when the gender differences between X and Y generations are examined, it is determined that in the X generation there is no eWOM behaviour differentiation according to gender while in the Y generation, CSII and positive valence eWOM spreading behaviours are higher in females. This finding reveals that in the Y generation, when eWOM messages are more effective, both males and females are more sensitive to eWOM. There are several limitations to the study that should be mentioned. The participants were chosen only in one city and country because of convenience. Therefore, the findings should be validated in multiple cities or countries to define possible cultural differences. Another limitation of the study is considering all types of products and social media websites, instead of specifically focusing on one product such as electronic devices or only eWOM messages in one social media website such as Facebook or Instagram. Also, a comparison between different products or social media websites could provide valuable and interesting insights both in theoretical and managerial perspectives. Although limited in scope, the findings of the current study enhance our understanding of several eWOM behaviours of consumers from Gen X and Gen Y. The findings also provide managers with strategic directions for rethinking their communication strategies in both media choice and consumer targeting.

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## PERCIEVED BARRIERS FOR BUYING ORGANIC FOOD PRODUCTS

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### **ABSTRACT**

*In marketing, it is of great importance to realize and understand the motives and barriers for a certain type of behaviour. Based on determined motives and barriers, it is possible to design the appropriate marketing strategy in order to achieve a specific short- or long-term goal. The purpose of this paper is to determine the main barriers for buying organic food products or the factors that negatively influence the intention to buy these type of products. Based on an extensive previous research, the intention to purchase is the best predictor of the actual behaviour.*

*The study is based on the outcomes of a questionnaire completed by a sample of 411 household primary shoppers from Eastern Croatia. Results from regression analysis reveal significant negative relationship between organic food purchase intention and cost barriers, time barriers, knowledge barriers and negative attitudes on organic food. Based on the model developed, these identified barriers explain 52.9% of the variance in intention to purchase organic food with the negative attitudes being the strongest contributor to the variance explained.*

*Identified barriers that prevent the buyers to opt for an organic product at the time of purchase indicate the great potential and the importance of action in terms of marketing at the level of different social stakeholders. In other words, the main barriers identified can and need to be minimized or eliminated by marketing actions in order to stimulate buying organic food products.*

**Keywords:** *Barriers, Intention, Organic food products*

### **1. INTRODUCTION**

Intention to buy represents a plan to purchase a particular good or service in the future. (Business dictionary, 2016). Based on an extensive previous research, the intention to buy is the best predictor of the actual behaviour. Intention to buy can be realized, while on the other hand, potential buyers may experience some obstacles that will prevent them for making the actual purchase. The final decision depends on whether the motives for purchase or barriers to purchase had more powerful impact on the potential buyer.

In this paper, the intention to buy relates to the purchase of organic food. In order to understand the motives and especially the barriers, it is necessary to define what defines organic food. According to Martić Kuran and Mihić (2014, p. 181) 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. Organic food is one of the fastest-growing segments of agriculture and retail. In the United States alone, organic food sales rose from \$1 billion in 1990 to \$25 billion in 2011, which accounted for more than 3.5% of total food sales in 2011. (Osteen, C., Gottlieb, J. and Vasavada U. 2012, p.15) The Croatian market of organic food at the moment is underdeveloped and far behind the developed Western European markets (for example, the Law on organic production in Croatia was adopted in 2001, and the EU has regulated this area in 1992) (Renko, S. and Bošnjak K. 2009. p. 388).

The purpose of this research is to determine the main barriers for buying organic food products or the factors that negatively influence the intention to buy these types of products. As important it is to examine the underlying factors that might influence consumers' intention to purchase organic food products, it is also important to understand the factors that prevents this behaviour so that those factors could be minimized or completely eliminated. It is believed that such research could help to formulate an optimal marketing communication and policy strategies in order to stimulate desired behaviour toward organic food.

## **2. THEORETICAL FRAMEWORK**

Previous research shows that consumers mostly have positive attitudes about organic food. The share of organic food consumers is relatively small and it can be concluded that a positive attitude on environmental food does not necessarily lead to the purchase. (Suprpto and Wijaya 2012, p. 115). It is useful to point out that, although the health aspect of organic food is the most common motive for buying organic food among respondents in that type of research, the correlation between attitudes about organic products and health awareness is not significant (Tomić, Matić, Mesić, Cerjak, 2015. pp. 12) but according to Plummer (1974, p.36) in predicting consumer behavior, experts argued that a person's life style will determine his consumption behavior.

One of the most used theories for predicting future behavior is the Theory of planned behavior. Based on the Theory of planned behavior the best predictor of behavior is intended behavior, which is determined by three elements: attitudes toward specific behavior, subjective norms and perceived behavioral control. (Ajzen, 1991). Results of research carried out by Martić Kuran and Mihić (2014), where they used the theory of planned behavior, showed that consumer attitudes towards organic food, subjective norms, awareness of health and knowledge about organic food significantly affect the intention of buying organic food. Some socio-demographic characteristics are also associated with the consumption of organic food, for example, women with young children are the most frequent consumers of organic food (Hughner, R. S., McDonagh, P., Prothero, A., Schultz, C. J., II, Stanton, J. 2007.). Also, according to Faletar, I., Cerjak, M. and Kovačić, D. (2016. p. 64), who conducted the research in Croatia about determinants of attitude and intention for buying ecological milk, women show more expressed awareness of the connection between nutrition and health, more positive attitudes about ecological milk and show higher purchasing intention than men for buying organic/ecological products. The same research has confirmed that consumers who trust eco-labels express more positive attitudes on environmental milk, and it can also be concluded that this can be applied for other ecological products too. According to Pearson, D., Henryks, J., Sultan, P. and Anisimova, T. (2013, p. 61) the findings show that, from a demographic perspective, consumers who are young, highly educated, and students are most likely to be regular purchasers of organic foods. On the opposite, there is a reduction in the frequency of

organic food purchases amongst older consumers and those with lower levels of education. Besides the already mentioned elements which affect the intention to buy organic food and other organic products, safety of food, nutritional value, taste, freshness, appearance and other sensory characteristics also affect consumer's preferences of organic food (Gil, J.M., Gracia, A., Sanchez, M. 2000.) The choice of organic, over conventional food is usually driven by many motives, including the ones related to social and environmental responsibility, economic incentives and barriers and factors related to one's own well-being and altruistic concerns for the well-being of family members (Urban, J., Zverinova, I. and Ščasny I. 2012, p.728).

Sorokin, B. (1973) defines motives as everything that stimulates a person from within, to a certain activity (in this case to a buying activity), what directs and maintains the activity, and, finally, what suspends that activity. Health is one of the strong motives for buying organic food. Intention to eat healthy is thus determined by intrinsic motives including 'feeling better' and 'staying healthy' (Michaelidou N., Christodoulides G. and Torova K. 2011, p. 20). According to their research, motives to eat healthy can be classified in terms of being intrinsic or extrinsic and capture three categories of motives, including self-image (e.g. looking attractive), health (e.g. to enhance health, prevent disease) and social pressure (e.g. pressure of others to eat healthy). Time of fast-food is slowly coming out of habit, and more and more people are thinking about buying food on green markets and buying food for which is believed that has been grown in natural conditions. Majority of organic food buyers believe that organic food is healthier compared to conventionally grown food (Bayaah Ahmad, S.N. and Juhdi N. 2010, p. 110). Żakowska-Biemans, S. (2009, p. 770) conducted the research in Poland about the motives and barriers related to organic foods. The survey, besides the motive of health, contained five other considerations that should be mentioned: safety, taste, environmental impact, contribution to animal welfare and appearance. In that paper, the author concludes that health and safety concerns are primary motives. The hierarchy of motives in this research was confirmed by the analysis of the research done in 2007. The author analysed different papers about the motives for buying organic food, and stated that it is safe to conclude that the health is one of the main motives for buying organic food.

Barriers for buying organic food products consist of all the intrinsic and extrinsic obstacles which impede buying organic food. If barriers are known, then it is easier to affect their elimination. Previous research discuss different barriers for the intention to buy organic food. Barriers are divided into two categories: physical (external) and psychological (internal) (Kaerney and McElhone, 1999). Time costs, unavailability and high prices are examples of physical barriers, while eating habits and will power are examples of psychological barriers (Lappalainen, R., Kaerney, J. and Gibney, M. 1998). The research conducted in Poland in 2007 by Żakowska-Biemans, S. (2009, p. 772) showed that consumers are dissatisfied with choice, availability, convenience and prices of organic food, and that is what prevents them from buying it. Lack of trust is also one important barrier for organic market development and that is confirmed in the same research. According to Aertsens, J., Verbeke, W., Mondelaers, K. and Huylenbroeck, G. (2009, p. 1157) lack of availability of organic products is one of the barriers, too. Availability poses a big problem because although consumers are motivated and purchase of organic food would truly be realized, it is directly prevented by the lack of availability of those products. The research conducted by Rodríguez E., Lacaze, V. and Lupín, B. (2008, p. 9) in Buenos Aires showed that, except the lack of availability, the lack of a reliable regulatory system and the lack of a common national label constrains consumption of organic products. Some authors emphasize other barriers, so Lappalainen, R., Kaerney, J. and Gibney, M. (1998, p. 478) point out nine physical barriers: lack



of time, self-control, resistance to change (‘I don't want to change my eating habits’, ‘Too great a change from my current diet’), food preparation (cooking skills, ‘Healthy food is more perishable’, lengthy preparation, storage facilities, limited cooking facilities), cost, unpleasant foods (unappealing food, strange or unusual foods), influence of other people (feeling conspicuous amongst others, taste preferences of family and friends), lack of knowledge/expert consensus (not knowing enough about healthy eating, experts keep changing their minds), selection influences (‘Limited choice when I eat out.’, healthy options not available in shop or canteen or home, healthy food more awkward to carry home from shops, not enough food to satisfy hunger).

## **2.1 Negative attitudes**

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). Since each attribute is evaluated in advance as positive or negative (emotional component of the attitude), the behavior is therefore automatically perceived as desirable or undesirable. According to Kim, M. S., Hunter, J. E., (1993) the relationship between attitude and intention is confirmed to be stronger than the relationship between intentions and actual behavior which is expected, considering that the relationship of intentions and behavior is under the powerful influence of external factors. There is a strong relationship between the attitude and buying intentions, but the social pressure from perceived norms play an even bigger role (Thøgersen, J. 2006, p.2). Chen, M-F. (2007, p. 1013-1014) established claim that when the consumers are more concerned about convenience, they will more likely have a negative attitude toward organic foods.

## **2.2 Cost barriers**

It can be stated that the cost barrier is present every time money is being exchanged for a good or a service. In these cases it is necessary to reduce prices or to attract people who will be willing to pay that amount of money for demanded product or service. Of course, influence of price upon food choice varies greatly between countries, but effect is always the same – lower prices means increasing demand. According to different studies (Hill and Lynchehaun, 2002; McEachern and Willock, 2004, Padel and Foster, 2005, Lea and Worsley, 2005, Botonaki et al., 2006, Aertsens, et al., 2009) one of the strongest barriers for organic food consumption is the price premium. The impact of price reductions on demand are expected to be important as price elasticity of organic food is a lot higher than for conventional food. (Wier, M. and Calverley, C., 2002). Price plays a significant role in the choice of food for many people, particularly for those on reduced incomes, such as unemployed or retired subjects, or for those who are responsible for the household food shopping (housewives). In terms of the promotion of healthy eating, it would be important that nutrition educators emphasize that a healthy diet should not have to involve extra expense (Lappalainen, R., Kaerney, J. and Gibney, M. 1998, p. 474). Mostly, consumer price premium levels depend on product origin (domestic, foreign), however, in the same sales channels, large differences show up in the pricing of organic products (Żakowska-Biemans, S. 2009, p. 769).

## **2.3 Time barriers**

This type of barriers refers to lack of time, more precisely, to the influence on the purchase intentions due to lack of free time. Lappalainen, R., Kaerney, J. and Gibney, M. (1998, p.471) mentions that the lack of time is associated with people with higher education level. Except that, people with higher education level have barriers like self-control (including the statements ‘Giving



up foods that I like’ and ‘Willpower’) and food preparation. The lack of their time is usually caused by irregular working hours and busy lifestyle.

## **2.4 Knowledge barriers**

When it comes to knowledge barriers, it is difficult to influence them and it takes time and a lot of effort in order to provide consumers with the necessary information. Lack of knowledge and inability to perform simple calculations leads to failure in decoding the information (Fullmer et al., 1991; Schapira et al., 1990). It is possible that low purchase rates of organic food can be attributed to the relative inadequacy of information available and it has been reported that, for some consumers, a lack of information about organic food acts as a barrier for purchasing more of it (Harper, G.C., and Makatouni, A., 2002; Demeritt, L., 2002). But, extra knowledge about organic production processes may help to increase involvement (Aertsens, J., Verbeke, W., Mondelaers K. and Van Huylenbroeck, G. 2009, p. 1157). In the previously mentioned research conducted by Żakowska-Biemans, S. (2009, p. 772), Polish respondents stated the lack of information as one of the reasons for not buying organic foods. An interesting finding from the survey conducted by Lappalainen, R., Kaerney, J. and Gibney, M. (1998, p.475) was that there was no relationship between the educational level of subjects and the selection of the barrier category ‘lack of knowledge / expert consensus’. Gil, J.M., Gracia, A. and Sanchez, M. (2000 p. 223.) mention that the market for organic food is small and that an important task is to increase consumers’ knowledge of what an organic product is and how to differentiate it in the marketplace.

## **3. RESEARCH METHODOLOGY**

### **3.1 Participants and procedure**

The research is based on an in-person survey carried out (in 2014) on a convenient sample of 411 primary household shoppers from five counties in the Slavonia and Baranya regions in Croatia. According to Tanner and 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 analysed using the statistical software package SPSS version 18.0. Statistical techniques of univariate analysis (frequency distribution, central tendency measures) and multivariate analysis (reliability analysis, linear regression) were used. Table 1 shows sample description.

*Table following on the next page*

*Table 1: Sample description*

		N	%
Gender	M	85	20.7
	F	309	75.2
Age	18-25	38	9.2
	26-35	83	20.2
	36-45	73	17.8
	46-55	140	34.1
	56-65	49	11.9
	>66	20	4.9
Education	Primary school	41	10
	High school	234	56.9
	Faculty	42	10.2
	Master's degree	72	17.5
	Doctorate	16	3.9
Place of residence	Village	120	29.2
	Suburb	70	17
	Town/city	212	51.6
Standard of living in household	Bellow country's average	83	20.2
	At country's average	286	69.6
	Above country's average	38	9.2
Employment status	Student	27	6.6
	Unemployment	102	24.8
	Employment	232	56.4
	Retired	48	11.7
Members of household	1	22	5.4
	2	71	17.3
	3	99	24.1
	4	121	29.4
	5	66	16.1
	>6	31	7.5
Children in household under 15 years old	0	291	70.8
	1	65	15.8
	2	39	9.5
	>3	16	3.9
Monthly income of all members in household	<500€	66	16.1
	501-1000€	131	31.9
	1001-1500€	105	25.5
	1501-2000€	59	14.4
	2001-2500€	27	6.6
	>2500€	21	5.1

Source: Authors' work

The main data collection was preceded by a pilot survey, the aim of which was to ensure that proposed methods and procedures effectively fulfilled the purpose of the study.

### 3.2 Variables and measurement

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. The final score for each of the measurement scales is the average of the scores on the items included in the scale.

Authors of this study developed a five-item scale to evaluate the individual's *intention* to purchase organic food products. *Cost barrier* scale consists of four items measuring respondents' perception of cost in purchasing organic food products and their own availability of funds for organic food purchasing. Three-item scale for *time barrier* was adopted from Tanner and Kast (2003) measuring respondents' time availability for organic food purchase. *Negative attitudes* scale was developed combining scales from Tanner and Kast (2003) and Voon et al. (2011) and it consists of five items measuring respondents' attitudes about taste, attribute perceptions and attractiveness of purchasing organic food products. *Knowledge* about organic food was measured with three-item scale combined from the previous research of Kumar (2012) and Umberson (2008).

All proposed constructs have adequate reliability (Table 2). According to Nunnally (1978) it is considered for Cronbach's alpha to be acceptable above 0.7.

Table 2: Reliability analysis of the constructs

Measurement scale	Number of items	Mean	Variance	Standard deviation	Cronbach's Alpha	Average inter-item correlation
<b>Intention</b>	5	14.76	27.978	5.289	0.929	0.724
<b>Cost barrier</b>	4	14.3096	10.411	3.22666	0.709	0.383
<b>Time barrier</b>	3	7.98	10.713	3.273	0.772	0.530
<b>Negative attitudes</b>	5	12.63	16.469	4.058	0.718	0.342
<b>Knowledge</b>	3	9.05	7.393	2.719	0.709	0.452

Source: Authors' work

## 4. RESEARCH RESULTS

The aim of the paper was to determine the main barriers for buying organic food products or the factors that negatively influence the intention to buy this type of products. Linear regression tests using standard regression method were subsequently conducted to find out which determinants could prevent the intention to purchase organic food products according to their level of importance.

Table 3: Model summary

Model	R	r <sup>2</sup>	Adjusted r <sup>2</sup>	Std. Error of the estimate	Change Statistics				
					R square change	F change	Df1	Df2	Sig. F Change
1	0.727 <sup>a</sup>	0.529	0.524	3.64773	.529	112.096	4	399	.000

a. Predictors: (Constant), Cost\_barrier, Time\_barrier, Attitude\_barrier, Knowledge\_barrier

b. Dependent Variable: Intention

Source: Authors' work

The proportion of explained variance as measured by R-Squared for the regression is 52.9% as depicted in Table 3.

Table 4: ANOVA

ANOVA<sup>a</sup>

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5966,154	4	1491,539	112,096	.000 <sup>b</sup>
Residual	5309,071	399	13,306		
Total	11275,226	403			

a. Dependent Variable: Intention

b. Predictors: (Constant), Cost\_barrier, Time\_barrier, Attitude\_barrier, Knowledge\_barrier

ANOVA results in Table 4. show that the model reaches statistical significance (Sig = .000).

Table 5: Regression coefficients

Model		Unstandardized coefficients		Standardized coefficients	t	Significance
		B	Std. Error	Beta		
1	(Constant)	31.737	1.050		30.213	.000
	Time barrier	-.151	.057	-.094	-2.650	.008
	Negative attitudes	-.786	.048	-.603	-16.441	.000
	Knowledge barrier	-.327	.079	-.168	-4.499	.000
	Cost barrier	-.201	.058	-.123	-3.500	.001

Source: Authors' work

The results of linear regression analysis (Table 5) show that negative attitudes, time barrier, cost barrier and knowledge barrier all have a significant negative influence on the intention to purchase organic food products.

Based on the results, the overall multiple regression model with four barriers for organic food purchasing has worked well in explaining the variation in barriers for organic food purchasing (F=112.096; d.f. =4; p=.000). As it can be seen in Table 5, negative attitudes were found to have the largest significant negative influence on intention to purchase organic food (t=-16.441; p=0.000;  $\beta$ =-0.603). Significant negative effect was also found in other independent variables:

knowledge barrier ( $t=-4.499$ ;  $p=0.000$ ;  $\beta=-0.168$ ), cost barrier ( $t=-3.500$ ;  $p=0.001$ ;  $\beta=-0.123$ ) and time barrier ( $t=-2.650$ ;  $p=0.008$ ;  $\beta=-0.094$ ). The beta values given in Table 5 seemed to indicate negative attitudes ( $\beta=-0.603$ ) as more important barrier in the intention to purchase organic food than other independent variables.

## 5. CONCLUSION

Besides the wide range of factors that positively influence organic food purchasing decision making, there are others that could be considered as barriers to the intention of organic food purchase. Knowing how consumers perceive organic food products and by understanding the barriers for their purchase can help the marketers of organic food to establish a proper communication message. This study has showed that the biggest barrier for the intention of organic food purchase is represented by negative attitudes toward organic food. Negative attitudes, such as “organic food tastes worse”, “organic food also contains artificial tastes and additives” and “buying organic food does not seem attractive to me” largely prevent people’s intention to buy organic food. In order to overcome this type of barriers, it is necessary to educate consumers, demonstrate the products and make the organic food purchasing and diet more appealing as a lifestyle choice.

In accordance with previous research, knowledge about organic food is also one of the important barriers for the intention to buy organic food. This shows that actions taken by the public institutions or companies producing organic food, either to inform or to create awareness, has not reach the satisfactory level in encouraging sustainable consumption of organic food. It is necessary that education of consumers becomes one of the main objectives for organic producers. An important task is to increase the consumers’ knowledge on what organic products are, where to purchase them and how to differentiate it in the marketplace. Some studies have found that by increasing the level of knowledge, it is possible to improve the attitude towards organic food (McEachern and McClean, 2002, Gracia and de Magistris, 2007, Stobbelaar et al., 2007)

Unlike some previous research (Hill and Lynchehaun, 2002; McEachern and Willock, 2004, Padel and Foster, 2005, Lea and Worsley, 2005, Bottonaki et al., 2006) cost was not found to be the biggest barrier for the intention to purchase organic food, but was found to be one of the significant barriers.

The research has also proved that the lack of time negatively influences the intention to buy organic food. Previous research has shown that the lack of time is usually associated with consumers with higher income and higher education and it is caused by irregular working hours and busy lifestyle. In order to overcome the time barrier it is necessary to facilitate the purchase of organic food (for example with delivery systems).

Findings from this study have a number of implications for policy makers as well as managers. Managers of healthy brands and public policy makers should shift their campaigns to influencing attitudes about organic food in positive direction which is also an undeniably desirable social goal. It is also very important for them to be aware of the level of knowledge about organic food so they could develop an effective communication to increase the awareness and knowledge about organic food and also to highlight the benefits of this behaviour in order to stimulate individuals to adopt healthy eating habits.

Future research should be directed towards determining other barriers for buying organic food and toward revealing the possible mediation variables that influence the intention-behaviour connection and possible explanation of the intention-behaviour gap that is undeniably present based on vast previous research.

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## EMOTIONAL INTELLIGENCE OF THE ELDERLY: THE RELEVANCE OF THE SENIOR UNIVERSITIES

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### **ABSTRACT**

*Introduction: Emotional Intelligence is understood by the academics as a skill that allows a better adaptation of the person to the everyday life adversarial situations. Senior universities promote health, social participation and security, through active aging programs. Aims: To assess the level of emotional intelligence of the elderly who attend senior universities and to confirm that their area of living, their education level and their physical activity can influence their own emotional intelligence and its dimensions. Methods: Cross-sectional, descriptive and correlational quantitative study. In this study there was the voluntary participation of 157 elderly who are attending senior universities, aged between 65 and 90 years old and living in the district of Viseu. For the measurement of the variables it was used an Emotional Intelligence Scale (MIE) and a form for the situational characterization. Results: 51% of the surveyed population has high emotional intelligence and 26.7% low emotional intelligence. For the dimensions of emotional intelligence (Empathy, Self-Motivation, Self-Awareness, Self-monitoring and Sociability), education level interferes with sociability, as well as the residential area and the practice of physical activity interferes in self-monitoring. Conclusion: the elderly who attend senior universities have a high level of emotional intelligence. The development of cognitive, relational and emotional skills enhances the autonomy, security and the ability to manage situations inherent to the aging process leading these people to an increased quality of life and health.*

**Keywords:** *Elderly, Emotional Intelligence, Senior Universities*

### **1. INTRODUCTION**

The term Emotional Intelligence is based on two basic and interrelated concepts which are intelligence and emotions, revealing themselves as objects of research (Siqueira, Barbosa & Alves,

1999). Intelligence is the ability of individuals to solve problems and differs from the concept of affectivity, because it has to do with the emotion process. Emotions are judgments influenced by feelings and preferences (Bruner referenced by Leite, 2014).

According to Damásio (2010), the emotions and feelings associated with the physiological aspects allow the individual to carry out future projects and to trace actions according to their own objectives. Damásio also refers to the importance of the emotions process in the decision-making ability in daily situations. Emotions are expressed automatically and unconsciously (Fragoso, 2012). Thus, the concept of emotional intelligence integrates the cognitive and emotional systems (Campos & Martins, 2012) and manifests itself as an intrinsic ability to respond in a more adaptive way to the negative emotions and feelings provoked by the daily setbacks (Queirós, Carral, Fernández-Berrocal, 2004).

Emotional aspects and the development of some abilities allow people to use emotions in a positive way, what will help them, particularly the elderly, to react and solve certain emotional problems (Taylor, 2011).

Emotional intelligence consists of basic and interdependent skills, such as self-awareness, self-motivation, self-control, empathy, and sociability. The first three skills (self-awareness, self-motivation, and self-control) are related to the people's reactions: how they control their feelings and are used to strengthen their internal structures. The last two (empathy and sociability) are connected with external bounds and to the one's competence in the social context. They are related to the feelings of others and to social interactions. Self-motivation is the emotional ability responsible for self-confidence, optimism, and hope (Goleman, 1995; Siqueira, 1999). The development of IE allows the elderly to be able to deal with emotional changes effectively and is reliant on the people's ability to use emotional strategies (Taylor, 2011).

In this perspective, the activities inherent to physical / intellectual exercise, social role / utility and even the social recognition imply an aging process with physical, mental and social health (Cabral *et al.*, 2013). Thus, the elderly must become participative and active elements in their aging process and the senior universities have contributed to these qualities.

Senior universities emerge as non-formal training structures (Chamahian, 2009) that have an impact on elderly to adapt themselves to new lifestyles after retirement (Pinto, 2003). Seniors feel the need to develop activities as a way to compensate and adapt to their retirement. These structures are understood as a social response that creates and triggers social, cultural, educational and social activities for the elderly (Monteiro & Neto, 2008). They are structures that promote greater participation of the elderly in the society and that also contribute to the reduction of the social isolation and exclusion (Jacob, & Pocinho, 2013; Veras & Caldas, 2004).

In these universities, the elderly can choose, according to their interests, the activities and themes where they want to acquire more knowledge or develop skills. This way of learning develops their physical, intellectual and emotional capacities, because they are performing activities that are pleasant and which value them as human-beings and their life projects (Pocinho, Pais, Santos, Nunes & Santos, 2013). These activities promote self-esteem, autonomy, independence and sustain the social participation that facilitates the adaptation to the vicissitudes inherent to the aging process, favoring an active aging process (Moura *et al.*, 2012). According to this, Fragoso and Chaves (2012) refer that «the capacity to manage emotions remains stable along seniority», and can be improved throughout life (p.102).

The senior universities try to respond to the interests and needs of the elderly, promoting their health, social participation and security.

The aim of this study is to evaluate the level of emotional intelligence of the elderly who attend senior universities and to verify if the residential area, education level and practice of physical

activity interfere in their emotional intelligence and its dimensions (empathy, self-motivation, self-sociability).

## 2. MATERIALS AND METHODS

This is a quantitative cross-sectional study of correlational descriptive nature.

There were 157 elderly participants, aged between 65 and 90 years old, of whom 68.8% were female and 31.2% male. The majority (65.6%) of the elderly live in urban areas. Concerning their education, the majority has a degree (65.0%) and 9.6% does not have a primary education. More than half (68.2%) of the elderly practice physical activity.

Inclusion criteria were: 1) individuals aged  $\geq 65$  years; 2) senior university attendance; 3) residents in the district of Viseu; 4) consent to voluntary participation in the study.

For data collection, we used the Emotional Intelligence Measure (EIM) scale and a situational characterization form.

The situational characterization form consists on a set of questions that aims to obtain information about education level, residential area and practice of physical activity among the elderly.

The Emotional Intelligence Measure (MIE) scale is an instrument conceived and validated in Brazil by Siqueira, Barbosa and Alves in 1999, which aimed to analyze the information processing about emotions and feelings experienced or observed during social interactions, and it is constituted by 59 items (Siqueira, Barbosa & Alves, 1999).

The EIM was adapted and validated for the Portuguese population by Andrade, Martins, Duarte and Madureira in 2014, which after an exploratory and confirmatory factor analysis ended up with 33 items and five factor dimensions: Empathy (2, 8, 10, 12, 14, 18, 20, 23, 27, 28, 30, 33), Self-motivation (1, 4, 5, 6, 7, 9, 11, 16, 17, 29), Self-awareness (15,19,24,25), Self-control (3, 13, 21, 26) and Sociability (22, 31, 32) (Andrade, Martins, Duarte & Madureira, 2014).

It is a Likert type scale, with four response alternatives (1 = never up to 4 = always) and evaluates the five dimensions. The five factor dimensions are quoted according to the values of the responses indicated by the elderly, and the overall score is obtained by the sum of all items. The higher the values in each dimension and the overall score the better the level of emotional intelligence of the elderly goes here, In the current research and after confirmatory factor analysis, items 1, 3, 7, 8 and 16 were eliminated from the scale. The adjusted final model consisted of 28 items and 5 factor dimensions.

To classify the emotional intelligence there were constituted three groups: Low emotional intelligence ( $\leq 75\%$ ); Moderate emotional intelligence (76-80%); High emotional intelligence ( $\geq 81\%$ ).

In the process of collecting data, the elderly were asked to consent to voluntary participation and the confidentiality of personal data was ensured.

All the data analysis was done using the SPSS (Statistical Package for Social Sciences) programs version 22.0 (2014) for Windows and AMOS (Analysis of Moment Structures) version 22.0.

## 3. RESULTS

The results present the characterization of the emotional intelligence of the elderly (levels) as well as their relation with the situational variables.

### Characterization of Emotional Intelligence

Regarding the level of emotional intelligence, 51.0% have high emotional intelligence and 26.7% low emotional intelligence.

The emotional intelligence of the elderly is analyzed through the five dimensions (Empathy, Self-motivation, Self-awareness, Self-control and Sociability) and the overall value.



Regarding the dimensions, the elderly who reveal more:

Empathy – were male, aged between 75 or over, living in an urban area, with a degree level and practice of physical activity.

Self-motivation - males, aged between 65-74, living in an urban area, with a degree level and practice of physical activity.

Self-awareness - female, aged between 75 or over, living in an urban area, with a degree level and practice of physical activity.

Self-control - male, aged 75 or over, living in rural areas, without primary education and with no practice of physical activity.

Sociability - male, aged between 65-74, living in an urban area, with primary education and practice of physical activity.

The elderly with the highest overall emotional intelligence were women, aged between 75 or older, living in rural areas, with higher education and practicing physical activity.

### **Situational variables vs. Emotional Intelligence**

The senior university attendance has revealed a statistically significant difference in all dimensions and in overall emotional intelligence.

The interaction between the attendance of the senior university and the situational variables presented the following results:

Educational level shows a significant effect only on the Sociability dimension ( $p = 0.041$ ). Older adults who have a graduation degree present a greater overall emotional intelligence.

The residential area has also significant effect but only for the Self-control dimension ( $p = 0.041$ ).

Elderly people living in rural areas have a better self-control. In a global way, the elderly that live in an urban area are the ones who reveal a greater emotional intelligence.

The practice of physical activity is significant only in the Self-control dimension ( $p = 0.038$ ). The elderly who do not practice physical activity have a better self-control.

## **4. CONCLUSION**

The main point of this study was to evaluate the emotional intelligence of the elderly people attending senior universities and to determine if the situational variables (education, residential area and practice of physical activity) were related to the emotional intelligence levels.

Senior universities, as a space for educational and social interactions, enable the integration and participation of older people in social dynamics, contributing to the knowledge and experiences acquired throughout life. The attendance of these spaces empowers the emotional intelligence of the elderly, supporting a better management of the emotions and, at the same time, contributing to reduce the pathologies associated with this stadium (Cabello, Navarro, Latorre, Fernández Berrocal, 2014). The development of cognitive, relational and emotional skills enhances the autonomy, security and ability to manage situations inherent to the aging process.

In our study, we found out that educational level shows a significant effect only for the Sociability dimension. Elderly who have graduation degrees are the ones who presented higher values of global emotional intelligence and those who did not have high education levels had lower emotional intelligence results. In a study by Birol *et al.* (2009), the connection between educational level and EI dimensions was not statistically significant. Llewellyn & Spence (2009) studied the psychological well-being and cognitive functioning in elderly and concluded that high levels of psychological well-being were associated with a better cognitive functioning. According to Yassuda & Abreu (2006), this cognitive functioning allows a better adaptation process to solve daily problems and in the opinion of Irigaray, Trentini, Gomes & Schneider (2011) it is considered an important prediction of an active aging process and longevity.

When relating the residential area and the EI, there was shown a significant effect only for the Self-control dimension. Elderly living in rural areas have a better self-control, but on the other hand, the elderly living in an urban context reveal a greater emotional intelligence.

A study by Savikko, Routasalo, Tilvis, Strandberg and Pitkala (2005) has shown that older people living in rural areas are more often set in situations of social isolation, pessimism and fear leading to situations of annoyance and later on depression.

The practice of physical activity was statistically significant in terms of the Self-control dimension. The elderly who do not practice physical activity have a better self-control. The results of other studies do not corroborate ours and Spirduso (2005) reports that physical activity in elderly improves safety and physical condition. Similarly, a study by Cabral *et al.* (2013) concluded that the elderly who practice physical, cultural and social activities have a better health and well-being. In summary, for the dimensions of emotional intelligence (Empathy, Self-motivation, Self-consciousness, Self-control and Sociability), educational level interferes with Sociability; the residential area and the practice of physical activity interfere in Self-control.

The development of emotional intelligence improves self-esteem and self-awareness, favoring the decision-making of the elderly in everyday situations.

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## THE RELATIONSHIP BETWEEN FINANCIAL DEVELOPMENT AND HUMAN DEVELOPMENT IN OECD COUNTRIES: A PANEL CAUSALITY TEST

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### **ABSTRACT**

*Empirical evidences indicate that a positive and significant relationship between financial development and economic growth. Also, human capital is one of the major components of economic growth and development. So, there are some empirical evidences about relationship between financial development and human development. According to these studies, developed financial system affects human development by raising on investment in education and other socio economic instruments. So, this paper aims that to analyze the relationship between financial development and human development and specify the direction of relation. In this study, the relationship between financial development and human development has been analyzed in OECD countries from 2001 to 2015 by using panel causality test. When domestic credit to private sector (% of GDP) has used as financial development, human developed index has used as human development indicator. Based on our primitive findings and the other empirical evidences we expect that developed financial system affects human development positively and significant.*

**Keywords:** *Financial Development, Human Development, Panel Causality Test, Economic Growth, OECD*

### **1. INTRODUCTION**

Although the relationship between economic growth and financial development is not a new invention, economic growth and human development are also old phenomena. Bagehot (1873), Schumpeter (1911) and Gurley and Shaw (1955) started studying the relationship between financial development and economic growth years ago; however, economic historians including Davis (1965), Cameron (1967), and Sylla (1969) gave this relationship an actual empirical content. These scientists benefited from the historical experiences of the United Kingdom and the United States to, first of all, define the role of the financial system that opens the way for market leadership. From then on, macro- and developmental economists continued to examine this relationship with studies reducing the friction in the credit market and producing significant effects on the macroeconomic outcomes of the financial sector (Rousseau, 2003:81).

In his study, Levine (1997) studied the relationship between financial development and economic growth of 77 countries between the years 1960-1989 and found a positive link between the variables as the result of horizontal section analysis. Levine and Zervos (1998), in their study on 47 countries covering the years 1976-1993, found a strong and positive relationship between financial development and economic growth. It is concluded that financial factors are an

inseparable part of the process of growth. Leuintel and Khan (1999) used VAR analysis for 10 country samples and obtained a bidirectional causality relationship between financial development and economic growth for all countries. The findings of Luintel and Khan (1999) in their study and the result for China in Shan and Jianhong's study (2006) are parallel. As the result of Shan and Jianhong's study (2006), a bidirectional causality relationship between financial development and economic growth that supports the view in the literature is ascertained. Kang and Sawada (2010) developed the internal growth model by bringing financial growth, human capital investments and external openness together. They have reached the conclusion that financial development and free trade increase economic growth by increasing the marginal utility of human capital investments. There are also some studies in the literature claiming that there is no relationship between financial development and economic growth. Al-Tamimi et al. (2001) analyzed the relationship between financial development and economic growth for specific Arabic countries, and found a strong link between financial development and the real GDP in the long term, whereas he concluded with a weak Granger causality in the short term. Besides, no clear evidence regarding that financial development affects economic growth or financial development is affected by economic growth has been found. Deidda and Fattouh (2002) found a non-linear relationship between financial development and economic growth.

However, in the literature the relationship between financial and human development has not been studied enough. On the other hand, although the direction of causation between human and financial development is unclear, it is known that by some empirical evidence, human development can support financial development by decreasing informational gaps and increasing demand of some financial tools. Also, developed financial system affects human development by rising on investment in education and other socio economic instruments. Human capital is multi-dimensional concept including such as education, health, nutrition, political and economic freedom and environment. However education is considered the main instrument for human capital development. Well educated people reach to information and eliminates to risk of financial system. In addition to this, there are not financial and other liquidity constrains in developed financial system and in this direction investment in socio economic elements can increase to support human capital development.

Outrivelle (1999), found high positive correlations between financial development and human capital for 57 developing countries. Evans et al (2002), the study for 82 countries, found that the interaction between credit and human capital makes a significant contribution to growth. De Gregorio and Gudiotti (1995), Pagano (1993), De Gregorio (1996) and Papagni (2006) found positive relationship between financial accumulation and human capital. Monacelli (2011), in his study on 44 countries between the years 1990-2005, used financial market dept and financial reform index variables as the indicators of financial development and human development index variable as the indicator of human development. According to the results, there is a positive and meaningful relation between the variables. Giri (2014), in his study for India between the years 1980-2012 using ARDL model, studied the relation between human development index and money supply, and concluded with the existence of cointegration relation between variables and one-way causality relation. Hakeem and Oluitan (2012), in their study on South Africa between the years 1965-2005, used M2 variable as financial indicator and human capital variable as human development indicator, and they found a positive relation between the variables. On the other hand, Akmat, Zaman and Shukui (2013) found a positive relation between financial sector and human development for SAARC countries in their study in which they used FMOLS and DOLS analyses, whereas they concluded with a negative relation between human development and growth.

The negative relation is traced to the lack of education of human capital and the use of financial loans predominantly by the public sector. Figure 1 illustrate that domestic credit to private sector (% of GDP) and human capital index for selected OECD countries.



Figure 1: Financial Development and Human Development for Selected Countries (World Bank:2016)

When Figure 1 is analyzed, it is seen that financial development in Turkey has increased significantly since 2001. The same applies to Chili, Denmark and the USA. Considering the mortgage economic crisis in the World during this period, the decline in human development index is normal. Financial development, on the other hand, has a tendency of increase in Chili and the USA in a similar way to that in Turkey, whereas there seems to be decrease in Denmark after 2007. Considering all these reasons, in this article, the relationship between financial development and human development will be analyzed. The models will be estimated using yearly data from 2001 to 2015 for OECD countries. While Domestic credit to private sector (% of GDP) is used as indicator of financial development, human development index is used as human development



indicator. By using the variables above, relationship between the series will be analyzed with panel cointegration and causality tests.

## 2. DATA AND METHODOLOGY

As regards to the data employed in this study, the annual data is collected for the period 2001-2015 for the OECD countries.

The variables used in this study covers Domestic Credit To Private Sector (% of GDP) as an indicator of financial development and Human Development Index has used as human development indicator. The data of domestic credit to private sector (FD) is sourced from World Bank and human development index is sourced from United Nations Development Programme. All variables are in natural logarithms.

The Model is written as follows:

$$InFD_{t,i} = \beta_0 + \beta_1 InHD$$

(1)

Where:

FD: Domestic Credit to Private Sector (% of GDP)

HD: Human Development Index

The existence of relationship between variables and the direction of relationship will be study with Panel Cointegration Tests (Kao, Pedroni, FMOLS and DOLS) and Panel Causality Test.

## 3. EMPIRICAL RESULTS

In the first stage of the study, to test of stationarity of variables IPS and LLC which are generally used in literature will be implemented. The second stage of the study Panel Cointegration Test and Panel Causality Test will be analyzed.

### 3.1. Unit Root Test

IPS unit root test, was developed by Im, Pesaran and Shin (2003). Basically IPS unit root test is obtained by taking the average ADF unit root test calculated for all units in the panel. Testing hypothesis are as follows:

$$H_0 : \beta_i = 0 \text{ for all } i, \quad (2)$$

$$H_1 : \beta_i < 0, i = 1, 2, \dots, N_1, \beta_i = 0, i = N_1 + 1, N_1 + 2, \dots, N \quad (4)$$

The formulation of alternative hypothesis refers to change in  $\beta_i$  for all unit in panel. Accordingly, each group unit root test is not zero, i.e.,  $\lim_{N \rightarrow \infty} (N_1 / N) = \delta, 0 < \delta \leq 1$ . Therefore, IPS t-test statistic expressed as average of ADF test for each unit (Baltagi, 2005:242).

Levin, Lin and Chu (LLC) (2002) assume that there are  $i = 1, \dots, N$  groups and each unit contains  $t = 1, \dots, T$  observation. In this case, each time series may contain constant and time trend. Accordingly, it assumes that all series in the panel have first degree of partial auto-correlation, however all parameters in error process vary among units. In LLC unit root test, null hypothesis express that time series includes a unit root for each unit and alternative hypothesis state that these series are stationary (Baltagi, 2005:240).

Maintain hypothesis of LLC Panel unit root test is

$$\Delta y_{it} = \delta y_{it-1} + \sum_{L=1}^{P_i} \theta_{iL} \Delta y_{it-L} + \alpha_{mi} d_{mt} + e_{it} \quad , \quad m = 1, 2, 3. \quad (3)$$

The test results are shown in Table 1 as all variables. According to test results, all variables are stationary at first level. So, the variables will be used as first differences in analyses.

*Table 1: Unit Root test Results*

Variables	LLC		IPS	
	Constant	Constant and Trend	Constant	Constant and Trend
<i>InFD</i>	-8.717*	0.0955	-5.020*	1.5648
<i>InHD</i>	-0.904**	0.456	-1.030	0.10526
$\Delta$ <i>FD</i>	-3.297*	10.2152*	-3.687*	4.84685*
$\Delta$ <i>HD</i>	-8.804*	6.770*	-4.409*	5.484*

$\Delta$  is the first difference operator. The maximum lag lengths were set to 2 and Schwarz Bayesian Criterion was used to determine the optimal lag length. \* indicates statistical significance at 1% level of significance; \*\* indicates statistical significance at 5% level of significance and \*\*\* indicates statistical significance at 10% level of significance

#### 4. PANEL COINTEGRATION TEST

After the unit root test of the series is done, cointegration test that is used to determine the long-term relation between the variables is applied. If there is an integrated relation between the variables as the result of the cointegration test, it means that the variables will co-operate in the long-term and any imbalance that may occur in the short-term will improve in the long-term (Güvenek and Alptekin, 2010:180). Panel Cointegration Test, Kao Cointegration Test, FMOLS and DOLS tests used to analyze the long-term relation between variables are the most commonly used tests in the literature.

Kao (1999) suggested that Dickey Fuller (DF) and Augmented Dickey Fuller (ADF) unit root tests for error term (e) as a test for the null hypothesis which is that no cointegration (Baltagi, 2005:252). The Pedroni (1999) cointegration test provides test statistics consistent with various situations with fixed effects, variables determining the direction of internal tendency, and heterogeneous dynamics. In addition, it both includes appropriate tests consistent with autoregressive roots under the alternative hypothesis and allows the heterogeneity of autoregressive roots under the alternative hypothesis (Pedroni, 1999:654).

The step after testing the existence of the cointegration relation between the variables is calculating the long-term parameters. For the purpose of estimating panel cointegration parameters, Panel FMOLS (Panel Fully Modified Ordinary Least Squares) and Panel DOLS (Panel Dynamic Ordinary Least Squares) estimators are developed (Erdem et al., 201:541).

Panel FMOLS estimator incorporates the possible correlation between the error term, invariable and the differences of the explanatory variables, and allows heterogeneity between individual sections to a great extent. The nonparametric adaptation in this method is fixing the autocorrelation and the problem of internality. Panel DOLS estimator, on the other hand, explains the possible internality between the variables (Ozsoy, 2015:98). Kao and Pedroni Cointegration Test results are given in Table 2.

*Table following on the next page*

Table 2: Cointegration Results

	Statistic	Prob.
<b>Koa</b>	4.438819	0.0000
<b>Pedroni</b>		
<u>Within-Dimension</u>		
Panel v-Statistic	1.938796	0.0263
Panel rho-Statistic	-2.925831	0.0017
Panel PP-Statistic	-4.523985	0.0000
Panel ADF-Statistic	-1.573837	0.0578
<u>Between-Dimension</u>		
Group rho-Statistic	-0.588511	0.2781
Group PP-Statistic	-6.272572	0.0000
Group ADF-Statistic	-1.810330	0.0351
<b>DOLS</b>	5.804860	0.0000
<b>FMOLS</b>	3.902078	0.0001

Critical Values; 10%, -1.28; 5%, -1.1645; %1, -2.233

As can be understood from the results in Table 2, there is a cointegration relation between the variables. According to Panel v, Panel rho, Panel PP, Panel ADF, Group rho, Group PP and Group ADF test statistics, the existence of the cointegration is clear.

After the analysis of the long-term relation between the variables, FMOLS and DOLS estimators that are developed by Pedroni (2000) and used to estimate long-term coefficients of the variables are found. The results are given in Table 3.

Table 3: FMOLS and DOLS Results of Countries  
 (Continues on the next page)

	Panel DOLS	Panel FMOLS
Countries	INHD	INHD
<b>Australia</b>	2.924 (30.003)**	1.603(2.831)**
<b>Austria</b>	0.213(2.102)***	-0.502(-1.504)
<b>Belgium</b>	2.091(9.653)*	1.670(6.125)*
<b>Chile</b>	4.499 (5.342)*	4.370(-3.530)*
<b>Czech Republic</b>	-1.269(0.730)	-9.109 (1.668)
<b>Denmark</b>	2.824(3.266)**	3.688 (3.040)**
<b>Finland</b>	0.091(0.097)	0.593 (2.186)***
<b>France</b>	0.055(0.064)	3.492 (4.047)**
<b>Germany</b>	1.433 (8.233)*	5.374 (2.625)**
<b>Greece</b>	-0.376(-0.230)	-0.001 (-0.001)
<b>Hungary</b>	0.205 (0.444)	0.900(0.802)
<b>Iceland</b>	12.048 (11.280)*	4.904 (1.977)***
<b>Ireland</b>	4.880 (9.256)**	5.918 (2.199)**
<b>Israel</b>	2.887 (7.071)*	2.026 (3.215)*
<b>Italy</b>	-0.570(-0.273)	-0.433 (-0.628)
<b>Japan</b>	1.735(5.112)*	0.718 (3.190)*
<b>Korea, Rep.</b>	0.314 (0.411)	-1.319 (-1.106)
<b>Luxembourg</b>	2.880 (4.902)***	0.443 (0.616)

<b>Mexico</b>	3.427 (6.518)**	6.209 (2.492)***
<b>Netherlands</b>	0.330 (1.419)	0.380 (1.896)***
<b>Poland</b>	1.087 (0.573)	17.016 (2.431)***
<b>Portugal</b>	1.652 (1.361)	9.479 (2.663)***
<b>Slovenia</b>	36.844(1.495)	55.066 (1.727)
<b>Spain</b>	1.168 (10.700)*	1.822 (2.901)**
<b>Switzerland</b>	0.948 (7.702)*	0.609 (7.750)*
<b>Turkey</b>	2.020 (2.740)***	1.636 (6.992)*
<b>UK</b>	-3.100 (-1.400)	-1.745 (-1.141)
<b>USA</b>	2.928 (3.363)*	2.636 (3.558)*

\* indicates statistical significance at 1% level of significance; \*\* indicates statistical significance at 5% level of significance and \*\*\* indicates statistical significance at 10% level of significance

Based on the data obtained from the analysis, meaningful and positive results are found for 19 countries. These countries are Australia, Belgium, Chili, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Mexico, Netherlands, Poland, Portugal, Spain, Switzerland, Turkey and the USA. According to the results of FMOLS and DOLS, an average of 1% increase in human development index increases financial development by 2% to 4%. Accordingly, while a 1% increase in human development index in Turkey increases financial development by 2.020%, a 1% increase in the human development index in Ireland increases financial development by 4.880%.

## 5. PANEL CAUSALITY TEST RESULTS

The causality means that the knowledge of past values of one variable (X) helps to improve the forecasts of another variable (Y). The long-term equation is estimated to estimate the residual values at the first stage of Engel and Granger (1987) that has two stages. When the cointegrated variables are taken into consideration, Pesaran et al. (1999) estimates panel vector error correction model to apply the Granger Causality tests since the cointegration relation means there is a causality interaction between the variables. If variables are cointegrated, there is a need of Vector Error Correction Model (VECM) estimation applying VAR model with a delayed error correction term (Agir, et al. 2011:453). Test results are given in Table 4.

*Table 4: Results of Panel Causality Test*

Dependent variable: LFD

Excluded	Chi-sq	df	Prob.
LHD	11.82285	2	0.0027
All	11.82285	2	0.0027

Dependent variable: LHD

Excluded	Chi-sq	df	Prob.
LFD	1.011391	2	0.6031
All	1.011391	2	0.6031

According to causality results, there is a one-way causality relation between the variables. Accordingly, while human development is the cause of financial development, financial development is not the cause of human development.

## 6. CONCLUSION

In the literature, there are more empirical studies about the relationship between financial development and economic growth. According to these studies, empirical evidences indicate that a positive and significant relationship between financial development and economic growth. Also human capital is considered as major components to support economic growth. Thereby, the interaction between these components is important to promote economic growth.

In this paper, the relationship between financial development and human development in OECD countries from 2001 to 2015 has been investigated. The empirical results show that financial development is positively correlated with human development. On the other hand, there is a unidirectional causality between the variables. The results obtained in this study coincide with the selected results obtained by Outrivelles (1999), Evans et al (2002), De Gregorio and Guidotti (1995), Pagano (1993), De Gregorio (1996) and Papagni (2006), Monacelli (2011), Giri (2014). In the light of the data obtained from the analysis, it can be stated that human development is one of the reasons of financial development.

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## UNDERSTANDING STUDENTS' EXPECTATIONS OF HIGHER EDUCATION AS A VALUABLE ROUTE FOR MAINTAINING UNIVERSITIES' ROLE OF PILLAR FOR ECONOMIC DEVELOPMENT: A LONGITUDINAL RESEARCH IN ROMANIA

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### ABSTRACT

*Education's 'sine qua non' condition for the economic expansion of societies was highly underlined in the economic literature and research. Nonetheless, in most European countries the education is compulsory only for the primary stage and part of the secondary (around 9-10 grades), while the tertiary education is completely optional albeit it is a key instrument for human capital development and growth of knowledge-based economies. Following the European pattern, in Romania many higher education institutions are public, offering the possibility to study free of tuition fees or paying a reasonable amount of money. Nonetheless, the number of persons finishing this stage of learning is decreasing due both to a decline in enrolment and a high rate of abandon, causing an intensification of the competition between faculties and universities. In the light of this trend, it becomes imperative for higher education managers to identify the key-factors that define their students' educational experience, in order to increase their recruitment chances and improve the retention rate. For this reason, the purpose of this paper is to assess the importance of various criteria related to students' higher education experience and to examine how this changes over time. The marketing research method is a longitudinal quantitative survey, covering the same population in 2006, 2010 and 2014. Our result have revealed that all the factors considered in the study have a medium to high importance for the students and, with few exceptions, maintain their level of importance over time.*

**Keywords:** *educational marketing, higher education, longitudinal marketing research, Romania, student's expectations*

### 1. INTRODUCTION

The relationship between education and economic expansion of societies has been a central point of interest in the economic literature and research (Beşkaya, Savaş, Şamiloglu, 2010), inspiring the construction of several models which confirm that education affects the economic growth, but lack a consensus on how and why (Johnes, 2006). The dissensions in this field are also fuelled by studies examining the effect of quantity or quality of education on the economic development (Minica, 2016; Cooray, 2009).

There is a large body of literature revealing that education contributes to economic prosperity of nations through outcomes as enhancement of labour productivity, rise of personal income, increment of employment opportunities, positive effect on the quality of life for the community (Neamțu, 2015; Amarasinghe, Ratnayake, 2009). Nevertheless, this role of knowledge (through education) is recognized not only by theoreticians, but also by practitioners and major international economic and financial institutions (eg. World Bank, IMF, OECD) and has been emphasized even in the EU strategies Lisbon Agenda 2000-2010 and Europe 2020. The Lisbon strategic goal to transform EU into “the most competitive and dynamic knowledge-based economy [...] capable of sustainable economic growth” (European Parliament, 2000), signalled the necessity of shifting from an industrial economy grounded on low-skilled labor towards an economy where production and services lean on knowledge-intensive activities that require greater reliance on intellectual capacities (Macerinskiene, Vaiksnoraite, 2006). The Europe 2020 agenda reiterated the role of education, but acknowledges that tertiary education is a key asset for human capital development and growth of knowledge-based economies, as knowledge received through higher education can lead to research and innovation, better use of new technologies, entrepreneurship opportunities, increased labor market insertion, higher income, high-level skills (Minica 2016; Amarasinghe, Ratnayake, 2009; Macerinskiene, Vaiksnoraite, 2006). Nonetheless, in most European countries the education is compulsory only for the primary stage and part of the secondary (starts at the age of 5-7 and ends at 15-18 years), while the tertiary education is completely optional (European Commission, 2015b). As regards Romania, the compulsory education lasts until the age of 17 (European Commission, 2015b); however, in order to encourage young people (and not only) to pursue tertiary education, the Romanian educational system follows the European pattern, providing a multitude of public higher education institutions (54) beside private ones. In this way, the access to tertiary education is facilitated by the possibility to study free of tuition or paying a reasonable amount of money. According to European Commission Tuition Report (on public or government-dependent private higher education institution, 2015a) in Romania, in the academic year 2014/2015, most of the students were benefiting on state-funded places, whilst 38% of students in first cycle and 30% in second cycle were paying tuition fees; amounts ranged from 530 to 880 Euro/year - 1<sup>st</sup> cycle, respectively from 570 to 1100 Euro/year - 2<sup>nd</sup> cycle for social science and technical fields (as basis of comparison, the average net wage was 410 Euro/month, INSSE, 2016). After the collapse of the communist regime in Romania, the demand for higher education increased dramatically, fuelled by the expansion of public and private universities (Pierson, Odsliiv, 2012). Yet, the current statistics on Romanian tertiary education are worrisome as the number of persons finishing this stage of learning is constantly decreasing due both to a decline in enrolment and a high rate of abandon. The ANOSR 2015 report highlights that the number of bachelor students has dropped by 45.32%, from 907353 in the university year 2007/2008 to 411229 in 2014/2015. A halved university enrolment rate cumulated with a dropout rate close to 40% (ANOSR, 2016), lead to public statements that one of two Romanian state universities is at the edge of survival (Vulcan, 2015). Nonetheless, it is important to mention that both the enrolment and the dropout rate vary significantly between the Romanian higher institutions; Eg. compared to year 2007/2008, USAMV Bucharest has registered a relative constant number of students, for UAIC Iași the number was halved, UTI Iași registered a decrease by 25 %, etc. (Vaduva, 2016; Hopulele, 2016).

The shrinking pool of potential students is a result of several factors: a) the continuing decline of birth rate which reached in 2013 the lowest peak since World War II, b) the migration of families with children to other countries which also involves leaving the Romanian educational system, c)

the decline in interest for tertiary studies, d) a reduction in the ability to fulfil the mandatory condition for faculty enrolment, as the number of high school graduates which don't pass the baccalaureate exam has dropped sharply due to weak pre-university preparation collaborated with video supervision of examination since the school year 2010/2011, e) the Bologna Declaration which allowed a greater international mobility, but lead to a negative flow of international students, as the number of Romanian students leaving to study abroad exceeds the number of foreign students who use Romanian educational system (Nicolescu, 2016; Wall-Street.ro, 2014).

On the other hand, the high dropout rate is rather a consequence of: a) inherited problems from pre-university system generated by a weak preparation throughout primary and secondary education, a situation confirmed by the low performances of Romanian high-school students to the PISA OCDE tests – for this reason, students cannot cope with the demands of tertiary education, b) financial difficulties encountered by students, confirmed as a main reason for abandon by 35% of the respondents included in 2012/2013 ANOSR study– same organisation underlined that the support of Government for students from socio-economic disadvantaged background is limited and ineffective, thus is requested a higher number of state-funded places for social cases, more consistent social scholarship, free meals in university cafeteria and accommodations in dorms, etc., c) wrong choice of field of study or faculty – the study conducted in 2012/2013 by ANOSR, revealed that for 41% of respondents this was the main reason for school dropout, d) difficulties in adapting to the academic environment or the group, e) lack of confidence in the quality of education (Nicolescu, 2016; ANOSR, 2016; ANOSR, 2012).

Even though the number of prospective students has decreased and the rate of abandon reached high levels, the number of Romanian universities and faculties has stayed relatively constant, leading to an intensification, without precedent, of the competition in the market of the higher education services. The public financing shift from a system based on the amount of university inputs (staff, administration, etc.) to one based on number of students (ARACIS, 2013), transforms this exacerbated competition between higher institutions into a real fight for survival. In this context, it becomes essential for all higher education managers to identify the key-factors that define their students' educational experience, in order to take future actions that may increase their recruitment chances and improve the retention rate. For this reason, the purpose of the present paper is to assess the importance of various criteria related to students' higher education experience and to examine how importance changes over time.

## **2. LITERATURE REVIEW**

The survey of the literature reveals a well established interest in the analysis of key-factors that have impact on student's educational experience. However, on the one hand, the landscape of higher education is constantly changing, and with it, the students and the factors that may influence their academic experience. On the other hand, the studies identified in the literature focus more on investigating student's perceived quality and level of satisfaction with different criteria (related to educational experience), and less on establishing the importance of these factors. Additionally, can be added the observation that the longitudinal approach is less frequent in the higher education literature. In this context, the present study should be considered opportune.

Educational experience is a multidimensional construct and previous studies proposed a multitude of factors that may have impact on. For the present study we have selected a set of criteria that, based on literature review, we consider to be the most relevant (Table 1).

*Table 1: Literature review on criteria used for student's academic experience analysing  
 (Continues on the next page)*

Admission process - Information	<i>Importance</i> (Elliot, Healy, 2001; Ivy, 2008; Silva, Fernandes, 2011)
	<i>Satisfaction</i> (Elliot, Healy, 2001)
Admission process - Staff	<i>Importance</i> (Elliot, Healy, 2001; Munteanu et al, 2010)
	<i>Satisfaction</i> (Elliot, Healy, 2001; Munteanu et al, 2010)
Faculty reputation and image development	<i>Importance</i> (Angell et al, 2008; Chen, 2016; Galeeva, 2016; Ivy, 2008; Lakkoju, 2016)
	<i>Expectations</i> (Donlagić, Fazlić, 2015; Galeeva, 2016)
	<i>Perception</i> (Angell et al, 2008; Brochado, 2009; Chen, 2016; Donlagić, Fazlić, 2015; Faizan et al, 2016; Gamage et al, 2008; Joseph, Joseph, 1997; Lakkoju, 2016)
Management team responsible for students	<i>Importance</i> (Angell et al, 2008; Ivy, 2008; Galeeva, 2016)
	<i>Expectations</i> (Galeeva, 2016; Sahney et al, 2004)
	<i>Satisfaction</i> (Arif et al, 2013)
Administrative staff responsible for students	<i>Importance</i> (Brochado, 2009; Chen, 2016; Elliot, Healy, 2001; Galeeva, 2016; Lakkoju, 2016; Munteanu et al, 2010; Silva, Fernandes, 2011; Yildiz, 2014)
	<i>Expectations</i> (Donlagić, Fazlić, 2015; Galeeva, 2016; Sahney et al, 2004; Shekarchizadeh et al, 2011)
	<i>Satisfaction</i> (Elliot, Healy, 2001; Munteanu et al, 2010; Yussof et al., 2015)
	<i>Quality</i> (Annamdevula, Bellamkonda, 2016; Brochado, 2009; Chen, 2016; Donlagić, Fazlić, 2015; Faizan et al, 2016; Gamage et al, 2008; Lakkoju, 2016; Petruzzellis et al, 2006; Sahney et al, 2004; Shekarchizadeh et al, 2011; Silva, Fernandes, 2011; Yildiz, 2014)
Educational process - training of teaching staff	<i>Importance</i> (Angell et al, 2008; Chen, 2016; Douglas et al, 2006; Elliot, Healy, 2001; Ivy, 2008; Galeeva, 2016; Jaafar et al, 2016; Lakkoju, 2016; Munteanu et al, 2010; Silva, Fernandes, 2011; Tóth et al, 2013)
	<i>Expectations</i> (Donlagić, Fazlić, 2015; Galeeva, 2016; Narang, 2012; Sahney et al, 2004)
	<i>Satisfaction</i> (Arif et al, 2013; Douglas et al, 2006; Elliot, Healy, 2001; Munteanu et al, 2010; Yussof et al., 2015)
	<i>Quality</i> (Angell et al, 2008; Annamdevula, Bellamkonda, 2016; Brochado, 2009; Chen, 2016; Donlagić, Fazlić, 2015; Faizan et al, 2016; Gamage et al, 2008; Lakkoju, 2016; Narang, 2012; Petruzzellis et al, 2006; Poon, Brownlow, 2015; Sahney et al, 2004; Silva, Fernandes, 2011; Tóth et al, 2013)
Educational process - Syllabus	<i>Importance</i> (Angell et al, 2008; Brochado, 2009; Chen, 2016; Douglas et al, 2006; Elliot, Healy, 2001; Galeeva, 2016; Jaafar et al, 2016; Lakkoju, 2016; Munteanu et al, 2010; Silva, Fernandes, 2011; Tóth et al, 2013; Yildiz, 2014);
	<i>Expectations</i> (Donlagić, Fazlić, 2015; Galeeva, 2016; Narang, 2012; Sahney et al, 2004)
	<i>Satisfactions</i> (Arif et al, 2013; Douglas et al, 2006; Elliot and Healy, 2001; Munteanu et al, 2010; Yussof et al., 2015),
	<i>Quality</i> (Angell et al, 2008; Annamdevula, Bellamkonda, 2016; Chen, 2016; Donlagić, Fazlić, 2015; Faizan et al, 2016; Gamage et al, 2008; Lakkoju, 2016; Narang, 2012; Petruzzellis et al, 2006; Poon, Brownlow, 2015; Sahney et al, 2004; Silva, Fernandes, 2011; Tóth et al, 2013; Yildiz, 2014)
Education process - Examination policy	<i>Importance</i> (Elliot, Healy, 2001; Chen, 2016; Jaafar et al, 2016; Munteanu et al, 2010)
	<i>Expectations</i> (Sahney et al, 2004)
	<i>Satisfaction</i> (Arif et al, 2013; Munteanu et al, 2010; Yussof et al., 2015)
	<i>Quality</i> (Annamdevula, Bellamkonda, 2016; Chen, 2016; Poon, Brownlow, 2015; Sahney et al, 2004)
International cooperation	<i>Importance</i> (Ivy, 2008; Munteanu et al, 2010; Silva, Fernandes, 2011)
	<i>Satisfaction</i> (Munteanu et al, 2010)
	<i>Quality</i> (Annamdevula, Bellamkonda, 2016; Petruzzellis et al, 2006; Silva, Fernandes, 2011)
Scholarships	<i>Importance</i> (Silva, Fernandes, 2011)
	<i>Quality</i> (Gamage et al, 2008; Petruzzellis et al, 2006; Silva, Fernandes, 2011)



Tutors	<i>Importance</i> (Angell et al, 2008; Elliot, Healy, 2001)
	<i>Satisfaction</i> (Elliot, Healy, 2001)
	<i>Quality</i> (Angell et al, 2008; Gamage et al, 2008; Petruzzellis et al, 2006)
Campus - Facilities and atmosphere	<i>Importance</i> (Angell et al, 2008; Brochado, 2009; Chen, 2016; Douglas et al, 2006; Elliot, Healy, 2001; Galeeva, 2016; Lakkoju, 2016; Silva, Fernandes, 2011; Yildiz, 2014)
	<i>Expectations</i> (Đonlagić, Fazlić, 2015; Galeeva, 2016; Narang, 2012; Sahney et al, 2004; Shekarchizadeh et al, 2011)
	<i>Satisfaction</i> (Arif et al, 2013; Douglas et al, 2006; Elliot and Healy, 2001; Yussof et al., 2015)
	<i>Quality</i> (Angell et al, 2008; Annamdevula, Bellamkonda, 2016; Chen, 2016; Đonlagić, Fazlić, 2015; Gamage et al, 2008; Lakkoju, 2016; Narang, 2012; Yildiz, 2014)
Campus - Staff	<i>Importance</i> (Chen, 2016)
	<i>Quality</i> (Annamdevula, Bellamkonda, 2016; Chen, 2016)
Campus - Dorms	<i>Importance</i> (Angell et al, 2008; Ivy, 2008; Silva, Fernandes, 2011)
	<i>Expectations</i> (Narang, 2012)
	<i>Quality</i> (Angell et al, 2008; Brochado, 2009; Annamdevula, Bellamkonda, 2016; Joseph, Joseph,1997; Gamage et al, 2008; Narang, 2012; Petruzzellis et al, 2006; Silva, Fernandes, 2011)
Utilities - Computer lab	<i>Importance</i> (Angell et al, 2008; Douglas et al, 2006; Galeeva, 2016; Ivy, 2008; Silva, Fernandes, 2011)
	<i>Expectations</i> (Đonlagić, Fazlić, 2015; Galeeva, 2016; Jackson et al, 2011; Narang, 2012)
	<i>Satisfaction</i> (Arif et al, 2013; Douglas et al, 2006; Yussof et al., 2015)
	<i>Quality</i> (Angell et al, 2008; Annamdevula, Bellamkonda, 2016; Gamage et al, 2008; Jackson et al, 2011; Narang, 2012; Petruzzellis et al, 2006; Poon, Brownlow, 2015; Silva, Fernandes, 2011)
Utilities - Cafeteria	<i>Importance</i> (Douglas et al, 2006; Galeeva, 2016; Joung et al, 2014; Silva, Fernandes, 2011)
	<i>Expectations</i> (Galeeva, 2016)
	<i>Satisfaction</i> (Douglas et al, 2006; Yussof et al., 2015)
	<i>Quality</i> (Annamdevula, Bellamkonda, 2016; Silva, Fernandes, 2011)
Utilities - Webpage	<i>Importance</i> (Angell et al, 2008; Ivy, 2008; Silva, Fernandez, 2011; Yildiz, 2014)
	<i>Quality</i> (Angell et al, 2008; Annamdevula, Bellamkonda, 2016; Yildiz, 2014)
Library	<i>Importance</i> (Angell et al, 2008; Douglas et al, 2006; Elliot, Healy, 2001; Galeeva, 2016; Munteanu et al, 2010; Silva, Fernandes, 2011; Yildiz, 2014);
	<i>Expectations</i> (Galeeva, 2016)
	<i>Satisfaction</i> (Douglas et al, 2006; Elliot, Healy, 2001; Munteanu et al, 2010; Yussof et al., 2015)
	<i>Quality</i> (Angell et al, 2008; Annamdevula, Bellamkonda, 2016; Gamage et al, 2008; Petruzzellis et al, 2006; Poon, Brownlow, 2015; Silva, Fernandes, 2011; Yildiz, 2014)
Other utilities	<i>Importance</i> (Angell et al, 2008; Elliot, Healy, 2001; Galeeva, 2016; Lakkoju, 2016; Yildiz, 2014)
	<i>Satisfaction</i> (Elliot, Healy, 2001)
	<i>Quality</i> (Angell et al, 2008; Brochado, 2009; Gamage et al, 2008; Joseph, Joseph,1997; Lakkoju, 2016; Petruzzellis et al, 2006; Poon and Brownlow, 2015; Yildiz, 2014)
Students' life - leisure activities	<i>Importance</i> (Angell et al, 2008; Douglas et al, 2006; Elliot, Healy, 2001; Galeeva, 2016; Lakkoju, 2016; Silva, Fernandes, 2011; Yildiz, 2014)
	<i>Expectations</i> (Galeeva, 2016; Narang, 2012)
	<i>Satisfaction</i> (Arif et al, 2013; Douglas et al, 2006; Elliot, Healy, 2001; Gamage et al, 2008; Petruzzellis et al, 2006; Yussof et al., 2015)
	<i>Quality</i> (Angell et al, 2008; Brochado, 2009; Joseph, Joseph,1997; Lakkoju, 2016; Narang, 2012; Silva, Fernandes, 2011; Yildiz, 2014)



### 3. RESEARCH METHODOLOGY

The research method was a personal structured quantitative survey assisted by a questionnaire as a data-gathering instrument. Our study has a longitudinal approach as it covers the same population in 2006, 2010 and 2014 – the equivalent of three generations of students. The statistical universe was embodied by the undergraduate students from Faculty of Economics and Business Administration of Cluj-Napoca, the biggest faculty of the biggest and most prestigious university in Romania. The sample was selected using the quota sampling method, dividing the population into subgroups according to year of study and specialization. Data was collected on the premises of the faculty, reaching to a number of 490 (in 2006), 506 (in 2010), respectively 475 (in 2014) valid questionnaires.

The survey questionnaire assessed the perceived importance of the following criteria: admission process (information, staff), faculty reputation and image development, management team responsible for students, administrative staff responsible for students, educational process (training of teaching staff, syllabus, examination policy), international cooperation, scholarships, tutors, campus (facilities and atmosphere, staff, dorm), library, utilities (computer lab, cafeteria, webpage, other utilities) and student's life (leisure activities). Responses were measured on a six-point scale, ranging from 1 – not at all important to 6- very important.

### 4. RESEARCH FINDINGS

Key results presented in Table 2 have revealed that all criteria considered in the study have a medium to high importance for the students, as the mean values range between 4.517 (for campus staff in 2006) and 5.46 (for educational process - training of teaching staff in 2010). Based on the results, we can underline that the top five most important criteria which define students' higher education experience includes educational Process – Training of teaching staff (5.37 to 5.46), Admission process - Staff (5.202 to 5.36), Educational process – Syllabus (5.315 to 5.41), Educational process – Examination policy (5.295 to 5.41) and Scholarships (5.15 to 5.335), while the less important criteria are the Campus - Staff (4.517 to 4.923), Campus – Facilities and atmosphere (4.59 to 5.133), Other utilities (4.8 to 4.978), Student's life – Leisure activities (4.8 to 5.035) and Tutors (4.81 to 5.128). Thus, the most important criteria are related especially to teaching, whereas the least important ones focus on non-teaching aspects.

Regarding how the importance of criteria describing student's higher education experience has changed between 2006 - 2014, it can be mentioned that with few exceptions, most factors maintained their level of importance over time with very low fluctuations. Hence, the following criteria are relatively constant through time, having fluctuations in importance lower than 0.2: Admission process – Information ( $\nearrow 0.037$  – constant increment between 2006-2010-2014), Management team responsible for students ( $\nearrow 0.055$ ,  $\searrow 0.020$  – fluctuations, with increase for 2006-2010 and decrease for 2010-2014), Administrative staff responsible for students ( $\nearrow 0.012$ ,  $\searrow 0.006$ ), Educational process – Training of teaching staff ( $\nearrow 0.088$ ,  $\searrow 0.09$ ), Educational process – Syllabus ( $\nearrow 0.081$ ,  $\searrow 0.095$ ), International cooperation ( $\searrow 0.047$ ,  $\nearrow 0.06$ ), Scholarships ( $\nearrow 0.185$ ), Admission process – Staff ( $\nearrow 0.158$ ), Educational process – Examination policy ( $\nearrow 0.14$ ,  $\searrow 0.098$ ), Library ( $\nearrow 0.184$ ,  $\searrow 0.138$ ), Utilities –Webpage ( $\nearrow 0.17$ ,  $\searrow 0.06$ ), Utilities – Cafeteria ( $\nearrow 0.001$ ,  $\searrow 0.144$ ), Other utilities ( $\nearrow 0.11$ ,  $\searrow 0.178$ ).

In some cases, more important variations have been registered. Thus, we have a more significant continuous increase for: Campus - Facilities and atmosphere from 4.59 in 2006 to 5.133 in 2014 ( $\nearrow 0.543$ ), Campus – Staff from 4.517 in 2006 to 4.923 in 2014 ( $\nearrow 0.406$ ), Campus – Dorm from 4.805 in 2006 to 5.173 in 2014 ( $\nearrow 0.368$ ), Tutors from 4.81 in 2006 to 5.128 in 2014 ( $\nearrow 0.318$ ), respectively Faculty reputation and image development from 4.996 in 2006 to 5.226 in 2014 ( $\nearrow 0.23$ ). To these can be added another criterion with a significant up and down fluctuation that led to a higher value in 2014 comparing to 2006, namely the Student's life –Leisure activities ( $\nearrow 0.235$ ,  $\searrow 0.047$ ). Contrariwise, the factor Utilities – Computer lab has registered an important continuous decrease, from 5.31 in 2006 to 4.7 in 2014 ( $\searrow 0.61$ ). As an observation, we can argue that even if various non-teaching aspects rank last in importance, their level of importance has increased over time, placing them among the factors with the highest increment.

*Table 2: Importance mean values for groups of criteria – year 2006, 2010 and 2014*

	<i>Mean</i>		
	<b>2006</b>	<b>2010</b>	<b>2014</b>
Admission process – Information	5.15	5.187	5.187
Admission process - Staff	5.202	5.346	5.36
Faculty reputation and image development	4.996	5.189	5.226
Management team responsible for students	5.23	5.175	5.155
Administrative staff responsible for students	5.226	5.238	5.232
Educational process – Training of teaching staff	5.372	5.46	5.37
Educational process – Syllabus	5.329	5.41	5.315
Educational process – Examination policy	5.295	5.435	5.337
International cooperation	5.225	5.178	5.238
Scholarships	5.15	5.245	5.335
Tutors	4.81	5.123	5.128
Campus – Facilities and atmosphere	4.59	5.007	5.133
Campus – Staff	4.517	4.857	4.923
Campus - Dorm	4.805	5.055	5.173
Library	5.074	5.258	5.12
Utilities - Computer lab	5.31	5.05	4.7
Utilities - Cafeteria	5.216	5.217	5.073
Utilities - Webpage	4.998	5.168	5.108
Other utilities	4.868	4.978	4.8
Students' life - Leisure activities	4.8	5.035	4.988

In order to better understand the evolution of importance value across time, the analysis will also focus on sub-criteria that form the factors related to students' higher education experience. In the case of Admission process – Information ( $\nearrow 0.037$ ), two sub-criteria are slightly more important, as students want to have access to complete admission information on flyers and website. The importance constancy through time is a result of very low importance value fluctuations for all sub-criteria between 2006 and 2014 (Appendix 1). Regarding the Admission process – Staff ( $\nearrow 0.158$ ), it can be noticed that for three sub-criteria the increment in importance is more visible, meaning that there is a tendency among students to give higher importance to the personnel involved in the admission process, requesting for helpful staff with information, with registration and that answers accordingly to their needs. Nonetheless, the most important sub-criterion for

students is to interact with well informed admission staff (Appendix 1). For Faculty reputation and image development ( $\nearrow 0.23$ ), students give the highest importance to reputation of the faculty in their study field and in community, respectively to correct and equal treatment of students. In particular, it can be observed in 2006 – 2014 a slight decrease in the importance of reputation sub-criteria (faculty - good reputation in community, reputation in my field). Less important sub-criteria focus on faculty promotional activities (use of promotional material, Open day) and pride or sense of belonging to the faculty. Yet, evolution through time indicates a low increase importance associated to sense of belonging to the faculty and a very significant increment in the importance of sub-criteria linked to faculty promotional activities (Appendix 1). With respect to the Management team responsible for students ( $\nearrow 0.055$ ,  $\searrow 0.020$ ), it can be underlined that students put more accent on sub-criteria expressing students' involvement and representation in faculty decision making, than on those describing the faculty management staff. Consequently, the least important aspect is the reasonable tax policy implemented by the faculty management staff. However, when considering the evolution through time, it stands out a slight decrease in the importance of students' representation in the faculty management (Appendix 1). As regards the Administrative staff responsible for students ( $\nearrow 0.012$ ,  $\searrow 0.006$ ), we have to acknowledge that students wish to have contact with amiable and helpful secretary, capable to offer pertinent information and solve promptly their requests. Less importance is given to the waiting time at secretary's office, respectively to the administrator's amiability and helpfulness. Even so, the last mentioned sub-criterion is characterized by a significant increment in the importance value (Appendix 1). Considering the Educational process – Training of teaching staff ( $\nearrow 0.088$ ,  $\searrow 0.09$ ), it can be emphasized that students give more importance to sub-criteria related to teaching staff's skills as adequate vocabulary, capacity to explain, ability to answer easily to questions, general quality of teaching and excellent training for specialized courses. However, in the case of teaching staff capacity to explain, the evolution through time indicates a significant continuous decline in importance. Also, students want professors to respect the timetable (one of the most visible increase in importance), to provide textbooks and to take into consideration their discontent on teaching. The least important sub-criterion is the involvement of specialists from companies in the teaching activity, even though its evolution knows significant up and down fluctuations through the period of analysis (Appendix 1). In case of Educational process – Syllabus ( $\nearrow 0.081$ ,  $\searrow 0.095$ ), students consider that the most important aspect is the possibility to do internships in companies. Relative similar importance value is given to courses valuable content, interactivity and up to date information, adequate number of courses and existence of computer labs during practical courses. However, both course content value and information up to date are characterized by a slight decrease in the importance through time. Less importance is attributed to the possibility to choose the desired courses and to practical courses based on case studies, although for the last one, the importance value has registered a more visible increase in time (Appendix 1). Regarding the Educational process – Examination policy ( $\nearrow 0.14$ ,  $\searrow 0.098$ ), it can be noticed that for three sub-criteria the importance takes similar values, as students expect professors to indicate the evaluation objectives, to communicate quickly the exam results and to take into consideration their discontent on evaluation. A slightly lower importance is given to clear regulation about transferable credits, yet its value has the most visible increment through time (Appendix 1). For the criterion International cooperation ( $\searrow 0.047$ ,  $\nearrow 0.06$ ), students give the highest importance to the possibility to study abroad and to provision of clear information necessary for the international academic mobility. Slightly less important sub-criteria focus on provision of complete information and on prompt announcement of these mobilities. All sub-criteria have a very low importance value

fluctuation between 2006 and 2014 (Appendix 1). With reference to the Scholarships ( $\nearrow 0.185$ ), the importance low increment through time is a result of a slightly increase in importance for both sub-criteria, between 2006 and 2014. Nevertheless, the evolution is more obvious for prompt announcement of scholarships, than for clear regulation sub-criterion (Appendix 1). The significant increase of importance for Tutors ( $\nearrow 0.318$ ) can be explained by a significant increment in the importance value for all sub-criteria through the period of analysis. Even so, the most important for students is to have accessible tutors and tutors well informed on requirements in their field of study (Appendix 1). As regards the Campus - Facilities and atmosphere ( $\nearrow 0.543$ ), we have to acknowledge that the significant increment in the importance value is due to a continuous increase of importance for each sub-criterion through time. Thus, students give more importance to campus facilities as they expect to be quiet and safe, well maintained and to offer a general pleasant experience. Other sub-criteria have a slightly lower importance, but a notable evolution: thus students want to feel welcomed in the campus, to have access to complete information during the recruitment process and a more reasonable campus regulation (the last sub-criterion has the highest increment between 2006-2014) (Appendix 2). For the Campus – Staff ( $\nearrow 0.406$ ), we have a similar situation, as the significant increment in importance is also a consequence of a continuous increase of importance for each sub-criterion between 2006 and 2014. Yet, even all evolutions are significant, one of the sub-criteria has a lower importance comparing to most sub-criteria analysed, meaning that students are less interested to have a campus administrator concerned about them as individuals. They seek for amiable and helpful campus staff and competent medical staff (Appendix 2). In the case of Campus – Dorm ( $\nearrow 0.368$ ), the significant increment in importance is as well determined by a continuous increase of importance value for each sub-criterion. Based on the level of importance, we can state that students' main preoccupation concerns the spatial dimension of campus dorms, as they want spacious dorms or with maximum two beds (these sub-criteria also have the highest increment between 2006-2014). It is slightly less important how bright are the dorms and if are taken into consideration students' discontent on accommodation (Appendix 2). The Utilities - Computer Lab ( $\searrow 0.61$ ) significant decrease in importance through time is a result of continuous decrease of importance value for both sub-criteria (Appendix 2). This tendency highlights that students have a lower interest in computer labs and a peculiarly reduced interest to access the computer labs when are not scheduled for class (the lowest value registered for sub-criteria in 2014). Considering the Utilities – Cafeteria ( $\nearrow 0.001$ ,  $\searrow 0.144$ ), it can be emphasized that students give the highest importance to cafeteria cleanness, followed by staff amiableness, accessible price, quality of the products and appropriate number of seats. The least important sub-criteria are the waiting time and the assortment width, both being characterised by a decrease in the importance between 2006 and 2014. However, when considering the evolution through time, it stands out that most sub-criteria have a slight decrease in the importance value (Appendix 2). With respect to the Utilities – Webpage ( $\nearrow 0.17$ ,  $\searrow 0.06$ ), it can be underlined that students put more accent on finding complete information on the curriculum and students' timetable. Slightly less important are the complete information on professors' consulting schedule, employment offers, international academic mobility and regulation about transferable credits. Yet, evolution through time indicates for most sub-criteria an increase in the importance value between 2006-2010 and relatively similar importance values between 2010-2014 (Appendix 2). The criterion Library ( $\nearrow 0.184$ ,  $\searrow 0.138$ ) is characterised by fluctuations of importance value in the evolution through time, as all sub-criteria have an increase in the importance between 2006-2010 and a decrease in importance between 2010-2014. Nonetheless, students give the highest importance to the appropriate equipment and slightly lower importance to library personnel,

number of seats, possibility to duplicate materials and convenient schedule (Appendix 2). In the case of Other utilities (70.11, 50.178), it can be noticed that students put more accent on the existence of consulting services on choosing a career and on the information provided by a student guide. Significant less importance is attributed to the personal e-mail address offered by the faculty and for the possibility to pay taxes using bank transfer. Evolution through time indicates also up and down fluctuations with the except of sub-criterion related to consulting services on choosing a career which registered a continuous significant decrease in importance value (Appendix 2). Up and down fluctuations are also registered for the criterion Student's life –Leisure activities (70.235, 50.047). Although the sub-criteria reflect aspects associated to leisure activities, the importance values are among the lowest registered in the study, indicating a limited interest of students for leisure activities bounded to the faculty. Even if all sub-criteria have similar importance value in 2014, when considering the evolution through time it stands out a significant increase in the importance of the possibility to enrol into a student organization (Appendix 2).

## 5. CONCLUSION

According to our analysis, in each year of research (2006, 2010 and 2014), all criteria considered to evaluate student's educational experience received a medium to high importance. The most important five criteria are related especially to teaching (Educational Process – Training of teaching staff, Admission process – Staff, Educational process – Syllabus, Educational process – Examination policy and Scholarships), while the less important ones, yet with a medium to high importance, focus on non-teaching aspects (the Campus – Staff, Campus – Facilities and atmosphere, Other utilities, Student's life – Leisure activities and Tutors). The longitudinal approach revealed that, with few exceptions, most criteria maintained their level of importance over time (2006-2010-2014) with very low fluctuations. A more significant increment has been observed for Campus - Facilities and atmosphere, Campus – Staff, Campus – Dorm, Tutors, Faculty reputation and image development and Student's life –Leisure activities, whilst for Utilities – Computer lab has been registered a more important decrease. In the light of these outcomes, we can argue that even if various non-teaching aspects rank last in importance, their level of importance has increased over time, placing them among the factors with the highest increment. Consequently, in order to be able to provide high quality educational experiences and to differentiate from competitors, higher education managers need to understand that an orientation focused especially on teaching aspects is not enough anymore. Their strategic vision should be extended to include also criteria that often receive less attention from the academic management (eg. cafeteria, campus, tutors), but which are a part of the current concerns of student's representatives (eg. ANOSR) and, at the same time, have been confirmed by our study.

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*Appendix 1: Importance mean values for subcriteria– year 2006, 2010 and 2014 (Part I)*

		Mean		
		2006	2010	2014
<b>Admission process - Information</b>	Admission information on flyers - complete	5.34	5.26	5.27
	Admission information on phone - complete	4.85	5.07	4.99
	Admission information on website - complete	5.26	5.23	5.3
<b>Admission process - Staff</b>	Admission staff – well informed	5.37	5.39	5.39
	Admission staff - helpful	5.24	5.35	5.35
	Admission staff – answers accordingly to potential students’ needs	5.11	5.31	5.36
	Staff with information – helpful	5.14	5.32	5.32
	Staff with registration - helpful	5.15	5.36	5.38
<b>Faculty reputation and image development</b>	Most students - have a sense of belonging to the institution	4.74	5	4.96
	Every student - is treated equally	5.44	5.25	5.41
	Students - feel welcomed to the faculty	5.22	5.27	5.34
	Every student - is treaded correctly	5.46	5.4	5.42
	It is important to be proud to belong to the faculty	5.07	5.23	5.21
	The education institution - good reputation in the community	5.53	5.37	5.39
	Faculty – has a reputation in my study field	5.51	5.4	5.43
	Faculty – promotes the image using promotional material	3.71	4.93	4.86
<b>Management team responsible for students</b>	Faculty – organizes “Open day”	4.28	4.85	5.01
	Faculty management staff – accessible	5.22	5.13	5.1
	Faculty management staff – reasonable policy of taxing	4.93	5.07	4.88
	Faculty management staff - solve promptly students’ requests	5.24	5.16	5.17
	Students - represented in the faculty management	5.37	5.17	5.2
	Students’ representative – informs promptly the students	5.27	5.22	5.21
<b>Administrative staff responsible for students</b>	Students - involve in dorms distribution	5.35	5.3	5.37
	Administrator – amiable and helpful	4.78	5.02	5.03
	Secretary – reasonable waiting time	5.11	5.09	5.1
	Secretary – amiable and helpful	5.41	5.31	5.29
	Secretary – offers pertinent information	5.37	5.38	5.38
<b>Educational process - Training of teaching staff</b>	Secretary – solve promptly students’ requests	5.46	5.39	5.36
	Teaching staff – involves specialists from companies in teaching activity	5.02	5.32	5.08
	Teaching staff - has the capacity to explain	5.71	5.6	5.52
	Teaching staff - answers easily to students questions	5.59	5.53	5.51
	Teaching staff – has adequate vocabulary	5.47	5.56	5.45
	Teaching staff – provides textbooks	5.31	5.39	5.28
	Teaching staff – respects the timetable	5.04	5.38	5.29
	Excellent training - specialized courses	5.39	5.41	5.41
	Quality of teaching – excellent for most courses	5.49	5.46	5.44
<b>Educational process - Syllabus</b>	Students’ discontent on teaching - taken into consideration	5.33	5.46	5.35
	Courses - valuable content	5.57	5.49	5.39
	Courses - interactivity	5.26	5.46	5.32
	Practical courses - based on case studies	4.99	5.35	5.22
	Courses - information is up to date	5.56	5.5	5.39
	Computer labs - available during practical courses	5.29	5.27	5.32
	Students - may choose the desired courses	5.24	5.29	5.25
	Number of courses – adequate	5.24	5.43	5.36
<b>Educational process - Examination policy</b>	Students – possibility to do internships in companies	5.48	5.5	5.45
	Student evaluation – objective	5.49	5.48	5.41
	Exam results – quickly communicated	5.28	5.45	5.37
	Regulation about transferable credits - clear	5.01	5.36	5.21
<b>International cooperation</b>	Students’ discontent on evaluation - taken into consideration	5.40	5.45	5.36
	Possibility for students to study abroad	5.43	5.23	5.33
	International academic mobility - announcement on time	5.15	5.16	5.14
	International academic mobility –complete information available	5.06	5.08	5.16
	International academic mobility - clear information available	5.26	5.24	5.32

<b>Scholarships</b>	Scholarships – information announced on time	5.09	5.25	5.32
	Scholarship – regulation is clear	5.21	5.24	5.35
<b>Tutors</b>	Tutors – accessible	4.99	5.18	5.22
	Tutors – concerned for the students’ professional development	4.68	5.09	5.02
	Tutors – help provided in setting academic objectives	4.67	5.02	5.06
	Tutors – well informed on requirements in students’ fields of study	4.90	5.2	5.21

*Appendix 2: Importance mean values for subcriteria - year 2006, 2010 and 2014(Part II)*

		<i>Mean</i>		
		2006	2010	2014
<b>Campus - Facilities and atmosphere</b>	Complete information on the campus – during recruitment process	4.62	5	5.08
	Campus area – quiet and safe	4.80	5.13	5.2
	Campus area – well maintained	4.71	5.05	5.17
	Campus general experience - pleasant	4.49	4.93	5.15
	Students - welcomed in the campus	4.60	4.99	5.1
	Campus regulation - reasonable	4.32	4.94	5.1
<b>Campus - Staff</b>	Campus staff – amiable and helpful	4.48	4.86	5.01
	Campus administrator – concerned about me as individual	4.23	4.61	4.7
	Campus medical staff - competent	4.84	5.1	5.06
<b>Campus - Dorms</b>	Campus dorms - spacious	4.77	5.07	5.27
	Campus dorms – bright	4.83	5.01	5.13
	Number of students in dorms – maximum 2	4.77	5.15	5.18
	Students’ discontent on accommodation in dorms-taken into consideration	4.85	4.99	5.11
<b>Utilities - Computer lab</b>	Computer lab - well equipped	5.40	5.25	5.1
	Computer lab – access when is not scheduled for class	5.22	4.85	4.3
<b>Utilities - Cafeteria</b>	Cafeteria – reasonable waiting time	4.90	4.9	4.65
	Cafeteria – wide assortment	4.91	5.04	4.75
	Cafeteria – quality products	5.36	5.32	5.16
	Cafeteria – cleanness	5.65	5.5	5.42
	Cafeteria – appropriate number of available seats	5.15	5.19	5.07
	Cafeteria – accessible prices	5.31	5.31	5.2
	Cafeteria – staff amiableness	5.23	5.26	5.26
<b>Utilities - Webpage</b>	Webpage – complete information on the curriculum	5.22	5.3	5.24
	Webpage – complete information on the regulation about transferable credits	4.90	5.15	4.97
	Webpage – complete information on professors’ consulting schedule	4.79	5.13	5.13
	Webpage – complete information on students’ timetable	4.97	5.2	5.2
	Webpage – complete information on international academic mobility	4.91	5.1	5.01
	Webpage – complete information on employment offers	5.20	5.13	5.1
<b>Library</b>	Library – appropriate schedule	4.98	5.25	5.06
	Library – appropriate equipment	5.25	5.32	5.21
	Library – appropriate number of available seats	4.98	5.31	5.1
	Library personnel – amiable and helpful	4.99	5.22	5.13
	Possibility to duplicate the materials – offered by the library	5.17	5.19	5.1
<b>Other utilities</b>	Consulting services – on choosing a career	5.58	5.27	5.12
	Student guide – useful information	5.06	5.14	4.99
	Personal e-mail address – offered by the faculty	4.37	4.58	4.48
	Tax payment – bank transfer	4.46	4.92	4.61
<b>Students’ life - Leisure activities</b>	The faculty – possibility for on-campus activities	4.83	5.08	4.96
	Students – can easily enrol into a student organization	4.62	4.98	4.95
	The faculty – possibility for leisure facilities	4.78	4.96	4.95
	The faculty – possibility to participate to cultural events	4.97	5.12	5.09

## THE EFFECT OF CORPORATE SOCIAL RESPONSIBILITY ON FIRM PROFITABILITY: A PERSPECTIVE OF ECONOMICS, BUSINESS AND LAW

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### ABSTRACT

*In the global market, increasing the economic dependence of firm, because of economic, social, technological and political developments, trigger raising of the welfare of countries. In this context, companies have acted with a sense of responsibility like individuals. In particular, with the corporate social responsibility (CSR), transnational organizations provide contributions to the economic and social development. Empirical studies imply that applications of CSR provide the earnings to firms such as brand value and marketing value. Addition to this legal responsibility is one of the basic responsibilities in these contributions. Because the company's commercial activities should be in accord with law, human rights, property rights and morality. On the contrary, there are also opinions stating that the companies should not have social responsibility. According to this view, CSR affects to the basis of the economic system and competition power of firms negatively because of additional costs. Within this regard, the relationship between CSR and firm profitability have been studied according to the perspective of economics, business and law in this study. In addition to this, the examples of CSR have been compared with developed and developing countries. In this way, the differences between social responsibility approaches of countries have been revealed.*

**Keywords:** *Socially Responsible, Business Ethics, Profit, Economics, Business, Law*

### 1. INTRODUCTION

The increase in the effect of businesses that are the essential elements of the commercial life on society has revealed that businesses operating with their economic interests need to be sensitive to human rights, ethics, the law and the environment. Operating accordingly requires increase in the loyalty of the businesses to each other, especially internationally, via economical, technological and political developments, prosperity and maintenance of it. For these reasons, businesses started to contribute to the solution of social problems by producing projects to develop public welfare and modern life standards while continuing their activities. So at this stage, the concept of social



responsibility comes out. The concept of corporate social responsibility is first mentioned in the book by Bowen named “*Social Responsibilities of Businessman*” in 1953, in which he claims that businessman carry out social responsibility activities in line with the standard of judgement of the society (Bowen, 1953:6). Corporate social responsibility expresses an understanding that the business is responsible for all relevant institutions and stakeholders. Corporate social responsibility represents a permanent promise to contribute to the economic development of the local community and to act fairly and with responsibility, as well as increasing the workforce of the business and the quality of life of the families (Commission of the European Communities, 2003). Corporate social responsibility is described as achieving success in business with respect for ethical values, individuals, societies and the natural environment (Business for Social Responsibility, 2003). Corporate social responsibility is interested in the relationship between businesses and the needs and the aims of the society, and the effect of the businesses on the society (UNCTAD, 1991:1). Kotler and Lee (2005) define as Corporate Social Responsibility (CSR) as “*CSR is a commitment to improve community well-being through discretionary business practices and contributions of corporate resources.*” In addition to this, firms manage their business to make a positive impact on society in economic, environmental and social actions with CSR (Pohle, 2008:1). According to Carroll (1999), CSR has an important future for companies because of improving business and society relationship. According to Ozupek (2005:9), the most effective and well accepted description of the concept of social responsibility is that it is “the body of rules that a manager who is obliged to do a work to fulfill a specific task needs to obey”. Eren (2000:99) describes social responsibility, in the broadest sense, as “that an institution should have a working strategy and policy in line with economical and legal conditions, professional ethics, and expectations of people in and around the institution and the other institutions”.

In fact, nowadays, social responsibility activities exist due to the aim of the business to improve its prestige in public opinion, the necessity to support important social purposes in the country they operate, and the existence of legal sanctions that they may otherwise face (Post et al. 1996:52-53). Those kind of social responsibility projects are expressed as aids that give a positive image to the business in society, and so allow long-term profitable operation and maintain their activities (Ferrell, O.C. – Friedrich, J. : 85).

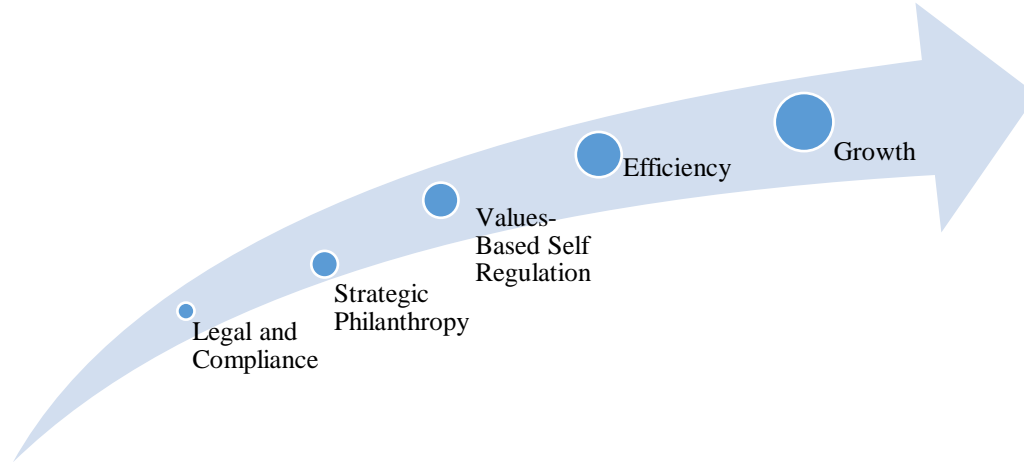
Within this regard, the relationship between CSR and firm profitability have been studied according to the perspective of economics, business and law in this study. In addition to this, the examples of CSR have been compared with developed and developing countries. In this way, the differences between social responsibility approaches of countries have been revealed.

## **2. A PERSPECTIVE OF ECONOMICS, BUSINESS AND LAW**

At this part of the paper, CSR is studied according to economics, business and law perspectives with the literature review.



*As the Scope of Economics;*



*Figure 1: CSR Value Curve (Pohle, 2008:6)*

CSR Value Curve has shown on Figure 1. According to this curve, companies firstly create legal and compliance. As the scope of this issue, companies depend on law about production, operation, distribution, marketing and sale. Secondly, it is stated that charity strategy factor and field. These strategic factors also include company skills and market needs. After that, companies involve the value system of operation to manage business behavior. At this scope, companies find a lot of CSR attempt such as energy consumption, water quality, building capacity for environment health and safety. So, in this way cost can decrease and productivity/efficiency can rise. This way can be called win-win scenarios. With CSR attempt, companies access to new markets and also new partnerships (Pohle, 2008:5-7). Also Holmes (1976) imply that prominent factors should be involved by firms as five areas. These areas are as follows: “*matching a social need to corporate need or ability to help, seriousness of social need, interest of top executives, public relations value of social action, government pressure*”.

CSR affect economic performance of companies in some ways. These ways are as follows (Kotler, 2005: 10):

- Increased sales and market share
- Increased ability to attract, motivate and retain employees.
- Decreased costs
- Advanced corporate image and prestige
- Increased appeal to investors
- Reinforced trademark state

Dimitropoulos and Vronsou (2015) indicate that corporate responsible can increase interpersonal trust among stakeholders, decrease transaction costs and the uncertainty about financial performance. Mallin et al. (2014) state that CSR attempt in Islamic banks create a positive relation with CSR and financial performance. Also, Kim and Kim (2014), Elliott et al. (2014), Balabanis et al. (1998), Ioakimidis et al. (2006), Salome et al. (2012), Waddock and Graves (1997) and Jones (1995) imply that CSR improves firm values, competitive advantages, increase profitability, sale revenues and product quality, reduce operating costs. Orlitzky et al. (1999) imply that there is a

positive relationship between corporate social responsibility and corporate financial performance. Gregory et al. (2013) indicate that high CSR firms have a higher expected growth rate in companies' earnings. Zhou et al. (2012) indicate that corporate ability and corporate social responsibility has positive interactions between each other and has significant impacts on consumer responses concerning corporate and product evaluations in developing countries. Also, Visser (2009) indicate that in developing countries, CSR is most commonly related with philanthropy such as education, health, environment, sports etc. on the other hand, in these countries, there is a trade of CSR issues like development versus environment. At this scope Ward et al. (2008) indicate that CSR can help to increase production capacity and benefits while decreasing the risk of failure or uncertainty. According to Vyakarnam (1992) companies in developed countries such as North America and UK concentrate on these areas: environment (energy, water quality, global warming), philanthropy, occupational health and safety, social issues ( education, human rights etc.) and urban investment.

*As the Scope of Business;*

Increasing competition due to rapid globalization causes some changes in businesses that are the basic building blocks of the economy (Vural and Coşkun, 2011:66). However, competition conditions nowadays confront businesses with the necessity of carrying out their activities together with sustainable development efforts with a number of factors, such as building both financial and corporate identity (Kuşat, 2012:227). Sustainability philosophy of businesses focusing on long-term social interests expresses responsibilities related with the interests of society. Considering the fact that responsibility also forms the basis of morality, it is clear that the concept of social responsibility is based on ethical and moral practices (Akyıldız, 2007:21).

The statement “sustainable development” of World Commission on Environment and Development is used as the general description. It explains the social, ecological and economic aspects of sustainability, and meeting current and future needs of humans with the theories of social justice. An ethical principle and an economic concept forms an attractive combination for people interested in the future of the world (Aiking and Boer 2004:359).

The significant aspect of sustainable development is the emphasis on the long-term balance among ecological, economic and social processes at the community level as a whole (Aiking and Boer, 2004:359).

Businesses as well as individuals, the state and non-governmental organizations have serious responsibilities of using the limited resources in the world with care and make them sustainable. Responsibilities of businesses in the name of “sustainable development”, sensitivity towards the environment and society, ethical and moral standards, and operating in accordance with human rights expresses their corporate social responsibility approach (Demir, 2013:214).

Nowadays, the “corporate social responsibility consciousness” of businesses is seen as one of the criteria that will provide advantage in competition for businesses and create a difference in this struggle (Vural and Coşkun, 2011:66).

According to Milton Friedman, “*businesses have purely and simply one social responsibility: to do activities that will increase their profitability using their economic resources so long as it remains within the rules of a game based on clean, honest, open and free competition.*” (Friedman, 1962:133). Moreover, it is claimed that it will contribute to the deviation of the businesses from their aims, their spending more social power than necessary, and so the decrease of the business responsibility in the society and finally businesses will face with problems as the distraction of the

businesses (Top and Öner, 2008:100). On the other hand, according to Business for Social Responsibility (BSR), a global institution that provides consultancy services to businesses in the field of corporate social responsibility, these kinds of activities provide some benefits to businesses. Businesses that are aware of their corporate social responsibilities and do these activities differ in the eyes of the customers compared to their customers, gain more reputation by acquiring transparency, and take a more valuable place in the customer's mind (Özdemir, 2009:65). It results in an increase in the brand value and market value of the business (Argüden, 2002:12). An increase in the productivity is provided by the improvement in the image of the brand, the increase in the financial performance, the development of customer loyalty, the increase in the sales and thus the increase in motivation of the employees who are in the position of internal customers of the business (Özdemir, 2009:65). In addition, the demand of the skilled workforce from the business is made attractive (Argüden, 2002:12).

*As the Scope of Law;*

According to Şimşek (2000:378), businesses that survive by profiting in trade and business life are obliged to see the profits of their shareholders, employees or the social circle they are in and protect them within the legal boundaries while achieving their economic objectives. Argüden who agrees with Şimşek (2007:37) expresses that businesses' voluntary contribution to a better society and environment by taking the needs and expectations of the society they are in into consideration for sustainable economic development creates "Corporate Social Responsibility". In this system of responsibility, voluntary basis of businesses rather than legal obligations should form the basis. This is because Bowie (2001:179) claims that the projects carried out by the enforcement of legal regulations will be lacking in reaching the original target; and it is accepted by many researchers that a business' operating social responsibility activities due to legal obligations and regulations will lead to lack of confidence in practice. Donaldson (2001:476) emphasizes that the significant point in this matter is that businesses should make the necessary investments within the scope of volunteerism, provide the balance in the region and need to put into practice only social aims such as protecting the environment, and supporting the improvement of societal, cultural and social resources. However, the shift of the awareness of social responsibility from individuals to businesses over time and embracement of the concept of "Corporate Social Responsibility" by especially world-class businesses have set an example for volunteering. With the help of this concept, businesses contribute to the economic and social improvement of the society they are in accordance with their legal responsibilities within the legal boundaries.

Velasquez (2001:410) asserts that it is a responsibility towards customers for businesses to design and manufacture products that are not harmful for human health, to package, to ensure that the customer using the safe products is informed about his legal rights in case of need or to provide technical support, to ensure that advertising activities that take up a significant amount of public attention do not include misleading information and are based on the basis of reality, and to take customer complaints into consideration and to compensate the loss of the customers or to work on the development of similar procedures. According to Carrol, within the frame of all these responsibilities, there are four basic responsibilities for businesses to fulfill to be beneficial in a real sense to the society while maintaining their activities (Argüden, 37; Ay, 2003:37):

- Economical- to be productive and profitable, to be a company on top of others.
- Legal- to obey the law, the legal society should connect the right and the wrong to the system.

- Ethical- to comply with social norms and expectations beyond laws, to behave in moral terms, enforce correct, full and open behaviors, avoid harmful activities.
- Social- to contribute voluntarily to the solution of the social problems, to be a good citizen of the company, to create resources for the company, to improve the quality of life.

If we examine legal responsibility that is secondary responsibility of businesses, we notice that the legal responsibilities in question are significant to meet the expectations of the society and the state, to operate in accordance with the law, to have an image of ‘success’ by fulfilling local and national obligations. Inasmuch as, companies ensure that they won’t harm the environment and the society in the country they are by operating in accordance with the law, relevant legislation, human rights protected by international agreements and the ethics while they are maintaining their business activities.

It is a rule for the businesses to fulfill their economic and social responsibilities while they are maintaining their activities in accordance with the law and the legal regulations. In case businesses in question do not fulfill their social responsibilities they have legally, they may receive negative criticism from the society in expectation, and even opposing applications to various governing bodies may be made. This is because it may be difficult for the society to accept a business that operates merely on profit, and it expects the business to operate in compliance with the current law and regulations. In order not to face legal regulations and not to pay penalties in the contrary case, businesses are careful to fulfill their legal responsibilities (Okay & Okay , 2001:629-630).

Some of the legal responsibilities of businesses arise from their relationship with the state. They are obliged to carry out activities meeting the demands of the society within the limits of their responsibilities and obligations regulated by law ( Soytekin, 2001:28). Özgür (2007:22) also thinks that businesses need to fulfill their responsibilities to some public institution while they are pursuing growth policies by acting in line with their economic interests starting from their establishment, and specifies these responsibilities as payment of taxes, miscalculating the taxes, not avoiding legal responsibilities and contributing to the solution of social problems. Sabuncuoğlu (1997:33) states some more as an example of such responsibilities; submitting the feasibility reports that the companies prepare in order to benefit from the investment allowance to State Planning Organization.

### 3. CONCLUSION

As it is seen, social responsibility has been born as a consequence of fulfilling business obligations for a more prosperous society in the long run rather than as the consequence of the legal and economic objectives of enterprises according to Robbins (1993:123). Businesses are obliged to fulfill their legal responsibilities towards their target groups such as the state, local authorities, the society, their employees, shareholders, and entrepreneurs, professional organizations and non-governmental organizations, etc. within the scope of ethic or social responsibility (Akıncı Vural et al. 2011:82). On the other hand, the ‘‘corporate social responsibility consciousness’’ of businesses is seen as one of the criteria that will provide advantage in competition and create differences for company (Vural and Coşkun, 2011:66). Moreover, CSR affect economic performance by Increasing sales and market share, increasing ability to attract, motivate and retain employees, decreasing costs and reinforcing trademark state.

Subsequently, it is significant for the businesses that are serious about social responsibility to understand that they need to cooperate with all these social stakeholders.

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## THE PROBLEM OF LIQUIDITY MANAGEMENT IN HOSPITAL AND ITS IMPACT ON PROFITABILITY

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### **ABSTRACT**

*The main aim of this article is to conduct comprehensive literature review as far as liquidity management in hospital and its impact on profitability are concerned. It is going to be the first step of the wider empirical study dedicated to the analysis of the impact of financial liquidity on profitability among Polish hospitals.*

*Such a problem seems to be really important from societal perspective as most of healthcare financing spent on hospital treatment in Poland comes from public funds. On the other hand hospitals should be portrayed as normal enterprises operating in the market economy which seems to be to some extent contradictory.*

*That is why finding out and analysing if one of the most typical financial relationships exists among hospitals might give crucial remarks if they should be portrayed as normal market players or in a different way.*

**Keywords:** *Financial liquidity, hospital finance, liquidity, liquidity management, profitability, working capital*

### **1. INTRODUCTION**

Financial management in hospitals has become a serious task in most healthcare systems all over the world. It is mainly due to the fact that hospital treatment usually takes the biggest part of healthcare spending actually everywhere. In Poland it is more than 56%. Higher health awareness of societies and more advanced medical technologies cause higher costs of healthcare systems' functioning. The problem is really vivid from societal perspective as it is estimated that among European countries approximately 70% of healthcare financing comes from public funds (Krajewski-Siuda, Romaniuk, 2011, p. 16).

Bearing this in mind financial management in hospital consists one of the most important fields in the problem of healthcare financing. So, analysing financial rules and patterns that occur among hospitals may have significant impact on the overall situation of healthcare systems not only in Poland – on which the attention will be focused in this article – but also in other parts of the world. Liquidity management is very important process in every enterprise as the problems with liquidity usually leads to serious financial problems including insolvency and bankruptcy. The other very important area of financial management in every enterprise is also profitability. Making profits is one of the most important aims for companies operating in market economy. Hospitals usually consist a special kind of enterprises. On the one hand in many countries – also in Poland – they are financed in a large part from public funds and should be mainly focused on rescuing human lives but on the other hand they operate in market economy and they have to cooperate with many different stakeholders. So, it is still an open question if they should be portrayed as normal market players focused on generating profits or maybe they should be portrayed in a different way. Verifying if one of the most typical financial relationships occurs in hospital sector might give important remarks in this area.

## **2. THE PROBLEM OF FINANCING HOSPITALS AND HEALTHCARE SYSTEM IN POLAND**

Healthcare system in Poland has been undergoing a lot of changes throughout the recent years. They were aimed at improving effectiveness of the system. Many of the changes were strictly connected with the financial sphere. The most important changes as far as financial aspects are concerned included the reform introduced in 1999 and implementation of the act where new law regulations aimed especially at improvement of hospital financing were included in July 2011. However, due to the fact that the situation as far as healthcare financing in Poland is still unsatisfactory the government considers introducing some further changes.

Taking into consideration the mentioned reform from 1999 it covered such aspects as: making changes in the way of financing the system (before 1999 the model of financing was based only on budget expenditures; since 1999 it has been financing on the basis of health insurance as well as budget expenditures), the abolition of regional zoning in provision of medical services, reorganization of the ownership structure and functions of the system. The main declared aims of the reform included: access to free healthcare services guaranteed by the state, autonomy and self-financing of healthcare facilities, equal access to medical services, free choice of medical services' providers and social solidarity. To realize the assumptions of the reform so called sickness funds were created. The main responsibility of the sickness funds was to manage the process of financing medical services but they were also responsible for taking care of proper quality and availability of the services, setting out the rules and conditions of health services, introducing mechanisms aimed at limiting the growth of healthcare costs and controlling the execution of the contracts signed with healthcare providers (Niżnik, 2004, p. 66, 166). Sickness funds played the role of national payer in Polish healthcare system. There was a competition between them because thanks to the abolition of regional zoning in provision of medical services patients were able to choose freely sickness funds regardless of domicile (Mazur, Łukasik, 2011). In 2003 the sickness funds were replaced by the National Health Fund which exist until now. The National Health Fund is much more centralized institution than the sickness funds used to be but its functions remained similar. However, there are serious attempts to replace it by new more effective institution starting from January 2018 (Kuta, 2015; Rynek Zdrowia 2016).

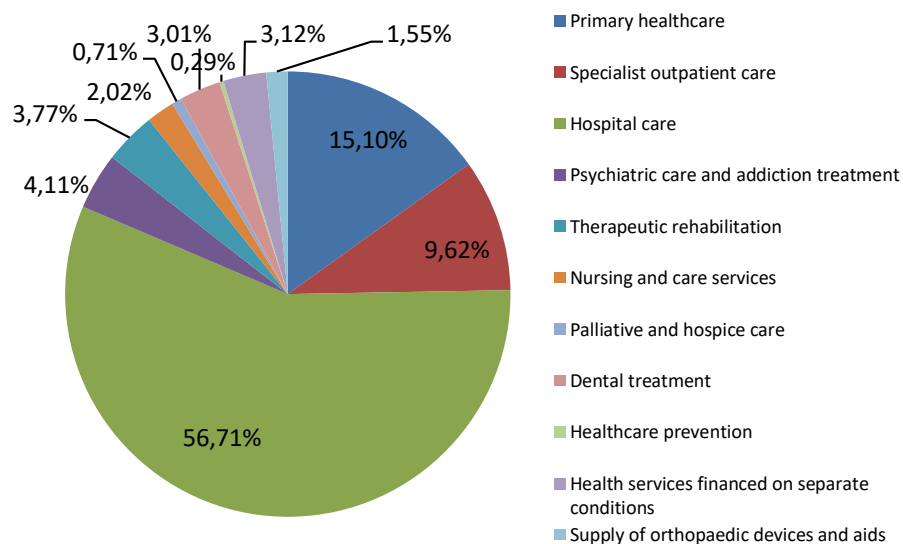
In Polish healthcare system there can be distinguished a few ways of financing medical services in case of public funds. Most of public funding comes from the National Health Fund (84%), much smaller part of the funding from state budget (10%) and also a small part from local government units (6%) – but this part used to be on dynamic growth (Miszczyńska, 2013, p. 187-200; GUS, 2012, p. 128). Bearing this in mind trying to classify Polish model of financing healthcare as one of the most typical models is not an easy task. In the subject literature there are mentioned three main types of healthcare financing models: Bismarck model, Beveridge model and private insurance model (Lameire, Joffe and Wiedemann, 1999, p. 3-9). Bismarck model is based on health insurance and in Poland in fact the main part of the revenues comes from health insurance contribution and is distributed by the National Health Fund. However, there are also different parts of funding coming from state budget and local government units which is rather typical for Beveridge model. Of course there is also in the system a part coming from private payments – typical for private insurance model. That is why Polish model of financing healthcare can be classified as hybrid one actually.

Hospital sector consists a very important part in financing of Polish healthcare system. Analysing data of public funds distributed by the National Health Fund it can be observed that most of the funding is dedicated precisely to hospitals. It is almost 34 billion of Polish zloty.

*Table 1: Healthcare funds distribution in Poland by the National Health Fund in 2015 (Jacyna, 2016, p. 66)*

Kind of treatment	Value in thousands of Polish zloty (zł)
Primary healthcare	8 811 269,00
Specialist outpatient care	5 616 398,17
<b>Hospital care</b>	<b>33 099 379,86</b>
Psychiatric care and addiction treatment	2 400 848,42
Therapeutic rehabilitation	2 197 756,41
Nursing and care services	1 177 333,28
Palliative and hospice care	414 031,61
Dental treatment	1 756 409,63
Healthcare prevention	169 060,92
Health services financed on separate conditions	1 823 805,10
Supply of orthopaedic devices and aids	904 527,00
<b>SUM</b>	<b>58 370 819,40</b>

Actually the values spent on hospital treatment are even higher than presented values in the foregoing table. It is due to some methodological aspects of collecting financial data in Polish healthcare system. In case of hospital care there is not included spending dedicated to emergency departments or emergency rooms (Jacyna, 2016, p. 66). For a better illustration of the problem of hospital financing in Poland the data is also presented on the chart below presenting percentage values of public spending distributed by the National Health Fund.



*Chart 1: Percentage distribution of healthcare funds in Poland by the National Health Fund in 2015 (Own elaboration on the basis of: Jacyna, 2016, p. 66).*

Presented chart gives even better understanding of the importance of hospital treatment in Poland. More than 56% of public funding dedicated to financing healthcare system and distributed by the National Health Fund is spent on this kind of treatment. Such a distribution has been similar for many years putting hospitals far ahead different kinds of medical treatment.

As far as the problem of hospital care is concerned it also worth to analyse the ways how the hospitals can be classified. There are various methods of hospitals' classification including such aspects as: type of ownership, founding body, the scope and nature of the health services, size of the hospital, territorial scope of activity, time of treatment period, the type and number of medical specialties in hospital, conducting research and teaching activity in hospital. Probably the most popular and the most often used classification of hospitals in Poland is that based on founding body. According to this classification among Polish hospitals there can be distinguished local government (municipal, county, provincial) hospitals, departmental hospitals, as well as hospitals set up by churches or religious organizations, the companies of civil and commercial law, non-governmental organization, or medical schools (Rój and Sobiech, 2006, p. 58; Hass-Symotiuk, 2011, p. 11-52). Underneath there is presented the classification taking into consideration foregoing attributes concerning founding body. There might be distinguished in Poland:

- 1) Local government hospitals,
  - a. Marshal (or provincial) hospitals,
  - b. County hospitals,
  - c. Municipal hospitals,
- 2) Departmental hospitals,
- 3) University hospitals,
- 4) Non-public hospitals.
- 5) Others.

It is also worth to bear in mind that all the earlier mentioned methods of classification can be treated on the one hand separately but on the other hand it is obviously possible to treat them also in a merged way (i.e. hospital conducting research and teaching activity can be classified as research and teaching unit but it is also featured by a particular type of ownership or founding body).

### **3. LIQUIDITY MANAGEMENT IN HOSPITAL AND ITS IMPACT ON PROFITABILITY**

The problem of liquidity management and analyzing relationship between profitability and liquidity among hospitals is not new. It has been analyzed so far by few authors.

The claim that such areas as profitability and liquidity should be for hospitals of great importance can be emphasized by the fact that liquidity and profitability measures are used as indicators of financial perspective in a popular tool used quite often to to manage and evaluate hospital activity which is Balanced Scorecard (Miszczyńska, 2015, p. 61-64; Miszczyńska, 2016, p. 141-152).

#### **3.1 Liquidity management in hospital**

The idea of liquidity management in the hospital has been recognized many years ago. In the literature there can be found many articles dedicated to this topic. Underneath there is presented a complex literature review concerning the analysed topic.

Working capital management consists a very important aspect of liquidity management. In 1977 Elnicki (1977) analysed the problem of working capital management in hospital. The importance

of working capital management in hospital was also noticed by Aggarwal i Hahn (1979). It was emphasized as well by Oszustowicz (1980).

Chu, Zollinger, Kelly, Saywell Jr. (1991) in their study, in turn, provided evidence that those responsible for financial management in hospitals should pay much more attention to the relations between the level of hospital equity to total assets, net income, cash flow or working capital flow. What is more, they suggested that the management staff in hospitals should pay attention to hospital working capital flow as a separate aspect of hospital asset flow rather than just cash flow and net income plus depreciation.

In 1994 the problem of working capital management was also described by Norton (1994) and in 1995 McGuire (1995) mentioned that working capital management is crucial and necessary from the point of view of organisations operating in the healthcare sector.

Ferconio and Lane (1991) presented, by contrast, factoring and asset-backed securitization as tools that can boost working capital in hospital. Securitization of receivables in order to improve the situation in terms of liquidity expressed by working capital in the healthcare organization was also the subject of studies by Kincaid (1993).

Zeller, Stanko, Cleverley (1997) analysing the situation of not-for-profit hospitals in years 1989 – 1992 distinguished liquidity and working capital management as two out of six financial characteristics of hospital performance. Among other characteristics were: profitability factor, fixed-asset efficiency, capital structure and fixed-asset age.

Such aspects of financial management hospitals as debt capacity, financial risk, profitability and also liquidity were dealt by Cleverley and Harvey (1992) who analysed the situation of hospitals on the background of industrial, transport and utility sectors. According to the analysis hospitals showed weaknesses in some of the analysed areas.

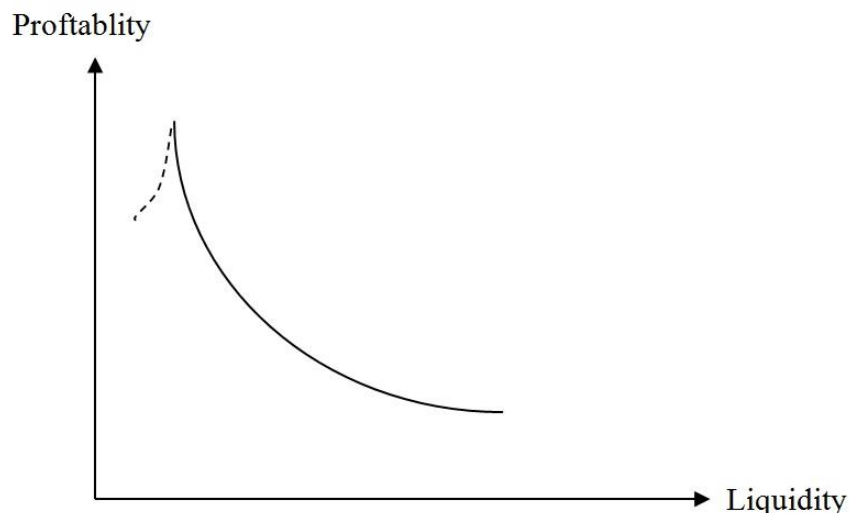
The liquidity among hospitals was also analysed in 2014 by Gaughan and Koepke (2014). The authors used a set of indicators including current ratio, average payment period, days cash on hand, debt-to-capitalization period or average age of plant to analyse the sample of nearly 600 US hospitals. In addition the study included the distinction into subgroups of hospitals such as major teaching hospitals, teaching hospitals, large, medium and small community hospitals.

Among Polish studies dedicated to the problem of liquidity management in hospitals there can be distinguished works conducted by Prędkiewicz and Prędkiewicz (2013a), Prędkiewicz and Prędkiewicz (2013b) Bem, Prędkiewicz, Prędkiewicz and Ucieklak-Jeż (2014a), Bem, Prędkiewicz, Prędkiewicz and Ucieklak-Jeż (2014b). Aspects related to the liquidity and working capital management in hospitals were also mentioned by Rój and Sobiech (2006).

### **3.2 Relationship between profitability and liquidity**

According to theory the relationship between profitability and liquidity is negative. Reduction in liquidity generally leads to the increase in profitability and vice versa – maximizing profitability leads to the decrease in liquidity (Gajdka and Walińska, 2000, p. 467; Wawryszuk-Misztal, 2007, p. 38). Some authors even point out that such opinion is soundly established by both theoreticians and practitioners (Guzik, 2006, p. 57-68). This relationship is presented below:





Source: Gajdka and Walińska, 2000, p. 467.

Basically decline in liquidity leads to increased profitability but it should be noted that if the level of liquidity is too small it could lead to a sharp drop in profitability (Narkiewicz, 2007, p. 331-345). However, there are some studies that suggest different – positive – relationship between these two financial measures (Zawadzka, Ardan, Szafraniec-Siluta, 2011, p. 195-207; Wasilewski, Gałęcka, 2010, p. 231-240; Bieniasz, Czerwińska-Kayzer, Gołaś, 2007, p. 11-25 ).

The differences in this relationship may be caused by the specific characteristics of a particular branch. That is why it is worth to analyse what is the situation in the hospital sector which usually consists the most expensive part in financing healthcare systems all over the world. For example, as it was mentioned earlier in the article, in Poland spending on hospital treatment consist more than 56% of all healthcare public spending.

The relationship between liquidity and profitability measures among hospitals was analysed by Rauscher and Wheeler (2012). They showed negative relationship between profitability and such liquidity measures as average collection period and average payment period. In case of the first indicator they noticed that hospitals which were featured by faster pace of collecting revenues reported higher profitability as compared to hospitals which were featured by the slower pace and as a result larger balances of accounts receivable outstanding. that. In the latter case they concluded that hospitals featured by higher profitability levels paid the suppliers faster probably to avoid high interests on outstanding accounts payable.

Another study analysing the relationship between liquidity management and profitability in hospital sector was conducted by Talha, Christopher and Kamalavalli (2010). The authors analysed Indian hospitals to find out the influence of liquidity indicators on profitability. Regression analysis showed that such measures as current ratio, cash turnover ratio, proportion of current assets to operating income and leverage have a negative influence on profitability.

Also Cleverley (1990) analysing the sample of 50 hospitals in terms of profitability came to interesting conclusions as far as liquidity is concerned. The author divided hospitals into two groups – high-performing and low-performing ones according to their return on equity (ROE) ratios. One of the conclusions was that high-performing hospitals minimize accounts receivables (one of the most important liquidity measures) which suggests a negative relationship between profitability and liquidity.

#### 4. CONSLUSION

Polish healthcare system like many others all over the world is in financial crisis. It is mainly due to the fact that the supply of health services is limited whereas health demand is unlimited. It might be also caused by complex financing of the system. That is why analysing the factors which may improve financial situation of the system is really important.

Liquidity management consists the area which is crucial in financial management of each enterprise as it ensures financial stability and is strictly connected with the profitability. Some studies concerning the problem of liquidity management and relationship between liquidity and profitability in hospital sector have been conducted so far. However, according to the analysis performed for this study their number is limited and there is still a gap which should be fulfilled. Still there remains the space in the literature for clarifying certain concepts – especially from the area of liquidity strategies used by hospitals and the impact of liquidity management on profitability. So, the topic needs to be further carefully analysed.

The review presented in this article consists the first step towards a wider empirical study which is going to be conducted among Polish hospitals taking into consideration the mentioned relationship. As it was presented in the article some studies pointing out the relationship between profitability and liquidity have been conducted but none of these on the example of Poland. Conducting such an analysis might give interesting remarks in the topic if the hospitals should be portrayed and analysed as normal market players or in a different way. It is very important especially in Poland where hospitals operate at the interface of market economy and public funding. It is even more important from the point of view of changes planned by current health policymakers and aimed at reforming whole healthcare system in Poland.

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## **COST OPTIMISATION OF SPARE PARTS INVENTORY IN TECHNICAL SYSTEMS MAINTENANCE PROCESSES**

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### **ABSTRACT**

*The efficiency of a maintenance system depends on a number of important factors such as the availability of workspace, tools and equipment, energy, supplies, employees, spare parts, etc. Spare parts play a crucial role in this process for multiple reasons. Their importance becomes especially apparent in case of stock-outs which disrupt production processes and affect total costs. On the other hand, excess inventory also has negative effects on the production system due to commitment of funds, inventory warehousing, partial obsolescence, etc. The paper aims to determine the optimal inventory level of spare parts that would ensure the reliability of production systems.*

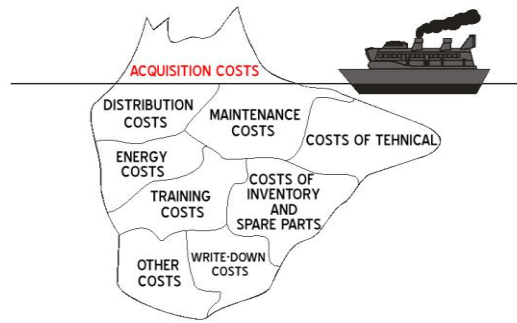
**Keywords:** *costs, spare parts, reliability*

### **1. INTRODUCTION**

Many machines and devices are planned, designed, produced, and used without giving much consideration to life cycle costs. Costs are usually considered in the design and development phase, but not from all aspects. If economic aspects are taken into account, all life cycle costs of a technical system must be considered including the costs of design, production, use, disposal, and beyond, and finally the total cost. Failure to identifying all the costs involved over the life of a technical system is the reason why use costs are usually higher than expected. According to Blanchard [3], poor cost management and planning cause “the iceberg effect”. One can only see the tip of an iceberg floating in the sea (Figure 1). Similarly, only acquisition costs are visible, whereas the costs of maintenance, distribution, training of operators, documentation, energy, fuel, lubricants, etc. incurred during operation, are not considered. Figure 1 shows that maintenance costs are a major consideration, which applies to all technical systems, including industrial plants. In other words, maintenance has a significant impact on the total life cycle costs, affecting a part of the total cost of logistics support. The actual share of individual activities and elements in the total life cycle costs depends on many factors, primarily the type of the technical system, its complexity and purpose. Some industrial facilities incur high energy costs; some require training



of operators and maintenance staff, while others incur high costs due to warehousing and excess inventory of spare parts.



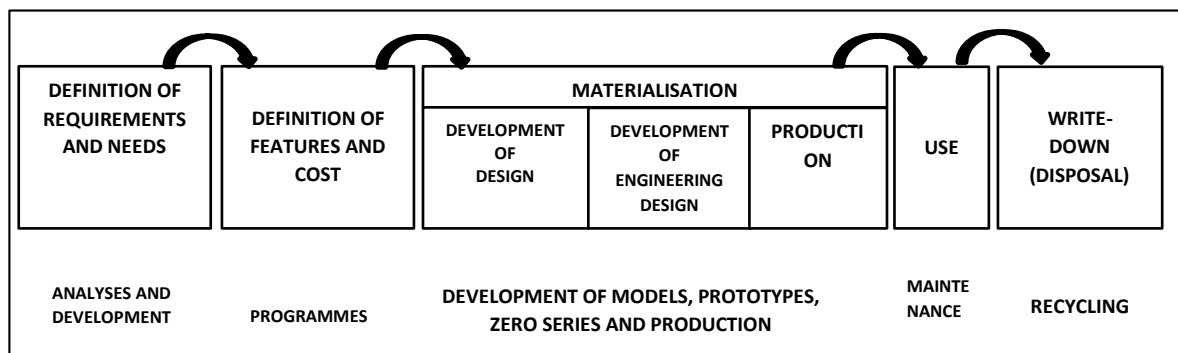
*Figure 1. The iceberg effect of maintenance costs*

The relationships shown in Figure 1 are general in nature and, in principle, refer to all types of technical systems and all conditions of their application. In the modern production process, maintenance is inseparable from any part thereof. However, it is specific in terms of working conditions, organization, planning and performance of maintenance operations. It brings together professionals of diverse backgrounds. Its role and scope grows as the production equipment becomes increasingly automated. Modern industrial systems require fewer operators and less qualified staff in the use phase, whereas maintenance requires an ever-growing number of qualified staff. A high level of automation ensures high productivity, thereby reducing production costs. However, system downtime (due to preventive or corrective maintenance) is costly and affects the entire production process.

## 2. LIFE CYCLE COSTS OF TECHNICAL SYSTEMS

The life cycle of a technical system is a period of time that begins with defining user needs, and further includes defining technical, technological and functional requirements, planning, research, design, development, production, verification, use and disposal. Naturally, each of these stages incurs certain costs. These costs are referred to as total life cycle costs of a technical system [1].

Figure 2 shows the main stages of development and activities in the life cycle of a technical system.



*Figure 2. Life cycle stages of a technical system*



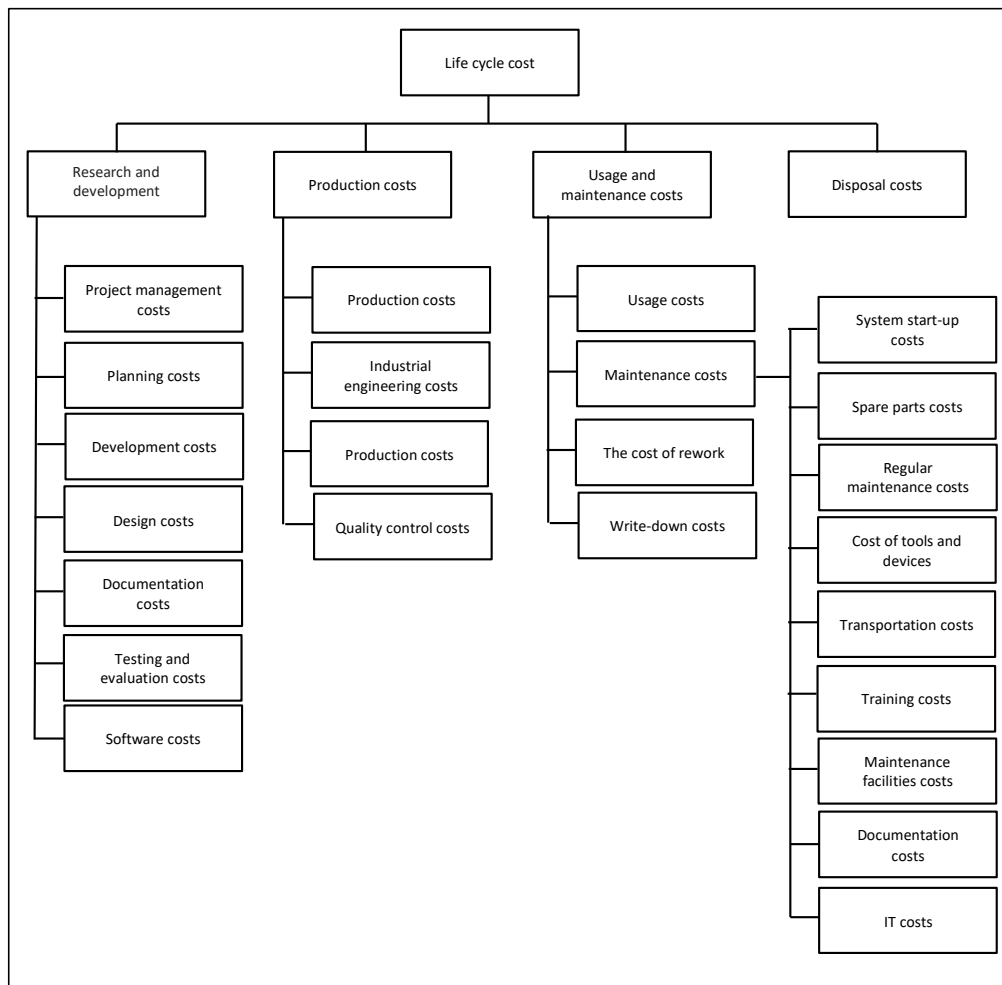
The life cycle costs are given by the following expression:

$$C = C_R + C_P + C_E + C_O$$

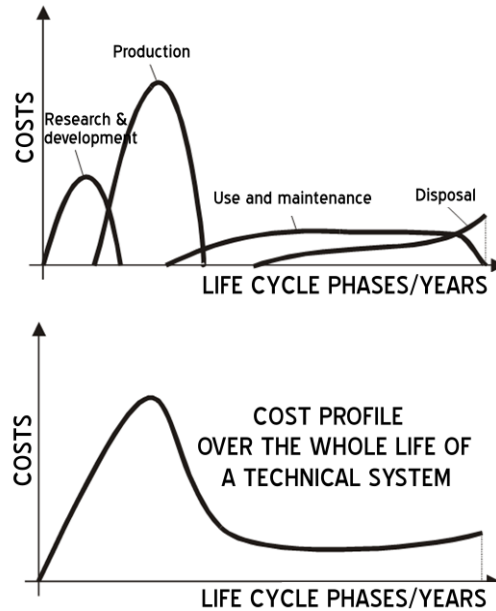
where:

- $C_R$  - stands for research and development costs
- $C_P$  - stands for production costs
- $C_E$  - stands for use and maintenance costs
- $C_O$  - stands for write-down (recycling) costs

Practice has shown that a simple expression such as this one can be broken down into several types of costs incurred over the whole life of a technical system (Figure 3). Figure 4 shows the basic structure and the relationship between the life cycle costs of a technical system.



**Figure 3.** Life cycle cost of a technical system



**Figure 4.** Cost profile over the whole life of a technical system

Considering all costs incurred over the whole life of a technical system helps in [6]:

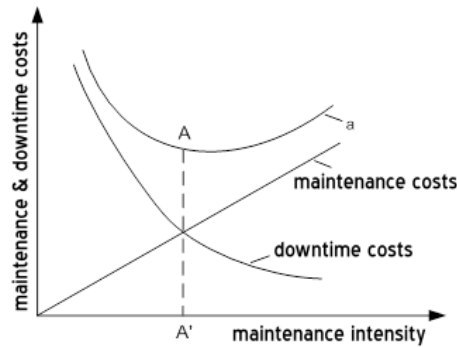
- timely consideration of operational features and the cost of their development;
- assessing life cycle cost efficiency of a technical system;
- rational and planned use of funds.

### 3. MAINTENANCE COSTS

Maintaining the required levels of availability (readiness) and reliability of industrial facilities requires funds on the one hand, and on the other, incurs costs due to downtime (costs incurred because a machine is not functional or cannot work). The diagram in Figure 5 shows the general relationship between maintenance and downtime costs as a function of maintenance intensity [2].

As can be seen in Figure 4, the costs of downtime decrease as the maintenance intensity increases, whereas the situation is exactly the opposite with maintenance costs. The sum of costs is depicted by curve “a”. It can be seen that these costs are optimal in point A. In practice this means that one should seek to eliminate as many defects and failures through preventive and predictive maintenance in order to keep downtime costs to a minimum, in order to avoid the costs that may incur due to:

- scrap generation,
- the reduction of equipment capacity,
- delivery delays (default interest),
- outsourcing of expert work,
- waiting for spare parts, etc.



**Figure 5.** General relationship between maintenance costs and downtime costs

The costs of maintenance of technical systems can be analyzed and monitored through fixed and variable costs.

Fixed maintenance costs include:

- salaries of maintenance staff,
- energy costs (lighting and heating),
- costs of workshop maintenance, etc.

Variable maintenance costs include:

- spare parts and supplies costs,
- acquisition costs for new maintenance tools and devices,
- maintenance staff training costs,
- workshop documentation costs, etc.

Taking into account maintenance costs and the reliability of technical systems, the main objectives of the maintenance process in a business system are keeping total maintenance costs (direct and indirect) to a minimum and delaying system obsolescence. These objectives can be reached by:

- adequate organization of preparatory work, development of work standards (man-hours and materials) and the establishment of planning function,
- carrying out preventive and corrective maintenance of all industrial facilities, focusing primarily on prevention,
- carrying out modifications to technical systems and restoring them to operable condition,
- keeping abreast of the development of technology and organization, both globally and locally,
- cooperating with other segments of the production system,
- taking part in the procurement of new equipment,
- monitoring the impact of maintenance costs on the total production costs,
- ensuring an adequate safety level at the industrial facility as required by law in order to keep the risk of injuries to a minimum,
- educating users on the proper use of technical systems with an aim to prolong their useful life, etc.

#### 4. 4. ISSUES SURROUNDING SPARE PARTS

One of the key issues regarding spare parts needed for maintenance is the size of their inventory. The belief that inventory management is beneficial only in large production systems is mistaken. Great savings can be achieved in small production systems as well, even in workshops.

Spare parts inventory movement involves (Figure 6) inbound flow of spare parts into the process (creating the inventory) and outbound flow of spare parts (usage).

As long as the inventory flow process is functioning, spare parts inventory is maintained. Otherwise, there is stock-out. In case of longer periods, e.g. a year, the quantity of spare parts procured for reserves can be adjusted to balance it with consumption. In case of shorter periods (a day, week, month, or a quarter of a year), the two flows vary significantly due to the unbalanced and uncoordinated input and output [1].



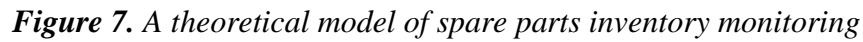
*Figure 6. Spare parts inventory flow*

Spare parts inventories sitting in a warehouse are a “dead capital”. From an economic point of view, they may cause losses due to tied up funds, incurred costs, inventory obsolescence and degradation, as well as taking up warehouse space. Therefore, spare parts inventory management should take into account both negative and positive aspects of keeping inventory on hand in order to balance input and output, maintain an adequate inventory level for a given period of time, adjust to the conditions and frequency of input and output, adhering to the business policy and using automatic data processing.

For spare parts inventory management to be efficient, one must be familiar with major factors affecting them (Figure 7). They are as follows:

- $Z_{\min}$  - minimum spare parts inventory level,
- $Z_{\max}$  - maximum spare parts inventory level,
- $Z_N$  - ordered quantity of spare parts for a given period of time  $T_p$ ,
- $Z_{\text{sig}}$  - spare parts safety stock,
- $T_p$  - usage period,
- $T_i$  - procurement lead time,
- $T_M$  - maximum delivery delay by the supplier,
- $Z_A$  - average spare parts usage per unit of time.

According to [7], Figure 7 shows a theoretical model of inventory usage monitoring (in real systems, the usage of spare parts is quite different than in this particular case).


$$Z_{\max} = Z_{\min} + Z_N \quad (1)$$

$$Z_{sig} = Z_A \cdot (T_M + T_i) = Z_{\min} + T_i \cdot Z_A \quad (2)$$

$$Z_N = Z_A \cdot T_p \quad (3)$$

$$Z_{\min} = Z_A \cdot T_M \quad (4)$$

#### 4.1 Determining inventory levels based on the reliability criteria

$$\lambda(t) = \frac{f(t)}{R(t)} = -\frac{1}{R(t)} \cdot \frac{dR(t)}{df} = const \quad (5)$$

The Poisson distribution can be used to predict the probability of failure in a given time interval providing that the mean number of failures per unit of time is constant and the events are independent and mutually exclusive.

The Poisson distribution is given by the equation:

$$R(r) = \sum_{r=0}^r \frac{M^r}{r!} \cdot e^{-M} \quad (6)$$

i.e.

$$R(r) = e^{-M} + M \cdot e^{-M} + \frac{1}{2} M^2 \cdot e^{-M} + \dots + \frac{1}{r!} M^r \cdot e^{-M} \quad (7)$$

In the expression 10.7, the first member represents the probability that zero failures will occur during observation period T. The second member represents the probability that one failure will occur in a given time interval T, while the expression

$$\frac{M^r}{r!} \cdot e^{-M} \text{ gives the probability that } r \text{ failures will occur in a given time interval } T,$$

where:

M – is the mathematical expectation of the required quantity of spares

r – 1, 2, .....n – is failure occurrence.

The mathematical expectation of the required quantity of spare parts can be calculated as follows:

$$M = m \cdot \lambda_s \cdot T \quad (8)$$

where:

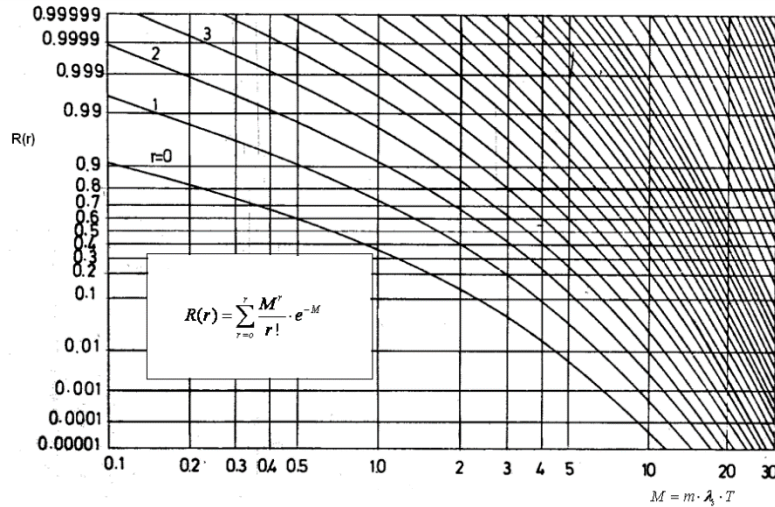
m – is the number of technical systems maintained,

$\lambda_s$  – is medium failure intensity,

T – is observation period.

When planning the required quantity of spare parts, expressions 7 and 8 can be considered as safety factors, because they represent the probability that a spare part will be available when it is needed. The higher the reliability, the higher the quantity of spare parts, which increases maintenance costs. If the following values are known: the number of technical systems, the number of individual types of elements, failure intensity and observation period (usage), it is possible to determine the required number of spare parts for a specific cumulative Poisson distribution according to the chart shown in Figure 8.





**Figure 8.** Nomograph for reading the required quantity of spare parts

#### 4.2 Experimental section

The maintenance process in a large production system involves care for the proper functioning of 142 transport vehicles. It is necessary to determine the required quantity of wheel cylinders with reliability  $R(r) = 0.9 \pm 0.05$  for a period of three years. Failure intensity (experiential) is  $0.96 \times 10^{-2}$ .

**Solution:**

The mathematical expectation of the required number of brake cylinders is:

$$M = m \cdot \lambda_s \cdot T \approx 4$$

The calculation of the number of brake cylinders needed to achieve reliability  $R(r) = 0.9 \pm 0.05$ . The following reliability levels were determined for various quantities of spare parts (Z):

$$Z = 0 \dots \Rightarrow R(r) = e^{-M} = 0,018$$

$$Z = 1 \dots \Rightarrow R(r) = e^{-M} + M \cdot e^{-M} = 0,09$$

$$Z = 2 \dots \Rightarrow R(r) = e^{-M} + M \cdot e^{-M} + \frac{1}{2!} M^2 \cdot e^{-M} = 0,25$$

$$Z = 3 \dots \Rightarrow R(r) = e^{-M} + M \cdot e^{-M} + \frac{1}{2!} M^2 \cdot e^{-M} + \frac{1}{3!} M^3 \cdot e^{-M} = 0,43$$

$$Z = 4 \dots \Rightarrow R(r) = e^{-M} + M \cdot e^{-M} + \frac{1}{2!} M^2 \cdot e^{-M} + \frac{1}{3!} M^3 \cdot e^{-M} + \frac{1}{4!} M^4 \cdot e^{-M} = 0,62$$

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—

$$Z = 6 \dots \Rightarrow R(r) = 0,873$$

As can be seen in the above example in which brake cylinder inventory level needed to ensure reliability  $R(r) = 0.9 \pm 0.05$  has been calculated, the quantity should be limited to  $Z = 6$  units, because it ensures reliability within the required limits (0.873). When this methodology is applied in real-world conditions, nomographs can be used from which the required quantity of spare parts can be read immediately (based on data obtained during longer testing). Figure 8 shows one such nomograph.

## 5. CONCLUSION

Technical system life cycle cost analyses facilitate decision-making in business systems by providing relevant information. This is important for all involved in the life cycle of a system, i.e. the designers, producers and users alike, as well as servicing and maintenance professionals.

A very important part of these analyses is the analysis of the costs of spare parts used for maintenance and repair. Their usage is quite random because it depends on the occurrence of defects which is also a random variable. On the other hand, the quantity of spare parts in stock is a very important factor as well. It is best to keep a sufficient quantity of spare parts in stock at all times. This can be done only if the warehouse keeps a large quantity of spare parts in stock for each element of the technical system. This is the only way to ensure that there is a high probability to cater to each and every demand. Ensuring stock safety requires a large quantity of spare parts, which in turn incurs high costs, thereby negatively affecting the system.

The presented methodology is one of a number of methodologies for the optimisation of spare parts inventory that uses reliability criteria. Its application is very simple and tested in practice by the authors of this paper.

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## ALTERNATIVE INVESTMENT FUNDS AND THEIR ROLE IN PORTFOLIO COMPANIES – STATE OF ART IN CROATIAN LAW AND PRACTICE

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### ABSTRACT

*Alternative investment funds (AIFs) differ from “traditional” investors in their role as shareholders of companies in which they invest. Although traditional institutional investors prevail over alternative ones in the global share of investments, their role in portfolio companies is usually passive due to regulatory and investment restrictions applicable to them (as for example UCITS funds). Specific types of AIFs (private equity/venture capital funds/hedge funds) invest a significant part of their asset in various companies and available comparative data suggests that they are significantly more active in portfolio companies than other shareholders/investors. Through different types of activism, AIFs tend to influence the corporate governance of companies in which they invest. The goal of this article is to determine whether Croatian AIFs play an active role as shareholders in their portfolio companies. Importantly, Croatian AIFs have just recently been regulated in line with known global trends, which further enhance their position on the market. Authors shall analyze available legal mechanisms for shareholders to actively participate and influence the corporate governance of the companies under Croatian law. In order to determine whether AIFs as shareholders employ those mechanisms in practice, authors conducted research among the managers of Croatian AIFs. Research was focused on determining whether Croatian AIFs participate actively in governance of portfolio companies through voting rights, making shareholder proposals, informal influence on the board members or other type of shareholders’ activism. Finally, authors shall elaborate if the current state of AIFs activism in portfolio companies represents a good example of corporate governance from the point of a long-term criticized passive shareholders issue.*

**Keywords:** *active shareholders, alternative investment funds, corporate governance, managers of alternative investment funds, private equity*

### 1. INTRODUCTION

The Croatian capital market is relatively young. The development of Croatian investment funds began approximately twenty years ago, when a first mutual fund was founded in 1997 [Čulinović-Herc, Grković, 2013, pp. 53-60]. The regulation of mutual funds, especially of UCITS funds, was under the heavy influence of the European Union (further in text: EU), even before Croatia became a full Member State. On the other hand, alternative investment funds (further in text: AIFs) have

just recently been regulated in line with known global trends and new types of AIFs are introduced in the Croatian capital market. As on the EU level, we can divide Croatian investment funds into UCITS funds and AIFs. Due to considerable differences in investment strategies and objectives, pension funds fall out of the scope of this article. Opposite to UCITS funds, AIFs represent a heteronomous group of funds which are mostly unburdened by the legislative restrictions in their investments. This research is limited to Croatian AIFs that invest in equity instruments of Croatian listed public companies and/or private companies. One part of the research therefore explores the shareholders' mechanisms which AIFs may employ, i.e. it contains an analysis of available legal mechanisms that allow AIFs to be active shareholders in Croatian companies. Portfolio companies are in most cases established as a public limited liability company (*dioničko društvo*) (further in text: PLLC) and a limited liability company (*društvo s ograničenom odgovornošću*) (further in text: LLC). Therefore, the basis of AIFs' available mechanisms is explored in this context. Authors acknowledge that AIFs are typically divided into specific types (such as private equity, venture capital, hedge funds, etc.) according to the investment strategies which they usually employ. Nevertheless, in some cases this distinction becomes blurred. Although the type of AIF may indicate the level of activist approach, it is not necessarily the case. Croatian AIFs that invest in equity as well as their foreign twins, AIFs on the global capital market, may employ investment strategies not necessarily connected with their type. Therefore, authors focused on the shareholders' active mechanisms regardless of whether such mechanisms are a result of the investment strategy usually connected with a specific type of AIF. In that regard, authors conducted research among Croatian managers of AIFs (further in text: AIFM) in order to determine if their AIFs are active shareholders in portfolio companies and if they are, which legal mechanisms they are using. The overall goal of this article is to provide an answer whether the Croatian AIFs as institutional investors play a role of an active shareholder comparable to trends in comparative capital markets.

## **2. AIFs AS ACTIVE SHAREHOLDERS – COMPARATIVE MARKET PERSPECTIVE**

The prevailing literature regarding AIFs as active shareholders is focused specifically on hedge funds, as they are known to have the most proactive strategy. Comparative data suggest that AIFs invest significantly less in equity than traditional institutional investors [Çelik, Isaksson, 2013, pp. 100-102]. However, when they do, the question arises whether AIFs actively participate in corporate governance of the portfolio company and show higher degree of shareholders' activism than traditional investors. It is a topic that recently gained more attention, although shareholder activism is not a new element in capital markets (it dates at least from the 1980s for the USA) [Gillian, Starks, 2007, pp. 57-59].

Authors note that AIFs can influence the company through derivative positions (such as options, convertible preference shares and other), share loan agreements, empty voting and other techniques [Stowell, 2013, p. 269] as well. The activism of AIFs and their influence on the companies in capital market is higher when taking that into account [AIMA, Simmons&Simmons, 2015, p. 29]. Likewise, besides the visible techniques that AIFs can employ in portfolio companies, authors acknowledge the existence of unofficial or “behind-the-scenes” pressures that AIFs can exercise on management boards. It seems that such behavior is reportedly very often in the practice [Becht, Franks, Mayer, Rossi, 2015, p. 225; AIMA, Simmons&Simmons, 2015, p. 5].

Shareholder's position in the company depends primarily on the size of the stake it holds. Comparatively, in European countries the average stake size that AIFs hold in their portfolio companies amounts from 6.1% to 9.7% [Becht, Franks, Grant, 2010, p. 20]. Such a result indicates

that AIFs prefer the position of a minority shareholder (with the exception for private equity and venture capital funds). They influence the company governance through various mechanisms, but they are avoiding costly public takeovers.

Generally, traditional institutional investors such as mutual funds, pension funds and other are not active shareholders, mostly due to organizational and investment restrictions applicable to them. If they are active, they use the "passive" form of activism [Kahan, Rock, 2007, p. 1043]. This mainly consists of making formal shareholder proposals, voting in favor or against shareholder proposals, informal discussions with management board etc. Although it represents a certain type of influence, it inclines towards only moderate changes in corporate governance at the smaller price for active shareholders [Kahan, Rock, 2007, p. 1044].

On the other hand, when AIFs and especially hedge funds act as active shareholders, they are often active in portfolio companies as a part of their strategy, i.e. they invest in certain companies because their analysis suggests that they will profit from active engagement [Kahan, Rock, 2007, p. 1069; Stowell, 2013, p. 269]. AIFs are generally not burdened with requirements for diversification and other organizational issues, which enhance the likelihood of their involvement as active shareholders [Clifford, 2008, p. 326; Klein, Zur, 2006, p. 7]. They strive towards changing the corporate control in the portfolio companies in order to issue a decision which is favorable for them, as are blocking the takeover of the company, acquiring the company for themselves and other [Kahan, Rock, 2007, pp. 1029-1043]. Such activism is certainly more expensive, but also more efficient with prompt results.

However, although helpful, such distinctions are relative. In fact, many AIFs employ techniques usually connected with traditional investors. In a study from 2015, it was found that even 52% of activism by AIFs relates to improving corporate governance of the portfolio companies, i.e. to the passive form of activism [AIMA, Simmons&Simmons, 2015, p. 31].

A hostile takeover is a notorious notion often connected with the investment techniques of AIFs, especially of hedge funds. However, available data shows that AIFs predominantly use non-hostile types of actions in order to gain corporate control in portfolio companies [AIMA, Simmons&Simmons, 2015, pp. 37-39; Brav, Jiang, Partnoy, Thomas, 2015, p. 273]. It confirms the findings that AIFs use similar activist methods as traditional institutional investors. Thus, they rather seek to influence the corporate governance through constructive methods (such as making formal shareholder proposals, informal influence on management board, being represented in the management and supervisory board and other), than employing aggressive methods (such as takeover of the company, litigation against the company or its directors and others).

It is often discussed whether shareholder activism by AIFs represents a positive or negative impact on portfolio companies and other shareholders. There are many studies which measure impact of shareholders' activism on target companies. The most frequent criteria used for analysis are short and long-term reactions of stock market on shareholders' activism, successfulness of shareholders' proposals, and influence on the management board.

Available academic literature supports the findings that active AIFs create values for other shareholders [Brav, Jiang, Kim, 2012, p. 208; Becht, Franks, Mayer, Rossi, 2015, p. 246]. Some authors argue that active AIFs improve corporate governance of the target companies and especially that their presence influences the CEOs whose compensation usually drops and becomes more tied with the performance results [Brav, Jiang, Partnoy, Thomas, 2015, p. 298]. It is considered that management boards start improving the corporate governance of the target company as soon as upon announcement of the investment.



Available data demonstrates that activism by AIFs regularly achieves short-term abnormal price returns in the shares of target companies [Brav, Jiang, Partnoy, Thomas, 2015, p. 286; AIMA, Simmons&Simmons, 2015, p. 48]. However, reasons for such a reaction are not clear. In the ideal scenario, a positive market reaction would be due to the expectations that AIFs shall add the company value by improving the company management. It can also be a sign to other investors that AIF detected an undervalued company worth of investing. As such it can bring additional value to the shareholders of the target company, but without long-term positive activism of the AIF in the company; the positive return is short-term and it affects the shareholders but not the company.

It is much less clear whether company performance improves in long-term period after the AIFs investment. There are mixed results regarding this issue [Coffee, 2015, p. 697]. AIFs as active shareholders can contribute to the welfare of the company only if they act in the interest of the company and not in the interest of their investment solely. Some AIFs are known to enter the company with the goal to strip the company from its assets, thus maximizing their immediate profit, but seriously damaging the company in the long term [Seretakis, 2013, p. 216]. Thus, it is understandable that AIFs raise justifiable concerns, especially for the management boards who should act in the best interest of the company and not individual investor's benefit.

To conclude, although activism by AIFs obviously raises certain concerns, the overall view in the academic literature towards AIFs as active shareholders is positive. Furthermore, there is a study that shows that even among the AIFs, those who employ strategy of the active shareholder achieve larger average annual return than passive AIFs [Clifford, 2008, p. 325]. Finally, the success rate for active AIFs is very high. AIFs achieve their goal as active shareholders in around 60% of cases [Klein, Zur, 2006, p. 30-31; AIMA, Simmons&Simmons, 2015, p. 33].

### **3. REGULATION OF AIFs UNDER CROATIAN LAW**

Croatian AIFs have recently been regulated in line with global trends. That was done by the Alternative Investment Funds Act from 2013, which was amended on 11 December 2014 (further in text: AIF Act) with the aim to further harmonize Croatian law with the Alternative Investment Fund Managers Directive (further in text: AIFMD). According to AIF Act (art. 3/2), AIF is an investment fund established for the purpose of raising capital through a public or private offering and investing this capital in different types of assets in accordance with a predefined investment strategy and objective, but to the exclusive benefit of unit-holders in the AIF concerned. An AIF may be an open-ended (separate pool of assets, without legal personality) and a closed-ended investment fund (a legal person established in the form of a PLLC or a LLC). AIF with private offering may be of any kind, in accordance with Croatian laws and regulations, including, but not limited to, basic AIF and special kinds of AIF, such as private equity, venture capital, real-estate, fund of funds, specialized AIFs, hedge funds, EuVECA and EuSEF. There are also several AIFs established during 2010 as funds for economic cooperation (*fond za gospodarsku suradnju*) in cooperation with the state, which basically function as private equity funds.

In order to fully understand the Croatian state of play regarding the AIF market, it is also important to note that Croatia provides a different regime for (i) AIFMs when the cumulative AIFs under management fall below the threshold of EUR 100 million; and (ii) AIFMs that manage only unleveraged AIFs that do not grant investors redemption rights for 5 years and when the cumulative AIFs under management fall below a threshold of EUR 500 million [art. 5/1 of AIF Act]. In comparison to many other EU Member states this actually means that only one Croatian AIFM, which manages only one AIF (with private offering and has only 2 investors), falls within



the full scope of regulation under AIMFD. All other Croatian AIFs are well below the threshold from AIFMD. However, even “small” AIFMs, which fall out of the scope of the AIFMD, are regulated and supervised in Croatia.

#### **4. ACTIVE SHAREHOLDERS – POSSIBILITIES UNDER CROATIAN LAW**

Croatian companies are regulated by the Croatian Companies Act (further in text: CA). Position of shareholders is determined by the CA, thus authors shall analyze which mechanisms AIFs can employ as shareholders in Croatian companies. As already stated, the focus in this article is put on PLLCs where authors make no distinction whether these companies are listed or not, and LLCs are often related as private companies.

##### **4.1. Active shareholders in public limited liability companies**

Generally, shareholders’ rights in PLLCs (*dioničko društvo*) are divided into management and property rights [Barbić, 2010, p. 521]. Management rights provide basic tools for active shareholders. Those of particular interest are shareholders’ rights to participate in general meeting of the company and taking part in discussions, amending the agenda of the general meeting, making formal shareholders’ proposals on the general meeting, and voting rights.

The general meeting is a central place for shareholders to exercise their rights and to influence the management of the company. The CA in art. 274/1 explicitly provides that shareholders have the right to participate in the general meeting of the company. Authors emphasize the right of the shareholders to request the management board to convene the general meeting. This right is even given to the minority shareholders who hold 5% of share capital or less (if the lower limit is set in the statute of the company) [art. 278/1 of CA]. Thus, if an activist shareholder holds at least 5% of share capital, it shall be able to convene the general meeting. It is self-understood that once the general meeting is convened, shareholders have the right to partake in discussions regarding various decisions on agenda [Čulinović-Herc, Hasić, p. 51].

Also, shareholders have the right to propose and amend the agenda of the general meeting. The CA gave this right to minority shareholders as well [art. 278/2 of CA]. When making a proposal, shareholders must accompany it with explanations and a proposal of the decision. It is possible for activist shareholders to simultaneously request the convening of the general meeting and to propose the agenda of what should be discussed [Barbić, 2010, p. 1091]. The significance of this right is clear as the CA in article 280/4 provides that general meeting cannot discuss issues which are not put on the agenda of the general meeting.

Further, active shareholders have the right to make formal shareholders’ proposals regarding the decisions discussed, either before the general meeting is convened or at the general meeting [art. 282/1 of CA]. It actually means that the shareholder who makes the proposal calls for a different decision than the one suggested (usually) by the management board. Shareholders’ proposals are an important tool given to shareholders in order to influence the management of the company. Of course, whether a proposal shall be accepted depends on the voting of the shareholders at the general meeting. Such proposals should be viewed as constructive for the company, but there is a very interesting finding that stock market reacts negatively when a shareholder’s proposal occurs [Cziraki, Renneboog, Szilagyi, 2015, p. 139]. The reasons are that it raises concerns for the company’s performance and existence of corporate governance issues.

The right to vote is the fundamental right of each shareholder. Every share gives to its shareholder the right to vote at the general meeting [art 169/1 of CA], except preferred shares without the voting right [art 169/2 of CA]. Voting rights are tied with the amount of share capital which a

shareholder has invested into the company [Barbić, 2010, p. 545]. Although voting for or against the proposed decision at the general meeting is a “passive” form of activism, it can be a strong tool to influence the corporate governance of the company, especially if the shareholder holds a majority block of shares. Authors acknowledge various mechanisms which active shareholders can employ in order to gather necessary votes such as shareholder agreements, empty voting and other.

Shareholders have the right to choose the supervisory board in a two-tier [art. 256/1 of CA], and non-executive managers in a one-tier system [art. 272.c/1 of CA]. The election is usually done at the general meeting. However, certain shareholders can have the right to directly choose up to a third of members of the supervisory board [art. 256/3 and art. 272.c/1 of CA]. Further, as the supervisory board chooses the members of the management board/executive officers [art. 244/1 and art. 272.l/1 of CA], shareholders can influence the choice of managers as well. By having this right, active shareholders can more effectively monitor the business performance of the company and indirectly influence its management.

To conclude, AIFs as active shareholders in Croatian PLLCs can use various mechanisms in order to influence the corporate governance of the company. These mechanisms are in line with comparative solutions, especially with company laws of other EU Member States.

#### **4.2. Active shareholders in limited liability companies**

Croatian LLCs (*društvo s ograničenom odgovornošću*) equity instruments cannot be listed on the stock-exchange market. Their investors do not have a “share,” but a “unit” which gives them similar rights as shares do to shareholders. Authors shall refer to them as unitholders.

Unitholders’ rights resemble the ones described for shareholders. However, there are some fundamental differences. They primarily stem from the basic features of the LLCs, which are construed as companies with simpler and more elastic organizational structure, and some basic unitholders’ rights are left to autonomous regulation within the company. A crucial difference is that organs of the company are in a hierarchy, where the general meeting and thus the unitholders are at the top [Barbić, 2013, p. 7]. Bearing this in mind, authors shall further discuss the most relevant management rights for AIFs, which are active shareholders.

Unitholders as shareholders have the right to participate at the general meeting and to partake in discussions. Decisions can be made in writing, even without convening the general meeting if all unitholders give their consent to such a modus of deciding [art 440/1 of CA]. This speaks of less formal requirements in functioning of general meetings. The biggest difference is that the general meeting is the first in the hierarchy of organs. This means that the unitholders’ decision brought at the general meeting is binding for the management board [art. 427/1 of CA]. In other words, AIFs as unitholders can directly influence the management board by making obligatory decisions, at least those who fall under the jurisdiction of the general meeting.

The voting rights of unitholders are arranged differently than those of shareholders. Every 200.00 Croatian kuna of ground capital gives the right to one vote [art. 445/2 of CA]. However, voting rights can be organized differently, providing that each unitholder has at least one vote and that such an arrangement is provided in the memorandum of association [art. 445/3 of CA]. In other words, AIF as a unitholder can negotiate for higher voting rights, for veto power or other privileges, even as a minority unitholder [Barbić, 2013, p. 267].

After 2012, Croatian legislature introduced the simple LLC as a subcategory of the LLC. Even though there are some differences, unitholders can employ the same techniques to actively influence the corporate governance as in the LLCs.

To conclude, AIFs as unitholders can have an easier access to the management of the company and the influence on the management board can be done with less formal requirements. Also, there is no risk of negative perception by the public if for e.g. AIF makes a formal shareholder proposal at the general meeting. The main advantage is that there is a higher degree of autonomy where AIFs can bargain for a better position within the company.

## **5. CROATIAN AIFs AS SHAREHOLDERS**

According to the publicly available data on the website of the Croatian Financial Supervisory Agency (September 2016), the Croatian AIF market consists of 14 AIFMs who manage 30 AIFs. Authors conducted research among AIFMs by compiling a questionnaire. Questions were divided into 5 groups: choice of portfolio company, modus of entering, activism in the company, time period of investments, and exit strategies. Research was limited to equity investments, excluding the influence which AIF can exercise through derivative positions, share loan agreements, empty voting, and other techniques.

Out of 12 received answers, 2 were not taken into account as the AIFs invested in bonds only, and additional 2 because the answers did not concern the AIFs under management but rather a general standpoint of the managers in question. Thus, the final sample consisted of 8 answered questionnaires, which covered around 50% of AIFs in Croatia who invest in equity.

In choosing the target company, AIFMs were asked about the most important risks of investment they were taking into account before investing. Among various risks offered, in the first place is the risk that the management board of the target company is not a good team. All AIFMs chose this risk, which loudly speaks of its importance. The risk of inadequate exit strategy came in the second place. The first two are followed closely by the risk of loss of the entire investment, risk of competition, risk that the company will fail to adapt its idea to the market, risk of transparency and accuracy of information and financial reports of the target company, risk of change of the legal and tax system, risk of change of circumstances on global, regional and local market and other.

As for the modus of entering, AIFMs were asked about the threshold of equity investment. 5 of them answered that their AIFs remain minority shareholders in the portfolio company. These funds are careful not to cross the threshold for takeover of the company (25% plus one voting shares). The remaining two declared that they prefer the position of majority shareholders (venture capital funds), while one answered that it depends on the particular company. This result is in line with the comparative findings elaborated earlier in the text.

AIFMs were questioned what legal form of portfolio companies they prefer. Only one answered that LLCs are preferable as a portfolio company, regardless of its more simple structure that allows more bargaining freedom to its unitholders. Thus, Croatian AIFMs dominantly opted for PLLCs as their portfolio companies.

Regarding the perception of investment, all AIFMs answered that both the management boards and the shareholders of target companies view the entering of AIFs in the company as being positive. One AIFM even emphasized that they do not invest in the company if it is viewed negatively by other shareholders and management boards. Thus, Croatian AIFMs do not use a hostile approach in entering a company.

As to the activism, 7 of 8 AIFMs reported at least some form of influence which they exercise in portfolio companies. All 7 reported that they consider that AIFs as shareholders should have an active role in the companies in which they invest. The main reasons for activism are the protection of investment and interest of the investors of AIFs. Some of them mentioned the improvement of corporate governance and influence on important business decisions of portfolio companies as

goals, which means that managers view activism as a tool for gaining some degree of control in the portfolio company. AIFMs were offered a selection of actions typical for active shareholders. Authors analyzed their answers in the following table.

*Table 1: Activism by Croatian AIFM*

Nomination/selection of members of the supervisory board	87,5 %
Personal attendance in portfolio companies	87,5 %
Telephone conversations with the management of portfolio companies	87,5 %
Forming business strategies of portfolio companies	75 %
Business monitoring of portfolio companies	75 %
Nomination of members of the management board	62,5 %
Support in managing portfolio companies	62,5 %
Recommendations in selection of the management	62,5 %
Making formal shareholders’ proposals at the general meeting	62,5 %
Help with acquiring financial means	62,5 %
Giving financial support to portfolio companies	37,5 %

Importantly, all 7 active AIFMs highlighted the importance of their representation in the supervisory board. In relation to their right to make formal shareholders’ proposals, some even pointed out that they avoid situations in which that would be necessary, as their goal is to achieve influence through the supervisory board. Needless to say, if AIFMs are represented in the supervisory board, they can directly influence the election of the management board, which represents the highest form of influence on the management of the portfolio company.

When influencing the nomination of members of the management board, 62.5% answered that it is important to select an expert from the field of business of the portfolio company. Interestingly, one answered they would opt for a financial expert, while one for a cross-sector expert who could cast a new perspective on the management of the company. As to the time period of investment, it is often emphasized that while traditional investors aim towards long-term, AIFs prefer short-term investments. However, recent studies show that the average time period of investment for AIFs in portfolio company is two years [AIMA, Simmons&Simmons, 2015, p. 40]. Croatian AIFMs declared that their period of investment ranges from 3 to 7 years. This demonstrates that Croatian AIFs have even longer time periods of investment than on the comparative level. For private equity funds comparative data show that the time period of investment is much longer, ranging from 5 to even 10 years [Kaplan, Strömberg, 2015, p. 499]. Croatian private equity funds follow this trend, as their managers report that the time period of investments is on average between 5 and 7 years.

AIFMs were questioned if they have some predefined mechanisms to protect their interest if during the investment the portfolio company fails to achieve business objectives. Only 4 AIFMs answered confirmatively. There are three main mechanisms equally represented. These are the change of management of the portfolio company, higher influence on the business strategy of the management, and earlier exit from the investment. As for the exit strategy, 87.5 % of AIFMs reported the sale of shares privately or in the open market as their exit strategy. This is in line with the comparative study that shows that the sale of shares in the open market forms almost two-thirds of AIFs exits [AIMA, Simmons&Simmons, 2015, p. 41]. Only one AIFM reported liquidation and one AIFM reported division/merger of the portfolio company as an exit strategy.

To conclude, Croatian AIFMs, which participated in this research, showed a high degree of shareholders’ activism. Even 7 out of 8 declared some type of activism in the portfolio company.

However, authors highlight that these results should be interpreted in light of the fact that 5 out of 8 analyzed questionnaires belong to AIFMs who govern private equity/venture capital funds, which are known for their active involvement in portfolio companies. Interestingly, the prevailing opinion of the practice and of public perception is that Croatian AIFs are usually passive shareholders. In this regard, the results of this research are somewhat surprising. To interpret them correctly one should bear in mind that this research covered only around half of equity investments by Croatian AIFs, and that within that half most of them fall into the category of private equity/venture capital funds industry, which is by default known for a high degree of shareholders' activism.

## 6. CONCLUSION

In this article, authors contributed to the comparative studies of AIF's activism in portfolio companies by conducting research among the Croatian AIFMs. As to the authors' knowledge, it is the first research of this type in Croatia. Comparative studies repeatedly report that AIFs are significantly the more active shareholders in portfolio companies than traditional institutional investors. According to this research, Croatian AIFs follow this trend. The majority of AIFs are careful not to cross the threshold for takeover of the company, but nevertheless employ mechanisms of influence. Statistically speaking, investments are predominately made in PLLCs. As to the types of actions, Croatian AIFs reported a “passive” or a rather traditional form of activism. The most important tool Croatian AIFs use is the nomination/selection of the members of the supervisory board. Through that, AIFs can actively control and directly influence the management of the portfolio company, especially by election of the management board. A direct access to the management of the company renders other shareholders' mechanisms as rather superfluous, such as convening the general meeting, amending the agenda, shareholders' proposals and other. It seems that Croatian AIFs have even longer time periods of investment than on the comparative level, excluding private equity funds. As this research did not analyze long-term consequences of AIFs activism, it is difficult to say whether activist mechanisms employed by Croatian AIFs represent a good example of corporate governance. It is clear that AIFMs view active involvement in portfolio companies from the aspect of protecting the interest of their investors, however, it is indicating that some AIFMs reported that in the case that a portfolio company is not doing well, they would try to influence the business strategy and management of the company. Presumably, they would do so in order to improve the company's welfare, which would have a positive effect on both the company and shareholders. This would certainly be the case where the interests of AIF (on the one hand) and the company and shareholders (on the other) are aligned. Other scenarios may create more complex situations. Complexity arises from the fact that AIF as a shareholder has the duty to act in favor of the portfolio company, while at the same time it has a legal obligation to act in the interest of AIFs' investors.

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## INNOVATION MEASUREMENT REVISITED: COMPARISON OF THREE MAIN MEASURES

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### **ABSTRACT**

*Innovation is interpreted as a tool enabling economic development, growth and international competition. It is vitally important in both macro and micro level, thus measuring of innovation also emerge as a crucial issue. The purpose of this study is to compare Global Innovation Index (GII), European Innovation Scoreboard (EIS) and Innovation Subindex of Global Competitiveness Index (GCI-Inn) to have insight of innovation understanding of different perspectives. The reports and previous studies are examined for this purpose in respect to structural formations, common grounds and outcome differences. It is found that innovation conceptualization and innovation measurement is not standardized. For a more thriving measurement, it is suggested to combine the advantages of three measures such as number of countries in GCI and GII, detailed perspective of GII and SME emphasis of EIS.*

**Keywords:** *Innovation measures, Global Innovation Index, European Innovation Scoreboard, Global Competitiveness Index*

### **1. INTRODUCTION**

Innovation has been centre of attention as a magical word to restore national economies and corporations after 1990s. Many international organizations and scholars dealt with the subject from different angles to create a clear theory of innovation and to conceive adequate measures. There are several indices, and scoreboards, published by institutions with some differences in measuring and with different rankings as a result. In this paper we would like to focus on the differences on measuring innovation to give an insight into the issue. Our understanding on economics today, and particularly on economic growth, is rather different than neo-classics since it is well accepted that cognition plays an essential role along with material sources (Ickes, 1996; Sohn, Kim, & Yeon, 2016, p. 494). In micro level, concepts such as social capital, intellectual capital or cultural capital is widely referred in business studies in context with new ways of doing things. Besides, it is widely recognized that being able to produce information, in comparison with purchasing, is the criterion for development in macro level. Innovation, in this sense, evolved as a phenomenon evoking an economic unit's capacity to produce new ways in given circumstances. There are several definitions offered in the literature as discussed in the next sections.

### **2. CONCEPTUAL FRAMEWORK**

Starting from Schumpeterian view of innovation as "new combinations", Lundvall (2005) stresses the difference between innovation and invention, thus offer a two-pillar definition as a process encompassing the discontinuity in "the technical characteristics or in the use of a new product or process" and "the introduction, diffusion and adaptation of the new artefact". This understanding

is consistent with the definition of OECD as "innovation is the implementation of a new significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (Crespo, & Crespo, 2016, p. 5265). Therefore it is asserted that innovation is a process, not a trait, and also a complex, non-linear, multi-dimensional phenomenon (Stone, Rose, Lal, & Shipp, 2008; Kazazoglu, 2013)

The second focal point we would like to offer is that innovation is as a catalyzer or actualiser for economic units to advance in their domains, as defined by European Commission's "Green Paper on Innovation Report" in 1995: "the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organisation, and the working conditions and skills of the workforce". Moreover, many scholars interpreted innovation as a result of this aspect and a the tool enabling economic development, growth and international competition of national economies (Freeman, 1987; Romer, 1994; Freeman, & Soete, 1997; Acemoglu, 2003; Edquist, 2005; Godin, 2005; Lundvall, 2007; Adam, 2014, p. 10).

Karaata (2012, p. 4) summarized conceptualization of innovation in time in four stages. From 1950 to 1970 input indicators were R&D, information technologies (IT), capital and technology and from 1970 to 1990 output indicators were used as patents, publications, products and quality management. After 1990's surveys, structured indices and innovation capacity comparisons became a current issue. And finally after the beginning of the century, process indicators such as information, intangible assets, networks, demand, management qualities, risks and system dynamics came out as subject of innovation. This leads to think innovation in two dimensions related to the two focal points referred; national policy and firm efficiency.

Turanli and Saridogan (2010) merges the two focal points mentioned above to an identification of innovation as a process which serves a function for economic units to improve benefits, effectiveness, efficiency or profitability. When speaking of such notions the first things to come to mind is conceivably research and development (R&D) practices, creativity and social capital. Education, commercial law, policies, culture and several other national factors are significantly effective in this respect. It is consequently both a macro and micro level phenomenon, thus, national economies are mainly selected as units of investigation in innovation literature.

From Schumpeterian perspective innovation has vital importance for economies as well as enterprises since productivity, profitability and competitiveness is related to innovative performances of economic units. Scholars recognize innovations role imputed as shifting "economic growth and success in global economy", therefore measuring innovation gains importance from an economical point of view (Sohn et al., 2016). For businesses, on the other hand, to be able to compete with rivals, obtaining technologies, new products and finding new markets are related to innovative performances, such as R&D, experience-based developments and technology and knowledge (Lundvall, 2005; Kiliç, 2016, pp. 30-31). Therefore, innovation measures not only demonstrate growth potential of the countries but also firms', since firms are inherently surrounded by the reciprocating innovative performances of economical environment (Adam, 2014, p. 17).

Many international institutions such as OECD, European Union, World Bank, IMF embraces innovation concept in consequence (Sharif, 2006). Nevertheless, measuring innovation is not a plain effort. There are several approaches, data sources and indicators used to objectify innovation (Crespo, & Crespo, 2016). Furthermore, as Mahroum and Al-Saleh (2013) noted, different countries with different instruments may have similar innovation performances, and vice versa, due to attributes or complex circumstances. It is then inherent to encounter differences in innovation measures depending on conceptual nuances. In the next section we would like to have a look at different innovation measures to provide an insight into theoretical base of the phenomenon.

### **3. MEASURING INNOVATION**

As in the challenge on definition of innovation, measurement comprises many other questions in itself. Since the concept arises from an understanding that an economic unit may have many and sometimes nonapparent properties, qualities, possessions, experiences and so on, and since these are seen as crucial in a strategic thinking, an innovation measure should aim to digitize all these assets. Obviously it is not easy work to do, hence scholars have been dealing with the measurement question for many years, and are still working on it.

The first stage of measurement of innovation is about the level of analysis the measurement would take place. Stone et al. (2008) emphasized two approaches in measuring innovation as aggregate indices and monetizing innovation. While monetizing innovation infers the difference of value of an economic unit from the book value, using indices in innovation literature is more common. Using indices also define the level on a national dimension. Lundvall (2005, p. 8) admitted the theoretical problem of a national innovation concept, yet he argues that the original intention of innovation systems are "to confront national economic policy strategies and standard economics". Therefore, innovation measurement mostly focuses on national level, under the denotation of "national innovation systems" (NIS). As an innovation influencing contributions set of different actors (Metcalfe, 1995, p. 463), NIS involves organizations and institutions, organizational associations, level and efficiency of intangibles and public policies (Crespo, & Crespo, 2016, p. 5266). This indicates a grounded theory approach (Lundvall, 2005), tendency for scholars to focus on internationally comparable indicators (Smith, 2006) and national economy comparisons through "assessing the innovation performance of countries relative to other countries" (Adam, 2014, p. 10). In this respect, many indices and scoreboards have been created, and are being updated constantly like European Innovation Scoreboard. Among them there are tools focusing on the outputs of innovation such as The Economist Intelligence Unit Innovation Report, Science and Technology Indicators of OECD and nationally designed country specific tools (Adam, 2014, pp. 9-13). Yet, we would like to focus on the more conceptually broad, unique and concurrent tools, Global Innovation Index (GII), European Innovation Scoreboard (EIS) and Global Competitiveness Index's innovation sub-index for comparison.

### **4. COMPARISON OF GII, EIS AND GCI-INN**

We would like to compare the three measures in respect to their structural formations, common grounds and outcomes of the measures.

#### 4.1. Measure Structures

*Global Innovation Index (GII)*: With comprising innovation indicators from broad number of countries GII is probably the most academically preferred index in innovation research. It emerged as an exertion of Cornell University, the business school European Institute of Business Administration (INSEAD), and the World Intellectual Property Organization to "to find metrics and approaches that better capture the richness of innovation, continuously adapting the GII framework to reflect the improved availability of statistics and the theoretical advances in the field" (GII, 2016, p. 71). The index deals with the issue from a broad perspective, consisting of five pillars for input and two pillars for output indicators of innovation (Sohn et. al, 2016). These factors are infrastructure as communication, general infrastructure and ecological sustainability; institution as political, business and regulatory environment; market sophistication; human capital and research as education, tertiary education and R&D; and business sophistication as knowledge workers, innovation links and knowledge absorption for input level. And output factors of innovation are knowledge and technology output and creativeness. We may argue that GII highly relates innovation with cognitive dimension and national policy level.

*Table 1: Innovation indicators of GII, EIS and GCI-Inn*  
 (Continues on the next page)

GII	EIS	GCI-Inn
Input: <ul style="list-style-type: none"> <li>• Infrastructure                             <ul style="list-style-type: none"> <li>○ ICTs</li> <li>○ General infrastructure</li> <li>○ Ecological sustainability</li> </ul> </li> <li>• Institutions                             <ul style="list-style-type: none"> <li>○ Political Environment</li> <li>○ Regulatory Environment</li> <li>○ Business management</li> </ul> </li> <li>• Market sophistication                             <ul style="list-style-type: none"> <li>○ Credit</li> <li>○ Investment</li> <li>○ Trade, competition &amp; market sophistication</li> </ul> </li> <li>• Human capital and research                             <ul style="list-style-type: none"> <li>○ Education</li> <li>○ Tertiary education</li> <li>○ Research &amp; Development</li> </ul> </li> <li>• Business sophistication                             <ul style="list-style-type: none"> <li>○ Knowledge workers</li> <li>○ Innovation linkages</li> <li>○ Knowledge absorbtion</li> </ul> </li> </ul> Output: <ul style="list-style-type: none"> <li>• Knowledge and technology output</li> </ul>	Enablers: <ul style="list-style-type: none"> <li>• Human resources</li> <li>• Open, excellent and attractive research</li> <li>• Systems</li> <li>• Finance and support</li> </ul> Firm activities: <ul style="list-style-type: none"> <li>• Firm investments</li> <li>• Linkages &amp; entrepreneurship</li> <li>• Intellectual assets</li> </ul> Outputs: <ul style="list-style-type: none"> <li>• Innovators</li> <li>• Economic effects</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity for innovation</li> <li>• Quality of scientific research institutions</li> <li>• Company spending on R&amp;D</li> <li>• University-industry collaboration in R&amp;D</li> <li>• Government procurement of advanced technology products</li> <li>• Availability of scientists and engineers</li> <li>• PCT patent applications</li> </ul>

GII	EIS	GCI-Inn
<ul style="list-style-type: none"> <li>○ Knowledge creation</li> <li>○ Knowledge impact</li> <li>○ Knowledge diffusion</li> <li>● Creativeness                             <ul style="list-style-type: none"> <li>○ Intangible assets</li> <li>○ Creative goods or services</li> <li>○ Online creativity</li> </ul> </li> </ul>		

*European Innovation Scoreboard (EIS):* Lisbon Strategy in 2000 shaped European technology policies and set goals for R&D to be supported by the Union as well as own resources (Hollanders, & van Cruysen, 2008). The scoreboard prepared, by Maastricht Economic and Social Research and Training Centre on Innovation and Technology (MERIT), in collaboration with Joint Research Centre (JRC) of the European Commission was renamed and updated to Innovation Union Scoreboard (Adam, 2014, p. 15), yet the name EIS turns back in 2016 once again. The European perspective also results in the broadness of the reports since the EIS reports mainly include European countries. The three pillar design of enablers, firm activities and outputs is preserved. The sub-factors of the scoreboard are presented as human resources, open-excellent research systems and finance and support for the enablers; firm investments, linkages & entrepreneurship and intellectual assets for firm activities; and finally innovators and economic effects for outputs (EIS, 2016a, p. 8). At first glance, emphasis on cognitive level is easily recognized yet sub-factors are bounded by the chain-link approach grounded indicators offered rather than conceptual scrutinizing. Also, we would like to note that main difference of EIS is that SME activities are in the core of innovation measurement, while many indicators are directly about SME innovation performance in the second pillar of the scoreboard (EIS, 2016b, p. 5).

*Global Competitiveness Index (GCI)-innovation sub-index (GCI-Inn):* The competitiveness report presented by the World Economic Forum annually scores countries listed in twelve different aspects. The 12th indicator the report is categorized as "innovation subindex" (GCI, 2016, p. 5). It is strongly advocated in the literature that NIS is directly relevant with competitiveness via improving productivity and bolstering national economies in general (Nelson, & Rosenberg, 1993). The GCI report thusly renders the understanding that wealth of nations, in respect to competitiveness, is bound to innovative characteristics of economical environment, yet it has a different viewpoint by comparison to GII and EIS. GCI, in general is about competitive performances of national economies, therefore the measure embraces innovation in a restricted layer respect to competitiveness. Another important feature of GCI-Inn is that the data is combined from a survey, The Executive Opinion Survey, mostly. The six indicators of GCI-Inn comes from this survey, and only one from hard data. For this reason objectivity of GCI-Inn may be questionable in comparison with GII and EIS, while they are mainly comprised of hard data.

The sub-dimensions and indicators of innovation are listed in Table 1 for further comparison. The table reveals that the conceptual aim of GII and EIS are also not equivalent, since it is easily recognized that some output factors in GII exists as an enabler or firm activity in EIS, or while GCI-Inn focuses on basic innovation causatives, EIS embraces it more structured. Thus, it can be



said that while GII directly deals with innovation as a complex process, EIS and GCI-Inn are more basic in real terms.

#### 4.2. Common Grounds

Some indicators of innovation are referred in the literature as major indicators in measuring innovation. R&D expenditures/institutions, patents (applications - revenues) and bibliometric data (scientific publications/activities) are the three key indicator classes of innovation in this respect (Smith, 2006, p. 152). When we examined the indicators of the data classes indicated in Table 1, we have determined three other classes in common. These other common classes are education, exports of medium&high tech product and university-industry collaboration. Ultimately, we would like to assert the common grounds of these three innovation measures as demonstrated in Table 2.

*Table 2. Common Grounds of GII, EIS and GCI-Inn*

- R&D expenditures / institutions
- Education / educated people existence – capacity – potential
- Universities and industry collaboration
- Patents (applications – revenues)
- Scientific (publications – activities)
- Export of medium&high tech products

#### 4.3. Outcomes

It is natural that methodological differences create differences in innovation scores and country rankings in result. Consisting of countries with best and worst innovation scores in EIS 2016 and rest of the best scored countries in GII 2016, table 3 is brought together to reveal these differences in measuring innovation in the last two years.

*Table 3. Outcomes of the Three Indices in 2014/2015 and 2015/2016 Period  
 (Continues on the next page)*

	2014 / 2015						2015 / 2016					
	GI	Rank	EIS	Rank	GCI-Inn	Rank	GI	Rank	EIS	Rank	GCI-Inn	Rank
Denmark	57,7	10/141	0,675	3/36	5,055	11/140	58,45	8/128	0,700	3/36	5,114	10/144
Finland	59,97	6/141	0,658	4/36	5,782	1/140	59,9	5/128	0,649	4/36	5,726	2/144
Germany	57,05	12/141	0,655	5/36	5,465	6/140	57,94	10/128	0,632	5/36	5,508	6/144
Ireland	59,13	8/141	0,607	10/36	4,679	20/140	59,03	7/128	0,609	7/36	4,812	21/144
Israel	53,54	22/141	0,620	8/36	5,562	3/140	52,128	21/128	0,581	12/36	5,647	3/144
Japan	53,97	19/141			5,536	4/140	54,52	16/128			5,538	5/144
Netherland	61,58	4/141	0,639	6/36	5,251	8/140	58,29	9/128	0,631	6/36	5,365	8/144
Romania	38,2	54/141	0,223	33/36	3,283	66/140	37,9	48/128	0,180	35/36	3,239	75/144

Singapore	59,36	7/141			5,183	9/140	59,16	6/128			5,242	9/144
South Korea	56,26	14/141			4,827	17/140	57,15	11/128			4,829	19/144
Sweden	62,4	3/141	0,719	2/36	5,371	7/140	63,57	2/128	0,704	2/36	5,457	7/144
Switzerland	68,3	1/141	0,793	1/36	5,696	2/140	66,28	1/128	0,791	1/36	5,764	1/144
Turkey	37,81	58/141	0,205	35/36	3,415	56/140	39,03	42/128	0,267	32/36	3,353	60/144
Ukraine	36,45	64/141	0,182	36/36	3,155	81/140	35,72	56/128	0,178	36/36	3,413	54/144
United Kingdom	62,42	2/141	0,580	12/36	4,959	12/140	61,93	3/128	0,602	9/36	5,018	12/144
USA	60,1	5/141			5,493	5/140	61,4	4/128			5,581	4/144

As revealed in table 3, in country rankings there are significant differences. United Kingdom in 2015-2016 rankings is listed third in GII, and 12th in GCI-Inn. Israel, on the other hand, is ranked 21th in GII, and 3rd in GCI-Inn. But when the measurement of USA a relative consistency can be alleged. Also, it is easily noticed that Switzerland is the most innovative country in all three indices. Therefore the methodological gaps between the three tools, clearly indicate differences in the understanding of innovation.

## 5. CONCLUSION

The three important and unique innovations measures GII, EIS and GCI-Inn are discussed in this study in comparison to identify a general understanding of the differences in between. Methodological frameworks presented in their reports and theoretical explanations in the literature are investigated for this purpose, thus structural formations, common grounds and outcome differences are ascertained.

The first implication of the findings is that conceptual explanations and thereby measurement of innovation is not plenary, differing in many aspects. Therefore innovation reports of different institutions have significant differences. Thus we may conclude that innovation and innovation measurement is not standardized.

It is found that the most significant virtue of EIS is the importance given in SMEs relative to GII and GCI-Inn. The understanding behind SME emphasis is the fact that innovation is strictly related to cognitive assets of firms which is on a large scale the core of innovation. This also represents itself in the difference of outcomes of the three measures. Thus public investments on innovation increase innovation scores of in GII, while private sector investments increase in EIS measurement. This may be one of the reasons why the results, as indicated in Table 3, differ between these measures. The comparison of the three main measures indicate a difference in scope of countries. While GII and GCI-Inn have a broader list of countries, EIS mainly deal with European countries. We would like to offer institutions and scholars to emphasis on the differences of the measures to come up with a more standardized and valid measure of innovation. It is underlined in this study that both GII and EIS have significant advantages. We would like to suggest a compilation of these advantages, as in the number of countries in GCI and GII, detailed perspective of GII and SME emphasis of EIS to create a better way to measuring innovation.

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## A THEORETICAL REVIEW OF A TERMINOLOGICAL CONFUSION: CHARACTER, IDENTITY, IMAGE OR REPUTATION?

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### **ABSTRACT**

*The concept of corporate reputation draws academic attention from numerous areas of social sciences. Depending on the perspective, reputation can mean rather different things. It can be considered from the point of view of each stakeholder. Mainly, scholars conceptualize the term corporate reputation from either an economics/managerial paradigm that consider corporate reputation as internal and external stakeholders' expectations and estimations of certain organizational attributes or as an impression that reflects the perception of a collective stakeholder group. In particular, strategic management perspective entitles reputation as a valuable asset that helps to sustain the organization and its competitive advantage over the course of its life time and a substantial tool that organizations use in order to protect themselves in turbulent times. However, given that corporate reputation is a complex construct, understanding corporate reputation is complicated owing to the interdependence and interrelatedness of its component parts; identity, image and character. Hence, marking out these analogous terms explicitly within theoretical perspective has become a “sine qua non”. Thus, instead of bringing forward new definitions into the definitional landscape, the main purpose of this paper is, to depict the theoretical backgrounds and approaches towards the terms corporate identity, corporate image, corporate character and corporate reputation in a framework that reflects the terminological confusion within an inductive methodology.*

**Keywords:** *Corporate Reputation, Image, Identity, Reputation Management*

### **1. INTRODUCTION**

The last few decades have witnessed significant growth in interest, conceptual development and empirical research in the topics of corporate identity, corporate image and corporate reputation (Abratt and Kleyn, 2012) in the scope of various disciplines including *management, marketing, economic, finance, accounting and public relations paradigms*. “Research on corporate reputation has identified the benefits of good reputation in explaining how a high-tech firm may benefit and best strategically position itself through its reputation” (Wang, 2013). Higher customer retention rates, increased sales, higher product selling prices, and reduced operating costs are suggested as some of these advantages of a good reputation. Particularly in managerial perspective, reputation is seen as an important asset that can be used for sustaining competitive advantage and for increasing performance. In this respect “a good reputation is identified as an intangible resource which may provide a firm with a basis for sustaining competitive advantage due to its valuable and hard to imitate characteristics” (Roberts and Dowling, 2002). However, despite the broad

consensus in the importance of corporate reputation as a strategic asset and its great potential to impact corporate strategy success, corporate reputation as a research object still lacks deeper conceptualizing both in theoretical and empirical approaches (Adeosun and Ganiyu, 2013). This could mainly be attributed to “muddy” nature of the concept as several scholars emphasize noting that the terms identity and image are often used interchangeably with corporate reputation (Melewar and Jenkins, 2002). Considering the term corporate character that was suggested by Davies *et al.* (2003) together with the aforementioned terms, the need for an extensive review of the terminological confusion in which all these terms are investigated theoretically has arisen.

## 2. METHODOLOGY

With the objective to investigate the theoretical confusion regarding the terms corporate identity, corporate image, corporate character and corporate reputation, an extensive review of the corporate reputation literature offered in various databases was conducted. As a part of the design of the survey, rather than suggesting a new conceptual approach or a definitional framework, publications from a wide variety of disciplines including management, marketing, economics, finance, accounting and public relations paradigms have been analyzed systematically and viewed here inductively.

## 3. LITERATURE REVIEW

### 3.1. Corporate Identity

“There are divergent views within the literature as to what is meant by corporate identity” says Van Riel and Balmer (1997) and refer to three main paradigm *graphic design*, *integrated corporate communication* and *multidisciplinary approach* respectively. They assert that the topic has gained popularity among management, marketing, organizational behavior, human resources, strategic movement, graphic design, and public relations academics. Judging by the number of publications for the past decades, they have ultimately proven to be righteous.

Corporate identity has traditionally referred to the physical ways an organization defines itself. “These can include logos, typography, colors, signage, packaging, annual reports and uniforms amongst others” (Dalton and Croft, 11). Marketing paradigm, for instance, readily accepts this definition and use the term identity to refer to “brand imagery and often to visual identity, a product’s get-up and logo” (Burke *et al.*, 2011:47). But from the viewpoint of strategic management paradigm, the idea that corporate identity is merely the visual elements of a corporation and it is only these visual elements which could distinguish one organization from another is a bit facile for a number of reasons. First and perhaps the most important reason is that the term corporate identity is the shared perceptions an organization’s members hold, in particular those central, distinctive and enduring qualities that guide behavior (Burke *et al.*, 2011). “Identity is akin to the concept of identity in mathematics, a representation of the firm that equates to its current state. It is not identifying *with* a firm, but rather, the identity *of* the firm” (Barnett *et al.* 2006:33). It affects the way managers interpret and react to environmental circumstances, and is a product of the shared values and assumptions within cultural context and certain shared principles as organizational ethos, aims and values that create a sense of individuality differentiates a company from the others and help organizational stakeholders associate such certain genuine features with a certain company (Martin and Hetrick, 2006:93). Davies (2006:12) refers to this originalization as “*saluting the flag*” and asserts that “each organization need a defined and clear identity, partly to distinguish them from other organizations and partly to rally support”. Apparently he bases his conceptualization on the traditionally repeated idea that certain aspects of



an organization's identity, such as its history, products and services it offers are enduring and unique.

He and Balmer(2007),on the other hand, have brought forward four sub-perspectives for corporate identity. These are *visual identity*, *corporate identity*, *organization's identity*, *organizational identity*. Among these terms they differentiate two seemingly similar concepts out of common and by addressing the term *organization's identity* as the most central, defining, enduring, basic characteristics of an organization perceived by the organization's numerous stakeholders about the organization whereas defining the term *organizational identity* as the identity of people within the organization. It has been discussed in many disciplines such as marketing, management, organizational studies, industrial psychology and consequently the notion of organizational identity has been defined as what members perceive, feel, and think about their organization (Hatch and Schultz, 1997). Indeed, though such an effort to mark out these analogous terms explicitly brings a new dimension to the identity concept, various new publications do not seem to have indigenized the differentiation as a “*sine qua non*”.

As for corporate identity, within the frame of marketing discipline, Abratt and Kleyn (2011) describes it as the “strategic choices made by the organization including the organization's mission, vision, strategic intent, values and corporate culture and, secondly the corporate expression”. This approach coincides largely with management view according to which a “company's identity shape a firm's business practices, as well as the kinds of relationships that managers establish with key stakeholders” (Fombrun and Van Riel, 1997:8). Creating alignment with such external stakeholders requires a fundamental understanding of their beliefs about the organization.

”The term corporate visual identity, on the other hand, consists of the corporate name, logotype and/or symbol, typography and color” (Melewar and Saunders 1998, 291). In other words, visual identity refers to various visual cues and/or anything else that is related to graphic design and is a part of corporate communications policy (Abrat and Kleyn, 1051). Such visual cues, elements or symbols are widely utilized on an organization's business offices, vehicles, corporate clothing and as mentioned above previously, marketing discipline embraces this identity perspective substantially. That is probably why some researchers use the term visual identity synonymously with the term reputation. However, using visual identity and reputation interchangeably would practically not be true with respect to controllability as changing visual identity via graphic design to refresh or update a tired perception of stakeholders is not the same as changing reputation. “Reputation is externally perceived, and therefore largely outside the direct control of firms' managers” (Fombrun and Shanley, 1990).

### 3.2. Corporate Image

Similar to terms *corporate identity* and corporate character, *corporate image* is another focal point within reputation management and various researchers from divergent perspectives embrace the term in a relatively distinct way. For the most part, corporate image is generally defined as “the mental picture of the company held by its audience what comes to mind when one sees or hears the corporate name or sees its logo” (Gray and Balmer, 1998) or the view of the company held by external stakeholders, especially that held by customers (Davies *et al.*, 2001). In addition to scholars above, Chun (2005) and Walker (2010) also emphasize on “the *perceptions of external stakeholders*” explicitly. On the other hand, Whetten (1997:27) rejects such an approach on the grounds that “If image is what organizations want external stakeholders to know, then it emanates from within the organization and is not based on the perceptions of external stakeholders”.Briefly,

though many seem to have agreed on the definitions, the term has still not been marked out clearly within the scope of reputation management terminology. Actually, this could partly be attributed to divergent theoretical approaches in the pursuit of reputation management. According to Balmer (1998) for example, there are three distinct disciplinary approaches to corporate image and these are the psychological paradigm, the graphic design paradigm, and the marketing and public relations paradigm.

Furthermore, in-depth analysis of literature corroborates that the term corporate image is another problematic topic along with the concept of identity, as some scholars take it as a separate notion, others use it synonymously with reputation. Indeed, even those scholars of the same conceptional category have not been able to reach a consensus. The survey of Gotsi and Wilson (2001), for example, indicates that “conceptualization efforts for image and reputation could be broadly merged into two dominant schools of thought”. First one is the analogous school of thought in which image and reputation is regarded the same and used synonymously. Second one, on the other hand, is the differentiated school of thought that considers the terms to be different but interrelated. Here authors note that the former could have been affected by the popularity of image notion as a part of terminological fashion. Nonetheless, this argument could only be partly valid today as many marketing paradigm scholars avoid using the term corporate reputation on purpose. When it comes to the latter one; differentiated school of thought, approaches vary greatly even within itself. According to Gotsi and Wilson (2001) there are three dominant views here. First one, which seems to have lost its validity, is that corporate reputation and corporate image are different and separate concepts. The second view asserts that reputation is a building stone of corporate image whereas the third view advocates vice versa.

Another relatively novel systematic categorization regarding the term corporate image is done by Cian and Cervai (2014) who individuate the terms corporate image, construed image and organizational projected image. They also assume the “*projected image*” and “*corporate image*” have the cognitive, the emotive, and the symbolic dimensions. Based on this new differentational viewpoint, corporate image is composed of perceptions of external stakeholders reflecting observers’ beliefs and feelings. In other words, the “image”, as a construct, is supposed to be composed of emotional and functional elements, in which the emotional side seems to be the prevalent one (Palacio et al., 2002). Construed image, however, does not reflect the way external stakeholders see the company, but rather how they are assumed to perceive the company by internal stakeholders (Radomir et al., 2014:226). According to the authors, this construct also takes place in literature under the names of “*construed external image*”, “*perceived external prestige*”, “*perceived organizational prestige*” and “*reflected stakeholder appraisal*”. Lastly, they define organizational projected image as what is projected outside the company by its internal stakeholders or is how the organization would like to be perceived by its customers.

### 3.3 Corporate Character

Another term within reputation management is corporate character. It has been asserted by Gary Davies and his colleagues (Davies *et al.*, 2003), who entitle organizational reputation as “the alignment of identity and external image”. They base their argument on the assertion that reputation is “the collective term referring to all stakeholders’ views of corporate reputation” including internal (organizational) identity and external image and they entitle this two-way interaction as corporate character. Indeed, judging from the literature view, the number of scholars recognizing that this two-way interaction (between employees’ and customers’ views of the company) is not few. But we should note here that what Davies *et al.* (2003) refer to as

organizational identity is defined as organization’s identity by He and Balmer’s (2007) conceptualization above. Davies *et al.*(2003) spent a few years in order to develop a corporate character scale which is able to assess the reputation of an organization from the perspectives of employees and customers and consequently they developed five major and two minor dimensions of corporate character that employees and customers can use to evaluate an organization’s identity, image and reputation (Martin and Hetrick, 2006:101).

**Table 1. Major and Two Minor Dimensions of Corporate Character**

Major and minor dimensions	Facets	Scale items associated with facet/dimension
<b>Major Dimensions</b>		
Agreeableness	Warmth	Friendly, pleasant, open, straightforward
	Empathy	Concerned, re-assuring, supportive, agreeable
	Integrity	Honest, sincere, trustworthy, socially responsible
Enterprising	Modern	Cool, trendy, youthful
	Adventurous	Imaginative, up-to-date, exciting, innovative
	Bold	Extravert, daring
Competent	Conscientious	Reliable, secure, hardworking
	Driven	Ambitious, achievement-oriented, leading-edge
	Technocratic	Technically competent, corporately competent
Ruthless	Egotistical	Arrogant, aggressive, selfish
	Dominant	Inward-looking, authoritarian, controlling
Chic	Elegant	Charming, stylish, elegant
	Prestigious	Prestigious, exclusive, refined
	Snobbish	Snobby, elitist
<b>Minor Dimensions</b>		
Informal		Casual, simple, easy-going
Machismo		Masculine, tough, rugged

**Source:** Martin and Hetrick, 2006:101

### 3.4. Corporate Reputation

Of all the terms that have been mentioned so far, corporate reputation is probably the most complicated and diverse one as getting the insights of it is almost impossible without theoretical backgrounds of such elements as identity, image and character in advance. This theoretical significance also affected the design of this paper. Moreover, “despite universal acknowledgment

of the importance of corporate reputation as a strategic asset and its large-scale potential to influence corporate strategy success, the notion of corporate reputation still lacks deeper conceptualizing” (Adeosun and Ganiyu, 2013). In fact, the interdisciplinary nature of earlier work on corporate reputation which is repeatedly emphasized in literature has caused terminological difficulties to define corporate reputation (Chun, 2005). According to Chu-Chen and Otubanjo (2013) who suggest a framework of six paradigmatic uses of corporate reputation these disciplines are *Management paradigm, Marketing and strategy paradigm, Economic paradigm, Finance and Accounting Paradigm and Public Relations Paradigm*.

Despite this variety of perspectives, however, corporate reputation is traditionally defined as a “perceptual representation of a company’s past actions and future prospects that describes the firm’s overall appeal to all of its key constituents” when compared to other leading rivals, or a stakeholder’s global assessment of a company based on performance characteristics salient to that stakeholder (Fombrun, 1996). However, not all scholars in literature readily adopt it as a bare fact and instead, they propose their own definitions. Lange *et al.* (201:163) attribute this diversification to theoretical pluralism claiming that “Corporate reputation is a multidimensional construct in part because it is shared by scholars from different academic fields that represent varied theoretical perspectives”. Hence, within the scope of this review we have focused more on the theoretical background than on definitions. Having reviewed, analyzed and evaluated prior definitional statements of corporate reputation to explain such diversified perspectives, Barnett *et al.* (2006) determined three key points central to the concept of corporate reputation. The first point defines reputation *as a state of awareness*. The second point identifies reputation *as an assessment in which* reputation functions as a judgment, estimate or evaluation of the particular organization. And the third point describes corporate reputation *as an asset* in which a reputation functions as an intangible resource and economic asset. Likewise, in another survey conducted by Lange *et al.* (2011) three primary reputation conceptualizations were identified. These are *being known, being known for something* and *generalized favorability*. According to the authors, within *being known* view, if awareness of the firm is broader and if perceivers have a more distinctive perceptual representation of the firm, irrespective of judgment or evaluation, corporate reputation is stronger. As for *being known for something* view, however, here judgement is a central feature and of vital importance. Love and Kraatz (2009:317) entitles this dimension as “*technical efficacy*” and emphasizes the evaluation of audience of the firm’s ability to meet the audience’s needs, which means that reputation is closely associated with tangible organizational outputs. Because as well as acting at a macroscopic level, affecting markets and shareholders, reputation also operates at an individual level and consumers do appear to care about and value the satisfaction of their own immediate needs (Dalton and Croft, 10). The final conceptualization *generalized favorability* entails perceiver judgments regarding the firm which are based on aggregated multiple organizational attributes rather than being dependent on a given audience’s expectations for specific organizational outcomes (Fischer and Reuber, 2007; Lange *et al* 201:159). Indeed, *being known* and *generalized favorability* are broad perceptions of a company but, *being known for something* provides us with a dimensional basis for reputation measurement.

#### 4. CONCLUSION

Based on the adopted perspective, the term reputation bears several connotations and it can mean different things to different people and various stakeholder groups. It can be regarded as the perception of an organization’s ability to satisfy the demands of its stakeholders, or as a general assessment of the performance of an organization or as a strategic asset, intangible resource used



for sustaining competitive advantage and to increase performance. Nevertheless, this paper indicates that there has been a confusion concerning the use of the term reputation and its building blocks corporate identity, corporate image and corporate character mostly because of the interdependent and interrelated nature of such notions which are observed to have been used interchangeably in certain contexts. Apparently, theoretical pluralism leading to quite a few diversifications is another underlying reason for this confusion. Moreover, literature analysis demonstrates that even categorized school of thought has not reached an utter consensus within themselves. Namely, what is defined as image by a group of researcher fits to other's definition of reputation or what is described as identity by a scholar is the same as some the other's definitions of image and even reputation. There are also scholars who claim that reputation is only a part of corporate character or who avoid using the term corporate reputation on purpose and using the term image instead. Consequently, all these reveal that *the reputational landscape* still lacks deeper conceptualizing both in theoretical and empirical approaches.

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## DOES A RELATIONSHIP EXIST BETWEEN THE DEVELOPMENT OF THE BANKING SECTOR AND THE ECONOMIC GROWTH OF EUROZONE?

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### ABSTRACT

*The goal of this paper is to discover the relationship between select banking sector indicators and the economic growth of the Eurozone. Loans provided by banks to the private non-financial sector and the M3 banking aggregate were chosen from among select banking sector indicators. Both absolute values and year-to-year changes are tested for these values. The Eurozone's economic growth was evaluated using the development of GDP. The aforementioned relationship between these values is analyzed using the Engle-Granger cointegration test. These tests are conducted on select statistical data from the years 2000 to 2013. The input data are quarterly in nature and have been seasonally adjusted. Before using the Engle-Granger cointegration test, it is necessary to test the time series for the optimal magnitude of delay, where the dependent variable is considered the value of GDP, i.e.,  $\Delta GDP$ . In order to be able to proceed to testing the cointegration of the time series using the Engle-Granger test, it was necessary to eliminate the series that do not meet the basic prerequisites – consequently, the existence of a unit root, i.e. the non-stationarity of the original time series. In light of the results of the Dickey-Fuller test, it was necessary to eliminate the time series of year-to-year changes in GDP, because the time series of the Eurozone's year-to-year GDP changes indicate stationarity at a level of significance of 0.05. For determining the cointegration relationship, it is possible to proceed with the Engle-Granger test, which is meant to determine the long-term relationship between the values – between the amount of bank loans provided to the private non-financial sector and GDP and between the M3 aggregate and GDP. On the basis of these tests, it was found that there is no cointegration relationship between any time series at a level of significance of 0.05; this means that no long-term relationship was found between the amount of bank loans provided to the private non-financial sector and GDP or between M3 and GDP. It is necessary to realize that the impact of the global financial crisis was being experienced during the period analyzed, i.e., between 2000 and 2013. It is possible that this is the reason why is not possible to statistically confirm the long-term positive influence of the banking sector on the economic growth of the Eurozone.*

**Keywords:** *banking sector, cointegration test, economic growth, Eurozone, GDP*

### 1. INTRODUCTION

The banking system has become an essential component of every country's national economy. The same as other sectors, banking has features and specifics that typify it; these have adapted to the internal and external influences of the economic sector. Banks are financial institutions that act as intermediaries for payments, provide loans, and accept deposits from clients. Bank development is closely related to the way money develops. Most often, central banks' primary

macroeconomic goals are to maintain price stability, support full employment, and support economic growth. Their objectives are achieved by using monetary policy instruments – by setting interest rates, open market operations, interventions on the currency market, or monetary reserve adjustments in the economy via a transmission mechanism with various transmission channels. The banking system in the European Union is unique in that there is a European Central Bank plus national central banks and commercial banks in individual countries. The Eurozone is composed of the 19 European Union countries that have introduced the euro, beginning in 1999. (Cernohorska, 2015)

Essentially, being a financial intermediary consists of the process of using the resources of economic entities to finance loans for entities in the real economy. This results in allocating loans from entities showing a surplus to entities showing a deficit. According to macroeconomic theory, this activity is necessary for an economy to operate effectively. Goldsmith made the first attempts at finding a relationship between the development of the banking sector and a given country's economic state. Goldsmith (1969) conducted the first empirically founded research on data of 35 countries from 1860 and 1963.

The size of loans provided appears to be a significant indicator of the economic growth of individual countries (the development of GDP) from the banking sector. According to research by the authors Levine (1999) and Beck et al. (2000), it is possible to explain economic growth better using loans provided only to the private sector than by using the indicator of loans provided overall. The goal of this paper is to discover the relationship between the selected banking sector indicators and the economic development of the countries in the Eurozone. Loans provided by banks to the private non-financial sector and the M3 banking aggregate were chosen from among select banking sector indicators. The relationship of these values was analyzed by the Engle-Granger cointegration test, as previously mentioned. These tests were conducted for select statistical data from the years 2000–2003. The input data were quarterly in nature and have been seasonally adjusted. On the basis of these tests, it was determined whether the banking sector had a positive, neutral, or negative influence on the economic development of the Eurozone countries. This paper is composed of the following sections: in Section 2, the authors list a review of the literature relating to economic growth and the influence of the banking sector on economic growth. Section 3 presents the theoretical foundation for conducting the Engle-Granger cointegration test. In Section 4, analysis of the banking sector indicators is conducted for economic growth in the Eurozone using the Engle-Granger cointegration test. In Section 5, the authors present their conclusions and state closing remarks.

## **2. THEORETICAL BACKGROUND**

Many economists consider finance to be one of the most important factors in economic development. Robinson (1952) states that financial development is followed by economic growth. Levine and Zervos (1996) demonstrated that financial markets positively influence countries' economic development, because they discovered a very strong positive correlation between stock market liquidity (measured by the relationship of trading value to the size of the given economy) and the level of economic growth in data from 49 countries from 1976–1993. On the basis of this research, stock market liquidity was also demonstrated to be a strong predictor of the future development of GDP per capita.

Likewise, Atje and Jovanovic (1993) found a significant correlation between stock markets and economic growth in their study analyzing data from 40 countries from the years 1980–1988.

On the basis of research by Arestis et al (2001), it is nonetheless possible to assume the fact that the development of the financial markets does indeed lead to economic growth, but that the impact of banking sector development on individual countries' economic growth is fundamentally greater.

Many authors have devoted themselves to understanding how the banking sector (banks) can affect the economic growth of individual countries in their international research work. Thanks to lower costs for collecting and processing information, financial intermediaries (banking institutions) are able to achieve better resource allocation (Boyd & Prescott, 1996). The development of the banking sector can achieve better prospects for initiating successful business activities – and therefore faster economic growth or technological development for the given country (King & Levine, 1993). The results of another study (Cetorelli & Gamera, 2001) show that the banking sector makes it easier for “young” companies to receive loans and thus supports the tempo of economic growth, because the investments of new companies are more likely to be invested in innovative technology. Bencivenga and Smith (1993) come to the conclusion that, thanks to reduced monitoring costs, the banking sector can lower even above-average credit rationing and thereby ensure the acceleration of a country’s economic growth. In their study, Gurley and Shaw (1995) state that financial intermediaries are able to ensure the mechanism necessary for trading, pooling, and diversifying risk. This fact can facilitate a company’s access to projects with higher expected profits, i.e., with positive impact on a given country’s economic growth. Levine (2005) used empirical research to prove the interconnection between the operation of the financial system and economic growth. In light of these facts and on the basis of research in academic literature, the relationship between the value of M3 (the so-called primary indicator of the volume of money in an economy) and GDP appeared to be the most suitable relationship. This relationship has also been analyzed by the authors’ King and Levine (1993a, 1993b), for example. They confirmed that it is possible to explain the economic growth of more than 80 countries using this indicator.

### 3. METHODS AND DATA

In light of the paper’s objective, the concept of cointegration – dealt with primarily by the authors Granger and Engle (1987) – is used to investigate the how the indicators of loans provided by banks to the private non-financial sector and M3 affect GDP in the Eurozone countries.

In an attempt to achieve up-to-date output, individual tests are conducted on quarterly data from the years 2000-2013 that have been seasonally adjusted. The data are derived from the Research Division of the Federal Reserve Bank of St. Louis (FRED) – data on gross domestic product at constant prices and the M3 monetary aggregate – and from the Bank for International Settlements (BIS) – data on the amount of bank loans provided to the private non-financial sector.

First, the time series that have been presented here are always tested for optimal lag length. This is done using the Akaike information criterion (AIC), when the best lag (used later in the subsequent tests) is always taken to be the lowest AIC value.

$$(M) = \ln \sigma^2 + 2M/T \quad (1)$$

The tests are conducted on the basis of the relationship of the values in (1), where  $M$  expresses the number of parameters,  $\ln \sigma^2$  denotes residual variance, and  $T$  is the number of observations (Arlt & Arltová, 2007). The next step in the analysis is verifying the existence of a unit root (invariance of the random variable over time), thus determining whether it is a stationary or non-stationary time series. The analysis was conducted in the Gretl 1.9.4 program for econometric analysis; this program makes it possible to conduct an augmented Dickey-Fuller test (ADF test) for this case. For more details, see Dickey and Fuller (1979). Three versions of the ADF test are commonly used for verifying hypotheses – one with a constant, one without a constant, and one with both a constant

and a trend. When testing, we used the assumption that the process listed below (2), where we test that  $\phi=0$  (the variable contains a unit root), takes the following form (Arlt & Arltová, 2007):

$$\Delta X_t = (\phi - 1)X_t - 1 + \sum_{i=1}^p \alpha_i X_{t-i} + \epsilon_t \quad (2)$$

$X_t$  expresses the dependent variable,  $p$  lag, and  $\epsilon_t$  the residual term. Deciding on the stationarity – or the non-stationary – of a time series will be conducted by evaluating the  $p$  values (the level of significance is in this paper always set at 0.05), which thus establishes whether the null hypothesis is rejected or accepted with 95% probability. For this test, this is formulated as follows:

- $H_0$ : the tested series are non-stationary (a unit root exists)
- $H_1$ : the tested series are stationary (a unit root does not exist)

If the time series are non-stationary in nature, the process continues with cointegration analysis, which is conducted here using the Engle-Granger cointegration test (Engle & Granger, 1987) according to the hypotheses listed below.

- $H_0$ : the tested series are not cointegrated
- $H_1$ : the tested series are cointegrated

The decision on the time series' relationship is based on the  $p$  value as defined by the Engle-Granger cointegration test. If the null hypothesis is not rejected ( $p > 0.05$ ), the time series will be considered non-cointegrated – thus, as series without the existence of a long-term relationship between them. In the opposite case ( $p < 0.05$ ), the time series will be considered cointegrated, i.e., series between which it is possible to show a long-term relationship at the level of significance.

#### 4. THE INFLUENCE OF SELECT BANKING SECTOR INDICATORS ON ECONOMIC GROWTH IN THE EUROZONE COUNTRIES

The Engle-Granger cointegration test is used to test the causal relationship between the overall amount of loans provided by banks to the private non-financial sector and GDP and between the M3 monetary aggregate and GDP. Both the absolute values and year-to-year changes are tested for these values.

The time series used are listed for the period of all four quarters of the year 2000 up to all four quarters of the year 2013. The absolute values of GDP, seasonally adjusted, are listed in constant prices either for the year 2009 or 2010. Table 1 shows a description of the variables used.

*Table 1: A Description of the Variables Used for Bank Loans (Author's own work)*

Variable Abbreviation	Variable Description
GDPEUR	The time series of the gross domestic product of the Eurozone, with seasonal adjustment
$\Delta$ GDPEUR	Year-to-year change of the time series of the Eurozone's gross domestic product, seasonally adjusted
BCEUR	The time series of the overall bank loans provided to the private non-financial sector of the Eurozone
$\Delta$ BCEUR	Year-to-year change of the time series of overall banking loans provided to the private non-financial sector of the Eurozone
MEUR	The time series of the M3 aggregate for the Eurozone
$\Delta$ MEUR	Year-to-year change of the M3 aggregate for the Eurozone

#### 4.1. Test for Optimal Lag Length Using the Akaike Criterion

Before using the Granger causality test, it is necessary to test the time series for optimal lag, where the dependent variable is the value of GDP, i.e.,  $\Delta HDP$ . Tables 2 and 3 list the values of the AIC criterion for 4 lag lengths (the lowest value is always shown in bold type).

The optimal lag results determined that, according to the Akaike criterion’s lowest values, a lag length of 2 always appears to be optimal for the absolute values of the dependent variable of GDP. The lag length is also 2 for the year-to-year changes of the listed values.

Furthermore, it is possible to state that the lowest AIC was achieved for absolute values in the Eurozone countries while including the constant. In the case of year-to-year changes, the lowest AIC value was likewise achieved when including the constant. Nonetheless, the length of the optimal lag is always the same in each test, even when the constants or trends of various AIC values are included.

*Table 2: Results of the Optimal Lag for Bank Loans in the Eurozone (Author’s own work using results of the program Gretl 1.9.4.)*

Lag Length	AIC for GDPEUR	AIC for $\Delta$ GDPEUR
-	Test with the constant	Test with the constant
1	49.984407	2.822197
2	<b>49.688352</b>	<b>2.057152</b>
3	49.723992	2.086916
4	49.731454	2.114469

*Table 3: Results of the Optimal Lag for M3 in the Eurozone (Author’s own work using data processed by the program Gretl 1.9.4.)*

Lag Length	AIC for GDPEUR	AIC for $\Delta$ GDPEUR
-	Test with the constant	Test with the constant
1	49.862320	2.721023
2	<b>49.329968</b>	<b>2.132477</b>
3	49.369137	2.168949
4	49.403809	2.203680

#### 4.2. Verifying the Stationarity of the Time Series

Possible non-stationarity of data can lead to apparent regression; the difficulty with this lies mainly in the fact that using the least squares method would make it possible to obtain statistically significant parameter estimates of the regression function – even though the time series analyzed do not relate to each other. For this reason, it is necessary to test the time series used here with the help of an augmented Dickey-Fuller test.

The results of the ADF test for a unit root, in this case in the model with the constant, are shown in Table 4.

*Table 4: Results of the ADF Test for Total Loans Provided by Banks (Author’s own work using the results of the program Gretl 1.9.4.)*

Variable Abbr.	Value of the P Parameter	Evaluation of the Results of the ADF Test	H <sub>0</sub> :
GDPEUR	0.451	non-stationary time series	not rejected
BCEUR	0.333	non-stationary time series	not rejected
ΔGDPEUR	<b>0.002</b>	<b>stationary time series</b>	<b>rejected</b>
ΔBCEUR	0.799	non-stationary time series	not rejected

*Table 5: Results of the ADF Test for M3 (Author’s own work using the results of the program Gretl 1.9.4.)*

Variable Abbr.	Value of the P Parameter	Evaluation of the Results of the ADF Test	H <sub>0</sub> :
GDPEUR	0.451	non-stationary time series	not rejected
MEUR	0.364	non-stationary time series	not rejected
ΔGDPJAP	0.168	non-stationary time series	not rejected
ΔGDPEUR	0.002	<b>stationary time series</b>	<b>rejected</b>
ΔMEUR	0.734	non-stationary time series	not rejected

As can be seen for the time series with absolute values, the time series were determined to be non-stationary at a level of significance of 0.05 (Tables 4 and 5). The time series of year-to-year changes in GDP for the Eurozone indicate stationarity at the level of significance.

### 4.3. Cointegration Analysis

In order to be able to proceed to testing the cointegration of the time series using the Engle-Granger test, it is necessary to eliminate the series that do not meet the basic prerequisites, i.e., the existence of a root unit – non-stationarity of the original time series. In light of the previous results of the Dickey-Fuller test, the ΔGDPEUR time series have been eliminated.

The results of the cointegration analysis for the remaining time series are listed in Table 6. The values of the coefficient indicate to us how much the dependent variable (GDP) changes when the exogenous variable (bank loans) increases by 1. The value of the *p* parameter indicated that the time series were non-cointegrated.

*Table 6: The Results of the Engle-Granger Cointegration Test and the ADF Test for Bank Loans and M3 (Author’s own work using data processed by the program Gretl 1.9.4.)*

Variable Abbr.	P Value	Lag Length	H <sub>0</sub> :	Conclusion
GDPEUR-BCEUR	0.274	2	not rejected	not cointegrated
ΔGDPEUR-ΔBCEUR	the test was not conducted – it does not meet the basic requirements for conducting cointegration			
GDPEUR-MEUR	0.382	2	not rejected	not cointegrated
ΔGDPEUR-ΔMEUR	the test was not conducted – it does not meet the basic requirements for conducting cointegration			



The results of this test are relatively surprising. Nonetheless, despite this, it was possible to take them into account. As has been mentioned above, the time series used depict the period from 2000–2013. The culmination of the global financial crisis happened during this period, and non-conventional monetary and fiscal policy instruments were implemented in the eurozone countries and beyond. Even though a positive relationship has been previously demonstrated between the loans provided by banks to the private non-financial sector and GDP, mutual interconnection of these values was not demonstrated over the long term.

## 5. CONCLUSION

The indicators chosen for discovering the relationship between select banking sector indicators and economic growth in the Eurozone were the relationship between the size of bank loans provided to the private non-financial sector and GDP and between the M3 aggregate and GDP. First, optimal lag length was specified for all the time series analyzed using Akaike's criterion. Next, the presence of a unit root was analyzed using the Dickey-Fuller test. When the prerequisites were met, the next step was the Engle-Granger test for determining cointegration relationships, which was meant to determine the long-term relationship between the selected values. On the basis of these tests, it was determined that there is no cointegration relationship between any time series at a level of significance of 0.05. It may be quite surprising that no long-term relationships were discovered between the amount of bank loans provided to the private non-financial sector and GDP and between the M3 aggregate and GDP. Nonetheless, it is necessary to emphasize that the global financial crisis covered one third of the period under observation, i.e., the period of 2000–2013. It is possible that this is the reason why it was not possible to confirm the long-term positive influence of the banking sector on the economic development of the Eurozone countries.

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## HEALTH LITERACY AMONG DIALYSIS PATIENTS

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### ABSTRACT

*Background: Health literacy has been defined by the World Health Organization (1998) as the "set of cognitive and social skills which determines the ability of people to gain access to, understand and use information in ways which promote and maintain good health."*

*Objectives: To determine the Health Literacy among haemodialysis patients; to analyze the influence of socio-demographic variables and of family in patients' Health Literacy; to establish a relationship between the duration of the treatment received and haemodialysis patients' Health Literacy. Methods: Quantitative, non-experimental, descriptive, correlational and cross-sectional study based on the information gathered from 68 patients suffering from chronic renal failure who were undergoing haemodialysis at the Nephrology Service at the Tondela/ Viseu Hospital Centre, EPE, and at the Beirodial Clinic - Medical Centre and Dialysis, in Mangualde and who were between 21 and 88 years old, which gives an average age of 66.74 ( $\pm 14.927$  Sd.). The data collection instrument was a questionnaire that included socio-demographic questions and others about the patients' clinical profile, the Family Apgar Scale (Smilkstein, 1978) and the European health literacy Survey (HLS- EU-Q) validated for Portuguese participants (Nunes & Sorensen, 2013). Results: Most patients seem to exhibit inadequate health literacy (61.8%). The independent variables that might interfere with health literacy were: the patients' age- middle-aged patients are more likely to exhibit better health literacy ( $X^2=10,340$ ;  $p=0.006$ ); their educational qualifications- higher literacy levels were evident among patients with higher academic qualifications ( $p<0.05$  in all dimensions); the family's monthly income- patients with higher monthly income tend to exhibit better health literacy ( $p<0.05$  in all dimensions) with a marginal*

*difference regarding health care ( $X^2=5.869$ ,  $p=0.53$ ); family relationships - patients who live in a functional family manifest better literacy (prevention of disease  $p=0.010$ ; total literacy in health  $p=0.034$ ); the amount of time required for treatment- where we have to include patients with shorter treatment time (health promotion  $X^2=6.077$ ;  $p=0.048$ ).*

*Conclusion: The results show a prevalence of haemodialysis patients with inadequate literacy levels. This situation requires the development of action plans that will contribute to improve the levels of health literacy.*

**Keywords:** *Dialysis patient; Health Literacy*

## 1. INTRODUCTION

Over the past few years, there has been a substantial increase in the number of people suffering from chronic illnesses, as a result of the ageing process which affects our population and because of the development of scientific techniques (Bastos, 2012, p.15). This way, and according to the same author, chronic pathologies, Chronic Renal Failure notably, have started to be studied more intensely by healthcare community, since they play an important role in the gradual increase in morbidity and mortality rates.

Chronic Renal Failure (CRF) strongly affects patients' routine and quality of life, for it is a disease that causes short term and long term pathological changes and whose treatment requires renal replacement therapy, dialysis (haemodialysis or peritoneal dialysis) and/or kidney transplant. These patients have to go through drastic changes that will affect their health and their lives, since they have to learn to live with this chronic and irreversible disease and with a vast set of situations that will limit their Quality of Life (QOL)

End-stage Renal Disease is defined by an irreversible Glomerular Filtration Rate (GFR) below 15 ml/min/173 m<sup>2</sup>

End-stage Kidney or Renal Disease is the final stage of chronic kidney disease, the stage V of the disease (Chronic Renal Disease Classification/KDOQI (2002) corrected by the *Kidney Disease Improving Global Outcomes* (KDIGO), in 2004 and, more recently, in 2012) in which the patient is already experiencing end-stage kidney failure, despite all the nutrition and fluid restrictions and different therapies that a patient suffering from Chronic Renal Failure has to go through. Although the disease aetiology may be quite vast, the most frequent diseases to which we may associate its origins are glomerulonephritis, polycystic kidney diseases, diabetes *mellitus*, high blood pressure and some autoimmune diseases (Santos & Pontes, 2007).

When there is a complete kidney inability to carry out the excretion of products caused by metabolic degradation, patients should start their dialytic therapy. This treatment will allow the removal of the different toxic metabolites (excessive levels of urea, Creatinine) and of other excessive substances that can be found our body and, at the same time, will allow doctors and nurses to replace some of the substances that were missing in the patients' bodies (Gama, 2014). Portugal has a very high prevalence and incidence of patients suffering from End-stage renal disease. According to the Portuguese Nephrology Society (2015), 2200 new cases of End-stage Renal Disease are reported every year. Currently, there are 15 thousand patients suffering from this health condition (10 thousand of them depend on dialysis and five thousand had already undergone a kidney transplant). The population ageing is one of the most important risk factors, along with diabetes and high blood pressure, among others (Macário, 2015).

These are important aspects to be taken into account and that show the economic burden of this medical condition on the National Health System and the kind of responsibility it represents to the

people who have to live with this disease, an illness that affects people from every gender, every age, every race or who belongs to every kind of social status.

Health literacy is defined as the learner's awareness of the development of his understanding, management and investment abilities towards health promotion. Health literacy implies the achievement of a good level of knowledge, personal skills and confidence that will allow people to take action to improve personal and community health by changing lifestyles and living conditions (Almeida, Silva, Gaspar, & Fonseca, 2014). The concept of Health literacy has been used in many occasions as a synonym for Health Promotion or Health Education. However, there are important differences between health literacy and health education, since literacy is associated with a planned process of learning, an intentional activity which is closely linked to an individual willingness and to individual and group abilities, that will influence ways of thinking, clarify values and beliefs in a way that people will be able to obtain certain skills that will trigger changes in their behaviours and lifestyles (Loureiro, Dinis, & Oliveira, 2012).

Health literacy should be developed among patients who suffer from any chronic disease, and particularly among those who suffer from renal failure, so that they may have a better knowledge of their disease and may adapt their lives to this condition. Health literacy promotes the adoption of appropriate behaviours that will, in turn, promote people's Quality of Life (Loureiro, 2015). Low levels of health literacy are directly associated with a higher prevalence of hospital admission cases, a greater and preventable use of emergency care services, a lower use of medication and a poorer ability to interpret labels and health messages and are responsible for poor health outcomes (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011).

## 2. METHODS

The current study is a quantitative, descriptive and correlational research work that will allow us to create a socio-demographic profile of the patients who have to undergo haemodialysis and of their health literacy levels to determine which socio-demographic variables will interfere with their health literacy, to analyse the relationship between family and clinical variables that affect these patients' health literacy and to assess the influence the duration of the treatment has on health literacy. Keeping these issues in mind, we outlined a set of questions that will guide our research: What is the level of health literacy of patients who have to undergo haemodialysis? Which socio-demographic and family variables will influence the health literacy of patients who have to undergo haemodialysis? Does the duration of the treatment provided have any influence on the health literacy of these patients?

With this in mind, we defined the following objectives, that meet the research questions we had asked earlier: to determine the level of health literacy of patients who undergo haemodialysis; to analyse the influence of socio-demographic and family variables on these patients' health literacy; to analyse the relationship that exist between the duration of the treatment and the patients' health literacy. We used a non-probability convenience sample, or accidental sampling, composed of 68 patients suffering from chronic renal failure who had to undergo haemodialysis.

We used a data collection protocol composed of the following instruments: the socio-demographic profile questionnaire distributed to the participants and that included 6 closed format questions (gender, age, marital status, residence, monthly income and academic qualifications); the socio-family questionnaire that included a closed format question (who do you live with?); the Apgar Family Scale, created by Smilstein in 1978, that allows us to assess the functionality of the participants' family; the clinical profile questionnaire that includes 3 questions: an open format question (duration of the dialysis treatment), a closed format question (type of treatment received)



and an open and closed format question (medical background); the *European Health Literacy Survey Questionnaire* (HLS- EU-Q) in its Portuguese version (HLS-EU-PT) adapted by Nunes and Sorensen (2013).

### 3. RESULTS

Statistics report the existence of a 22.04 ( $\pm 9.669$  Sd.) average Health Literacy value. The highest average value regarding the dimensions that form the health literacy has to do with health care ( $M=38.10 \pm 9.144$  Sd). The lowest average value is associated with health prevention ( $M=35.49; \pm 9.120$  Sd). Most of the participants show an inappropriate health literacy (61.8%): 57.9% of the elements who belong to this particular group of respondents are male, while 66.7% are female participants. Right after, comes a group of participants who exhibit a problematic kind of health literacy (27.9%) , a group mainly formed by men (34.2%).

When it comes to the influence of age over health literacy, we observed that most of the participants exhibit appropriate health literacy: this kind of knowledge is mostly possessed by people who have just entered their elderly age (73.1%) and by elderly/ older people (68.2%). We could also observe that 27.9% of the participants display problematic health literacy. Middle aged participants (45.0%) and the elderly/older participants (22.7%) are the predominant groups in this category.

When we analysed the influence of age on health literacy, we verified that there was a prevalence of inadequate literacy among most of the participants (61.8%). This lack of literacy was more evident among 57.7 % of the people who were living with a partner and 64.3% of those who were living by themselves. The percentage of participants who exhibited problematic health literacy was quite expressive, too (27.9%). 30.8% of those participants were living with a partner and 26.2% were living alone.

As far as the participants' place of residence was concerned, we could observe that 60.0% of those who were living in a rural environment and 63.6% of those who were living in an urban area exhibit inappropriate health literacy (61.8%). Then, we analysed the case of participants who showed problematic health literacy (27.9%): 28.6% of those participants were living in a rural area, while 27.3% of them were living in an urban environment.

When we checked the dimension associated with the family monthly income, we verified the existence of a high prevalence of participants who exhibited inadequate health literacy (61.8%). 66.0% of those participants earned less than 500 euros /month and 68.8% of those participants had a family monthly income that ranged between 500 and 1000 Euros. We also observed the existence of participants with problematic health literacy (27.9%): 23.4% of them had a lower monthly income and 31.3% a monthly income between 500 and 1000 Euros. 10.3% of the respondents showed a sufficient level of health literacy. This specific group was mostly formed by participants with lower monthly incomes. When we studied the participants' academic qualifications dimension, we could, once more, observe a clear predominance of participants with inadequate health literacy (61.8%). 77.6% of the respondents had concluded their primary education and 30.8% of them had finished their basic education. In this dimension, we could also verify that 27.9% of the participants exhibited problematic health literacy. 14.3% of the participants who were part of this group had concluded their primary education and 61.5% of those participants had only concluded their basic education.



10.3% of the participants exhibited a sufficient/excellent level of health literacy. The highest mean value (33.3%) was related to those who had higher academic qualifications, that is to say those who had graduated from high school.

When we analysed the dimension that paid attention to the family functionality dimension, we observed, as it had occurred in the previous dimensions, that there was a high prevalence of participants with inadequate health literacy (61.8%). 83.3% of the participants who belonged to this particular group had already experienced some kind of family dysfunctionality and 57.1% of them came from a functional family. 27.9% of the participants exhibited inadequate health literacy. 30,4% of them came from a functional family. 12.5% of the participants who came from a functional family exhibited a sufficient/excellent level of health literacy.

Middle-age patients were those who exhibited a better health literacy level. Among those patients, the highest mean ordination value corresponds to health care; the next values were related to health promotion and health prevention. Elderly patients and patients who were older exhibited lower health literacy, except for health promotion, a dimension in which the lower health literacy levels were exhibited by people who had just entered the elderly stage of their lives. We have to stress out that there is a statistically significant difference when it comes to health care ( $X^2=10.340$ ;  $p=0.006$ ). Patients with a higher family monthly income were those who exhibited a better level of health literacy, since the mean ordination values were higher among this group of participants. The main dimensions were illness prevention, followed by health promotion. There were statistically significant differences in the health literacy dimensions ( $p<0.05$ ). The marginal difference was associated with health care, which suggests that health literacy depends on the family monthly income. As for the differences of the mean ordination values between academic qualifications and health literacy, we could observe that the patients who had higher academic qualifications were those who exhibited a better level of health literacy, followed by patients who had concluded their basic education. This evidence has statistically significant differences for all the health literacy dimensions ( $p<0.05$ ). As far as the role played by family functionality in the participants' literacy level was concerned, we can state that the patients who live in a functional family exhibit a higher level of health literacy, with a mean ordination value which is higher when it comes to health care and health promotion.

We have to stress that there are statistically significant differences in illness prevention ( $p=0.010$ ) and in the total health literacy ( $p=0.034$ ) dimensions. The mean ordination difference between health literacy and the treatment duration shows that the patients who have to undergo shorter haemodialysis treatments are those who exhibit a higher level of health literacy, mainly in the health promotion dimension, in which we observed the highest mean ordination value. The patients whose treatment has been going on for a 3-5 years period of time are those who exhibit a lower level of health literacy, a fact that has statistical relevance in health promotion ( $X^2=6.077$ ;  $p=0.048$ ).

#### 4. CONCLUSION

The most important results obtained from this empirical study show that most of the elements that formed our sample were male, and that the men who have participated in our study were slightly older than the women participants. More than half of the elements who composed our sample were living with a partner, and most of them were living in a rural area. Most of them have monthly incomes below 500 Euros and most of them had low academic qualifications, since the majority of these participants had only concluded their primary education. Most of our respondents come from a functional family and more than half the sample was living with their family. Most of the

patients exhibit inadequate level of health literacy. As for the influence socio-demographic, family and treatment duration variables have over healthy literacy of the patients who undergo haemodialysis, we could observe that age, academic qualifications, family monthly income and the patients' family functionality may affect the level of health literacy. The same can be said for these patients' treatment duration: we concluded that this variable interferes with health literacy, since the patients whose treatment was shorter were those who exhibited a better level of health literacy, mainly in the health promotion dimension in which we observed the highest mean ordination value. Those results show that we need to develop intervention plans that will help improve the levels of health literacy among patients who undergo haemodialysis, always taking into account that psychological (motivation and self-efficiency perception), social and environmental factors will always influence health-related choices and behaviours.

This suggestion is based on the evidence that any health promotion action has to include policies seeking the reduction of inequality and that intend to create environments that will in turn favour healthy choices, policies that will develop health education, social awareness and empowerment strategies. On the other hand, this suggestion is based on the evidence that the investment in health literacy asks for a holistic approach so that it may help the patients who need haemodialysis treatments deal with their disease, help them use healthcare services properly and handle their own pathology and its consequences. These improvements will undoubtedly allow them to achieve a much higher quality of life.

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## THE GUARANTEED MINIMUM INCOME IMPACT ON POVERTY REDUCTION IN ROMANIA AND SOME SCENARIOS REGARDING THE EMPLOYMENT ACTIVATION PRESENTED INTO THE LAW

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### ABSTRACT

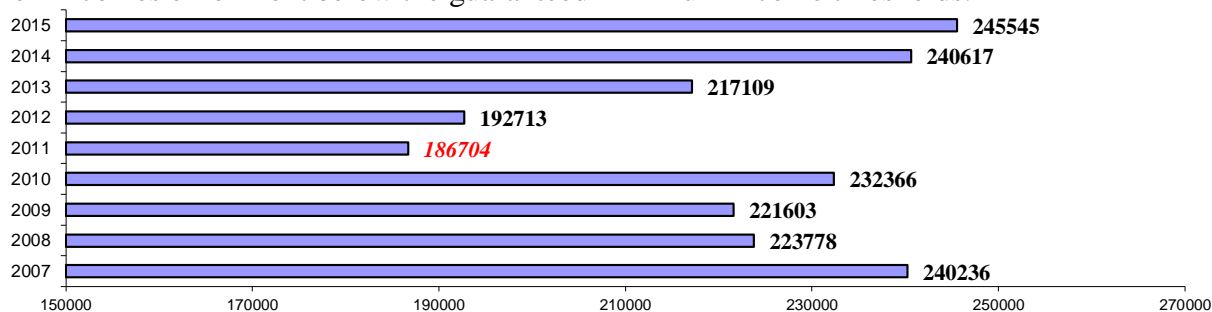
*The guaranteed minimum income is the main instrument in the social assistance benefits system with central propose of poverty reduction for vulnerable families. The paper focuses on the impact assessing of this social program on the relative poverty reduction, calculated at 60% of the median income per equivalent adult, by certain features: residence area, gender, number of people in household, age of the household head, etc., including the own-consumption into the disposable income (main component for vulnerable households). The results of these evaluations are based on the data from the Household Budget Survey, conducted by the National Institute of Statistics, 2008-2013. Into this social assistance benefit with an important role of poverty reduction, there is an employment incentive element, but this does not represent a real economic and social instrument in employment activation stimulation. The paper presents some scenarios concerning the improving of this activation incentive, considering the fact (provided initially in the guaranteed minimum income law) that in those households having employed people, the income test threshold increases by a certain proportion of income obtained from work. In this paper, analyzes are only in terms of relative poverty reduction, and not in terms of budgetary effort. By these performed simulations we want to analyze these employment activation incentives (calculating to some incentive thresholds than those initially provided) leading to lower relative poverty rates and how important are these influences to the total population. One of the simulated thresholds is stipulated in the law draft regarding the minimum income of insertion, which could come into force next year, so that the ex-ante evaluation (correlated with budgetary implications aspects) may be considered a based foundation for this social program with real purpose of reducing poverty and its severe and extreme forms among the vulnerable people.*

**Keywords:** *employment activation incentive, evaluation impact, guaranteed minimum income, relative poverty, scenarios*

### 1. INTRODUCTION

Social assistance benefits represent a form of supplementing or replacing individual/family work income in order to ensure a basic standard of living and a form of support in order to promote social inclusion and increase the quality of life of certain categories of persons whose social rights are prescribed by the law (Law no. 292/2011 on social assistance). One of the most important

social assistance benefits designed to prevent and combat poverty and social exclusion risk among families and single persons in difficulty is the guaranteed minimum income (MIG). The framework law for this social benefit is the Law. 416/2001, as amended and supplemented, together with its implementing rules. This social assistance benefit is based on the means testing of the single person or family income, namely the assessment of cash income (considering all income obtained in the country or outside the country's border, including income from state social insurance rights, unemployment insurance rights, legal obligations of maintenance, allowances, grants, permanent aids, other legal claims) and also on evaluation of property and incomes that can be obtained by harnessing / using any movable and immovable property owned or legally given for the purpose of using. In accordance with the law, the guaranteed minimum income levels increased annually and the amount of social aid is determined as the difference between the levels stipulated in the guaranteed minimum income law depending on family size (number of people) and the net monthly income of the family / single person. During 2007-2010, when the social aid was financed from the local budgets, there were no significant differences in terms of number of beneficiaries. Since 2011, the welfare has been financed from the state budget, and the annual number of the beneficiaries has been showing some variation, with the average number of beneficiaries decreasing when the funding source moved from the local budgets to the state budget. This may be a result of more rigorous tracking of social aid granting. However, in 2011 there was a considerable decrease, with approx. 20% compared to the previous year, due to the list of goods that are / are not considered basic necessities for the family's needs – this list considerably restricted the access to this social assistance benefit (GD no. 50/2011 approving the Methodological Norms for the application of Law no. 416/2001 on guaranteed minimum income introduced the list of basic necessity goods for the family's needs, which limited the access for people / families in the social aid program, Annexes 4 and 5), and imposed the payment of taxes in order to receive the benefit. Since 2016, maintenance of the entitlement to the guaranteed minimum income hasn't been conditioned anymore by the payment of taxes for assets owned by the beneficiary families (Law 342/2015). However, since 2011, the average monthly number of social aid recipients has been placed on a continuous and slightly increasing trajectory from year to year. Increases of the guaranteed minimum income threshold established by law were associated to an increase of the average monthly number of beneficiary families. Furthermore, starting with 2014, although the thresholds for minimum income didn't change for nearly three years, the average monthly number of beneficiaries has continuously increased, due mainly to their impoverishment, respectively to their incomes enrollment below the guaranteed minimum income thresholds.



*Figure 1: The monthly average number of the guaranteed minimum income beneficiaries during 2007-2015 (Statistical Bulletins of the Ministry of Labour, Family, Social Protection and Elderly, 2007-2015)*

## 2. POVERTY RATE BY MAIN CHARACTERISTICS OF THE HOUSEHOLD

Next, the poverty rates will be analyzed at national level, by different characteristics of the household, and also we will estimate the impact of the guaranteed minimum income for reducing the relative poverty rates, determined at the threshold of 60% of the median income per equivalent adult.

### 2.1. Relative poverty incidence during 2008-2013 (relative poverty rates)

Calculating the poverty rate at the threshold of 60% of the median income per person was achieved on the basis of disposable income that included the consumption from own resources, taking into account the modified OECD equivalence scale. Subsequent assessments and simulations were based on data from the Household Budget Survey / National Institute of Statistics, for 2008-2013.

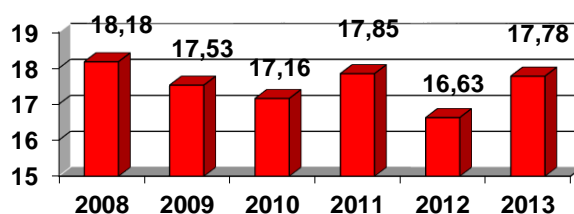


Figure 2: The risk of poverty rate 2008-2013 (Estimation on Household Budget Survey)

Overall, the relative poverty rate per person, calculated at the 60% of median income, during 2008-2013, hit a low point in 2012 when the lowest value of poverty rates was recorded (16.63%) compared with the maximum value registered in 2008 (18.18%). After a relatively significant decrease in 2012, in the next year, the poverty rate continued its high growth rate (up to 17.78%). By the main components of household, the poverty rates showed the following trends during 2008-2013:

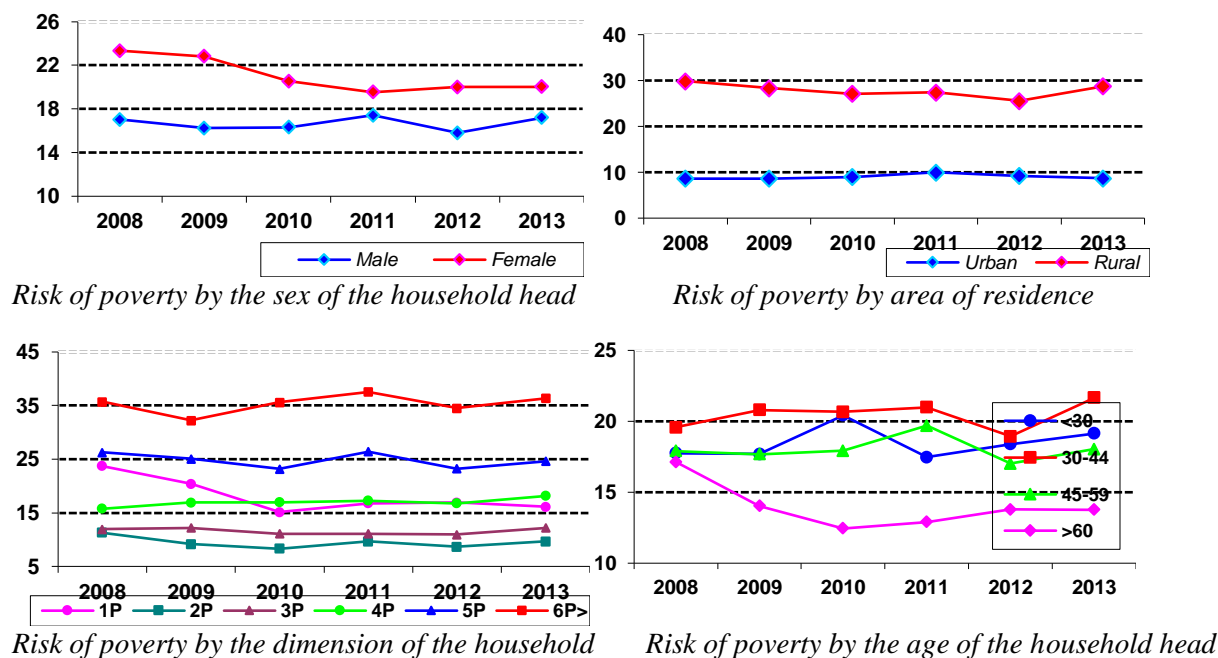


Figure 3: The risk of poverty rate 2008-2013, by main characteristic of the households (Estimation on Household Budget Survey 2008-2013)



*By gender of the household's head:* The poverty rate recorded maximum values over time for households headed by women (20-25%), although these rates have been steadily declining compared to 2008 - the year when poverty has recorded the highest values.

*By residence:* poverty rate recorded maximum values for rural households (approx. 30%); these recorded rates are approx. 3 times higher in rural areas than in urban areas, which indicate the maintaining of sharp poverty in rural households.

*By the size of the household:* Over time, poverty rates recorded maximum values for large households composed of 6 and more persons (approx. 35%), for households with 5 members (approx. 25%), followed by those with 4 members and even households with one person (over approx. 15%).

*By age of the household's head:* The poverty rate has recorded the maximum values over time for households headed by adults aged 30-44 years (approx. 20%), followed by those headed by people aged 45-59 years and young people under 30 years (approx. 17-19%).

### **3. THE IMPACT OF THE GUARANTEED MINIMUM INCOME ON THE POVERTY RATES DURING 2008-2013 PERIOD**

In order to assess the impact on poverty of the guaranteed minimum income granted to vulnerable families, we will be analyzing the relative poverty rates when including the social aid for the guaranteed minimum income in the households' disposable income and then when removing the social aid value from the household's income. The difference between the two simulated poverty rates assesses the impact of this social assistance benefit on relative poverty, calculated at the 60% threshold.

*Methodological notes* used in the simulations:

- The poverty rate is an indicator of relative poverty incidence which represents the share in the total population of persons from households with a disposable income per adult equivalent below the poverty threshold. Poverty rate was determined at the 60% of median income (also named relative poverty, or standard poverty);
- We took into account the incomes (and not the expenses) of the household, determined at the threshold of 60% of median disposable income, according to the modified OECD scale, data processing being performed on adult equivalent (first adult = 1; another adult = 0.5; each child = 0.3);
- Databases are part of the Household Budget Survey (HBS/ABF), conducted by the National Institute of Statistics / (NIS/INS) during 2008-2013;
- In this paper, the disposable income included the component of consumption from own resources; analyses can be performed by eliminating the component of consumption from own resources from the disposable income;
- In this paper, poverty rates have been calculated per person; calculations can also be performed at household level;
- The indicators used were grouped according to the following characteristics of the household: household size (households with one person, 2, 3, 4, 5, 6 and more members); head of household age (under 30 years, between 30-44 years, between 45-59 years and over 60); head of household sex (male, female); area of residence (urban, rural); and total.

For the beginning, using data from the Household Budget Survey, poverty rates were estimated at the threshold of 60% of median income per equivalent adult, among people in the household; the component of consumption from own resources and also the social aid (the guaranteed minimum income) were included in the disposable income. Then, the same iteration was performed in the



simulation process, after the social aid (guaranteed minimum income) had been removed from the disposable income. Differences between the two simulated poverty rates, taking into account and not taking into account the social aid in the disposable income, were used to estimate the impact of this benefit on poverty rates.

	2008	2009	2010	2011	2012	2013
Total	0.31	0.32	0.40	0.27	0.28	0.29
Sex of the household's head						
Male	0.25	0.29	0.40	0.22	0.28	0.31
Female	0.59	0.42	0.44	0.46	0.26	0.24
Area of residence						
Urban	0.04	0.19	0.15	0.11	0.12	0.08
Rural	0.64	0.48	0.70	0.47	0.47	0.54
Size of the household						
1 person	0.16	0.09	0.16	0.19	0.14	0.10
2 persons	0.18	0.13	0.19	0.24	0.15	0.10
3 persons	0.21	0.24	0.16	0.20	0.10	0.29
4 persons	0.23	0.21	0.25	0.24	0.31	0.28
5 persons	0.32	0.51	1.00	0.35	0.78	0.27
6 persons and more	0.98	0.94	0.96	0.52	0.30	0.78
Age of the household's head						
age <30 years	0.06	0.15	0.00	0.21	0.16	0.01
age >=30 and <=44 years	0.47	0.51	0.67	0.42	0.34	0.39
age >=45 and <=59 years	0.28	0.34	0.32	0.16	0.30	0.14
age >=60	0.21	0.12	0.27	0.25	0.20	0.36

*Table 1: The impact of the guaranteed minimum income on the poverty rate, 2008-2013  
 (Estimation on Household Budget Survey 2008-2013)*

While, at first sight, it would seem that not paying the guaranteed minimum income would produce an important impact, in reality that is not true. The influence of this social assistance benefit is quite small in terms of decreasing the poverty rate; differences between poverty rates from 2013 compared to 2008, calculated when excluding this social benefit, are relatively small, both in total and by the main characteristics of the household.

The relative poverty rate calculated without taking into account this social assistance benefit would have been higher by 0.31 pp. in 2008, by 0.32 pp. in 2009 and by 0.40 pp. in 2010 - maximum values recorded over the analyzed period. In 2011 the impact would have been the lowest one, when the poverty rate increased only by 0.27 pp. However, this impact is quite low, hovering below 1 pp. over the period, regardless of the household characteristics.

However, in 2013 the most affected households would have been those with 6 and more members (0.78 pp. in 2013 and 0.98 pp. in 2008), people living in rural areas (0.54 pp. in 2013 and 0.64 pp. in 2008), households headed by adults aged between 30-44 years (0.39 pp. in 2013 and 0.47 pp. in 2008 and 0.67 pp. in 2010), and households headed by men (0.31 pp. 2013 and 0.4 pp. in 2010).

However, in 2013, the most affected households would have been those with 6 and more members (0.78 pp. in 2013 and 0.98 pp. in 2008), people living in rural areas (0.54 pp. in 2013 and 0.64 pp. in 2008), households headed by adults aged between 30-44 years (0.39 pp. in 2013 and 0.47 pp. in 2008 and 0.67 pp. in 2010), and households headed by men (0.31 pp. 2013 and 0.4 pp. in 2010).

Since the guaranteed minimum income is given to the poorest of the poor people, this social aid granted by municipalities does not have a significant impact on poverty rates determined at the 60% threshold, but it would generate a much more pronounced impact in severe poverty, calculated at the threshold of 40% of disposable income. In other words, poverty incidence is not significantly affected because of the exclusion from the disposable incomes of the guaranteed minimum income, since even in the initial stage when these households benefited from social aid, they were still below the severe poverty threshold; it would be possible, however, for some of the households positioned in the vicinity of the severe poverty threshold to descend below this threshold if they didn't qualify for this social aid.

However, with a monthly average number of social aid beneficiaries granted under the Law no. 416/2001 on the minimum guaranteed income, of approx. 250 thousand people, which represents about 1% of the total population of the country, even if the impact of non-payment of this type of social assistance benefit is not very significant, attention must be paid however to this type of social assistance benefit (MIG) granted for the prevention and reduction of poverty and its extreme forms, as this social benefit is granted to the poorest people, respectively persons/households with lowest incomes and, most often, faced with an accumulation of problems: low education and qualification; health problems; large number of members in the household, even elderly and children (inactive people) that contribute to the increasing of consumption, without additional and appropriate income sources. While it emerged from these simulations based on HBS data that the guaranteed minimum income has no significant impact on reducing the poverty rates (maybe only in case of severe poverty the impact could be stronger) although it is directly designed to prevent and reduce poverty and its extreme forms among vulnerable people / families, this result shows that this important social assistance benefit should be better targeted to eliminate inclusion and/or exclusion errors. And also a special emphasis should be placed on the activation component targeted towards the beneficiaries of the guaranteed minimum income. We do not plead here for other passive measures, such as increasing of the social benefit or legislative permissive conditions to access the guaranteed minimum income program, but we try to draw an alarm signal towards the importance of activating the people receiving social aid, where it is possible.

#### **4. INSERTING OF SOME ACTIVATION ELEMENTS INTO THE GUARANTEED MINIMUM INCOME PROGRAM**

Law no. 416/2001 on guaranteed minimum income provided, in 2001, an idea for the potential transition from the assistance system to work, specifying that "families and single people with net monthly incomes below the guaranteed minimum income benefit from a 15% increase on the social aid per family unit if at least one family member proves that he is working under individual labor contract, or he has the status of a public official or he performs a task, obtaining salary revenue". This legal provision marked a first step, at that time, in encouraging the social aid recipient's efforts to overcome the status of a social assisted person and enter employment. But, the reality did not fully confirm this transition to employment, which suggests that this activation element doesn't have, in fact, an incentive effect, not representing an encouragement factor for entering the labor market. In addition, the guaranteed minimum income law provides a certain number of hours of work in the community service under certain conditions for those who can work, but this provision may not fit the typology of employment incentives.

The authors of this study consider that the presence of real work incentives into the social aid program is of utmost importance, these elements can lead to the activation of recipients of guaranteed minimum income in certain circumstances (provided by law, such as those related to

work capacity, etc.), to stimulate them to take a job and escape being permanently placed in the safety net or social assistance system. Thus, we performed some simulations and proposed some scenarios by introducing in the guaranteed minimum income program some "challenging" incentives for activation. We developed, at the same time, some scenarios for changing the testing thresholds of the income, which would increase by a certain proportion of income from work in the case of households having at least one employed person. In the case of these scenarios, simulations were made, assessing the impact on poverty rate dynamics. The basic idea in these scenarios was to increase the guaranteed minimum income (percentage) for households with employed persons in composition.

*Methodological notes* used in simulations:

- The relative poverty rate was calculated, for each of the scenarios, using a fixed poverty threshold at 60% of median income per equivalent adult;
- In calculating the threshold of 60% of median income per equivalent adult, the disposable income including the consumption from own resources (total disposable income) was used;
- The relative change in poverty rates was calculated for each scenario, comparing the simulated poverty rate to the real poverty rate;
- In this paper, poverty rates were calculated per person;
- The difference between the two poverty rates, i.e. the simulated and real poverty rate, helped in assessing the impact, i.e. how much the people are influenced by the new component introduced in the simulation for each of the thresholds considered.

In the simulations, the following eligibility conditions were taken into account:

- Testing if there is at least one employed person in every household, if YES then to the existing guaranteed minimum income (threshold 0), the ratio "p" is applied;
- For households benefiting of guaranteed minimum income, but without any employed members, the existing value of the guaranteed minimum income was maintained.

For the starting point of the paper, we considered that in the households with employed persons, the income testing threshold increases by a certain proportion of income obtained from employment, as follows:

$Threshold1 = Threshold0 + p * Family\ Income\ from\ employment$ , where:

**threshold1** = new income threshold specific to the household where there is at least one employed person

**threshold0** = income threshold currently available for testing the eligibility conditions for guaranteed minimum income and depending on the number of persons in the family

**p** = proportion of earned income from employment to be taken into account in setting the new threshold (50%).

Initially, the simulations / ex-ante evaluations were considered for 3 possible scenarios (threshold of 35%, of 50% and of 65%; the scenario related to the 50% is the one that will be included in the law on the insertion minimum income, that will enter into force on the 10<sup>th</sup> of July 2017; it is currently in draft law status). The 3 scenarios are the following: scenario S1 - for the threshold of 35% as proportion of income from employment taken into account for setting up the new income threshold; Scenario S2 - for the threshold of 50% and scenario S3 - for the threshold of 65%. In choosing these 3 possible scenarios the authors aimed at providing a possible choice of an optimal option that should be included in the future program on the insertion minimum income (this future social assistance benefit must include an incentive component to stimulate employment among beneficiaries).

The poverty rate simulated in Scenario 2 was calculated for 50% of the employment income being taken into account in the setting up of a new income threshold. The poverty rate is calculated at the threshold of 60% of median income, on equivalent adult, and per person; the disposable income includes consumption from own resources. This threshold of 50% is set out in the minimum income for insertion law draft – this future social assistance benefit would come into force midyear of 2017. So, these simulations / ex-ante evaluations may underlie the rationale for inserting activating elements in the guaranteed minimum income program (which, together with two other social assistance benefits, the family support allowance and the assistance for heating, will be aggregated in the future program regarding the insertion minimum income).

The analysis of data from HBS/ABF shows that the share of the guaranteed minimum income in total disposable income is quite low, about 0.30%. Thus, the impact of the scenario proposed in the paper should be carried out taking into account this low share in total household incomes.

<b>Scenarios with 3 new thresholds</b>	<b>Poverty rate (%)</b>	<b>Simulated poverty rate (%)</b>	<b>Relative change of the poverty rate (%)</b>	<b>Reducing of the poverty rate (pp.)</b>
S1. Threshold 35%	18.36	18.17	98.97	0.19
S2. Threshold 50%	18.36	18.13	98.75	0.23
S3. Threshold 65%	18.36	18.07	98.42	0.29

*Table 2: The impact of 3 Scenarios on the poverty rate, 2014 (Estimation on Household Budget Survey 2014)*

The increasing with 35% of the existing income influences the poverty rate by 98.97% for the total population, i.e. poverty rate is reduced by 0.19 percentage points.

The increasing with 50% of the existing income influences the poverty rate by 98.75% for the total population. The impact of this scenario is low, the differences between the poverty rate and the simulated poverty rate with the new threshold is relatively low, of 0.23 pp.

The increasing with 65% of the existing income influences the poverty rate by 98.42% for the total population, value very close to the previous 2 scenarios when the existing income increases by 35% and 50%, so that the poverty rate is reduced by 0.29 percentage points.

Further analyzes will be carried on, focusing on certain characteristics of the household, only for the second scenario, that is found in the insertion minimum income law draft (threshold of 50% as a proportion of employment income taken into account in setting up of the new threshold income). So these simulations that constitute, in fact, an ex-ante evaluation, may underlie the rationale for inserting of some real activation elements within the guaranteed minimum income/insertion minimum income program.

*Table following on the next page*

Profile of the households	Relative change of the poverty rate (%)	Reducing of the poverty rate with (pp.)
Total	98.75	0.23
<b>Children aged 0-18 years</b>	<b>97.10</b>	<b>0.87</b>
Households with children up to 2 years	99.93	0.02
Households with 2 adults and children up to 2 years	99.87	0.04
Households with children aged 0-18 years	99.31	0.2
Households with 1 adult and children aged 0-18 years	100.00	0
Households with 1 or 2 children aged 0-18 years	99.31	0.2
Households with 2 adults and 1 or 2 children aged 0-18 years	98.96	0.31
<b>Households with 3 or more children aged 0-18 years</b>	<b>97.98</b>	<b>1.06</b>
Households with 2 adults with 3 or more children aged 0-18 years	98.83	0.66

*Table 3: The impact of 3 Scenarios on the poverty rate, by main characteristic of the household, 2014 (Estimation on Household Budget Survey 2014)*

The 50% increase of the existing income influences the poverty rate by 98.75% for the total population, and the poverty rate is reduced by 0.23 pp. The impact of this scenario is quite low, however, a greater influence is found for children aged 0-18 years (relative change in the poverty rate = 97.10% and a reduction in the poverty rate by 0.87 pp.) and households with three or more children aged 0-18 years (relative change in the poverty rate = 97.98% and a reduction in the poverty rate by 1.06 pp.). For households consisting of one adult and children aged up to 18 years there is no significant influence.

## 5, CONCLUSION

This simulation model supported the impact assessment of the guaranteed minimum income on poverty rates, determined the standard threshold of 60% of median income per equivalent adult, thus serving to estimate poverty rates in the presence and absence of this social assistance benefit designed with the main purpose of preventing and reducing poverty and its severe and extreme forms such as social exclusion.

Comparing the evolution of poverty incidence in dynamics for 2008-2013, it can be seen that the poverty rates decreased from 18.18% in 2008 to 16.63% in 2012 and then increased to 17.78% in 2013 - a value comparable to the one calculated for 2011.

While at first view it would seem that not paying the social aid should have a pronounced impact, the reality is not so. Since social aid is given to the poorest of the poor, this social benefit granted by municipalities has no impact on poverty due to the 60% threshold, but it could have a much more pronounced impact on the severe poverty, calculated at the threshold of 40% of disposable income. In other words, the incidence of poverty is not greatly affected through the elimination from the disposable incomes of the guaranteed minimum income, since even in the initial stage when these households benefited from social aid, they were still below the severe poverty threshold; it would be possible, however, that some of the households being in the vicinity of the severe poverty threshold to fall below this threshold if they didn't qualify for this social aid.



One should also take into account the number of recipients of guaranteed minimum income, because that number is, generally, in a continuous increase, almost in spite of introducing of additional legal limitations over time (list of durables, and so on).

All these coordinates, i.e. poverty rates in the presence or absence of this social assistance benefit that is considered to be very important in preventing and reducing poverty and its severe and extreme forms, and the influences of this social aid on the poverty rates describe its impact and complete the picture of the guaranteed minimum income, considered to be an important social program. Such impact assessments are particularly important in monitoring and evaluating the social aid effects, but also in the monitoring and evaluation of poverty and severe poverty reduction (this model of impact assessment can be applied to other social benefits). There is a necessity for continuous analysis to provide permanent rigorous understanding of the effects of the guaranteed minimum income program, but also the magnitude of the studied phenomena related to poverty incidence.

The authors of the paper considered that the presence of real employment incentives within the social aid program is particularly important, because these incentive elements can lead to a better activation of MIG beneficiaries, under certain conditions (e.g. those related to work capacity, etc.), stimulating them to take a job and to avoid being placed in a permanent safety net / social assistance system. These activation elements that were taken into account in the ex-ante evaluation of this paper are also included in the insertion minimum income law draft (which could come into force from July 1, 2017). And even if the budgetary efforts are not analyzed in these simulations, we believe that by including more attractive activation incentives in these ex-ante simulation exercises for impact assessments, these simulations managed to provide a rather expressive image on the impact of social aids on poverty rates, by certain characteristics of the household.

The social assistance system is not and should not be considered the only or the most important instrument for fighting against poverty. The role of the social assistance system consists, primarily, in preventing poverty through support in terms of income for the vulnerable families, and support for the population under the poverty rates at a sufficient high level in terms of resources availability, so as not to allow a large gap in living standards between those who receive social assistance benefits and the employed population. However, the social assistance system should consider the introduction of real activation elements, therefore the beneficiaries should be encouraged and stimulated to hold a job, trying, wherever possible, to transit from poverty and from the social assistance system to employment.

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## SOCIAL ENTREPRENEURSHIP

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### ABSTRACT

*Social entrepreneurship is a specific form of entrepreneurship which has lately gained momentum in advanced and growing economies of the world. It has interesting features since it combines social, economic and environmental sustainability, thus contributing to the prosperity of society. As such, it has been recognized by the European Union, which stimulates and encourages the development of social entrepreneurship through its various operational programmes. Social entrepreneurship is specific because it represents a link between the private and the public sector; it is led by entrepreneurial principles (risk-taking, innovating, creating something new...), but it also brings benefit to the society. The determinant of social entrepreneurship in private sector creates possibilities for spreading and implementation of the programme of the organization which are important for accomplishing the mission. The concept of social entrepreneurship refers to marginalized groups or individuals with fewer opportunities. This form of entrepreneurship is not new in Croatia; it has only started drawing more attention. Social entrepreneurship in Croatia is known under the term 'societal entrepreneurship'. The aim of this paper is to review the development of social entrepreneurship in Croatia and in general because it might represent an exclusive solution for improving the quality of life in times of globalization. The stipulated issues imposed the objective of the research, which focuses on the analysis of social entrepreneurship in Croatia using the case study method which was conducted on a sample of five relevant cases from practice. The goal was to realize to which extent it had fulfilled its purpose and justified its existence. The research will confirm whether social entrepreneurship can function in all sectors and whether certain activities are suitable to be called social, non-profit and socially responsible at all. Can certain activities with non-profit and social character be denominated as entrepreneurship and classified into this category, or are they purely humanitarian activities which are contradictory to the concept of entrepreneurship.*

**Keywords:** *Social entrepreneurship, social change, socio-economic thinking, philanthropy*

### 1. INTRODUCTION

The philosophy of social entrepreneurship has become more important since the beginning of the new millennium. The new way of thinking which postulates that all people are entrepreneurs when given a suitable opportunity has fundamentally changed the former philosophy that only a minority of people can be entrepreneurs, whereas all the others should work for those entrepreneurs. Such new way of thinking strongly reminds of Marx's theory of socialism which stipulates that all men are equal and that we should all possess equally, therefore capitalism and market competition are something evil and a completely wrong way of thinking since they do not offer people equal opportunities nor a chance to succeed and live their lives in prosperity. It is a well-known fact that the current world order and distribution of wealth tend to make the rich even richer and the poor

even poorer, which is a result of the capitalist social system common to majority of today's developed economies of the world. Philanthropy and social consciousness of a certain number of people who have accumulated a certain amount of wealth, to share their fortune with wider community are shifting the paradigm of capitalism towards thinking that the poor also deserve a better standard, be it only the minimum of elements offered by today's technological achievements of our civilisation as a whole. The idea that the poor should be given self-confidence and an initial incentive to awake their entrepreneurial skills and become entrepreneurs themselves so that they can, first of all, work to their own benefit and the benefit of their families, and secondly to the benefit of the community they live in, originated from Muhammad Yunus, an entrepreneur, a banker and an economics professor from Bangladesh.

The concept is that everyone should be given a chance to become an entrepreneur and to create something for themselves and for the benefit of the community, but concurrently never to make a profit. In conventional companies, at the end of the year, every entrepreneur asks himself or herself the following question, 'How much have I earned this year?', while a social entrepreneur asks, 'How much of an influence on the benefit of the community have I had this year?'. In these very questions lies the key task which is put before any social entrepreneur: I cannot make any profit. Consequently, if any form of entrepreneurship does not bring profit, it cannot make any progress, nor can the company or any new technologies develop. When there is no progress or development, a stagnation or regress ensues. Stagnation or regress in any following time period inevitably leads to bankruptcy and disappearance from the market. The only thing that keeps such businesses afloat is an additional incentive from something that progresses and develops, in a way that it grants them subsidies, financial or any other material aid. Someone who is constantly dependent on help of others, be it humanitarian or any other kind of help, cannot be considered an entrepreneur, but only an organization of humanitarian character. Led by this thought, the following pages of this paper will demonstrate theoretical differences between the traditional notion of an entrepreneur and the one called a social entrepreneur. Factual cases of social entrepreneurship, in conjunction with ways and models of how they function, will be presented by several examples. The aim of this paper is to give an answer to the question whether such a form of business can be called entrepreneurship, or whether is it just one of the forms of philanthropy, humanitarian activity or care for the poor; which cannot in any way function on its own as the only form of business activity or as a base for development of economy in the future.

## **2. DEFINING OF THE NOTIONS OF SOCIAL ENTREPRENEURSHIP AND SOCIAL ENTREPRENEUR**

Social entrepreneurship represents the application of entrepreneurial principles in the social sector, having as a goal improvement and advancement of the quality of life of society as a whole. It is simultaneously inclined towards realising both financial and social values (Škrtić, 2006). Social entrepreneurship is a relatively new phenomenon in the third sector of modern economies and it differs from the traditional non-profit sector, although there are some points of similar points. The social entrepreneurial sector produces goods and services on a permanent basis in branches where an economy market activity cannot be developed (Bežovan, 2008). Social entrepreneurship represents development of socioeconomic structures, connections, institutions and measures which result in universally accepted social benefits and whose main task is to improve functioning of the existing system. Social entrepreneurship is an innovative and creative entrepreneurial model of dealing with social and ecological issues, it is simultaneously used to stimulate sustainable development, which is the key factor for all other ensuing changes (Perčin, 2011). Nowadays social

entrepreneurship is observed in differing ways. One group of scientists finds it a non-profit initiative in search of alternative founding strategies or management schemes, all with the purpose of creating new social values. Another group of researchers experiences social entrepreneurship as social responsibility of commercial companies included in inter-sectoral partnerships, while the third group of scientists characteristically views social entrepreneurship as a means for dealing with social problems and transformation of the society as a whole (Škrtić i Mikić, 2011).

Yunus himself believes that we can create an ideal world in which there will be no poor nor hungry, and that poverty will only be seen in the 'museum of poverty', that people and children will visit as a tourist attraction (Yunus, 2010).

'Social entrepreneurship functions according to a model of threefold balance (the three letters P) which is: (Perčin, 2011:10):

- PEOPLE (equality and equal opportunities for all)
- PLANET (environment protection)
- PROFIT (financial sustainability and reinvestment of profit)'.

A social entrepreneur is also called a champion of ideas, they promote ideas by working within, between, with and above existing organisations. Therefore, by being insecure they are given a great dose of security and they feel the need for absolute autonomy (Bornstein i Davis, 2010).

Social entrepreneurs set up the type of company or organisation according to their strategic decision, be it of a profit or a non-profit type. Moreover, unlike the 'classical' entrepreneur who strives for making a profit, a social entrepreneur strives for effectuating and increasing social values (Škrtić, 2006). They recognize solutions for dealing with social problems, while combining innovations, available resources and opportunities; their activity is not limited by a single market since there are many segments in which they can act and develop (Škrtić i Mikić, 2007).

'Social entrepreneurs (Škrtić, 2006:17 according to Dees 1998:6):

- adapt their mission with the aim of creating and maintaining of a social value (and not only a private value)
- recognize new opportunities which serve to the aforementioned mission and open up to them
- integrate processes of continuous innovation, adaptation and learning
- are not limited by currently available resources, and
- strive towards achieving maximum output under given conditions.'

### **3. THE TRADITIONAL ENTREPRENEUR VS THE SOCIAL ENTREPRENEUR**

There are many different definitions of entrepreneurship since it cannot itself be specifically defined, being more than a 'normal' individual can envisage, but most commonly the term 'entrepreneurship' is defined as a totality of an entrepreneur's innovative, organisational, directional, managerial and supervisory abilities. Developed countries accentuate entrepreneurship in their economic theory as the foundation of the economy and view it as a special factor of production (Škrtić, 2006). Entrepreneurship is a dynamic process of creating expanding wealth. Wealth is created by individuals who take great risks in terms of capital, time and/or dedication to their careers, or those who offer value for a certain product or service (Ronstrad, R.C. 1984). The activity of a traditional entrepreneur is based on three essential components, which are:

- 'seizing initiative
- organisation and reorganisation of social and economic mechanisms and resources in a practical direction
- acceptance of risk or failure' (Zrilić i Šola, 2014:60 according to Hirsrich 2011:7).

By definition, social entrepreneurs are just as ambitious and persistent as traditional entrepreneurs, determined by the same disposition, but differing in direction of their efforts; traditional ones direct their efforts towards generating profit, whereas social ones use the opportunities others had missed to generate social values (Funda, 2011).

Deriving from everything stated above, a social entrepreneur should possess the following qualities (Funda, 2011:21 according to Drayton):

- 'a forceful new idea, which can change the system,
- creativity,
- revolutionary potential,
- entrepreneurial quality,
- morals.'

The main determinant of a traditional entrepreneur is profit, whereas a social entrepreneur strives for social benefit. 'Unlike the classical notion of entrepreneurship, social entrepreneurship is a much more complex notion. However, neither social entrepreneurship is understood unambiguously. With the exponential growth of the popularity of the concept of social entrepreneurship in the last decades, the number of its definitions has been growing as well. Although there is no universal definition of social entrepreneurship, it is observable that the mission of solving social problems and creating social values represents the basis of every definition,' (Zrilić i Širola, 2014:62). Social entrepreneurship itself stems from the idea of acting in a non-profit way to general welfare. This has generated new organisations which are trying to integrate market mechanisms with social goals (Lešić, 2015). Organisations which are oriented towards social entrepreneurship in the Republic of Croatia are regulated by law, thus implying legal and institutional forms within which a certain type of social entrepreneurship can be developed. In the Republic of Croatia, social entrepreneurship can be organised as:

- organisation
- foundation
- cooperative
- crafts
- institution
- company (Zrilić i Širola, 2014).

'Social entrepreneurs need not necessarily be motivated by altruism, their motives can also be explained by wish for self-actualisation. Creating social usefulness is the very essence of social entrepreneurship, although the process of creating of economic value becomes a crucial condition for financial sustainability,' (Lešić, 2015:86)

#### **4. ADVANTAGES AND DISADVANTAGES OF TRADITIONAL AND SOCIAL ENTREPRENEURSHIP**

There are many advantages in taking up traditional entrepreneurship, some of them being: taking control of one's own fate, possibility to use one's own potential, being acknowledged by the society, and - one of the most important – the ability for the entrepreneur to do what he or she likes and makes him or her fulfilled. Although there are many advantages to entering entrepreneurship, there are also some disadvantages. Some of the most common disadvantages would be: high risk, uncertain earnings, company failure, undefined working hours, hard work, decreasing quality of life due to working hard when trying to 'set the company on its feet', great responsibility and high levels of stress (Škrtić, 2006).



Advantages in taking up social entrepreneurship are as follows: social entrepreneurship can be used as added value for its beneficiaries and it is in this way also possible to reach the beneficiaries; this type of entrepreneurship can help the expansion of the strategic programme of the organisation and accomplishing the mission; through social entrepreneurship organisations can make people aware of a certain problem; social entrepreneurship can improve public opinion and such organisations can grow stronger internally, since they have an organisational system different from that of the traditional entrepreneurship.

Disadvantages of social entrepreneurship are quite similar to those of traditional entrepreneurship, the greatest of them being the risk, i.e. market risk (Sočo, 2009). 'Social entrepreneurs are leaders in the field of social change, they can be found in private, public and non-profit sectors. It can also be said that a social entrepreneur is an individual who uses profitable strategies to achieve social goals, simultaneously looking for both financial and social return on their investment,' (Škrtić i Mikić, 2007:157). Other economically non-profitable sectors, i.e. volunteering, charities and non-government organisations spend a considerable amount of time and energy trying to solve the problem of poverty, at which they do not entirely succeed. The profit sector, being the most efficient and financially most innovative sector, also has no answer as to how to entirely eradicate poverty. The concept of social entrepreneurship needs to offer a solution and raise the living standard of millions of people and introduce them to the market so that they could support themselves (Yunus, 2007).

## **5. SOCIAL ENTREPRENEURSHIP IN THE REPUBLIC OF CROATIA**

The intrinsic factors which influence the creation of entrepreneurial climate, be it of traditional or social nature, are: economic, political, legal and cultural environment, together with the key factor that there should be free market economy. Under the term economic environment, we are considering the form of the economy which can be: market, plan, mixed and state-governed economy. Political environment implies political environment of the state; be it directed towards collectivism or individualism, democracy, socialism or capitalism. Legal environment is characterised by legal and sub-legal acts which regulate economic activity in terms of taxation, investment and legislature... Cultural environment implies material and immaterial goods of a society, that is, cultural values, norms, competences, skills, religion and similar. Cultural environment as such has great influence on entrepreneurship since it strongly defines corporate culture (Funda, 2011). According to the aforementioned influence factors, it is clearly visible which spheres social entrepreneurship is able to reach. Social entrepreneurship in Croatia also functions on the principle of uniting desire to solve social problems with making a profit and it, '...represents a significant step towards developing a more humane and tolerant society and socioeconomic relations,' (Škrtić i Mikić, 2007, 163).

Social entrepreneurship as such developed in the Republic of Croatia during the Homeland War; it was characterised by destroyed economy, lack of food, fear within the population etc... However, after the Homeland War a greater problem arises - leftover landmines. The first steps towards solving the problem were undertaken by the Government of the Republic of Croatia on 28th March 1996 by founding a company for mine clearance - AKD Mungos Ltd. with the aim of dealing with the burning issue of leftover landmines. After the subsequent changes of the applicable laws, landmine clearance activities were completely commercialised so the limited company AKD Mungos Ltd. became one of the 25 landmine clearance companies on Croatian market, but by far the largest of the type in the country. In the last six years the Mungos team of landmine clearance technicians have inspected and cleared 46 316 461m<sup>2</sup>. More than 9,135 different types of anti-



personnel and armour-piercing landmines have been found and destroyed, alongside over 36,740 different types of unexploded ordnance. Financing of the project itself is mostly based on donations, means from the state budget of the Republic of Croatia and means obtained from the EU funds, but there are also significant funds raised by exporting the services themselves, especially to Bosnia-Herzegovina and the area of Kosovo (Škrtić i Mikić, 2011). Wartime destruction has marked the emergence of social entrepreneurship in Croatia and although it might not seem like an illustrative example of social entrepreneurship, it genuinely is so. 'The movement of social entrepreneurship also includes non-profit organisations which use business models for accomplishing their mission, as well as profitable organisations whose primary goal is social change. Many commercial businesses have social goals integrated into their activity, but only those which have set influence on the society and/or environment as the primary goal of their activity can be called social entrepreneurs,' (Horvatin, 2013). Croatian government has recognised the importance of social entrepreneurship and as such and, alongside other participants, acts on its development, led by the following goals:

- encouraging programmes of social entrepreneurship, social economy and social employment by creating stimulating legislative and tax framework for companies and non-profit organisations,
- development of measures for systematic following of the effects and the assessment of the efficiency of investing into non-profit entrepreneurship relative to its economic and social effects,
- proposing subjects which can be bearers of the programmes of social employment and which could, based on certain conditions, be entitled to certain reliefs in their business activity
- working systematically on development of measures for building the capacity and infrastructural support for all subjects of social entrepreneurship
- development of support centres for social entrepreneurship and development of both regional and national forums for social entrepreneurship
- considering possibility of securing financial means of support for the initial investment into social entrepreneurship and its sustainability in later development phases of entrepreneurial activity
- encouraging the profit sector to become more actively involved in programmes of social employment, both through programmes for co-funding of the non-profit entrepreneurial programmes, and also by securing a market access and giving supervision services to organisations which engage in non-profit entrepreneurship
- encouraging programmes of social employment in public, business and non-government non-profit sectors on local level through public-private partnership
- securing special tax conditions for non-profit entrepreneurship programmes
- calculating and including economic indicators of social economy into GDP calculation
- encouraging networking with related organisations in Europe and the rest of the world (Sočo, 2009).

## **6. BUSINESS CASES OF SOCIAL ENTREPRENEURSHIP**

### **6.1. Dolphin Dream**

- Organisation Dolphin Dream was founded in May 2001 in the Republic of Croatia. Founding of the organisation was inspired by Croatian novel 'Dolphin Dream' by Adrian Predrag Kezele with the aim of achieving high quality cooperation with institutions,

individuals and organisations at home and abroad on projects which promote ecological consciousness, environment protection and sustainable development of the Adriatic Sea, the coast and the islands. The organisation itself was given the epithet social entrepreneurship because it wrestled with the problems of preserving the nature and cultural heritage of continental and Adriatic Croatia. The mission of the organisation Dolphin Dream is, according to them, the journey towards the vision and it is oriented towards:

- uniting citizens of the 'Adriatic' and 'continental' Croatia on projects of protection and conservation of natural heritage of the Adriatic Sea, its coast and its islands,
- social entrepreneurship, humanism and philanthropy,
- protection of sea mammals and other various life forms which inhabit the Adriatic Sea and other seas and oceans of the world,
- effectuating positive and proactive ecological education and development of personal potentials.

The vision of the organisation was presented as an inspired ideal and it is, 'People cannot place themselves above other living beings and life forms but live wholeness in the unity of all existing things.' Sources for financing the organisation are mostly donations by the Ministry of Environmental Protection, Physical Planning and Construction, the Ministry of Maritime Affairs, Transport and Infrastructure, European Union through CARDS Programme, the Embassy of the United Kingdom of Great Britain and Northern Ireland, the Embassy of the United States of America and the Embassy of the Kingdom of Norway. Apart from donations, the organisation is financed by self-financing, i.e. sales centre which sells the Croatian novel 'Dolphin Dream' by Adrian Predrag Kezele, the author who assigned the entire sales income of the novel to the project activities of the organisation Dolphin Dream. Other funds stem from the membership fee paid by the members of the organisation.

Organisation Dolphin Dream was active from 2003 – 2011 on projects called 'SUPPORT THE COLOURS OF THE ADRIATIC 2003 – 2011' with the campaigns: **BLUE** – Preserve blue! **GREEN** – Plant a life! and **WHITE** – To love means to preserve – Take responsibility! This long-running ecological communication programme 'SUPPORT THE COLOURS OF THE ADRIATIC' (2003– 2011) was based on positive consideration of sustainable development and proactive activity in environment protection. By the implementation of the three projects the main purpose was realised, which was to encourage positive communication and change the attitude to natural, but also partly to cultural heritage of the Adriatic region, with the aim of its restoration and preservation. Project activities, i.e. campaigns were marked by the symbolic colour of the activity:

- **blue** - preservation of the sea and of the undersea level,
- **green**- restoration and preservation of continental landscape (both representative of natural heritage), while
- **white** combined natural and cultural heritage and was directed towards the need for restoration and preservation of traditional shipbuilding in Croatia.

The main goal of the multiannual programme was to put a stop to negative trends in dealing with the environment and to encourage positive and responsible consideration of the Adriatic orientation with respect for the system of sustainable development.<sup>1</sup> After 2011 there has been no available information about the further actions of the organisation.

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<sup>1</sup> All information about the association Dolphin dream are being taken from their official website <http://www.dolphindream.org/index.php?mmlID=2&ctgId=11&ctgTplId=38&nav=0>

## **6.2. URIHO – Institution for Vocational Rehabilitation for Persons with Disabilities**

Institution for Vocational Rehabilitation for Persons with Disabilities, or shortened URIHO, has been active since 1996 as a legal successor of the oldest protective workshop in the Republic of Croatia, founded in 1946 in Zagreb under the name 'Ivančica'. The activities of URIHO relate to vocational rehabilitation and employment of people with disabilities. They realise protective employment within frames of manufacturing programmes for textiles, metal, ceramics, leather, millinery, orthopaedics, production of cardboard and printing. Moreover, 51% of the total number of employees consist of disabled people of different categories and profiles. The mission of URIHO is to train and employ disabled people and people who are difficult to employ and to find and create new possibilities for their employment by creating pleasant and stimulating working environment. The latter is achieved by employing people with disabilities in production units suitable to their abilities and preferences and by rehabilitation within the same department by means of envisioned programmes. Their vision is based on their main goal within which they strive to build an acknowledged name for URIHO and its brands in every part of its activity, thus building and maintaining their status, which is the leading position as the most appreciated institution for employment of people with disabilities in Croatia. With the intention of realising this praiseworthy goal, they have also developed a strategy based on high quality of their products and services which fully satisfy their clients' desires and needs. Pertinent to their orientation to quality, URIHO is the first protective workshop in Croatia in possession of an ISO standard; the certificate for quality management EN ISO 9001:2008, awarded for the programmes 'Development and production of clothes and underwear' and 'Production of leather accessories and footwear'. The implementation of the ISO standard is indicative of the continuous advances in the quality of work, innovation, flexibility and contentment of all the involved. URIHO's strategy involves investing in technical equipment of manufacturing units and additional non-manufacturing departments. Apart from investing in technological components, a great value is placed on investing in education and training of their employees, so a system for motivation of all personnel, above all the disabled, has been developed. The accent is set on vocational rehabilitation of people with disability with the aim of developing their social skills and maintaining capability for work. Their range of goods is sold in five retail outlets in Zagreb, through wholesale and in an online shop.<sup>2</sup> URIHO has deserved the epithet of a 'social company' since its activities support employment of vulnerable groups in society and help sensitisation of society, but also the development of the economy as a whole. Long-term clients who have recognised the quality of URIHO's products are: The Ministry of Internal Affairs, Croatian Pension Insurance Institute, Croatian Institute for Health Insurance, Zagreb Holding, Zagreb City Gasworks, Croatian Railways, Croatian Forests, Zagreb International Airport as well as many healthcare institutions of the City of Zagreb and the rest of Croatia.<sup>3</sup>

## **6.3. ACT - Autonomous Centre Čakovec**

Autonomous Centre ACT acts as a non-profit non-government organisation founded in January 2003 and is based in Čakovec. The basic orientation of ACT is development of society and community through informal education, providing information and advising through which social changes in fields of open technologies, social entrepreneurship, philanthropy and media can be encouraged (Sočo, 2009). The organisation has been active in social entrepreneurship since 2005,

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<sup>2</sup> All information about the association URIHO are being taken from their official website <http://www.uriho.hr>

<sup>3</sup> All information are being taken from website <http://www.poslovni.hr/sponzorirani/poslovanje-s-uriho-m-privatnim-tvrtkama-ali-i-javnim-poduzecima-donosi-dvostruku-dobit-288541>

when their first club programmes were started. The idea of gaining additional financial means emerged after the need for achieving financial stability had arisen. The initial entrepreneurial projects included organising courses and workshops, as well as various cultural events in the Club, for which they started selling and charging entrance fee. The means collected by the ticket sale were used to finance projects that could not had been realised due to lack of funds. After introducing activities which made them earn additional means and having recognised the needs of the market, an idea to set up separate companies was born. The turn towards social entrepreneurship and the growth of the organisation itself was motivated by preservation of the organisation and finding ways to obtain financial means in ways alternative to previous sources. ACT has managed to set up four social companies so far: ACT Printlab Ltd, ACT Konto Ltd, Social Cooperative Humana Nova, Centre for Eco-Social Development CEDRA Čakovec. The following is an (a closer) explanation of activities of two of the companies founded by the Autonomous Centre:

- ACT Printlab Ltd is a social company active in publishing, printing and IT founded in 2007. The idea of creating a new company arose as a follow-up to the previous activities of the organisation, which used to provide graphic design services and create websites for other civic organisations, and was therefore a logical direction for choosing the activity of the company. ACT Printlab is specific in that it is primarily directed towards providing services to organisations in the non-profit sector and in that sense they declare themselves a social company. The social component of this company is also reflected in the structure of its employees who predominantly come from marginalized groups or groups which are difficult to employ (e.g. single mothers, long-term unemployed people and the disabled).
- ACT Konto Ltd was founded in 2009. Its scope of activity includes accounting, book-keeping, auditing activities and tax counselling for non-profit organisations. The sole activity of this company has a social purpose. (Vidović, 2012)

Although the Autonomous Centre has set development of social entrepreneurship and its concrete application in practice as its strategic goal, due to difficulties within legal and taxative frames, they do not succeed in covering expenses of their activities on their own. (Sočo, 2009).

#### **6.4. Grameen Bank – the bank for the poor**

Grameen Bank, better known as the bank for the poor, was founded in 1983 in Bangladesh by Muhammad Yunus. This bank, which is the world synonym for social entrepreneurship, started its activity as a small institution. Yunus is also one of the founders of Grameen Trust which continues the heritage and supports the goals of Grameen Bank in microfinancing of various institutions and financing of the poor in order to eradicate poverty. The activity of Grameen Bank is based on unconventional approach without the need for collateral, which means that this entire banking system is based on mutual trust. The activity of this bank is governed by following principles:

- an effort to empower the poor, above all poor women
- holding themselves and their partners responsible for transparency and measurable results, including social and financial results
- celebrating innovations which contribute to life improvement of the poor
- being proactive
- respecting, supporting, promoting and investing in local social entrepreneurs and local population
- respecting the voice, professionalism and integrity of their employees and volunteers.

Grameen Bank provides loans to the extremely poor in rural areas of Bangladesh and it does so without collateral, presenting its loans as an efficient weapon against poverty, and providing conditions for socioeconomic development of the poor who had been outside the scope of banking circles prior to the founding of the Bank. The mission of Grameen Bank is to enable the poor, and above all the poorest, to create a world without poverty. According to the latest available and published data from December 2015, Grameen Bank has 8.81 million borrowers, 97% out of the total number being women. Grameen Bank has a total of 2,568 subsidiaries and provides its services in 81,392 villages, having in this way 97% of the villages in Bangladesh covered. Types of loans that the bank provides are the following:

- investment loans with the interest rate of 20% with a falling base,
- housing loans with the interest rate of 8%,
- student loans with the interest rate of 5%
- loans for homeless people with the interest rate of 0%

According to the Grameen Bank data, an average of 1.5 million dollars of weekly instalments are collected every working day, which means that over 97% of loans are returned, i.e. paid back so the bank has the highest recovery rate of any other banking system. Grameen's business methods have been applied in various projects in 58 countries of the world including the USA, Canada, France, the Netherlands and Norway. Independent studies conducted by the World Bank, the International Food Research Policy Institute and the Bangladesh Institute of Development Studies have confirmed that Grameen Bank has had a positive influence on both its currently poor borrowers, and on the borrowers who had used their loans to rise from poverty. Muhammad Yunus and Grameen Bank have been awarded the Nobel Peace Prize for their general social activities in fighting poverty.<sup>4</sup>

### **6.5. Campo Vivo Colombia**

Campo Vivo Foundation of Yunus Social Business and McCain in Colombia, is an organisation dealing with helping the extremely poor inhabitants in their survival and everyday lives. With the help of Yunus Social Business Foundation, a cooperative was founded whose activity is growing of vegetables and whose aim is to hire the poor in order to help them feed themselves and their families. Another goal is to give the children of the poor a chance for schooling, alongside the chance of getting a job and thus succeeding in life more significantly, compared to their parents who, being extremely poor, did not have this opportunity. The company started its activity with the help of the foundation and has been commercially active on the market ever since. With the low work productivity, they are not able to make any significant profit which would enable them to buy their own farming machines and additionally increase their competitiveness. The concept is based on voluntary work of the poor who are in this way able to make some kind of living, feed their families and school their children. The point is that children should get better education, find better jobs and by doing so break free from the poverty into which they were born. The future of the company is possible with the aid of the foundation; however, without a more significant step towards increasing productivity and competitiveness, it could hardly be called a truly entrepreneurial initiative.<sup>5</sup>

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<sup>4</sup> All information about the Grameen Bank are being taken from their official website  
[http://www.grameencommunications.net/grameen\\_bank/introduction/#](http://www.grameencommunications.net/grameen_bank/introduction/#) , <http://www.grameenfoundation.org/>

<sup>5</sup> All information about Campo Vivo Columbia are being taken from their official website  
<http://www.campovivicolombia.wordpress.com/>



## 7. CONCLUSION

The conducted research presents several recent examples of social entrepreneurship in Croatia and in the world. The idea of charitable work, philanthropy is by all means praiseworthy and it is necessary to direct significant efforts towards trying to diminish immense social differences in the population and trying to make the world a better place for all its inhabitants. The ways to achieve these goals, which were started by relevant groups of people who have the influence and the power to change the consciousness of people that it is good to do good, are commendable. Presumption must be that the entire collective consciousness of mankind should be changed, making all people in the world better than they are today, so that they can make more effort to aid their fellow-people. Throughout its long history, this has also been the teaching of the Church, not only the Catholic Church, but also all other religions which advocate equality and justice among nations. Perhaps such a teaching could enhance efforts for achieving welfare and equality of all humankind, which does not go in favour of the attacks on church itself and distancing from it, and by doing so, separation from the entire concept of social entrepreneurship.

Notwithstanding, our civilisation is moving forward, technological advances are inexorable and more and more elements are being developed which can undoubtedly make living conditions of the entire community better. Such a development of technology would surely not be possible without the entrepreneurs led by desire for extra profit. Such an attitude of a certain number of entrepreneurs is by all means necessary, since the question could be raised as to whether technology would have developed to this extent, had there not been a desire for profit, earnings and wish for an easy life exclusively for oneself. Yet, the 'laissez faire' concept cannot be discarded as heresy. One might call it egoism and selfishness, but the fact still remains that humankind would not have made such a progress had there not been such a way of thinking, just as there will not be any further progress if people would stop thinking in that way in the future.

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## CONSUMER PROTECTION ISSUES IN CROWDFUNDING

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### **ABSTRACT**

*Being an emerging alternative financing model which relies upon raising money from a large number of sources, crowdfunding may take many forms. They range from crowd sponsoring, based on collecting funds from donors in return for either gratification of a project owner, or a symbolic reward such as the possibility of appearing in a crowdfunded movie, to crowd investing and crowd lending which enable investors and lenders to gain financial profit. An important role in crowdfunding is played by various internet platforms which enable the project owners to advertise their project and allow potential contributors to inform themselves on the project and contribute money. While the advantage of this financing model is unquestionable due to the fact that a number of projects in Europe would not have a necessary source of financing without it, there are a number of issues connected to it. As a consequence of the various existing financing models which are further evolving and different parties who take part in crowdfunding, the legal framework for crowdfunding in the European Union and its Member States is not clear at this stage. One of the distinct concerns is the applicability of the EU consumer protection acquis, particularly to contracts concluded at a distance, unfair contract terms, unfair commercial practices and consumer credit. The aim of this paper is to identify the crowdfunding models which may be subject to mentioned consumer protection legislation. While assumption that some contributors could be characterised as consumers appears to be rather straightforward, such characterisation in regard to project owners is unexpected. Additional controversy is related to whether in crowd investing model, investors may enjoy protection as consumers. The analysis of legal sources will include relevant EU directives and where necessary comparative outline of Member States laws through which the directives were implemented into national legislation.*

**Keywords:** *alternative funding, consumer protection, crowdfunding, European Union law*

### **1. INTRODUCTION**

We live in a mass consumer society for many decades (Kaelble, 2004, p. 288) and the consumer protection legislation has been developed as a response to this socio-economic development. Crowdfunding (hereinafter: CF) as means of securing capital for the purpose of financing projects which can be of various types, ranging from private to professional, from start-up to local community action, is yet another business model which has been facilitated by the information technology developments. Motives to support such projects may vary, but it is reasonable to assume that in many cases, especially within the more sophisticated CF models, they are linked to the expectation of securing financial benefit. The purpose of this article is to study the area where consumer protection and CF practices interconnect by analysing the applicability of the European Union consumer protection legislation over the individual relationships within the CF structure. With that in mind, the next section contains the overview of the pertinent EU consumer protection

legal instruments. Further section provides an account of the notion of ‘consumer’ as reduced to its core constituting elements. Final section is intended for discussing the particular roles which are played by parties to the tripartite CF structure in their bilateral relationships (Kunda, 2016, p. 254) in order to identify potential consumers.

## 2. SETTING THE SCENE – RELEVANT EU CONSUMER PROTECTION *ACQUIS*

The necessity of protecting consumer rights to ensure proper functioning of the internal market was recognised early on by the European legislator. Thus, the enactment of the legal instruments aimed at consumer protection commenced prior to being formally declared a regulatory competence of the EU in 1993, as a result of entry into force of the Treaty of Maastricht on the European Union (OJ C 191, 29.7.1992, pp. 1-110). The Treaty of Maastricht introduced into the then Treaty establishing the European Community the provision of Art. 129a according to which the task of the European Community was to contribute to the attainment of a high level of consumer protection (Weatherhill, 2005, pp. 1-19). Up until now, this task evolved into the obligation of the EU to afford a high level of protection to consumer rights (see for instance EU Consumer Policy Strategy for 2007-2013). Consumer protection is one of the shared competences of the EU and Member States pursuant to Art. 4 of the Consolidated version of the Treaty on the Functioning of the European Union. The EU *aquis* encompasses large number of legal instruments which afford substantive law protection to consumers, the following being of particular relevance for the regulation of CF-related activities:

- Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights (OJ L 304, 22.11.2011, pp. 64-88, hereinafter: the Consumer Rights Directive). This Directive sets the information requirements for distance and off-premises contracts, including information about the functionality and interoperability of digital content. It regulates the right of withdrawal in terms of length, standard form, procedure and effects. In addition, it lays down rules on delivery and passing of risk applicable to contracts for the sale of goods as well as certain rules applicable to all types of consumer contracts, such as rules prohibiting the use of pre-ticked boxes on websites for charging extra payments in addition to the remuneration for the trader's main contractual obligation;
- Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts (OJ L 95, 21.4.1993, pp. 29-34, hereinafter: the Unfair Contract Terms Directive), amended by the EU Consumer Rights Directive. The Directive offers protection to consumers against unfair contract terms which has not been individually negotiated (such as in pre-formulated standard contracts) and which, contrary to the requirement of good faith, causes a significant imbalance in the parties' rights and obligations arising under the contract, to the detriment of the consumer. The Directive also requires traders to draft contract terms in plain and intelligible language, whereas ambiguities are to be interpreted *in favorem consumatoris*;
- Directive 2008/48/EC of the European Parliament and of the Council of 23 April 2008 on credit agreements for consumers (OJ L 133, 22.5.2008, pp. 66-92, hereinafter: the Consumer Credit Directive). Under this Directive, creditors are obliged to provide to consumers two essential information: a comprehensible set of information in a standardised form and sufficiently ahead of the conclusion of the contract and also as part of the credit agreement, and the Annual Percentage Rate of Charge in a single figure, harmonised at EU level, representing the total cost of the credit. Additionally, the Directive grants two important rights to consumers: the right to withdraw from the credit agreement without

giving any reason within a period of 14 days after the conclusion of the contract, and the right to repay the credit early at any time;

- Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council (OJ L 49, 11.6.2005, pp. 22-39, hereinafter: the Unfair Commercial Practices Directive). Thanks to this directive it is possible to curb a broad range of online and offline unfair business practices, such as providing untruthful information to consumers or using aggressive marketing techniques to influence their choices;
- Directive 2002/65/EC of the European Parliament and of the Council of 23 September 2002 concerning the distance marketing of consumer financial services and amending Council Directive 90/619/EEC and Directives 97/7/EC and 98/27/EC, OJ L 271, 9.10.2002, pp. 16–24; hereinafter: the Distance Marketing of Financial Services Directive). Two most important consumer rights under this Directive are: the right to obtain pre-contractual information listed in therein and the right of withdrawal from a ‘distance contract’ within 14 days without justification;
- Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (OJ L 165, 18.6.2013, pp. 63–79; hereinafter: the Directive on consumer ADR). Under this Directive obligations are placed upon traders to inform consumers about an ADR entity which covers the trader where the trader has committed or is obliged to use the ADR entity to resolve disputes with consumers; and
- Regulation (EU) No 524/2013 of the European Parliament and of the Council of 21 May 2013 on online dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (OJ L 165, 18.6.2013, p. 1–12; hereinafter: the Regulation on consumer ODR). Under this Regulation traders established in EU are obliged to inform consumers of their e-mail address and of the ODR platform by means an electronic link on their website. Furthermore, traders established in EU, which are engaged in online sales or service contracts and committed or obliged to use an ADR entity to resolve disputes with consumers, are obliged to provide to consumers: an electronic link to the ODR platform in an email, if a commercial offer is made to a consumer via e-mail; and general information about the ODR platform along with conditions applicable to online sales and service contracts.

Apart from these substantive law instruments, consumers are guaranteed protection under the EU private international law instruments which contain provisions the aim of which is to level the playing field by granting a more favourable procedural position to the consumer (Tomljenović, 2005; Lazić, 2014):

- Regulation (EU) No 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (OJ L 351, 20.12.2012, pp. 1-32, hereinafter: the Brussels I bis Regulation). The Regulation assures that the trader may sue consumer only before the place of the consumer’s domicile, while the consumer may sue the trader before the courts of either the trader’s or the consumer’s domicile. There is also a limited option of prorogation of jurisdiction; and

- Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (OJ L 177, 4.7.2008, pp. 6-16, hereinafter: the Rome I Regulation). This Regulation is intended to assure the application of the law of the consumer's habitual residence, whenever there is no parties' choice of law. If parties have chosen the applicable law that law will apply to the extent it does not deprive the consumer of the protection afforded to it under the law of its habitual residence.

The EU consumer legislation generally applies in contractual relationships, the exception among the abovementioned directives being the Unfair Commercial Practices Directive (see Art. 3(1)). For this reason, it is important to highlight that the below discussion is limited to contractual relationships between parties to the tripartite CF structure (Kunda, 2016, p. 256).

### 3. THE NOTION OF ‘CONSUMER’ IN EU PRIVATE LAW

Establishing the notion of ‘consumer’ in EU law is not a straightforward task, given that lack of a single definition and the variations in the wording employed in different legal instruments. Pursuant to Art. 2(1)(b) of the Unfair Contract Terms Directive, Art. 3(1)(1) of the Consumer Credit Directive and Art. 2(d) of the Distance Marketing of Financial Services Directive, consumer is a natural person who acts for purposes which are outside his or her trade, business or profession. The wording slightly differs in Art. 2(1) of the Consumer Rights Directive, Art. 2(1)(a) of the Unfair Commercial Practices Directive, Rec. 18 of the Directive on consumer ADR and Rec. 13 of the Regulation on consumer ODR in which, besides trade, business or profession, the consumer must act outside of his or her craft, as well. In sources of the EU private international law, namely Art. 17(1) of the Brussels I bis Regulation and Art. 6(1) the Rome I Regulation, the consumer is defined as the natural person acting for a purpose which can be regarded as being outside his or her trade or profession.

Regardless of the differences in defining the consumer, consumer *acquis* contains a common core according to which two elements must be satisfied for a person to fall into the ambit of that corpus or rules. First, only natural persons are entitled to consumer protection, and, second, they must act outside of their economic activity (Kingisepp, Värvi, 2011, p. 45).

#### 3.1. Natural person

Under EU law, legal persons cannot be considered as consumers. The requirement that the consumer is the natural person is based on the understanding that only a natural person may be in a position of a weaker party due to his or her weaker economic or social position when compared to that of the trader (Mišćenić, 2016, p. 149). The CJEU case law repeatedly confirms this, one of the earliest example being *Bertrand* (judgment of 21 June 1978, *Bertrand*, C-150/77, EU:C:1978:137), the case which interpreted the provisions of the Brussels Convention of 27 September 1968 on jurisdiction and the enforcement of judgments in civil and commercial matters (Consolidated version OJ C 27, 26.1.1998, pp. 1-27, hereinafter: the Brussels Convention), a legal predecessor to the Brussels I bis Regulation. The CJEU held that Brussels I provisions protecting consumers are not applicable in the case of a sale of goods between businesses.

This standing was later confirmed in *Di Pinto* (judgment of 14 March 1991, *Di Pinto*, C-361/89, EU:C:1991:118). The case concerned the interpretation of the Council Directive 85/577/EEC of 20 December 1985 to protect the consumer in respect of contracts negotiated away from business premises (OJ L 372, 31.12.1985, pp. 31-33, hereinafter: the Directive on Contracts Negotiated outside Business Premises) which has been repealed in 2014 when the Consumer Rights Directive



entered into force. The criminal proceedings were instituted against Mr. Di Pinto because his representatives were canvassing business owners who expressed the intention of selling their business. In the course of proceedings, Mr. Di Pinto argued that business owners cannot invoke national legislation by which the Directive on Contracts Negotiated outside Business Premises was implemented. The CJEU emphasised the importance of narrow interpretation of the term ‘consumer’ by explaining that a normally well-informed trader is aware of the value of his or her business and does not act impulsively. By doing so, it departed from the proposition of the Advocate General Mischo who advocated extension of the consumer protection to businesses when they enter into contracts unrelated to their trade or profession (opinion of Advocate General Mischo delivered on 12 December 1990, in *Di Pinto*, C-361/89, EU:C:1990:462). However, the CJEU further explained that in case of minimum harmonisation directives, such as the Directive on Contracts Negotiated outside Business Premises, the national legislator may extend the protection afforded to consumers even to traders when implementing the directive into national legislation. It must be noted that several Member States did so (Ebers, 2008, pp. 721-726).

In another case (Judgment of 21 November 2001, *Cape and Idealservice MN RE*, C-541/99, EU:C:2001:625), the CJEU further clarified the notion of the consumer while interpreting the Unfair Contract Terms Directive. The CJEU held that companies which concluded contracts for the supply of automatic drink dispensers, which were intended to be used by the companies’ staff, were not covered by the term ‘consumer’, even though the contracts were unconnected to the companies’ trade or business.

### 3.2 Private purpose

Natural persons may sometimes be denied legal remedies envisaged for consumer. This will be the case when a natural person acts for the purposes of his or her trade or professional activity (judgment of 19 January 1993, *Shearson Lehman Hutton v TVB*, C-89/91, EU:C:1993:15). The restrictive interpretation of the notion ‘consumer’ goes to the extent that even natural person who, acting outside of his trade or profession, guarantees repayment of the debt of another person acting as a part of his trade or profession cannot be afforded consumer protection (judgment of 17 March 1998, *Bayerische Hypotheken- und Wechselbank v Dietzinger*, C-45/96, EU:C:1998:111).

The concept of ‘private purpose’ as one of the elements of the consumer contract was discussed before the CJEU for the purposes of the Brussels Convention on several occasions. In one such case, the CJEU established a principle that strict understanding of the concept of consumer requires that even the natural person who enters into contract with the aim of pursuing a trade or business in the future, cannot be regarded as a consumer, despite the fact that he or she may not pursue a professional activity at the present time (judgment of 3 July 1997, *Benincasa v Dentalkit*, C-269/95, EU:C:1997:337).

In determining whether the natural person qualifies as a consumer, contracts concluded for a dual purpose raised particular concern. In these contracts a natural person acts partly for the purposes of his or her trade or profession and partly for his or her private purposes. The CJEU had a chance to clarify the legal nature of such contracts in *Gruber* (judgment of 20 January 2005, *Gruber*, C-464/01, EU:C:2005:32), the case decided under the Brussels Convention. The CJEU established a principle pursuant to which it is not sufficient that private purpose is predominant in order for the contract to be considered a consumer contract; rather the trade or professional purpose has to be so limited as to be negligible in the overall context of the contract. The same principle was included in the Rec. 17 of the Consumer Rights Directive, Rec. 18 of the Directive on consumer ADR and Rec. 13 of the Regulation on consumer ODR.



#### **4. WHO CAN BE CONSIDERED AS A CONSUMER IN CROWDFUNDING?**

The characterisation of a certain party as the consumer depends both on the party's particular characteristics and circumstances in which that party acts and on the CF model. This having been said, it has to be observed that irrespective of the CF model the CFP will never act as a consumer (Kunda, 2016, p. 259). CFP is an online platform which receives applications from the project owners. If it accepts to market the project, it will act as intermediary between the project owner and the funders, its main task being collecting money from funders in favour of the project owner. The CFP relies on its knowledge, knowhow and previous experience while connecting the project owner and funders (Danmayr, 2014, pp. 26-28). Even if the CFP is operated by a natural person, the second condition would not be fulfilled.

##### **4.1. Crowd donations, crowd sponsoring and crowd-preselling**

Turning to the CF models (for a taxonomy see Hemer, 2011, 11-13), the crowd donations, crowd sponsoring and crowd-preselling show certain similarities. Funders contribute money via CFP to a project owner. The project owner either provides a reward, a promotional item or an early version of a product to funders in return for their money. The position of funders may be observed in relationship to the project owner and the CFP. Funders, who are natural persons and who act outside of their trade or profession are considered consumers in their relationship with the project owner, provided that the project owner is a natural or legal person and acts for the purposes of his or her trade or profession. Such relationship is often referred to as a business-to-consumer (B2C) transaction. If the project owner is a natural person acting for his or her private purposes, the contract at issue is a consumer-to-consumer (C2C) transaction and as such not covered by the EU consumer *acquis* (Hondius, 2016, p. 95). However, in majority of cases the project owner, who collects money for his or her project, does so in the context of his or her trade or profession (Kunda, 2016, p. 259). Because CFPs act as traders or professionals, in the relationship between them and funders the latter are considered consumers, provided they are natural persons acting for private purposes.

In the relationships between funders and project owners, the project owners cannot be regarded as consumers. The reason for this is the fact that consumer-to-business (C2B) transactions are not protected under the applicable consumer *acquis*. C2B transactions are the ones in which the consumer sells goods or provides services and the trader is the one buying or receiving them. The Unfair Commercial Practices Directive excludes C2B transactions from its ambit (see the full title of the Unfair Commercial Practices Directive and its Art. 2(1)(d)). In the Consumer Rights Directive the exclusion of the C2B contracts derives from the definition of the sales and service contracts according to which the consumer has to be the buyer or the recipient of the services (Art. 2(1)(5) and (6) of the Consumer Rights Directive). Likewise, in the preamble of the Unfair Contract Terms Directive the specific wording is used identifying the contracts concluded between the seller of goods or supplier of services on one hand, and the consumer on the other. Therefore, in the unlikely case of a project owner who is a natural person, acting for his or her private purposes, the project owner will not be protected by the rights specifically designed for consumers. The Regulation on consumer ODR is applicable to contractual obligations stemming from online sales or service contracts between a consumer resident in the EU and a trader established in the EU where the ADR proceedings have been initiated by the consumer against the trader, whereas the situations in which they are initiated by a trader against a consumer, the Regulation applies in

so far as the legislation of the Member State where the consumer is habitually resident allows for such disputes to be resolved through the intervention of an ADR entity (Art. 2(1) and (2)). The Directive on consumer ADR applies to contractual obligations stemming from sales contracts or service contracts between a trader established in the EU and a consumer resident in the EU, but only to the proceedings initiated by a consumer against a trader (Art. 1(1) and (2)(g)).

#### **4.2. Crowd lending**

In the context of crowd lending, an essential issue is whether the Consumer Rights Directive is applicable. In answering this question, the relationship between the project owner and the funder has to be analysed. In Art. 3(1)(c) of the Consumer Rights Directive a credit agreement is defined as an agreement in which “a creditor grants or promises to grant to a consumer credit in the form of a deferred payment, loan or other similar financial accommodation” whereas the creditor is a natural or a legal person granting credit in the course of his or her trade, business or profession (Art. 3(1)(b)). It follows that the project owner may be characterised as a consumer for the purposes of the Consumer Rights Directive in limited number of cases: if he or she is a natural person acting for private purposes and the funder is acting for the purposes within his or her trade or profession, regardless of the fact whether the latter is a natural or a legal person.

The funder will never be considered as the consumer for the purposes of the Consumer Credit Directive because the consumer has to be the party to whom the credit is granted. The applicability of the Consumer Credit Directive is further limited by Art. 2(2)(h) according to which this Directive does not apply if an investment firm or credit institution lends funds to a consumer for the purposes of investing in a financial instrument regulated by Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC (OJ L 145, 30.4.2004, p. 1, hereinafter: the MiFID), where the company providing the credit would be involved in that transaction. Therefore, if the CFP were authorised under the MiFID and provided credit to funders so that they could invest in the project marketed by that CFP, the Consumer Credit Directive would not apply (ESMA, 2014, pp. 38-39).

It seems that there is no limitation for application of the Distance Marketing of Financial Services Directive, which needs to be observed especially by the CFP which might be involved, in capacity of a supplier or intermediary, in the conclusion of a ‘distance contract’ with a consumer (Crowdfunding in the EU Capital Markets Union, 2016, p. 27).

A final note on the crowd lending concerns the applicability of the Regulation on consumer ODR and the Directive on consumer ADR under the same conditions are in the previously discussed CF models.

#### **4.3. Crowd investing**

The last CF model, crowd investing, generally has to be authorised. This particularly refers to CFPs. There are 4 models of authorisation which are not mutually exclusive and may be combined in certain Member States: 1) authorisation under the MiFID; 2) authorisation under domestic regime under the Art. 3 of the MiFID exemption; 3) authorisation for non-MiFID financial instruments; and 4) authorisation outside the MiFID framework (Crowdfunding in the EU Capital Markets Union, 2016, pp. 19-20). The authorisation model comes along with a more detailed legal regime for the CFPs, thus different capital requirements, conduct of business rules, conflict of interest rules and organisation requirements may apply. Likewise, the investor protection measures

may vary accordingly and may include obligation to carry out a suitability test or an appropriateness test, provide information requirements and risk warnings, carry out due diligence, abide by maximum investable amounts etc. In addition, the issuers of transferable securities as defined in MiFID are subject to prospectus requirements under the Directive 2003/71/EC of the European Parliament and of the Council of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading and amending Directive 2001/34/EC (OJ L 345, 31.12.2003, pp. 64-89) involving approval by regulatory authority and publication.

Besides these special legal regimes deriving from either EU or national law, it is essential to verify whether certain instruments making part of the EU consumer protection *acquis* are applicable. Financial services are excluded from the scope of application of the Consumer Rights Directive (Art. 3(3)(d)). In contrast, the Unfair Commercial Practices Directive and the Unfair Contract Terms Directive do not contain equivalent exclusions. Arguably, the Unfair Commercial Practices Directive might apply if the funders are natural persons acting outside of their trade or profession (ESMA, 2014, p. 37; Crowdfunding in the EU Capital Markets Union, 2016, pp. 19-20). The debate whether this part of consumer protection *acquis* in which there is no explicit exclusion of the matter applies to crowd investing comes down to a single issue – whether an investor may be considered as a consumer. Even though traditionally this is a controversial matter (Čulinović-Herc, 2005), modern tendencies favour extending the consumer protection to retail investors (Cherednychenko, 2010). In the aftermath of the most recent economic crisis, the ‘consumerisation’ of the retail investor, based on interventionist and precautionary approach, is supported by viewing the retail investors as buyers of essential-for-welfare financial services and investment products, rather than risk-takers, asset accumulators and utility maximisers (Moloney, 2012). It seems that the situation in which the MiFID in particular severely neglects private enforcement mechanisms placing the accent on the public enforcement of investor protection rules (Cherednychenko, 2010, p. 423), leaves the door opened for the consumer protective rules to step in.

Moreover, similarly to the situation in the lending-based crowdfunding, the Distance Marketing of Financial Services Directive may also apply whenever a CFP, acting as a supplier or intermediary, is involved in the conclusion of a ‘distance contract’ for a financial services product and engages in ‘business-to-consumer commercial practices’ (Crowdfunding in the EU Capital Markets Union, 2016, pp. 18-23). Again, the Regulation on consumer ODR and the Directive on consumer ADR are applicable in the investment-based crowdfunding under the same conditions as in the previously discussed CF models.

## 5. CONCLUSION

Although a general conclusion on whether consumer protection legislation applies in the context of CF is difficult to make, the study of roles which the parties to bilateral relationships in various CF models play offer sufficient basis for ascertaining that in the simplest forms of crowd donations, crowd sponsoring and crowd-preselling a funder who is a natural person and acts outside his or her trade or profession may be characterised as a consumer. In the context of crowd lending, a project owner may be considered as a consumer under the Consumer Rights Directive but only if he or she is a natural person acting for private purposes and the funder is acting for the purposes within his or her trade or profession. However, the funder may never be considered as the consumer within the meaning of the Consumer Credit Directive because the consumer has to be the party to whom the credit is granted. Furthermore, if the CFP were authorised under the MiFID and provided

credit to funders so that they could invest in the project marketed by that CFP, the Consumer Credit Directive would not apply. While the Consumer Rights Directive does not apply to the investment-based crowdfunding, the Unfair Commercial Practices Directive and the Unfair Contract Terms Directive as well as the Regulation on consumer ODR and the Directive on consumer ADR seem to be applicable, but the end result will eventually depend on the resolution of the doubt whether a retail investor may be considered as consumer. It is submitted that, in the absence of a specific exclusion, the doubt should be resolved in favour of the application of the consumer protection legislation.

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## EXPORT COMPETITIVENESS OF THE CROATIAN ECONOMY

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### ABSTRACT

*Export competitiveness is one of the major indicators of the economic competitiveness and it can be globally monitored both on the level of a country's total export and in particular sectors and products. Small countries like Croatia need to go internationally and tailor their manufacturing to the needs of the world market in order to achieve the minimal level of productivity. In 2002, with its annual GDP growth at 5.2%, Croatia had one of the most dynamic economies among the 26 transitional countries in Central, Eastern and Southern Europe. With a growth rate of -6.9% in 2009, it was among the slowest, even in the group of economically stagnating Balkan countries, and these unfavourable trends remained until 2015. The comparative and competitive advantages of a country are the main factors of the country's inclusion in international trade and a factor of increasing export competitiveness of the economy as a whole. While the possibility of influencing and improving comparative advantage in the short term is relatively low, the competitiveness of a national economy can be increased as a result of properly defined and confirmed macroeconomic policies (trade, fiscal and monetary policy). In this work we have analysed the export competitiveness of the Croatian economy, trying to answer the question: What is the role of the state in increasing export competitiveness of a small national economy like Croatian and what macroeconomic policies the government should use in order to increase exports competitiveness.*  
**Keywords:** *Croatian economy, export competitiveness, international trade, macroeconomic policies, small countries*

### 1. INTRODUCTION

Competitiveness is a central preoccupation of all countries in an increasingly open and integrated world economy, characterized by the tendency of freer trade. It is even more important today in such challenging times for Europe and for the global economy

The comparative and competitive advantages of a country are the main factors of the country's inclusion in international trade and they increase export competitiveness of the economy as a whole. The theory of comparative advantage and its evolution to the term of competitiveness tells us that these are two separate categories and not synonyms. The theory also shows that competitiveness arises from improvements in comparative advantage. Availability, price and quality of natural resources are the factors of comparative advantage. Coupled with strong technology and economies of scale they sustain competitive advantages of a country. While the

possibility of influencing and improving comparative advantage in the short term is relatively low, the competitiveness of a national economy can be increased as a result of properly defined and confirmed macroeconomic policies (trade, fiscal and monetary).

The role of the state in increasing export competitiveness of a given national economy has changed through history. In the era of mercantilism, the state apparatus had an important role in creating the macroeconomic framework and in the implementation of macroeconomic instruments whose only goal was to attain positive foreign trade balances. With the advent of classicists, the role of the state lost its importance and the *laissez faire* thesis was more and more evident, by which the state did not interfere with the economy. The inability of the classicists to solve great economic crises brought a little-known economist to the forefront, who offered a view that was in contrast to that of the classicists. J.M. Keynes insisted that the state must take a role in managing economic growth and that its role must be an active one. Fiscal policies had their success in getting the USA out of the Great Depression of the 1930s and in solving the recessions in 1949 and 1950. However, even during Keynes' four decades of success, monetary policy played an important and supporting role. A strong monetary policy was implemented in order to keep inflation under control. His direction is known as *interventionism* in economics. Therefore, J. M. Keynes and his followers, known as *Keynesians*, support the theory of the crucial role of state interventions during a crisis.

Today, due to liberalisation and globalisation, the role of the state with regard to autonomous management of macroeconomic policies, especially trade policies, has been drastically reduced, especially in small countries like Croatia. However, when conquering markets using price policies the state's role is important in the area of setting the prices of *input* and forming the foreign exchange rate. Prices of raw materials and labour are crucial in manufacturing labour-intensive products such as those produced in Croatia and price competitiveness can be strengthened by weakening the foreign exchange rate. Fiscal policy is also important for price competitiveness, which uses lower taxes as incentive to certain manufacturing branches and lower tax burdens on employees to stimulate labour-intensive manufacturing. The state can provide incentives for export businesses as well as subsidies, even though the legal framework of the European Union and World Trade Organisation has minimised or them.

## 2. THEORETICAL CHARACTERISTICS OF EXPORT COMPETITIVENESS

International trade and especially export are necessary for modern national economies and for the world economy in general and are the main reason why individual countries enter into economic relationships with foreign countries.

The manner in which an individual country can enter the world goods and services exchange is defined by the choice of international strategic orientation. In economic theory, two general options exist (Sach, Larrain, 1993, 576):- *a closed economy or inward orientation* and- *an open economy or outward orientation*. Economic theory supports the option of an open economy since economic growth is achieved by foreign investment and trade. Even theories that are themselves in conflict do not question this law: international specialisation and international trade are a

precondition for achieving economic growth and development. Regarding the necessity of economic relations with foreign countries, we argue that there is no country that could be successfully developed in isolation from the rest of the world. Therefore, no country can survive in autarchy. The degree of dependence on international trade is not equal for all countries. If a country is geographically smaller and economically weaker it is dependent on economic relations with other countries. The country is economically weak, if there is a small market, with small population and low purchasing power. For these countries we use the term *small economy*.

Empirical research has shown that achieving long-term economic growth in a country is of crucial importance for a stable and supportive macroeconomic framework and as a result the basic role of the state is to create a social, economic and legal environment that is conducive to business development. Therefore, macroeconomic policies, including monetary policies, affect the total economic growth of a country. They are a necessary requirement for long-term sustainable growth and development and act as catalysts for structural change.

### **2.1. Factors influencing the export competitiveness**

The concept of competitiveness has different aspects. It is possible to differentiate between macroeconomic and microeconomic concepts. Microeconomic concept of competitiveness is generally defined as the ability of a firm to increase in size, market share and profitability. Macroeconomic concept refers to the competitiveness of the country or economy. At the same time it has to be remembered that it is enterprises and industries that sell their products on the world market, and not countries. The competitiveness of the firms is also strongly influenced by country-specific factors for example infrastructure, legislation etc (Clark, Guy 1997). Export competitiveness of the firm is connected to several factors, for example: productivity, production costs (capital, labour and material costs), price of the product, innovations and so on. Table 1 presents some of the factors mentioned by different researchers. Some research stresses the role of labour costs and/or production costs in general in the process of gaining the export competitiveness. The price of labour differentiates between countries more than the price of capital and materials since labour is considered to be more immobile than capital and materials. Other factors of export competitiveness such as productivity, innovations and/or quality of the products are becoming more important, since export based only on low labour and/or production costs is not sustainable. It could be seen from Table 1 that McGeehan mentioned the role of innovations as early as 1968.

*Table following on the next page*

Table 1. Factors influencing the export competitiveness

Author(s)	Labour cost	Production cost	Product -tivity	Price	Quality of factors and/or products	Innova-tions	Economic and political environment
Ark 1995		X	X		X		
Carlin, Glyn, Reenen 2001		X	X	X	X		
Clark, Guy, 1997		X		X	X	X	
Drake 2003	X		X			X	X
Durand, Simon, Webb 1992	X	X		X	X	X	X
EIROnline 2003	X		X				X
Fagerberg 1988		X				X	
Golub, Edwards 2003	X						
Hinze 1998	X		X				X
McGeehan 1968	X	X	X	X	X	X	X
Porter 1990		X				X	X
Rosselet-Mc Cauley 2003			X				X
Turner, Golub 1997	X						

Source: Compiled by the authors based on [www.emselts.ee/konvertsids/ems2006/.../Janno\\_Reiljan.pdf](http://www.emselts.ee/konvertsids/ems2006/.../Janno_Reiljan.pdf)

Besides the factors which are partially control able by firms, the factors outside the reach of the firms are also mentioned. For example the role of country’s economic and political environment, the existence of infrastructure and investments in human capital. The last one is an important precondition for innovations. (Porter 1990a) The sustainability of competitiveness is defined as achievement and preservation of competitiveness in the long term (Hoffmann 2000). Usually the international competitiveness increases with low level of production costs, but this kind of competitiveness is not constant. If an industry or a firm concentrates only on how to lower production costs, changes in markets could remain unnoticed and the industry or firm may be late to react to these changes. (Bartels, Pass 2000) To achieve the sustainable competitiveness, important aspects besides production costs are also adequate reaction to market changes, increase

in productivity and exploitation of innovations in production and in marketing. Important preconditions are research and development programs and human capital.

## **2.2.Comparative and competitive advantages – factors for strengthening the export competitiveness of national economies**

The comparative and competitive advantages of a country are the main factors of the country's inclusion in international trade, at the same time increasing the export capability of the country and its entire economy. They also represent the key segments of neoclassical economic theory. This all began with Ricardo's *theory of competitive advantage* (Ricardo, 1817, 68) upon whose foundations the international division of labour, international specialisation and in the end, all of international trade lie.

Samuelson was the first theorist to introduce the dynamic approach in approaching comparative advantage as far back as 1941 when he tried to supplement the H-O model by researching the effects of changes in the prices of goods on the prices of production factors. After this Leontief (Leontief's Paradox), Balassa, Krueger and others also gave their contributions, but were not successful in creating a complete and consistent theory which would completely dismiss the static nature of the first versions. (Samuelson, Nordhaus, 2007, 425-430)

In the 1970s and 1980s a special contribution to the development of the dynamic version of comparative advantage was given by the so-called *structuralists* (Scott, Chenery, Taylor, Justman, Teubal) who introduced another production factor (technology), and observed comparative advantage through a process of developing technological infrastructure. (Scott, 1990)

As opposed to comparative advantage, *competitiveness* is a multi-dimensional category which can be viewed from the level of the economy as a whole or from certain branches, industries, sectors or companies.

M. Porter was the first economic theorist who defined the term competitiveness at the macroeconomic level. Since it is every country's goal to achieve a growing and high standard of living for its citizens, an important factor for the full realisation of this goal is the productivity of manufacturing factors. (Porter, 1990, 6). Krugman feels that competitiveness is a microeconomic term and that nations are not companies and cannot compete amongst themselves and that copying competitiveness at the national economy level leads to protectionism and trade wars. (Krugman, 1996, 37) The OECD defines competitiveness as the ability to cope with competition on the world market or the ability to survive on existing markets and win new ones.

This means that it is necessary to differentiate the competitiveness of the national economy from the competitiveness of a company. On the micro level competitiveness is usually equivalent to the company's market success, that is with the dynamic of their market share and position on the quality scale. At the macro level, competitiveness is a wider concept that includes growth, quality of life and productivity. The link between micro and macro competitiveness becomes visible when we note how improvements in quality of life and standard of living are important for a national economy to generate income on the foreign market, which is only possible with competitive products.

From the discussed theories of comparative advantage and their evolution, as well as from the idea of competitiveness, it can be concluded that these are two separate categories and not synonyms. Competitiveness arises from comparative advantages and improves them. Availability, price and quality of natural resources determine comparative advantages of a country, and coupled with modern technology and economies of scale maintain its competitive advantages.

### 3. ANALYSIS OF THE EXPORT COMPETITIVENESS OF THE CROATIAN ECONOMY

Export competitiveness is of particular importance for scientists, economic policymakers and business people in small and open economies like Croatia. The pressure of international competition on domestic market in these economies requires companies to seek the key to their survival in competing on the other countries' markets. In addition, the limited size of domestic market implies that at a certain moment national borders present the barrier to growth of these companies so they are forced to go on international markets. The exporters' competitiveness in small and open economies is also important for their industry and national prosperity. Revenues generated through export are an important source of import payments for these economies. Participation on international markets leads to the vertical and horizontal spill-over effects through which export companies acquire knowledge and skills necessary for improvement of their competitiveness, which they can apply on domestic market. In that way they improve the competitiveness of their industries and, ultimately, the national competitiveness.

In 2002, with its annual GDP growth at 5.2%, Croatia had one of the most dynamic economies among the 26 transitional countries in Central, Eastern and Southern Europe. With a growth rate of -5.8% in 2009, it was among the slowest, even in the group of economically stagnating Balkan countries, and these unfavourable trends remain until 2015. However, it would be incorrect to blame only the recession for the fall of the GDP and lower export competitiveness. Croatian exporters argue that their biggest problem is the overvalued exchange rate for the kuna, which made all domestic products significantly more expensive than imported products. In such a situation it is difficult to find capital for greenfield investments or direct foreign investments which would positively affect the Croatian economy in the long term. Therefore, the Croatian economy is still not sufficiently competitive and, as a result, is not capable of exporting. This, in turn, results in the growth of the foreign trade balanced deficit, budget deficit and above all, growth of foreign debt. None of these problems can be solved in the short term, which means that the state's macroeconomic policies must be geared towards increasing exports and above all towards development.

Croatia was included in the Global Competitiveness Index for the first time in 2002 and based on this inclusion the competitiveness of the Croatian economy was measured by internationally-accepted standards and compared with the rest of the world. In the Global Competitiveness Report for 2002-2003, issued by the World Economic Forum in Davos, Croatia found itself ranked 58<sup>th</sup> among 80 countries on the Growth Competitiveness Index, and 52<sup>nd</sup> on the Business Competitiveness Index. In 2005 a third index was introduced, the Global Competitiveness Index, by which Croatia was ranked 64<sup>th</sup>. According to the Report for 2006, Croatia's global competitiveness was significantly improved and the state moved up thirteen places on the ranking (from 64<sup>th</sup> to 51<sup>st</sup>). Croatia has not improved its position on the World Economic Forum's competitiveness ranking since 2005.

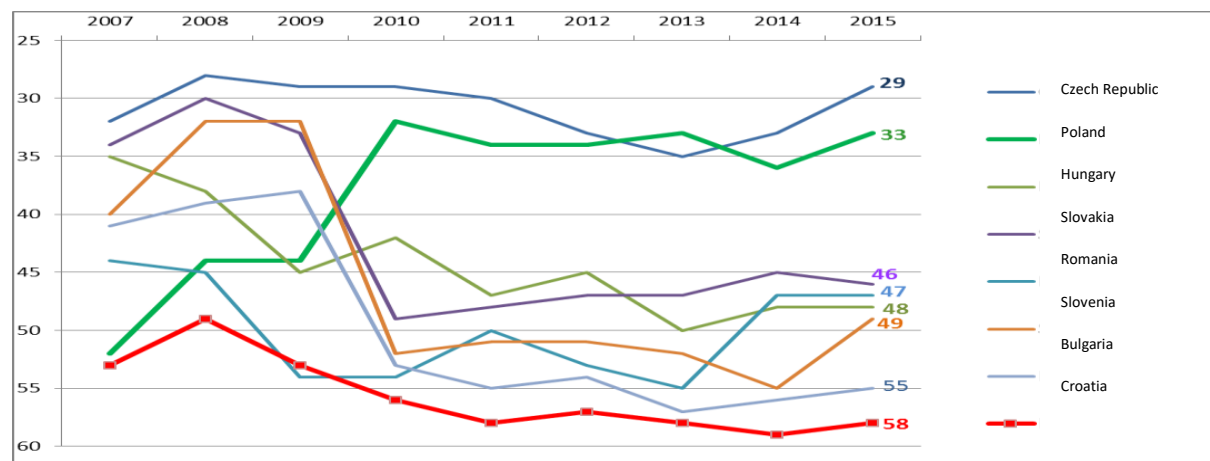
Nevertheless, since its independence Croatia has largely failed to overcome the inherent weakness and challenges of the export sector, characterized its small size, narrow base in terms of the number of exporters, unfavorable ratio of products and services and inadequate technological level. Only one in eight Croatian entrepreneurs generates revenue from foreign markets (Croatian Chamber of Economy, 2014).



### 3.1. Competitiveness and trade between Croatia and foreign countries

Yearbook of world competitiveness IMD wakens interest in the business and political community because it measures how well countries manage their resources and competencies in order to facilitate creation of long-term value. Methodology of IMD is based on an analysis of four factors of competitiveness: economic performance, efficiency of public sector, effectiveness of the business sector and infrastructure, as well as five indexes for each area.

Figure 1. Ranking of competitiveness of Croatia and other countries

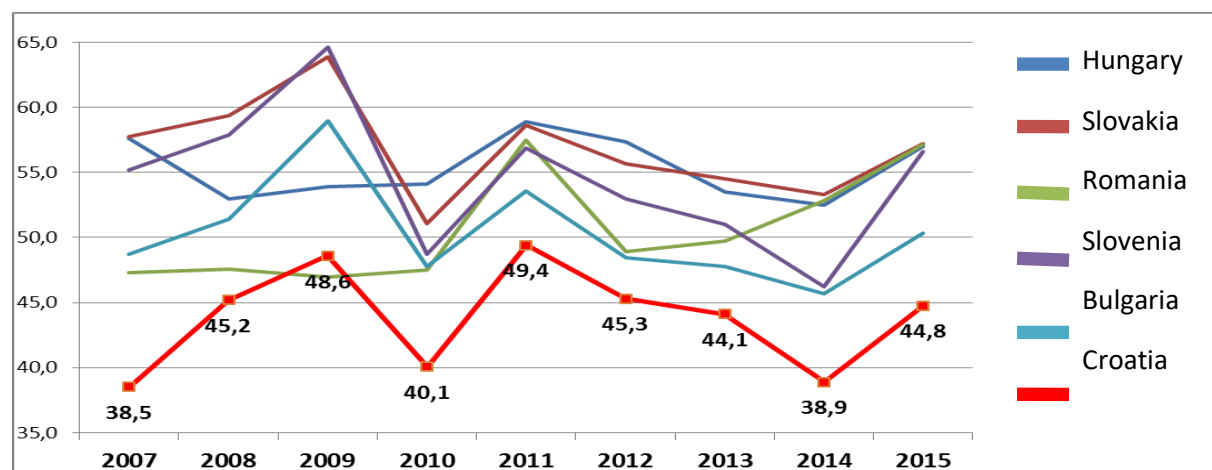


Source: <http://www.konkurentnost.hr/IMD> World Competitiveness Yearbook 2015.

Figure 1 shows competitiveness of Croatia in relation to other countries it was compared with. In addition, the chart shows movements in the ranking of competitiveness in the period from 2007 to mid 2015. Based on this results it is evident that Croatia recorded improvement of the position in this period. In 2008, Croatia was followed by six countries (Indonesia, Argentina, Mexico, South Africa, Ukraine and Venezuela), and in 2014 only by Venezuela. Realistically, in 2015 the position of Croatia improved by two places which led to its higher position in the competitiveness rankings, in front of Venezuela, Argentina and Ukraine. However, one place in front of Croatia was taken by the newly included Mongolia, so nominally Croatia moved up the ladder by only one place.

*Figure following on the next page*

Figure 2. The competitiveness of Croatia and other countries



Source: <http://www.konkurentnost.hr/IMD> World Competitiveness Yearbook 2015

In addition to the overall position in the rankings, Figure 3 shows and compares the dynamics of the final assessment of competitiveness between Croatia and selected countries, with the most competitive country in the world rated with grade 100 (United States). It is clear that the assessment of the competitiveness for Croatia significantly improved in the period from 2006 to 2009, while in the period from 2011 to 2014 it recorded a continuous decline in competitiveness. However, in 2015 the improvement is noticeable and is very similar to shifts of other countries that Croatia used to be compared with. This means that level of final ratings remains well below 50, while 4 of 5 other countries have comparative assessment at 57.

Figure 3. Merchandise trade of the Republic of Croatia with foreign countries (billion. £.), 2010-2014

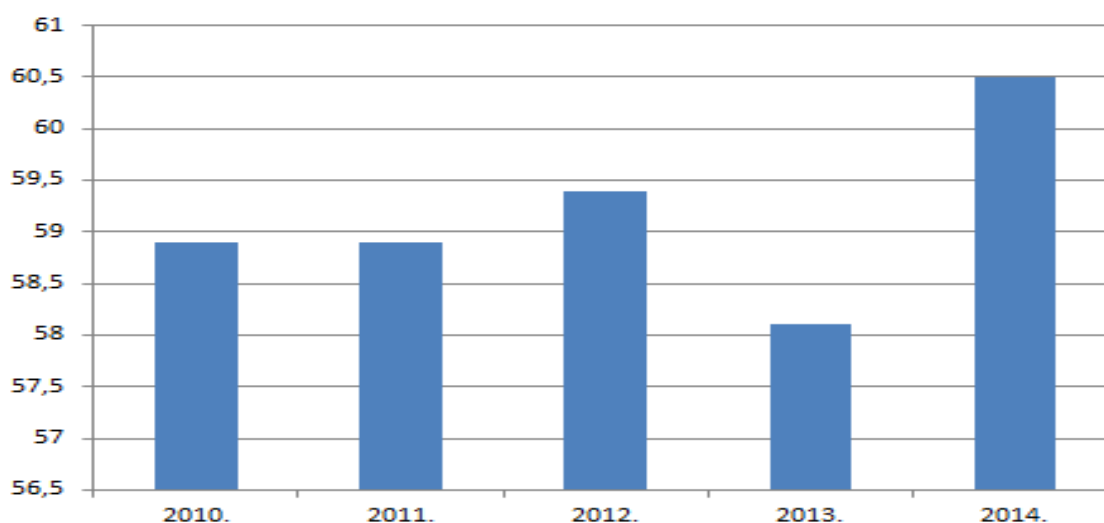


Source: Compiled by the authors, according to the CBS databases

Figure 3 shows the results for merchandise trade between Croatia and foreign countries in the period from 2010 to 2014. Results in 2010 amounted to 64.9 billion Croatian kuna in favor of export, while import stood at 110.2 billion Croatian kuna.

In 2011, exports reached 71.3 billion Croatian kuna, and import 121 billion Croatian kuna. Furthermore, in 2012 rise in export was recorded, amounting to 72.4 billion Croatian kuna, while import also grew to 121.9 billion Croatian kuna. In 2013, export continued to grow and totalled 72.6 billion Croatian kuna, while import was 125.1 billion Croatian kuna. In 2014, exports continued to grow with the highest increase recorded in the manufacturing industry.

Figure 4. The coverage of import by export for Croatia (%), 2010-2014



Source: The systematization of the author, available at: <http://www.dzs.hr/>

Figure 4 shows the results of coverage of import by export expressed in percent ratio. In 2010, the export-import ratio was 58.9%, as in 2011, while in 2012 the export-import ratio increased to 59.4%. In 2013, the decline of 58.1% was detected. However, in 2014, the best result was achieved in the given period with a trade balance of 60.5%. The coverage of import by export in 2014 was 60,5%, which is 2.4 percentage points more than in 2013.

The value of export in Croatian kuna increased by 8.7% in 2014 when compared to 2013, and the growth was significantly influenced by Croatia entering the European Union. On the one hand this growth was due mainly to the complete abolition of customs barriers, while on the other the changes were made in the methodology of tracking merchandise trade. Therefore a country of departure, not the origin of goods is used to monitor the value of exports for the trade within the EU, as is the case of all trade covered by the Intrastat forms.

### 3.2. The importance of export competitiveness for Croatia

In conditions caused by economic crisis which Croatia currently experiences, export competitiveness is one of the most important levers of its total recovery. Export creates new jobs, increases the gross domestic product (GDP), reduces the deficit of the current account, increases

foreign exchange reserves and improves the competitiveness of the country by adopting and developing new knowledge and technologies. Only the export orientation can guarantee competitiveness and long-term sustainable economic growth for a small country with high levels of unemployment and foreign debt. Tourism also provides a significant space for future sale of domestic goods and services. Croatian exporters are also the healthiest segment of the Croatian economy. They employ half of the employees in all businesses, and generate 65 percent of total sales profits, even though only 13 percent of companies in Croatia export. Furthermore they invest as much as 70 percent of total assets in development.

In the last 20 years our country has recorded a constant deficit in foreign export, where the import of goods has been twice the export. The share of Croatian export of goods and services in GDP in the last five years has ranged from 37 to 43 percent.

On the other hand, the countries of central Europe have had significantly higher share of export of goods and services in GDP in the same period. According to the World Bank in Slovakia it has ranged from 71 to 89 percent, in the Czech Republic from 64 to 78 percent, and in Hungary of 81 to 94 percent.

Croatian products are mainly low value-added and can not be compared with the products of technologically developed countries that have invested a lot more of knowledge and technology in them. This is confirmed by the fact that Croatia is in the 37th place, among 124 countries ranked by production complexities, and that only 6.4 percent of Croatian exports are in the first, the most complex category of production, while 65 percent are categorized as of the lowest level of production complexity – in the fourth, fifth and sixth category.

In the entire period since independence the export has been lagging behind, even compared to the period of the eighties. Thus, the share of products of medium and high level of processing in 1987 amounted to 67 percent, while in 2010 it amounted to only 28 percent of total exports.

According to the analysis of the European Commission (EC), Croatia is considered one of the "moderate innovators with a below-average effect" within the countries of EU. The challenge is even greater due to the fact that the world is entering the third technological revolution dominated by modern and sustainable production capacities such as 3D technology.

The reasons for the weakness of the Croatian exports are multiple, primarily related to the de-industrialization of the economy, lack of competitiveness resulting from high cumulative increase in prices of domestic inputs, low investment in research and development of work, the fragmentation of entrepreneurial structures, poor connections between direct investments and export programs, lack of opportunities in financing, unorganized appearance in foreign markets and extended deep economic crisis in Europe.

### **3.3. Macroeconomic policies to increase export competitiveness in Croatia**

In order to increase the export competitiveness in Croatia it is necessary to use a combination of trade, fiscal and monetary policy. In the Government Export Action Plan 2014-2015 the following measures are listed:

#### *To relieve the financing of export*

For many years, which is especially evident with the global financial crisis, capital markets have been shallow and illiquid and therefore have not offered alternative forms of financing businesses. Considering the current state of the economy it is not expected that the interest of investors will

grow in a shorter period of time, so the "migration" of capital from traditional forms of conservative investments such as bank deposits in other forms can be achieved only by strengthening the business climate and by the intensification of investments, which will certainly be recognized by the investors on the market..

The goal is to create opportunities for lower cost financing of businesses, to reduce paperwork and partly to reduce the high collateralisation of loans, which is currently the case. It is necessary to strengthen the financial support aimed at finding appropriate models which are eligible for credit institutions, but also in line with the objectives of monetary policy and fiscal policy (particularly in the process that relates to the procedure in case of excessive deficits and significant fiscal adjustment).

*Stimulate a change in the structure of exports*

Looking at the structure of Croatian export it is evident that there is only a small part of products with high complexity and that unfavorable ratio of the share of industrial products and the share of primary products exists. Weak industrial production, low level of technology and innovation and low investment in research and development are the main causes for this situation. The overall level of spending on research and development in 2012 reached 0.75 percent of GDP, and the main target for Croatia is to achieve the level of 1.4 percent by 2020. To change the structure of export it is essential to revitalize the tradable sector through the adoption of the Industrial Strategy of Republic of Croatia 2014-2020, Smart specialization strategies and a Strategy to encourage innovation in Croatia 2014-2020, as well as to orientate towards the products with high technology and added value.

*Develop appropriate and sustainable models of fiscal support in order to strengthen the export sector*

This activity should encourage public-private dialogue that will propose a model for the elimination or reduction of negative fiscal impacts on economic activity in the export segment. Possible modalities for supporting exporters are also being discussed, as well as the reduction of taxes and parafiscal (non-tax) burden on income from work. The objective is to reduce unit labour costs, a key determinant of a country's export competitiveness.

*Put the emphasis on strategic export markets and strategic export industry*

Only the usage of specific comparative advantages of the country as well as the implementation of smart specialization can lead to excellence and recognition of Croatian goods and services on the international market.

#### **4. CONCLUSION**

The analysis of the export competitiveness of the Croatian economy has shown that the Croatian economy is highly integrated into the global economy through the international trade. In a relatively short period, trade integration of Croatia has approached the levels that would be expected given their proximity to the EU markets.

However, the concept of the Croatian economy has so far been based on growth whose foundations are imported goods and foreign capital, resulting in constant high current account deficit of the balance of payments. The shift towards surplus in 2013 and 2014 was only a consequence of the closure of the import channels and foreign capital during a general economic crisis: there was no deficit in trade of goods, services and capital with foreign countries, but there was also no growth in economic activity.

Export competitiveness of the Croatian economy is low, it does not follow the dynamic of total world demand and as a result there are oscillations in export competitiveness as well as stagnation

of the real exports. Export propulsion of the goods sector of the Republic of Croatia is extremely low, stagnating and falling while import dependence is ever greater and more emphasised. Thus from the aspect of economic growth and development economic relations between Croatia and foreign countries can be graded as negative. The reasons for stagnation and lack of competitiveness of Croatian exports on the world market are the following: low level of productivity, lagging behind in technological development, inefficiency of domestic and foreign investments in the real sector, inadequate level of education and little investments in research and development, unsuitable and disincentive tax policies, high interest rates on long-term capital which discourages investments, and an unrealistic exchange rate or more precisely an overvalued kuna.

Small countries like Croatia need to go internationally and tailor their manufacturing to the needs of the world market in order to achieve the minimal level of productivity, much more so than large countries. Therefore, it is quite clear that without a change in the economic concept, which should rely on the production and export requiring an increase in competitiveness and on structural reforms, there will be no expansion of economic growth and development of the Croatian economy.

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## INNOVATIVENESS IN THE POLISH FINANCE SERVICES SECTOR

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### **ABSTRACT**

*Financial services are a broad category of services related to money and capital circulation. The Central Statistical Office of Poland (GUS – a government institution that gathers and publishes statistical data) divides financial services into three main divisions: 64 – Financial service activities, except insurance and pension funding, 65 – Insurance, reinsurance and pension funding, except compulsory social security, and 66 – Activities auxiliary to financial services and insurance activities. Each of these types has its own level of innovativeness as concerns products, processes, organisation and marketing. The goal of this article is to show the character and scope of innovativeness in Polish financial institutions, as well as their ways of achieving it, and to try and evaluate the level of innovativeness of financial services entities in Poland between 2008 and 2012. Research methods used are an analysis of literature on innovation and banking, an analysis of secondary data available on websites of chosen financial institutions and in periodicals on the subject, and a comparative analysis of statistical data from the GUS “Reports on innovative activities of enterprises” between 2008 and 2014. An analysis of statistical data from the sector shows that financial services are one of the most innovative branches of Polish economy. Product and process innovation is the most important (except for type 66, dominated by organisational innovations). During the period analysed, the number of marketing innovations implemented by financial institutions dropped considerably, except for type 65, which noted a small increase: after a drop in 2010-2012, the level was back up and matched the state from 2008-2010. An analysis shows that among all the enterprises of the Section K (financial and insurance services in GUS classification), type 65 – Insurance, reinsurance and pension funding – is the most innovative. The enterprises of type 64 – Financial services, insurance and pension excluded – which are the most numerous, are less innovative.*

**Keywords:** *financial services sector, innovativeness, financial innovation*

### **1. INTRODUCTION**

The modern financial sector is highly competitive, obliging enterprises to seek out advantage over one another. At the same time, financial institutions function in highly unstable conditions, which changes originating in the economy itself, as well as technology, society and culture or demographics. This obliges the financial institutions to seek out new sources of competitive advantage, and to react flexibly to change. Innovation – meaning new products, processes, organisation or marketing methods – give a chance to surpass the competition. It should also be noted that clients of financial institutions are increasingly educated, acquainted with new technologies, and mobile, and have rising expectations of a financial offer and its use. Innovativeness thus becomes mandatory, as finding new clients and meeting their needs becomes possible through constant upgrading the offer and methods. The goal of this article is to show the character and scope of innovativeness in Polish financial institutions as concerns products, processes, organisation and marketing, and to try and evaluate the level of innovativeness of financial services entities in Poland between 2008 and 2012. Research methods used are an analysis of literature on innovation and banking, an analysis of secondary data available on websites of chosen financial institutions and in periodicals on the subject, and a comparative

analysis of statistical data from the GUS “Reports on innovative activities of enterprises” between 2008 and 2014.

## 2.. FINANCIAL INNOVATION – TRAITS AND TYPES

The term "innovation" was introduced to economics by J. A. Schumpeter, who gave it several possible meanings (Schumpeter, 1960, p. 104):

1. introducing a new product that clients had not seen before, or a new type of a product
2. introducing a new production method, heretofore not used in the field
3. opening a new market, one where a given type of industry of a given country was not active before
4. obtaining a new source of material or intermediate products
5. introducing new organisational structures in a given field

Initially, innovation was primarily technical and was a natural consequence of technology progress. This understanding of innovation evolved together with world economies. Ph. Kotler defined innovation as a good, service or idea, that was considered new by someone (meaning it could have existed before, but were still innovative for whoever came across them for the first time) (Kotler, 1999, p. 322). P. Drucker also considered innovation more of a social and economic phenomenon than a technical one, since he defines innovation as a change of values and meeting the needs of customers through use of specific resources (Drucker, 1992, p. 42) and also as an idea, action or thing, that is qualitatively new compared to those used before (Drucker, 2004, p. 35). The international guidelines on the definition of innovativeness, as well as on gathering and interpreting statistical data pertaining to innovations can be found in the Oslo Manual - Proposed Guidelines for Collecting and Interpreting Technological Innovation Data (OECD & Eurostat, 2005), a result of cooperation between OECD and Eurostat. It defines innovation as implementing a new or significantly improved product (merchandise or service) or a process, a new method of organisation in economic practice, organisation of work space or of relations with entourage (OECD, Eurostat & Ministerstwo Nauki i Szkolnictwa Wyższego, 2008, p. 48). The OECD lists **four main types of innovation** in the Oslo Manual (OECD & Eurostat, 2005, p. 19 and 50) :

1. product innovation – implementing significant changes in the traits or uses of products or services
2. process innovation – implementing significant changes in production and supply methods
3. organisational innovation – implementing new organisation methods
4. marketing innovation – implementing new methods of marketing into product design, packaging or manufacturing, as well as marketing communication, product distribution or prices.

Financial services are a broad category of services related to money and capital circulation. They are offered by such institutions as banks, insurance companies, pension funds, leasing firms, investment funds, brokerage firms and others. Innovation pertaining to financial services is often called financial innovation. **Financial innovation** can be seen

1. narrowly – as new solutions for financial instruments (completely new financial instruments, combining several traditional financial instruments, modifying those or finding new uses for them, new financial techniques or services etc.)
2. broadly – as new solutions in any element of the financial system (within a market, an institution, operation or financial regulations) (Błach, 2011, p.21).

Financial innovations are distinct from production innovations in many ways. These distinctions are listed in Table 1. They are based on an intangible medium (money), are created through a personalised calculation of income and cost of financial institutions, and on an evaluation of their effectiveness and competitive position.

*Table 1: Characteristic traits of financial innovations (Pyka 2013, p.255)*

<b>Distinguishing criteria</b>	<b>Traits of financial innovations</b>
Entity implementing innovation	Commercial banks, credit institutions, financial mediation institutions, insurance companies, investment and pension funds, hedge funds
Goal of the innovation	Increasing profitability
Cost of the innovation	Current value of the expected income from investment
Effect of the innovation	Increased risk in speculative transactions, increasing globalisation of the banking market (long-term)
Object of the innovation	Deposits, loans, securities, and derivative instruments
Medium of the innovation	Intangible

The characteristic traits of financial services are, among others, their intangibility, the fact that the service and consumption happen at the same time (which means the service creation phase and service using phase cannot be separated), and thus the client's participation in its creation, the fact that consumption happens over time, and the fact that the services cannot be separated from the staff providing it. (Bednarska-Olejniczak, 2011, p. 15-17) All this means that the distinction between the product and process is blurred, further obscuring the difference between product and process innovation.

### **3. INNOVATIVENESS OF FINANCIAL INSTITUTIONS IN POLAND BETWEEN 2008 AND 2014.**

The financial services sector is one of the most rapidly growing sectors of the Polish economy. By the end of 2014, there were 64 commercial banks active in Poland, including 28 branches of credit institutions, 565 cooperative banks, 2 bank associations, 50 credit unions, 57 insurance companies, 676 investment funds, 12 open pension funds and 54 brokerage entities. (NBP, 2015, p. 19). Over the analysed period, the banking, insurance and pension sector not only consolidated, but saw a rapid increase in the number of operating investment funds (systematically, from 319 institutions in 2008, to 676 in 2014). The Central Statistical Office of Poland (GUS – a government institution that gathers and publishes statistical data), which periodically scrutinises the innovativeness of Polish enterprises, divides services into 14 divisions (following the Polish Classification of Activity). Three of these divisions pertain to financial services: 64 – *Financial service activities, except insurance and pension funding* (this includes commercial banking), 65 – *Insurance, reinsurance and pension funding, except compulsory social security*, and 66 – *Activities auxiliary to financial services and insurance activities*. The percentage of financial enterprises that declared implementing specific types of innovations over the 2008-2014 period is presented in Table 2.

Over the analysed period, the percentage of innovative service enterprises among all enterprises was as follows: 12.8% in 2008-2010, 12.4 % in 2010-2012, 11.4% in 2012-2014. The percentages for manufacturing enterprises, over the same period, were 17.1%, 16.5% and 17.5% respectively. Service companies are therefore less innovative than manufacturing companies overall, and

although both sectors show a decline between 2008 and 2012 (possibly a reflection of the global depression), between 2012 and 2014 manufacturing companies showed a growth in innovativeness, while service companies continued to decline. (GUS, 2011, p. 27; GUS, 2013, p. 34; GUS, 2015, p. 36).

*Table 2: Innovativeness of financial institutions in Poland between 2008 and 2014, sorted by types of innovation (in %) (Bednarska-Olejniczak, 2016, p. 284)*

Description	2008-2010	2010-2012	2012-2014
<b>64 – Financial service activities, except insurance and pension funding</b>			
Product innovation	29.0	21.8	17.7
Process innovation	25.5	23.8	19.0
Organisational innovation	22.1	21.0	11.3
Marketing innovation	23.0	20.8	13.4
<b>65 – Insurance, reinsurance and pension funding, except compulsory social security</b>			
Product innovation	46.3	48.6	42.3
Process innovation	47.6	51.4	56.3
Organisational innovation	46.3	35.1	36.6
Marketing innovation	46.3	39.2	46.5
<b>66 – Activities auxiliary to financial services and insurance activities</b>			
Product innovation	10.3	8.0	6.5
Process innovation	15.1	10.0	9.4
Organisational innovation	20.6	15.2	13.3
Marketing innovation	20.6	8.8	10.9
<b>All types of service companies</b>			
Product innovation	7.9	7.0	6.8
Process innovation	10.0	9.1	8.4
Organisational innovation	15.2	10.5	9.7
Marketing innovation	15.5	11.1	7.9

In every scrutinised period, the insurance, reinsurance and pension funds division was the most innovative among the service industries (61% in 2008-2010, 64.9% in 2010-2012 and 64.8% in 2012-2014). (GUS, 2011, p. 27; GUS, 2013, p. 34; GUS, 2015, p. 36) This was true for all types of innovation. An analysis of statistical data shows that in 2008-2014 the amount of enterprises from division 65 implementing organisational innovations had declined (from 46.3% to 36.6%), but an increase was noted for process innovation (from 47.6% to 56.3%). Marketing innovations, after a decline in 2010-2012, were back to their previous level of 46.5%. The 64 division (*Financial service activities, except insurance and pension funding*), the most numerous one, was less innovative, with statistical data showing a steady decline in all types of innovation in that group. Over the first analysed period, product innovation was in the lead, but over time lost to process innovation. The least innovative group is the 66 division (*Activities auxiliary to financial services and insurance activities*), where organisational innovations is in the lead, but still the percentage of companies implementing it declines steadily (as it does for product and process innovation). The percentage of companies from division 66 that implement marketing innovation, however, rose by 2.1% in 2012-2014 after a dramatic drop in 2010-2012.

### 3.1 Product and process innovation

According to the OECD definition, **product innovation** is implementing significant change to the qualities or use of products or services. This includes completely new products or services, as well as those which have been significantly improved. This improvement in turn may concern technical characteristics, components and materials, software included, ease of use or other functionalities (OECD, Eurostat & Ministerstwo Nauki i Szkolnictwa Wyższego, 2008, p. 19 and 50). **Financial product innovation** is usually defined in literature as:

1. completely new solutions or traditional instruments which have new elements introduced as means of improving their fluidity, their potential uses, and their suitability to the situation
2. substitutes of traditional instruments that improve the situation of their users
3. instruments that cannot be easily ascribed to a single segment of the financial market
4. instruments that can be used as means of security against changing market parameters
5. complex instruments combining several traditional financial instruments
6. instruments used with new processes, techniques or strategies of financial entities that are using them for the first time. (Błach, 2011, p. 19)

In 2008-2014 there was a steady decrease in the percentage of financial institutions that implemented product innovation (Table 3). This trend was visible in the entire services industry as well. Throughout the whole analysed period, the most innovative group was division 66 – *Insurance, reinsurance and pension funds, with the exception of compulsory social security*. The percentage of product innovation implemented in this sector grew by 2.3% between 2010 and 2012, although it fell to 42.3% in the next period. Division 65 was also the leader in implementing product innovation that was a novelty on the whole market. (14.1% in 2012-2014)

*Table 3: Product and process innovation in Polish financial institutions between 2008 and 2014 (in %)*

*(own calculations based on additional data for GUS, 2011; GUS, 2013; GUS, 2015).*

*(Table continues on the next page)*

Description	2008-2010	2010-2012	2012-2014
64 – Financial service activities, except insurance and pension funding			
<b>Product innovation – total</b>	29.0	21.8	17.7
New on the market	8.9	5.4	3.9
Methods of manufacturing	8.2	7.0	5.1
Methods in logistics, delivery and distribution	8.4	6.9	6.5
Methods supporting processes	22.0	21.5	17.0
<b>Process innovation - total</b>	25.5	23.8	19.0
65 – Insurance, reinsurance and pension funding, except compulsory social security			
<b>Product innovation - total</b>	46.3	48.6	42.3
New on the market	nd	17.6	14.1
Methods of manufacturing	nd	16.2	14.1
Methods in logistics, delivery and distribution	nd	21.6	21.1
Methods supporting processes	nd	47.3	53.5



<b>Process innovation - total</b>	47.6	51.4	56.3
66 – Activities auxiliary to financial services and insurance activities			
<b>Product innovation - total</b>	10.3	8.0	6.5
New on the market	nd	5.0	1.2
Methods of manufacturing	nd	3.2	1.4
Methods in logistics, delivery and distribution	nd	3.6	3.2
Methods supporting processes	nd	7.8	8.4
<b>Process innovation - total</b>	15.1	10.0	9.4
All types of service companies			
<b>Product innovation - total</b>	7.9	7.0	6.8
New on the market	nd	3.4	4.0
Methods of manufacturing	nd	3.0	3.0
Methods in logistics, delivery and distribution	nd	3.5	3.4
Methods supporting processes	nd	6.6	6.1
<b>Process innovation - total</b>	10.0	9.1	8.4

According to the OECD definition, **process innovation** is implementing significant change to production, distribution or support methods for goods and services. This category includes significantly improved methods of creating and offering services, new or significantly improved techniques, facilities and software for auxiliary activities such as supplies, accounting, IT or maintenance (GUS, 2013, p. 40). In financial services, process innovation means, for instance, new solutions for distribution or new forms of sales facilities, new client-user interfaces such as online and mobile banking, text message services, chat rooms, using new forms of service procurement (remote banking, centralising support systems, dividing sales functions from support functions), introducing new technical solutions (support systems for data processing, client information systems). (Marcinkowska 2012, p. 78) In the period analysed, process innovation was implemented most frequently by division 65 (*Insurance, reinsurance etc.*), this being 47.6%, 51.4% and 56.3% of companies implementing them over the three analysed periods respectively. The marked increase visible here was not found in other divisions. In 64, a drop was recorded (from 25.5% in 2008-2010 to 19% in 2012-2014), same as in 66 (15.1%, 10% and 9.4%). The firms from division 65 most frequently implemented new methods supporting processes, and least frequently new methods of product creation. The situation was similar for 64 and 66.

### 3.2 Organisational and marketing innovation

**Organisational innovation** is a new method of organisation (one that was not used in a given institution before), or of dealing with an enterprise's procedures (including knowledge management), in workplace organisation or in outside contacts. Organisational innovations can increase work quality and effectiveness, intensify information exchange, increase a company's learning capability and its use of new information and technology. (GUS, 2015, p. 51) Similarly to product and process innovation, organisational innovations were most often implemented by companies from division 65 (*Insurance, reinsurance and pension funds*) over the analysed period. 46.3%, 35.1% and 36.6% of companies from that division reported implementing organisational innovations over the three analysed periods respectively. The most popular form of innovation was new methods in procedures and new methods of task and credential division (see Table 4). Division 66 had also shown an interest in organisational innovation, although the percentage of firms

implementing them had dropped significantly, from 20.6% in 2008-2010 to 13.3% in 2012-2014. These companies introduced new methods of task and credential division most often. An interesting situation was observed in *Financial services, excluding insurance and pension funds division*. Between 2008 and 2012, organisational innovations were implemented by more than 20% of those institutions. However, in 2012-2014 this percentage dropped to 11.3%. In this group, new methods of task and credential division were most popular as well.

*Table 4: Organisational innovations in Polish financial institutions between 2008 and 2014 (in %)(own calculations based on additional data for GUS, 2011; GUS, 2013; GUS, 2015).*

Description	2008-2010	2010-2012	2012-2014
64 – Financial service activities, except insurance and pension funding			
New methods in functioning	7.2	7.5	5.0
New methods in task and credential division	18.5	16.1	9.5
New methods in outside contact	9.6	9.8	5.1
<b>Organisational innovations - total</b>	22.1	21.0	11.3
65 – Insurance, reinsurance and pension funding, except compulsory social security			
New methods in functioning	nd	21.6	28.2
New methods in task and credential division	nd	29.7	23.9
New methods in outside contact	nd	20.3	14.1
<b>Organisational innovations - total</b>	46.3	35.1	36.6
66 – Activities auxiliary to financial services and insurance activities			
New methods in functioning	nd	4.7	4.8
New methods in task and credential division	nd	6.8	7.3
New methods in outside contact	nd	5.8	4.0
<b>Organisational innovations - total</b>	20.6	15.2	13.3
All types of service companies			
New methods in functioning	nd	4.7	4.8
New methods in task and credential division	nd	6.8	7.3
New methods in outside contact	nd	5.8	4.0
<b>Organisational innovations - total</b>	15.2	10.5	9.7

**Marketing innovation** is an implementation of a new marketing strategy or idea, significantly different from marketing methods used in a given institution before. Marketing innovation includes significant changes in product design, packaging, distribution, promotion, and pricing. The goal of marketing innovation is better fulfillment of clients' needs, opening new markets or new positioning of a product to rise sales. (GUS, 2015, p. 59) Over the analysed period, division 65 was the most innovative in that respect, (46.5% in 2012-2014, Table 5). These companies used new promotion and distribution methods. The other two divisions (64 and 66) were less innovative where marketing was concerned (although still more than the median of service industry in general, which was 7.9% over the latest analysed period). Among the Financial services companies, new techniques and means of promotion were implemented most often, whereas in Auxiliary financial activities, new distribution and sales methods and new techniques and means of promotion dominated.

Table 5: Marketing innovations in Polish financial institutions between 2008 and 2014 (in %)(own calculations based on additional data for GUS, 2011; GUS, 2013; GUS, 2015).

Description	2008-2010	2010-2012	2012-2014
<b>64 – Financial service activities, except insurance and pension funding</b>			
Significant change in product design, construction, or packaging	7.2	9.0	4.6
New techniques or means of promotion	18.2	18.1	11.5
New methods in distribution or sales channels	9.7	9.0	5.0
New methods of pricing	8.2	6.6	4.5
<b>Marketing innovation - total</b>	<b>23.0</b>	<b>20.8</b>	<b>13.4</b>
<b>65 – Insurance, reinsurance and pension funding, except compulsory social security</b>			
Significant change in product design, construction, or packaging	nd	21.6	15.5
New techniques or means of promotion	nd	28.4	33.8
New methods in distribution or sales channels	nd	35.1	33.8
New methods of pricing	nd	18.9	8.5
<b>Marketing innovation - total</b>	<b>46.3</b>	<b>39.2</b>	<b>46.5</b>
<b>66 – Activities auxiliary to financial services and insurance activities</b>			
Significant change in product design, construction, or packaging	nd	2.6	2.6
New techniques or means of promotion	nd	5.8	6.8
New methods in distribution or sales channels	nd	6.0	6.5
New methods of pricing	nd	3.2	3.8
<b>Marketing innovation - total</b>	<b>20.6</b>	<b>8.8</b>	<b>10.9</b>
<b>All types of service companies</b>			
Significant change in product design, construction, or packaging	nd	3.8	3.0
New techniques or means of promotion	nd	6.3	5.4
New methods in distribution or sales channels	nd	5.3	3.3
New methods of pricing	nd	5.3	3.7
<b>Marketing innovation - total</b>	<b>15.5</b>	<b>11.1</b>	<b>7.9</b>

#### 4. CONCLUSION

This analysis of statistical data on the sector shows that financial services are one of the most innovative sectors of the services industry. Product and process innovation is important for the functioning of financial institutions (apart from division 66, where organisational innovation dominates). However, the amount of marketing innovations implemented by financial institutions has diminished over the analysed period (except for division 65, where a small rise was noted: after a drop in 2010-2012, the level was back up and matched the state from 2008-2010. Research shows that of all the enterprises in section K – Financial and insurance activities (as per Polish Classification of Activity of the Main Statistical Office), the 65 division, *Insurance, reinsurance and pension funds, except compulsory social insurance*, was the most innovative. The financial

institutions of the most numerous division, 64 - *Financial service activities, except insurance and pension funding*, were less innovative. The analysed period covered the years during which the financial sector faced the consequences of the global recession that started in 2007 in the USA. The data analysed shows that Polish financial institutions have decreased their innovative pursuits in that period, but the scale of that decrease was not large and financial institutions remained among the most innovative in Poland despite unfavourable conditions.

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## UNEMPLOYMENT AS FACTOR OF INTERNATIONAL MIGRATION

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### **ABSTRACT**

*Unemployment is a serious problem that troubles the majority of countries in the world. The big problem is particularly long-term unemployment. Slovak economy is trying to deal with this problem already for a long time. Despite of the pronounced decline of unemployment rate in recent years, the high long-term unemployment persists in Slovakia. The aim of the article is therefore to evaluate the causes of long-term unemployment in Slovakia and its impact on the economy and on the migration of the labor force in search of work abroad. On the basis of the results of our research, we have found that one of the causes of long-term unemployment is uneven distribution of industry and a poor quality and inadequate infrastructure. This is particularly the case for unemployment in the southern and eastern Slovakia. Unemployment in Slovakia, especially in the last period, negative influences an discrepancy in the structure of the qualification and profession of unemployed people and vacancies. Another reason for the relatively high unemployment is the large number of people with low levels of education, especially in the eastern part of Slovakia. The result of high unemployment in this region are low wages, which often don't encourage these people to work, even if they would have found the job vacancy. Another reason for unemployment is sometimes unwillingness of people to migrate between regions of Slovakia for the work or travel for the work to the more distant town. This is linked with the underdeveloped and inefficient functioning of the market for rental flats. Living outside of the region of residence (in Slovakia) in most cases is significantly more expensive and therefore is not worthwhile for the unemployed people to seek the work outside their region. Therefore, many people solve the problem of unemployment and low wages in the migration for work abroad. This includes people with a lower, but also with high qualifications, who are looking for better valuation of their labour.*

**Keywords:** *Labor force, Migration, Slovakia, Unemployment*

### **1. INTRODUCTION**

Unemployment is one of the most serious problems that plague the current society. The Constitution of the Slovak Republic regulates the social rights of citizens in the form of the right to work and at the same time in the form of contributions of citizens, who not from their own guilt do not work. Jandourek (2012, p. 169) defines unemployment as a state, where people are looking for work, because they want to work, the work is a source of livelihood of them, but they cannot find any reasonable and paid work. The phenomenon of unemployment is examined in a number of scientific disciplines, for example, in economics, psychology, or social policy. From the perspective of economic theory there are two dimensions of unemployment - microeconomic and macroeconomic. From a microeconomic perspective, unemployment affects not only the individual, who lost a job, thereby limits his revenue, but it also means the overall reduction in the standard of living for the whole family. Unemployed people have the material, but also the social problems. Macroeconomic dimension of unemployment is related to the essence of the functioning of the economy as a whole, question of the use of available resources and loss of creation of GDP in the case of higher levels of unemployment. Unemployment increases deficit of the state budget,

and this in two ways. One way are the losses in the tax area, which reduces the revenues of the state budget. The second way are the expenditures connected with the payment of the unemployment benefits and social benefits, which increases the expenditure page of the state budget.

The big problem is particularly long-term unemployment. Slovak economy is trying to deal with this problem already for a long time. The aim of the article is therefore to evaluate the causes of long-term unemployment in Slovakia and its impact on the economy and on the migration of the labour forces.

## 2. DEVELOPMENT OF UNEMPLOYMENT IN SLOVAKIA AND IN EUROPEAN UNION

During the period of high economic growth (2004 – 2008) the total unemployment in Slovakia decreased. The unemployment rate declined approximately from 18% in 2004 to 8,7 % in 2008. This positive trend stopped the financial and economic crisis. Unemployment rate started again to increase and later stagnated around 14% (2010-2013). This has not prevented the recovery of the economy and economic growth, which, however, was significantly lower than in the pre-crisis period. From 2014, the unemployment rate in Slovakia has begun gradually to reduce. In the spring 2015, registered unemployment decreased to 12,06 % and in 2016 to 9,9 %.

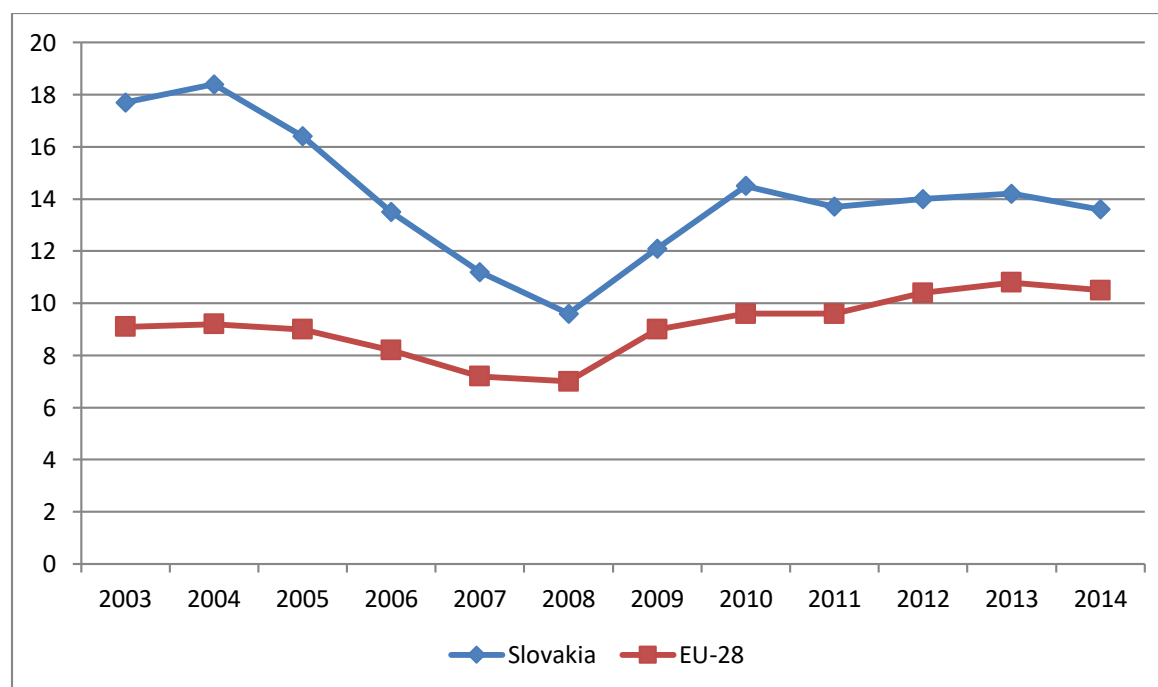
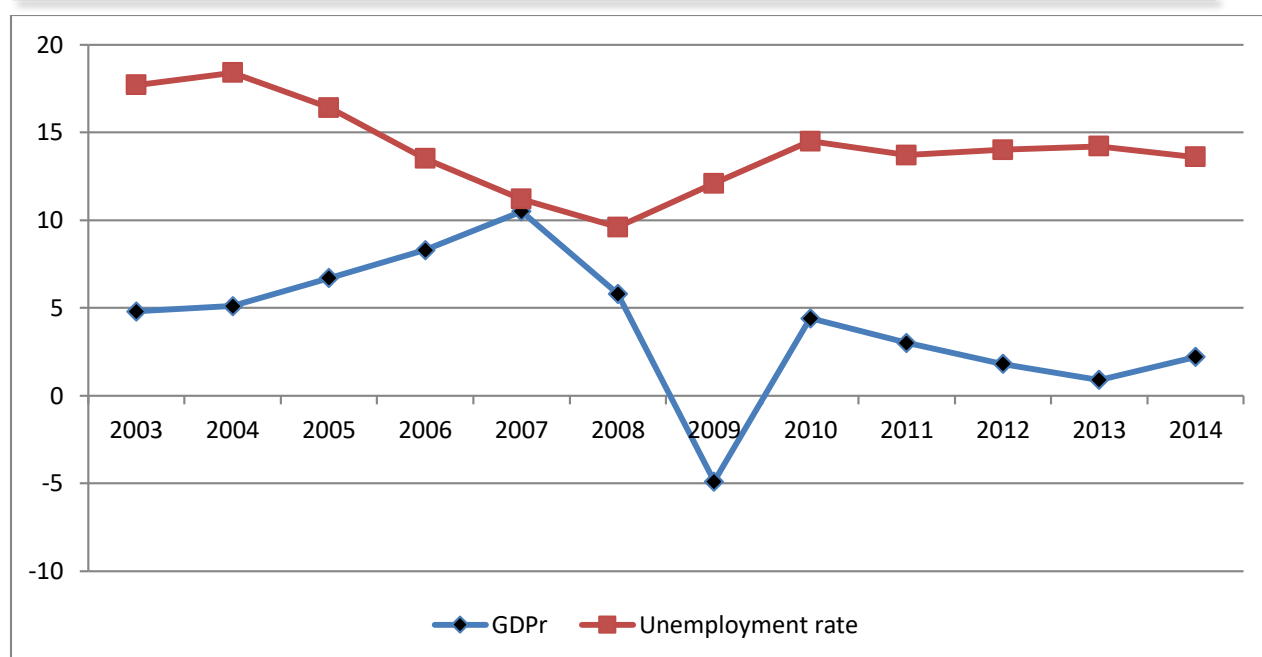


Chart 1: Unemployment rate in Slovak Republic and in EU-28 (processed on the basis of Eurostat data)

Unemployment in Slovakia reaches in the long term higher values than the average EU countries. The economic cycle is manifested also in the fluctuation of unemployment rate, so in Slovakia, as well as in the EU countries. In both economies can be find the pre-crisis decrease of the unemployment rate, then its growth during the global crisis coupled with the decline of real GDP and later, after a brief recovery, stagnation around the level 14% in Slovakia and 11% in EU.





*Chart 2: Development of real GDP and unemployment rate in Slovak Republic; annual rate of change in % (processed on the basis of Eurostat data)*

The highest unemployment rate within the countries of Visegrad four (V4 countries) at the beginning of the reporting period, i. e. in 2003, amounted to Poland (almost 20 %), followed by Slovakia (about 18 %). Unemployment rate in this period was significantly lower in Czech republic (7,5 %) and in Hungary (6 %). In the pre-crisis period, which was characteristic with high economic growth, the unemployment rate in Poland and in Slovakia significantly has been reduced and in 2008 decreased to 9,6 % (Slovakia) and 7,5 % (Poland). This positive trend was stopped in the time of global financial crisis and economic recession.

At the time of second, more modest economic recession in 2012, the unemployment rate in the EU, as well as in Slovakia rose slightly. Similar increase in unemployment was recorded again in 2013. The unemployment rate reached 14% in Slovakia. Until the end of 2013, the number of unemployed people decreased. The unemployment rate in the EU, however, in post-crisis period (2013) remained at a relatively high level (10,8 % EU, respectively 12 % euro area), despite the economic recovery in the EU. Stabilization on the labour market occurred in 2014, when the unemployment rate began slightly to decrease (in the EU to 10,3 % and in the euro area to 11,8 %). In the first half of the year 2015 fell in Slovakia to 12,06 %. It can be expected that in the coming years as a result of the continuing trend of a decline in unemployment and growth of real incomes of consumers will increase the final consumption of households, and therefore also total domestic demand. The engine of economic growth after a long time so should become domestic demand (Morvay, 2015, p. 61).

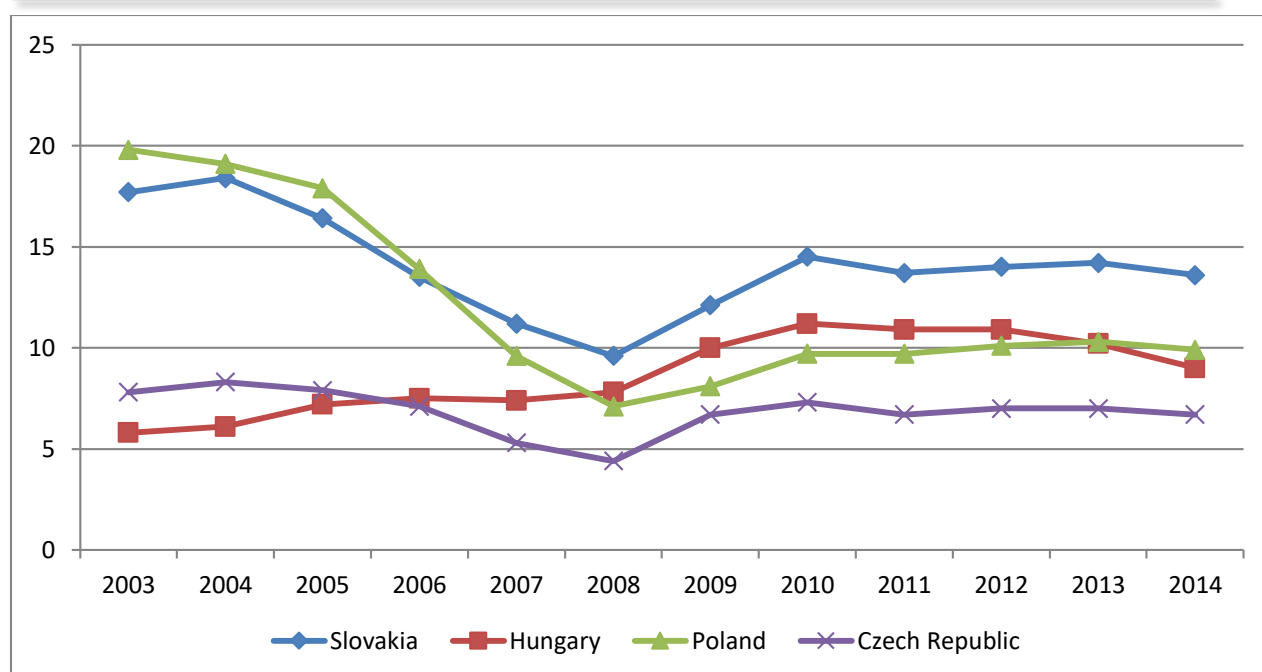


Chart 3: Development of unemployment in the V4 countries; annual change of rate in % (processed on the basis of Eurostat data)

### 3. THE CAUSES OF UNEMPLOYMENT IN SLOVAKIA AND LABOUR MIGRATION

Slovak labour market reached the highest number of jobs in 2016 and the unemployment rate fell for the first time below the average of the euro area. Development in the labour market, however, is significantly affected by demographic development. In the next few years, a large proportion of the labour force will vanish in Slovakia. In the half year 2016, the number of Slovak workers has increased on 2 490 000. It is about 86 000 workers more than in the same quarter of 2008, which has been the most successful year for the Slovak labour market. The unemployment rate has fallen below 10 % in 2016, for the first time below the euro area average. This year, however, will not fall to the historic low (8,7 %) from the end of 2008, because the rate of economic activity of the Slovaks has risen. Although the number of people in the working age has lowered, interest in the work of those who have remained grew. The number of economically active population so, overall, increased. Demographic profile of the population of Slovakia is going through significant changes. In 10 years there will be about 130 000 pensioners (64+), on the contrary, from young graduates (23 - 30 years) will wane approximately 120 000. Economically active people will wane, decrease in the unemployment rate so will speed up even without creation of new jobs. Demographic development will cut the unemployment rate in 2017 by 2 - 3 tenths of a percentage point (0,2 - 0,3 %), in 2018 by another 3 - 4 tenths (0,3 - 0,4 %), in 2019 about 5 tenths (0,5 %). In the next decade it will be cumulative by a few percentage points. The number of unemployed in Slovakia, 265 000 people, is still high, on the labour market is, however, an inconsistency in the structure of demand and supply of labour. More than 50 % of the unemployed have only basic education or apprenticeship without leaving examination. But the labour market shows that only one of the three or four posts (jobs) are suitable for such jobseekers. Also many people were long out of work and have lost their qualification. More than half of the unemployed (58 %) are out of work more than one year, one quarter of the unemployed did not work even more than four years. Tens of thousands of Slovaks are working abroad. Their return could increase the supply of skilled labour.

Trend is, however, quite the opposite. Labour migration abroad is growing. About 165 000 Slovaks commute for work abroad, especially to Austria, Germany and the Czech Republic. The strongest migration flow to the Czech labor market comes from the Slovak Republic. After 1993, the number of Slovak workers in the Czech Republic grew rapidly and their share on the foreign labor force reached almost 40 %. Reasons for such a development are related to the geographical location, cultural and linguistic proximity, and advantageous legislative conditions for the employment of Slovaks. The popularity of Czech job positions in the other 5 years is declining in favour of Austria and Germany (Rievajová – Přivara, 2013, p. 66). The number of people working abroad is growing year on year faster than the number of jobs at home. The share of Slovaks who commute to work abroad on the total number of workers has increased from 4,9 % at the beginning of 2012 on the current 6,6 %. High long-term unemployment in Slovakia has a number of reasons. To the most common and most important causes of unemployment may include lack of education and skills of the long-term unemployed persons. Another reason is the reluctance of people to migrate in search of work or to commute to another city. In Slovakia is this problem associated with inefficient functioning of the market of rental housing, therefore a job outside of the region of residence of the candidate on the job is a problem. Living outside the region of residence of unemployed person may be significantly more expensive, or is characterized by lack of capacity. Factor that discourages potential jobseekers are high social contributions in Slovakia. For every euro that the employee earned in net wages, falls 56 cents, that have been paid to the Social insurance agency (Dinga - Ďurana, 2015, p. 8 - 10). This overcharge in prices work reduces the willingness of unemployed people to work. A similar problem also represents the amount of the minimum wage, which is one of the deciding factors, whereas wage as the price of the work is a main motivation of the people to work. It is necessary to look at the amount of the minimum wage from two perspectives - from the perspective of an employer, that examines whether a potential employee will bring him at least the value of the minimum costs incurred to him and also from the perspective of the employee who will be willing to work for such a sum. Other reasons of long-term unemployment are also various barriers of psychological nature, income from work on black, the passivity of the people, an unwillingness to cooperate with the Labour office. Slovakia achieved the second highest rates of long-term unemployment in the EU. The Slovak labour market cannot deal in particular with two groups of unemployed people - young people (graduates) and persons with low levels of education. A significant problem with the integration in the labour market has another group of citizens - ethnic groups. A forecast of the development of the Roma population say, that from the current 400 000 persons other 300 000 Roma in the coming years will get into the labour market. In view of the very high unemployment of this ethnicity, especially the long-term, the Slovak economy may not handle this situation, if will be not used appropriate and effective measures. The long-term unemployment in Slovakia is concentrated. The highest is in the southern districts of Central Slovakia and in Eastern Slovakia. Highest unemployment rate of all counties in Slovakia amounts to Prešovský kraj (county). Its surface area is the second largest in Slovakia. Is located in the east of Slovakia and borders with Poland and Ukraine. In this region is a higher representation of people with low levels of education, for example apprenticeship without a leaving examination. Problems are therefore also the low wages - they are achieving the lowest level in Slovakia. The average monthly wage in 2013 here reached a level of 586 EUR, while the national level was 789 EUR. This county suffers from long-term unemployment a long time, already in 2001 the unemployment rate has reached a level of 23,59 %. The consequence of such situation is the fact that the long-term unemployed tend to be out of job and do not attempt to get a work. They learn how to use the social benefits, or unemployment benefits and lose their

qualification. Companies then even if they need the workers, refuse to employ the long-term unemployed who have lost skill and a willingness to be given the highest performance. The consequence is a reduction in the performance of the economy, lower growth of GDP compared to making full use of resources (labor forces). As a result of high unemployment is a migration for work and a high proportion of the labour forces working abroad.

#### 4. CONCLUSION

Unemployment (in particular, the long-term) is the most serious macroeconomic problem in Slovakia. Is the subject of a major cyclical fluctuations. Of the approximately 18 % in 2003, thanks to the high rates of economic growth had fallen to 8,7 % in 2008. The favourable development of the economy has been undermined by the global financial and economic crisis, which mainly due to a decline in foreign demand was fully demonstrated also in the Slovak economy. Unemployment then has increased to 14%. In the post-crisis period, gradually managed to start up economic growth and unemployment fell again. Currently reaches approximately 9,9 %. However, the number of people working abroad has been sustained. Despite of new foreign investment to Slovakia and the creation of new jobs, the number of people interested in working abroad is not declining. This is due to the relatively low wages in Slovakia in comparison with the level of wages in many EU countries, what motivates people to look for work abroad. Another reason is the regional imbalance in investments in Slovakia, which are directed primarily to the more developed regions of Slovakia (especially western Slovakia) and just the less developed areas of Slovakia are circumventing. The cause of this can be found also in the lack of infrastructure in less developed areas and in the lower level of the qualification of unemployed people in these regions.

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## THE IMPACT OF SOCIO-DEMOGRAPHIC CHARACTERISTICS ON LIFE SATISFACTION AND HAPPINESS

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### ABSTRACT

*In recent times, subjective well-being has been increasingly studied from the perspective of economists within the scientific branch called the economics of happiness. In the aim of defining and quantifying subjective well-being (SWB), despite numerous studies on global level, in recent years the focus of research on life satisfaction and happiness, as the two most important concepts of subjective well-being, is on the lower territorial, i.e. local levels. This paper analyzes life satisfaction and happiness (n = 1019) based on primary research in the city of Osijek, Croatia, on a representative sample.*

*The goal of this paper is to compare different approaches in measuring life satisfaction and happiness (dependent variables). Analysis of variance of the expressed life satisfaction and happiness of citizens in the city of Osijek has enabled insights into statistically significant differences of two subjective well-being variables with regard to socio-demographic characteristics of respondents.*

*The research results can be used as a guideline for the design of local politics by its creators.*

**Keywords:** *analysis of variance, city development, economics of happiness, life satisfaction, subjective well-being*

### 1. INTRODUCTION

There are two approaches of observing the degree of development or progress of a society in the context of improving the quality of life. On one hand it is possible to observe the objective indicators that present external view on the well-being and are based on the so-called hard data. This objective well-being of society assumes achieving and sustaining economic development and is measured by statistical indicators usually obtained from official statistical sources. These include, for example, economic indicators (such as GDP), but also those non-economic (e.g. The Ecological Footprint, The Human Development Index and so on) that are often referred to as the alternative indicators or measures.

On the other hand, there are subjective indicators that analyze perception on the state of society from the perspective of citizens. These indicators are of major interest of the economics of happiness. The main focus of the economics of happiness is to understand the interdependence between economic output and the resulting happiness of economic actors (Coyne and Boettke,

2006). Easterlin (1974) first discussed the factors that contribute to happiness and discovered that there is no correlation between the degree of economic growth and the overall level of happiness of a society (that way he formulated so called Easterlin paradox).

In the last 20 years there is a progress in the methodology of the survey, the number of professionals interested in the economics of happiness, as well as the development of scientific thought in the field of behavioral economics. In the late 1990s considerable interest was awakened on the subjective well-being in which economists are beginning to publish papers and seriously analyze subjective well-being (SWB). Thereby a number of different indicators and measures of SWB on European and world level are being developed, such as the Gross National Happiness, World Database of Happiness, Happy Planet Index, National Accounts of Well-being, International Well-being Index, Legatum Prosperity Index, European Quality of Life Survey, etc.

In recent years, cities as local communities and lower territorial levels also started to directly measure SWB to achieve and maintain competitiveness. Cities are starting to activate in order to explore what is important to people, what kind of life they want to lead and how satisfied they are with life in the community (see for e.g. Frajman Ivkovic, 2012). Examples of this are often found in the USA, Canada and the UK, and some countries such as Bhutan and UAE have their own ministry of happiness. In the focus of this paper therefore are life satisfaction and happiness (as two main concepts of SWB). More specifically, authors wanted to find out whether there are differences in the expressed life satisfaction and happiness due to the socio-demographic characteristics of the respondents in the city of Osijek.

## **2. SUBJECTIVE WELL-BEING**

The perception of people about satisfaction with the situation in society represents subjective well-being. SWB is the welfare of the individual, expressed for one person or for a particular group of people (as averaged sum expressed subjective well-being of all the people who make up the group, for example, citizens of the city, residents of the state, region, etc.). SWB is a subjective experience of an individual's life and, as such, under the influence of personality, values, expectations and goals (Cummins et al., 2002). Subjective well-being is based on the so-called soft data, i.e. represents an internal view of the well-being to measure the perception of people (so-called self-reported data). Today SWB is connected with the economy (Easterlin, 1974, 2001, 2005, Frey and Stutzer 2000, Layard, 2005) through the branch of economy of happiness, although originally it has been the subject of interest in the psychology (Diener, 1984).

SWB is a general evaluation of one's life (Diener and Seligman, 2004), in which internal assessment are emphasized, i.e. the perception of life well-being by the individual (life experience of the people), not experts in this field (as is the case with the objective well-being that is measured with hard data mostly for statistical offices). Indicators of subjective well-being precise complement the objective indicators because there is a difference in the reported experiences of people on one hand and what is covered by objective indicators on the other hand (Diener and Seligman, 2004). As Watson et al. (2010) point out, the objective conditions are associated with subjective well-being in a simple manner and the variations between them are extensively documented (e.g. Ekins and Max-Neef, 1992, Veenhoven, 1993, Diener and Suh, 1997, Kahneman et al., 1999, Frey and Stutzer, 2002a.). Such deviations justify the independent study and measurement of subjective well-being.



Indicators of subjective well-being are needed and provide information in addition to those that provide economic and social indicators (Diener and Seligman, 2004, Kahneman and Krueger, 2006). SWB measures and can be used as input for discussions on national policies, could be useful for business leaders, government offices at local and regional levels and decision-makers should have an interest in SWB not only because of its intrinsic value for the citizens, but also because SWB of individual can have a positive iridescent benefit for society as a whole (Diener, 2006). Monitoring and measurement of SWB should become an important input for policy making because the well-being depends not only on economic but also on subjective judgments (Diener and Seligman, 2004).

There are many definitions of terms that are significant in the context of the concept of subjective well-being, such as happiness, positive/negative impacts, life satisfaction, quality of life and the like. Here we have adhered to the definitions of Diener (2006), which was signed by a number of respected scientists from this field (some of them are Luigino Bruni, Andrew Clark, Richard Easterlin, Bruno Frey, Carol Graham, Alan Krueger, Richard Layard, Sonja Lyubomirsky, Andrew Oswald, Daniel Kahneman, Alois Stutzer, Ruut Veenhoven, etc.) and are consistently used in their works. As defined in the mentioned article (Diener, 2006), subjective well-being refers to different types of subjective assessment, positive and negative, about our life. It includes cognitive assessments such as life satisfaction, job satisfaction, interests and emotional reactions to life events such as joy and sorrow. Subjective well-being thus represents a superior term for different evaluations of their own lives, life events and conditions in which people live.

It is important to notice two components or two views on SWB: affective (hedonic level) and cognitive (satisfaction), which together are used for the eval

uation of all life. In other words, subjective well-being defined as a state of general satisfaction, includes affective and cognitive components (Ahuvia and Friedman, 1998), i.e. represents the 'sum' of (un)happiness and life satisfaction (Bruni and Porta, 2007). To understand the well-being of the individual (i.e. SWB), it is important to directly measure cognitive and affective reactions of the individual to his life (Diener and Suh, 1997). The affective and cognitive happiness represent the perception of people, i.e. together form the SWB which is why researchers have developed different approaches to measure these concepts (Diener, 2006, Veenhoven, 1993, Diener and Seligman, 2002, Helliwell and Putnam, 2006).

On the affective point of view, happiness refers to the situation of the individual, determined by emotions, moods, feelings, can be interpreted as a pleasure, a pleasure and a good period in his life and is more indicative of short-term feelings of the individual. Affective happiness is a concept "feel happy now" (Bruni and Porta, 2007) in a particular time unit; the most important is a positive emotion that is primarily in the interest of the positive psychology. Affective happiness really means current sense of happiness and commonly used measure of emotional components of SWB. Happiness means a feeling of pleasant emotions for a long time. Of course, in the context of affective position, negative impacts are possible and common, i.e. the other extreme of human happiness is misfortune. Diener (2006) by negative impacts considers moods and emotions that are unpleasant and present negative answers that people perceive as a reaction to their life, health,

events and circumstances. Affective happiness is measured by simple questions such as: "How happy are you today?" on a scale 1-5 (or 1-10).

From the cognitive point of view (Diener et al., 1999), happiness presents the life satisfaction based on the thinking process/evaluations related to the observation/evaluation of life in general (health, family relationships, economic conditions, social conditions and the like). Cognitive happiness is actually defined with the concept of "being happy", i.e. it refers to the long-term (general) state of happiness and satisfaction of the individual, and not exclusively on the emotional characteristics of a situation in which it is located at a certain point of time (Bruni and Porta, 2007). Life satisfaction or satisfaction with life, as another important concept in the context of SWB, is a report about how an individual evaluates his life as a whole. Life satisfaction is subjective perception of quality of life that is related to cognitive evaluation of life. To study the subjective well-being as a phenomenon, the research was conducted in Osijek.

The hypothesis to be tested within this paper are:

H1: Socio-demographic characteristics of respondents are associated with expressed cognitive happiness (life satisfaction).

H2: Socio-demographic characteristics of respondents are associated with expressed affective happiness (happiness).

H3: Measuring life satisfaction with measuring construct contributes to significant clarification of association with socio-demographic variables in relation to the measurement of life satisfaction with a single item.

### **3. RESEARCH METHODOLOGY**

The survey was conducted in the city of Osijek in the last quarter of 2011. The sample frame consists of residents with permanent residence in the city of Osijek. Criteria variables for representatives of this study was gender and age. The sample (n = 1006) was created with the use of criterion variables based on data of the Central Bureau of Statistics, i.e. the census in 2001 with summarized creating of quotas based on criterion variables (age classes, and gender). Data collection was conducted with a highly structured questionnaire.

Finally, the sample consisted of 1019 respondents (13 respondents collected outside the set quota of research). In other words, the planned quota sample was realized with a slight deviation of 1.29% noting that no quota had unfulfilled criterion. The statistical procedures for data analysis were carried out in the statistical software package Statistical Package for the Social Science (SPSS) 17.0 for Windows. ANOVA procedure was used to test differences in expressed life satisfaction and happiness due to socio-demographic characteristics of respondents. For explanation of statistical difference between the observed group Tukey post-hoc test (honestly significant difference - HSD) was used.

#### **3.1. Sample description**

The citizens of Osijek were included in the quota, representative sample (gender and age) Table 2 shows the socio-demographic characteristics of respondents.

*Table 2: Socio-demographic profile of the respondents, n = 1019  
 (research conducted by authors)*

Variable		N	%	Variable		N	%
gender	female	550	54	employment status	employed	435	43
	male	469	46		temporary employed	73	7,2
age	15 - 24	171	17	no answer	student	100	9,8
	25 - 34	165	16		unemployed	117	12
	35 - 44	180	18		pensioner	231	23
	45 - 54	181	18		pupils	59	5,8
	55 - 64	144	14		no answer	4	0,4
	65+	178	18		married	501	49
	no school	103	10	marital status	common law	36	3,5
education level	primary school	181	18		divorced	54	5,3
	secondary school	543	53		widowed	107	11
	University or college	167	16		single	313	31
	master/PhD	24	2,4		no answer	8	0,8
	no answer	1	0,1		permanent job	474	47
	no income	191	19	source of income	parents	104	10
monthly income	up to 1.000kn	44	4,3		odd jobs	76	7,5
	1.001kn - 2.500kn	216	21		scholarship	8	0,8
	2.501kn - 4.000kn	246	24		occasional support of others	19	1,9
	4.001kn - 5.500kn	163	16		pension	240	24
	5.50kn - 7.000kn	83	8,1		no income	94	9,2
	7.001kn and more	70	6,9		no answer	4	0,4
	no answer	6	0,5				

In the sample, 54.0% of respondents were female, all age classes are equally represented, and for the majority of respondents the last completed level of education is high school (53%). Respondents (24% of them) have a monthly income in a range of 2.501kn to 4.000kn which is less than the average net salary in Croatia. This was probably influenced by a large number of retired respondents (23%) versus 43% of those in labor force. Of the respondents surveyed, 47% said that their main source of income is permanent job.

### 3.2. Operationalisation of variables

Taking into account the assumption of research according to which there is affective and cognitive component of SWB, the first part of the questionnaire consists of two items that take into account the above criteria. Both approaches of SWB represent the dependent variables of this study. The affective component "feel happy now" is measured with item "How filled with positive emotions are you today, i.e. How happy do you feel today? (Grades 1 - extremely unhappy, 2 - unhappy, 3 - neither happy nor unhappy, 4 - happy, 5 - extremely happy). The cognitive component "being happy" is measured with item "How satisfied are you with your life if you consider all the factors that affect your satisfaction?" (Grades: 1 - extremely dissatisfied, 2 - dissatisfied, 3 - neither satisfied nor dissatisfied, 4 - satisfied, 5 - extremely satisfied). The use of these items is the most common method of evaluation of happiness and life satisfaction, and greatly contributes to the clarification of measured term (Diener and Seligman, 2002, Helliwell and Putnam, 2006).

In addition to the proposed measurement of these components, researchers of life satisfaction (cognitive component) propose and measure constructs composed of many particles. In this study five items are used (i.e. the life satisfaction scale) already proposed by Diener et al. (1985). Their five items are: (1) In most ways my life is close to my ideal. (2) The conditions of my life are excellent. (3) I am satisfied with my life. (4) So far I have gotten the important things I want in life. (5) If I could live my life over, I would change almost nothing. Their results show that scale has favorable psychometric properties, including high internal consistency and high temporal reliability (Diener et al., 1985).

In this study, all described items are used; Table 1 gives a short description of the used variables/constructs with a description of the main psychometric characteristics.

*Table 1: Dependent variables (research conducted by authors)*

Name of the construct	Life satisfaction		Happiness	The
Construct creation	5 item average life satisfaction scale	Single item	Single item	
Measurement scale	5-graded Likert scale			
Psychometric characteristics	Cronbach $\alpha = 0.84$ average total-item scale = 0,6049 factor loading > 0,6760 variance explained 58%	-	-	

second part of the questionnaire related to 6 determinants of life satisfaction of the respondents, which are not the focus of this paper. The third and final part of the questionnaire included the socio-demographic variables (gender, age, employment status, education level, city district, monthly income, source of income and marital status), whose modalities characteristics are largely followed the ones used by the Central Bureau of Statistics.

## 4. RESULTS

Distribution for happiness measured with single item shows that even 45% of respondents feel happy and 15% extremely happy, i.e. happy are 60% of respondents in total. Neither happy or unhappy feel 33% and unhappy and extremely unhappy feels a little less than 7%. Figure 1 compares the distribution of happiness and life satisfaction of the respondents.

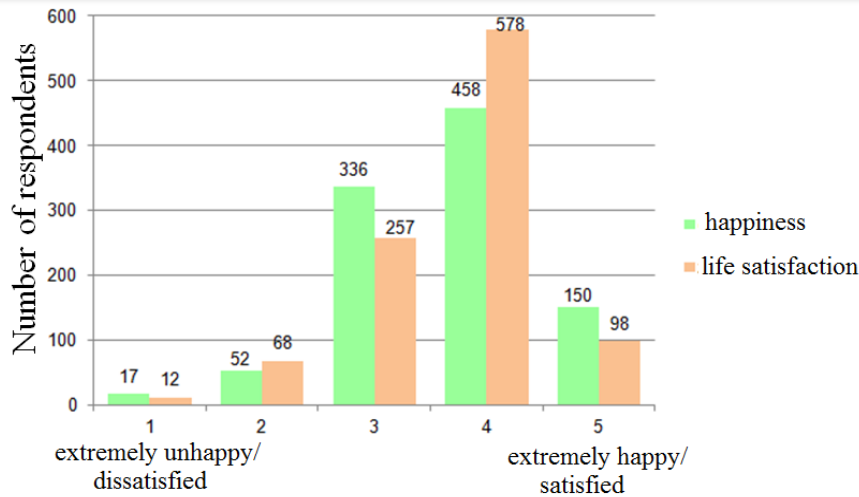


Figure 1: Distribution of happiness and life satisfaction (research conducted by authors)

More important data than current happiness for further analysis brings life satisfaction of respondents (when all things considered); the largest proportion of respondents were satisfied or very satisfied (over 66% of respondents), neutral attitude have about 25% of them, and 8% are dissatisfied and very dissatisfied. Table 3 compares the average scores for different approaches in measuring life satisfaction (single item or 5 items average).

Table 3: Descriptive statistics of indicators used to measure life satisfaction  
 (research conducted by authors)

	<i>N</i>	<i>min</i>	<i>max</i>	<i>M</i>	<i>SD</i>
How satisfied are you with your life if you consider all the factors that affect your satisfaction?	1013	1	5	3,67	0,787
Life satisfaction measured as average of 5 items.	1007	1	5	3,36	0,796

#### 4.1. Testing differences with regard to socio-demographic variables

Testing difference in the ratings of life satisfaction (measured in two ways) and happiness carried out with respect to socio-demographic characteristics of the respondents (gender, age, employment status, level of education, city district, monthly income, sources of income and marital status). In two socio-demographic characteristics no statistically significant difference was found, namely: gender and city district in which respondents live. However, it is possible to say that men are slightly more satisfied with their lives (1 item), and women happier. For other socio-demographic characteristics statistically significant differences were found (F ratio), and are summarized in Table 4. In addition to identified significant differences, Table 4 interprets conclusions based on Tukey post-hoc test.

Table following on the next page

*Table 4: The synthesis of the ANOVA results with regard to socio-demographic variables  
 (research conducted by authors)*

		Life satisfaction				Happiness	
		5 items average		Single item		F	p
		F	p	F	p		
Gender	ANOVA	0,002	0,964	0,226	0,634	0,306	0,580
	post-hoc						
	test results	-		-		-	
Age	ANOVA	3,316	0,006**	10,399	0,000**	5,059	0,000**
	post-hoc	15 - 24 more satisfied than 35 - 45		15 - 24 more satisfied than all other groups, 65+ less satisfied than all other groups		15 - 24 happier than 35 - 44, 45 - 54 and 65+	
	test results						
Employment status	ANOVA	7,016	0,000**	13,300	0,000**	3,420	0,002**
	post-hoc	unemployed are the least satisfied, students are more satisfied than pensioners		unemployed are less satisfied than all others except pensioners, pensioners are less satisfied than all others		students are happier than pensioners	
	test results						
Level of education	ANOVA	7,727	0,000**	7,285	0,000**	2,139	0,074
	post-hoc	those without school education are less satisfied than all others except those with primary school education, those with primary school education are less satisfied than the educated		those without school education are less satisfied than the others		no statistically significant difference found	
	test results						
Monthly income	ANOVA	5,072	0,000**	3,058	0,006**	2,120	0,049*
	post-hoc	those with an income of 7.000 kn are more satisfied than all the rest except those with an income of 5.500 - 7.000kn		no statistically significant difference found		no statistically significant difference found	
	test results						
Source of income	ANOVA	3,239	0,004**	7,819	0,000**	3,355	0,003**
	post-hoc	permanently employed are more satisfied than those with temporary jobs		those with parents' support are more satisfied than those who receive temporary support from others or pension		pensioners are less satisfied than those without pays	
	test results						
Marital status	ANOVA	5,376	0,000**	8,819	0,000**	3,098	0,015*
	post-hoc	married are more satisfied than divorced or widowed		widowed are less satisfied than those married or single		singles are happier than widowed	
	test results						
City district	ANOVA	1,696	0,106	0,399	0,903	1,208	0,295
	post-hoc						
	test results	-		-		-	



Looking at the results of the ANOVA and conclusions of Post-hoc tests it is possible to conclude that the socio-demographic characteristics of the respondents (all except gender and city district) significantly differ with respect to the reported levels of life satisfaction suggesting not to reject H1 hypothesis. The second hypothesis (H2) was connected with the affective happiness (happiness), and with a little less statistical significance indicates that there are statistically significant differences between socio-demographic characteristics and levels of affective happiness of respondents. In all the observed demographic characteristics, respondents are more inclined to evaluate their satisfaction something better if evaluated only with one item on a scale from 1 to 5 than when the same is estimated based on the average of five items (although this difference was not statistically significant). The reason for this may be that the respondents in the evaluation of life satisfaction on a scale from 1 to 5 take into account the 'freshest' past and forget the bad from the past. That is why the feeling of happiness and satisfaction on a single item often has similar results, but when one compares the feeling of happiness and life satisfaction (measured on average of 5 items) results are different. When people are asked to respond to the question of how much their lives are close to the ideals, how excellent conditions of life are, whether they have achieved everything that is important to them and if they would change something in their life, they think deeper and through multiple perspective. Consequently, enough evidence for not rejecting the H3 hypothesis is given, according to which the measure of life satisfaction with measuring construct contributes to significant clarification of association with socio-demographic variables in relation to the measurement of life satisfaction with a single item.

## 5. DISCUSSION

The study of SWB is exponentially growing in scientific community in recent years, not only in the area of psychology, but also in other scientific fields such as economy. Numerous efforts of researchers of the economics of happiness show that SWB research, although based on exclusive assessment and evaluation of people, are methodologically valuable and valid. Researches relate to national level (state), but also to lower territorial levels that are homogeneous in composition. In fact, more and more communities around the world, particularly local, continuously measure population SWB and use the results to improve the quality of life in the community. In this paper, in the frame of primary research, both components of SWB were observed (affective and cognitive). It was concluded that life satisfaction is better measured by average of 5 items than with single item (1 question). In focus were the socio-demographic characteristics and their relation to the reported life satisfaction and happiness of respondents. In most observed categories statistically significant difference was found, i.e. it has been proven that certain socio-demographic characteristics influence the life satisfaction and happiness of respondents. The value of such research is reflected in its use from local authorities that need to be agents of the community. In addition to these quantitative studies that rely on socio-demographic variables, it is necessary to collect data about the external factors of the quality of life, and to collect qualitative data about the community to which one can get through in-depth interviews, focus groups, etc. In future research, it would be a good idea to create the happiness index of the citizens and the profile of a happy citizen. By doing so, one could identify a normal range of life satisfaction and happiness and policy makers could direct the decisions to increase the quality of life of those groups that are out of range. Although this research is among the few in Croatia, given the trends in the scientific environment, it is expected that there will be more of them and that local policy creators will start relying on their results.

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## THE LACK OF AWARENESS OF USING SKIN WHITENING COSMETICS: IN CASE OF WOMEN IN BANGKOK, THAILAND

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### ABSTRACT

*The aim of this study intends to find out the user's awareness of using skin whitening cosmetics containing hydroquinone and other cutaneous depigmenting agents among women in Bangkok, Thailand. The chemical skin lightening has a range of serious side effects to damage skin and skin whitening cosmetics is the cause of serious public health risk and threat to skin safety. The sample comprised four hundred women living in Bangkok, Thailand. Structured questionnaire was the main instrument used for the data collection. The data collected were analyzed using percentage, mean and t-test statistical measures. The results showed that most of the women (30%) are not aware of the harmful effects of whitening cosmetics on their skin face and body and 60% revealed that the perception of lighter skin is more beautiful and more attractive to men than women with dark skin. In conclusion, the factors of enculturation and socio-demographic have no significant influence on the perception of the respondents. Therefore, to educate the knowledge of the effects of whitening cosmetic products are an important approach to restore sanity in the health and safety of people.*

**Keywords:** awareness, cosmetics, hydroquinone, side effect, whitening

### 1. INTRODUCTION

Thailand is in the tropics and in the Southeast Asia. Thai people are Caucasoid and have brown skin. In the past decade or two, the Korean-styles pretty which are all the rage in Thailand. The value of cosmetics products are 4 thousands US\$ and 48 % are the whitening cosmetics. The extend value in the each year is 10 %.The skin care products are the big market and expand in every year. The cosmetics industries and small medium enterprises (SMEs) are 762 and 520 industries which control by the Thai Food and Drug Administration (FDA) (Gesmankit,2016, p.1-7).Thai women were believed that they were looks pretty, cute and attractive for men when they have white skins (Chaipraditkul, 2013, p. 27-37). Many Thai women shun sunlight like vampires and cover themselves with sun-blocking, whitening products. They were made their skin lighter by using everything such as whitening lotion, whitening deodorant, whitening pills, whitening injection and whitening laser all promised to make a woman skin white, bright and glowing (Macer,2012, p.385-397). Some the skin whitening cosmetics were not passed to the examination by the FDA because these products have the hydroquinone, mercury and others in the ingredient (Ng, Dewi, Wang, et al,2015, p.59-65 ). The outlaw products were bought in the local market which produce by homemakers or import to border of Thailand. Many cosmetic products contain hydroquinone, mercury and other harmful ingredients but rarely stops Thai women wanting to be fair and beautiful (Numata et al.,2015,p.194-195). Mercury is a very toxic element that can inhibit melanin production by competing with copper in tyrosinase, resulting in the appearance of paler

skin. The effects of mercury are central nervous system accumulation and neurotoxicity (Copan et al, 2015, p.10943-54; Chan, 2011, p.886-891) when they used them prolonged. Hydroquinone is a major benzene metabolite widely used in skin lightening products. It is a well-known hepatotoxic and carcinogenic agent (Enguita and Leitao, 2013, p.542168). In this study, we determined mercury and hydroquinone in a wide variety of the skin whitening cosmetics. We collected products from various the local markets in Bangkok. The questionnaires were corrected the data for survey the behavior using the whitening cosmetics.

## 2. EXPERIMENTAL

### 2.1 Sampling of skin whitening cosmetics

Ninety samples were skin whitening cosmetics for body and sixty samples for face which purchased from the local markets and convenience stores in Bangkok, Thailand. Some samples have tradition brands. All samples were analyzed mercury compounds and hydroquinone by kid test of FDA ([www.dmsc.moph.go.th/ifc\\_cosmetic](http://www.dmsc.moph.go.th/ifc_cosmetic)). The reaction in kid test were detected the quantitative of mercury 0.15% and 0.006% of hydroquinone.

### 2.2 Questionnaires for survey for behavior by using whitening cosmetics

The questionnaires 200 papers are used as an instrument for collecting the data. The questioning information was sent to the students at Suansunandha Rajabhat university in were 100 papers and worker female were 100 papers. The students were age between 17-24 years old and female women were aged 25-45 years old. Three tropics of questionnaire were 10 closed questions and concerned with:

- 1) personal information: age, work and incomes.
- 2) general information of using whitening cosmetic:
- 3) survey for behavior of using the whitening cosmetics:

## 3. RESULTS AND DISCUSSION

### 3.1 The percentage of mercury and hydroquinone detected in the whitening cosmetics

The body whitening lotions 60 samples were purchase in the local market and 30 samples collected in the convenience stores. All samples were showed the ingredient of the extracted of natural product that the result these cosmetics were incredible. Women bought them for healthy skin and more whitening. Some products made at the households for commercial and were not allowed by FDA.

*Table 1: Percentage of mercury and hydroquinone in the body whitening lotions and the facial whitening creams cosmetics*

Toxics agent and kinds of whitening cosmetic	Sources of samples	
	local markets	convenience stores
% of samples found mercury compounds		
The body whitening lotions	30	2
The facial whitening creams	40	1
% of samples found hydroquinone		
The body whitening lotions	40	2
The facial whitening creams	60	2

The experiment using by kid test of FDA(Thailand) found mercury compounds in the whitening lotions and the facials whitening creams were 30 and 40 % in samples from the local markets. Hydroquinone are bleaching agent were found in the body whitening lotions and the facials whitening creams were 40 and 60% from the local markets. Mercury compounds and hydroquinone found in the samples were bought from the convenience store found 1-2% of samples.

### 3.2 The questionnaires survey of the behavior using the whitening cosmetics

The ten closed questions of general information of using whitening cosmetic s and survey for behavior of using the whitening cosmetics were showed in Table 2.

*Table 2: Percentage of general information and survey for behavior for using the whitening Cosmetics of students and worker female.*

Questions	answer	Students (%)	worker female(%)
1. Where are you bought the whitening cosmetic	convenience stores	45	40
	local markets*	30	30
	direct sales	20	20
	counter brands	5	10
2.How much do you spend on the whitening cosmetic (in time buying)?(US\$)	2-10*	75	50
	11-19	10	25
	20-29	10	15
	30-60	0	10
3. How do you decide to buy the whitening cosmetic?	Beauty appear*	60	60
	imitating friend	15	-
	whitened face	15	40
4. How are you received information about the danger caused of using the whitening cosmetic?	Newspaper*	60	70
	public health official	30	20
	friends	10	10
5. How long have you ever been using the whitening cosmetics?	1-2 years*	65	10
	3-4 years	20	20
	5-6 years*	10	60
	more than 6 years	-	10
6. At present, are you still using the whitening cosmetics?	yes*	85	100
	no	10	-
7. How do you apply the whitening cosmetics?	regular*	70	90
	sometimes	30	10
8. How do you feel after using them?	whitened	70	90
	no change	30	10
9. Are you ever allergic, after using them?	yes	60	65
	no	40	35
10. What do you do when you were allergy after used them?	absolutely stop*	80	90
	used them until ended	5	-
	stop allergic brand and change the new one.	15	10

\*the predominance of data

The 10 closed questioning information were showed the students and worker female bought the whitening cosmetics in the local markets to 30%. Students and worker female bought the cosmetic in the low costs of 2-10 US \$ in the percentage of 75 and 50%. Students and worker female used the whitening cosmetics every day were 85 and 100%. This study found 2 groups allergic were 60



and 65% of students and worker female but they were used them and now 92.5% have using the whitening cosmetics.

#### 4. CONCLUSION

The whitening cosmetics were detected toxic of mercury compounds and hydroquinone to 30-40% which collected samples in the local markets. The study showed the students and worker female bought these whitening cosmetics which were the lack awareness. Women bought these toxic whitening cosmetics because she wanted whitened for beauty appear, attractive and confidence. The local markets sale the cosmetic products by the low costs because they made them with forbidden of the material in the law of FDA, avoid the examination and producing the cosmetics in home. Some women did not know the toxic chemical ingredient of cosmetics that used them prolonged and unlimited when the sunscreens are irradiated her skin was burn, mottled, blacken and melisma. Women used the whitening cosmetics regular in every to 92.5% which manufacturers produced these products for responding the consumers. Continuous of this research were studying the other ways were buying the cosmetics such as on facebook, Lines.

**CONFLICTS OF INTEREST:** The authors declare that they do not have conflict of interest.

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## THE IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGIES ON PUBLIC ADMINISTRATION MANAGERS AND THEIR WORK

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### ABSTRACT

*In just a few decades, information and communication technologies (ICT) have changed the world dramatically. Today, there is no area of life that is not affected by ICT. Without any doubt, ICT play a key role in the development of modern public administration. The employment of ICT in public administration with the purpose to enhance the delivery of government services has become known as e-government. Public administration managers are responsible for the efficient and effective operation of their institutions, including e-government. With this in mind, the main aim of this paper was to examine the impact of ICT on Croatian public administration managers and their work. More precisely, the study sought to determine the extent to which managers used various devices and their pattern of ICT usage. According to the results, Croatian public administration managers regularly used desktop computers and smartphones at work. Laptops/notebooks and tablets were significantly less popular among participants. The average age of their computers was about two years, which can be considered satisfactory. The study further revealed that the majority of the surveyed managers were satisfied with their ICT equipment. In addition, the results showed that participants regularly used ICT for some purposes, such as text writing/editing, e-mail communication, data entry and analysis, and searching information and news on the Internet. In contrast, managers used ICT less frequently to interact with citizens, businesses, and other government agencies. They also very rarely participated in video conferencing. On the basis of these findings, it is possible to improve ICT use in public administration and develop an effective strategy of ICT integration.*

**Keywords:** *ICT, managers, pattern of usage, public administration, strategy*

### 1. INTRODUCTION

Information and communication technologies (ICT) are an integral part of everyday life and have a great impact on individuals and society. Today's business organizations depend on modern technologies. In the era of ICT and a knowledge-based economy, it is hard to imagine a company which does not use computers and Internet extensively. This also applies to public administration bodies. Public administration has a very important role to play. An effective public administration is a prerequisite for the successful development and structural transformation. In the context of the

present paper, public administration can be defined as all processes, organizations, and individuals associated with carrying out laws and other rules issued by authorities (Milakovich, Gordon, 2009). Marini (2000) perceives public administration as the occupational sector, enterprises, and activities having to do with the formulation and implementation of governmental policy. The author considers that public administration also refers to the management of organizations and activities involved. In this sense, public administration is a professional practice, but it is also an academic field which seeks to understand, develop, and improve that professional practice. For Quah (2010), public administration represents all activities undertaken by public organizations to ensure the attainment of national development goals. Perry and Keller (1991) simply defined public administration as the practice of complex governmental service, where practice refers to all of the activities of public service organizations. Since this paper examines the impact of ICT on public administration managers, it is necessary to place public administration more clearly within the digital context. Bianchi et al. (2012) define the digital public administration as the view of public entities and their services in the virtual world, such as web, social networks, e-mail, and mobile devices. The digital public administration is the result of the work of a number of public entities. The development of effective public services in the digital age is a very challenging organizational issue. This fact prompted Khan (2008) to conclude that public administration tasks are getting even wider and more complex with the technological development. Chen (2007) notes that adoption of modern technologies affects public sector managers in many ways, including new methods and channels of communications with stakeholders, the ability to draw them into the policy development and implementation process; active participation of community members in decision-making, and the use of collaborative technologies in the area of policy administration. Therefore, there is a great need to study ICT and its impact on public administration (Reddick, 2012). In recent years, the use of ICT in public administration has become known as electronic government (e-government). By default, managers are responsible for achieving the defined goals and organizational results. Private sector managers are liable for the efficient and profitable operation of their companies. In addition, they are expected to act in the owners' and shareholders' best interests (Ullah, Jamali, 2010). The public sector is not profit driven, since its main goal is not maximization of profit. Rather, this sector is focused on the public interest. However, public sector managers are also responsible for the efficient and effective operation of their institutions. According to Milakovich and Gordon (2009), public sector managers are concerned with meeting their staffing needs, motivating subordinates, obtaining financing, and conducting operations that lead to the survival and maximum impact of the organization's programs, as their counterparts in the private sector. In recent years, managers from public sector institutions are under pressure to deliver services in rapidly changing conditions. McNabb (2009) pointed out some problems government managers have to deal with in today's turbulent environment. First, they must learn to cope with various challenges after decades of pressures to downsize and reorganize themselves. Second, government managers have to find a way to deliver new and expanding services with declining resources. Third, they are expected to integrate new technologies alongside aging systems and management architectures. Another problem for government managers is the necessity to deal with discrepancies between personnel needs and available staff. Finally, government managers must also find ways to form and structure new organizations, such as virtual ones. Taking into account the importance of ICT for a successful government, this paper examines the impact of such technologies on Croatian public administration managers and their work. The study seeks to determine the extent to which managers use desktop computers, laptops/notebooks, tablets, and smartphones for work purposes. Furthermore, the study aims to investigate the pattern

of ICT usage. Since these issues have not yet been adequately explored, the paper contributes to understanding how ICT affect Croatian public administration managers.

## **2. RELATED STUDIES**

ICT have become essential tools for managers. Their work is unthinkable without modern technology, regardless of whether they are top, middle or first-line managers. It is necessary to understand the ways in which ICT impact the work patterns of managers in order to improve their performance and ability to cope with contemporary challenges. However, this issue has not received sufficient attention in the literature. Especially the impact of ICT on public administration managers and their work is virtually unexplored. Taking this into account, below are presented the results of studies that examined ICT usage by managers. Vlahos, Ferratt, and Knoepfle (2004) investigated German managers' use of ICT, including their perception of the value provided by computer-based information systems. According to the results, managers were relatively heavy ICT users. Spreadsheet (financial report preparation) was the first choice of software used by the majority of participants in the study. It was followed by word processing, database applications, and e-mail. Generally, German managers rated their overall satisfaction with computer-based information systems higher than its overall value. The aim of the study by Robertson and Callen (2004) was to identify the profile of Australian health information managers, together with ICT and health informatics knowledge and skills they possessed. The majority of managers involved in the research perceived that they had very good to excellent skills in word processing, spreadsheets, Internet, e-mail, and patient administration systems. In contrast, respondents reported limited or no skills in Microsoft Project software, statistical packages, and programming. Accordingly, the majority of surveyed health information managers used word processing, spreadsheets, Internet, e-mail, and patient administration systems on a daily basis. Most of the respondents claimed that they never used Microsoft Project, statistical packages or programming. The objective of Birchall and Giambone's study (2008) was to examine managers' attitudes towards the deployment and use of ICT in their organisations. The authors found that many of the respondents appeared equipped to work flexibly. They were able to access the company's management information systems, e-mail, and centrally stored files when working remotely. Most of the managers used mobile phone as the main portable device accessible almost invariably during the working day. Overall, very few respondents said that they used transportable PC for this purpose. The study also showed that two-thirds of managers spent one hour or more per day on the phone, while one-third of them used the company's internet one hour or more. The time spent on e-mails was quite considerable, since 61% of respondents stated that they dealt with e-mail two hours or more. However, many of e-mails received were irrelevant to the job, so for many managers this meant time wasted. Mbatha and Lesame (2013) explored the availability and usage of ICT in selected South African government departments. The sample comprised of managers employed in five district municipalities. They confirmed that various ICT were mostly accessible in their offices. All respondents said that they had a computer at their disposal, as well as mobile phone and e-mail. On the contrary, none of them had an opportunity to use video conferencing system. The survey further revealed that all respondents used ICT for word processing and printing, to communicate with colleagues, for spreadsheet purposes, to access the Internet, and to disseminate information. All participants in the study also considered mobile phones, personal computers, laptops, the Internet and e-mail to be very effective in improving work performance. Adeleke et al. (2015) examined the ICT skills, utilisation, and training needs of health information management professionals from Nigeria. Slightly less than two-thirds of their respondents reported

that they possessed a computer, while about 78% of participants had an e-mail address. More than half of surveyed health information management professionals said that they had access to health-related archives through the Internet. The majority of respondents believed that they knew how to use Office applications, such as Microsoft Word, Excel, and Access, but very few reported that they could skilfully use them. Therefore, many participants expressed a desire for further ICT training. The authors also realised that age, level of education, and ownership of a computer were associated with ICT knowledge and perception.

### 3. INSTRUMENT, PARTICIPANTS, AND PROCEDURES

The data presented in this study were collected as a part of a wider survey. For this purpose, an online structured questionnaire was created using Google Forms. A link to the questionnaire was sent via e-mail to potential participants. The invitation letter included information on the study's background and aims. It was also explained that the surveys would be anonymous. Two reminder letters were sent to encourage non-respondents to take part in the survey.

Finally, 96 managers employed in Croatian central government bodies filled out the questionnaire. At the time of research, Croatian central government bodies consisted of 20 ministries, 7 state administrative organizations, and 18 state and government offices. Table 1 presents the socio-demographic characteristics of the participants.

*Table 1. Socio-demographic characteristics of the study sample*

Characteristics	n	%
<b>Age (years)</b>		
28 – 39	35	36.5
40 – 51	34	35.4
52 – 63	27	28.1
<b>Gender</b>		
Female	52	54.2
Male	44	45.8
<b>Highest level of education</b>		
Secondary school	2	2.1
Undergraduate degree	2	2.1
Graduate degree	63	65.6
Postgraduate degree	29	30.2
<b>Years of service in the institution</b>		
0 – 11	50	52.1
12 – 24	37	38.5
25 – 37	9	9.4

Participants were divided into three equal age groups. The younger and middle-aged groups were very similar with respect to the frequency. The sample had a slightly lower percentage of older



managers. The average age of respondents was 44.9 years with a standard deviation of 9.2 years. There were more women than men in the sample and the vast majority of participants had either graduate or postgraduate degree. Only two respondents reported that their highest level of education was secondary school. Participants were also split into three approximately equal groups based on years of services in the institutions. More than half of the managers worked in the institution for less than 12 years. About 9% of respondents were employed for 25 years or more. The average years of service in the institutions was 12.1 with a standard deviation of 8.6.

#### 4. RESULTS

In order to determine the extent to which ICT affect Croatian public administration managers, participants were asked to indicate how often they use a desktop computer, laptop/notebook, tablet, and smartphone at work. Response options were presented on a five-point scale ranging from 1 (never) to 5 (always). The results are summarized in Table 2. These data are also shown in Figure 1.

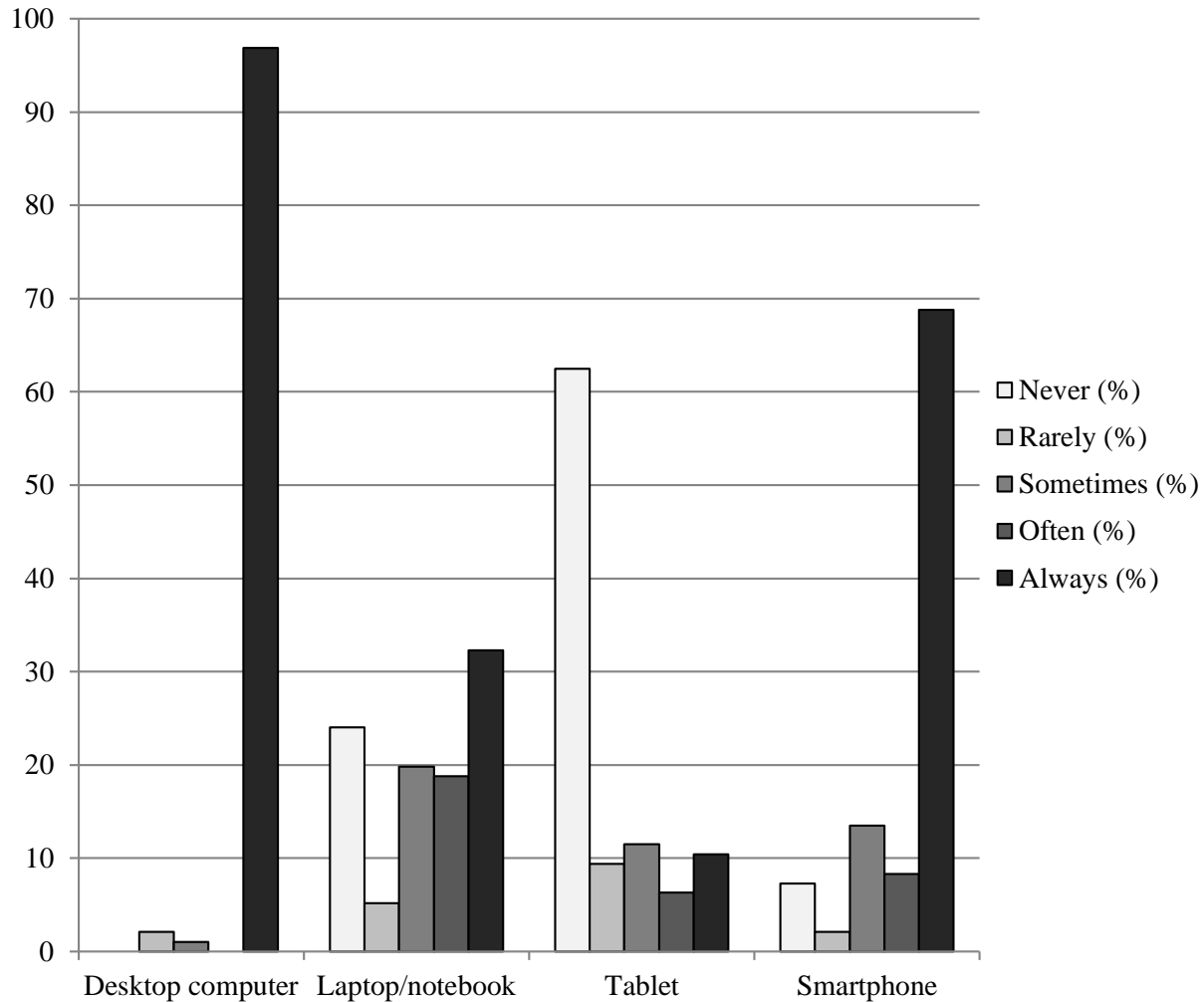
*Table 2. The frequency of ICT usage and associated descriptive statistics*

Device	Frequency of use					Descriptive statistics		
	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)	Mean	Median	Standard deviation
Desktop computer	0.0	2.1	1.0	0.0	96.9	4.9	5.0	0.5
Laptop/notebook	24.0	5.2	19.8	18.8	32.3	3.3	4.0	1.6
Tablet	62.5	9.4	11.5	6.3	10.4	1.9	1.0	1.4
Smartphone	7.3	2.1	13.5	8.3	68.8	4.3	5.0	1.2

Almost 97% of respondents stated that they regularly used a desktop computer at work. More than half of the surveyed managers said that they often or always used a laptop/notebook for business purposes. In contrast, less than 17% of participants reported such frequent tablet use. Smartphones are also very popular among managers. Slightly more than two-thirds of respondents reported that they always used a smartphone at work, while only 7.3% of those surveyed replied that they never used a smartphone for business. Measures of central tendency confirm that a desktop computer was the most commonly used device by Croatian public administration managers, followed by a smartphone. According to the standard deviation, tablet usage had the largest dispersion.

The research further revealed that the average age of personal computer was 23.3 months with a standard deviation of 26.9 months, while the median value was 18 months. This can be considered satisfactory, especially if we take into account the financial situation. About 78% of respondents were mostly or completely satisfied with the ICT equipment with which they worked. Only two managers (2.1%) were completely dissatisfied with the available ICT resources.





*Figure 1. ICT usage by Croatian public administration managers*

In addition, participants were asked to estimate how often they use ICT for business purposes. Once again, a five point scale was employed, ranging from 1 (never) to 5 (always). Table 3 presents the results of managers' responses to 13 survey items. The frequencies of responses are also shown in Figure 2.

Respondents indicated that they most often used ICT for text writing/editing and e-mail communication. More than 90% of participants stated that they constantly used ICT for these purposes. In these two cases, none of the surveyed managers reported “never” or “rarely”. According to the results, Croatian public administration managers also used ICT very often for various administrative purposes, reading business reports, and searching information on the Internet. More than 80% of respondents reported that they always used ICT for performing such activities. Reading news on the Internet, data entry, and data analysis are further areas where ICT were often used by Croatian public administration managers, but to a lesser extent compared to the previous ones. The surveyed managers used ICT less frequently to interact with government agencies and businesses. Their interaction with citizens was even rarer. Approximately 17% of participants claimed that they never used ICT to interact with citizens. The results further indicate that Croatian public administration managers did not often use ICT for creating presentation. As

expected, they very rarely participated in video conferencing. More than half of respondents said that they never used a video conferencing system.

*Table 3. Purposes of ICT use and associated descriptive statistics*

Purpose of use	Frequency of use					Descriptive statistics		
	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)	Mean	Median	Standard deviation
Administrative	0.0	1.0	5.2	9.4	84.4	4.8	5.0	0.6
Reading business reports	1.0	1.0	4.2	13.5	80.2	4.7	5.0	0.7
Text writing/editing	0.0	0.0	3.1	6.3	90.6	4.9	5.0	0.4
Data entry	0.0	1.0	14.6	17.7	66.7	4.5	5.0	0.8
Data analysis	2.1	1.0	15.6	27.1	54.2	4.3	5.0	0.9
Creating presentations	7.3	14.6	19.8	17.7	40.6	3.7	4.0	1.3
E-mail communication	0.0	0.0	2.1	5.2	92.7	4.9	5.0	0.4
Video conferencing	55.2	21.9	14.6	6.3	2.1	1.8	1.0	1.0
Searching for information on the Internet	0.0	0.0	3.1	15.6	81.3	4.8	5.0	0.5
Reading news on the Internet	0.0	4.2	10.4	13.5	71.9	4.5	5.0	0.8
Interaction with government agencies	2.1	8.3	10.4	31.3	47.9	4.1	4.0	1.0
Interaction with citizens	17.7	20.8	20.8	20.8	19.8	3.0	3.0	1.4
Interaction with businesses	5.2	8.3	14.6	29.2	42.7	4.0	4.0	1.2

Measures of central tendency are in accordance with the above mentioned findings. According to the mean values, Croatian public administration managers most often used ICT for text writing/editing and e-mail communication. These two items had the lowest standard deviations. Managers also frequently used ICT for various administrative purposes, reading business reports, data entry and analysis, and searching information and reading news on the Internet. In all these cases, the median has a value of 5. The lowest mean and median values were found for the item

relating to managers’ participation in video conferencing. The means also indicate that Croatian public administration managers did not use ICT extensively to interact with citizens, businesses, and other government agencies.

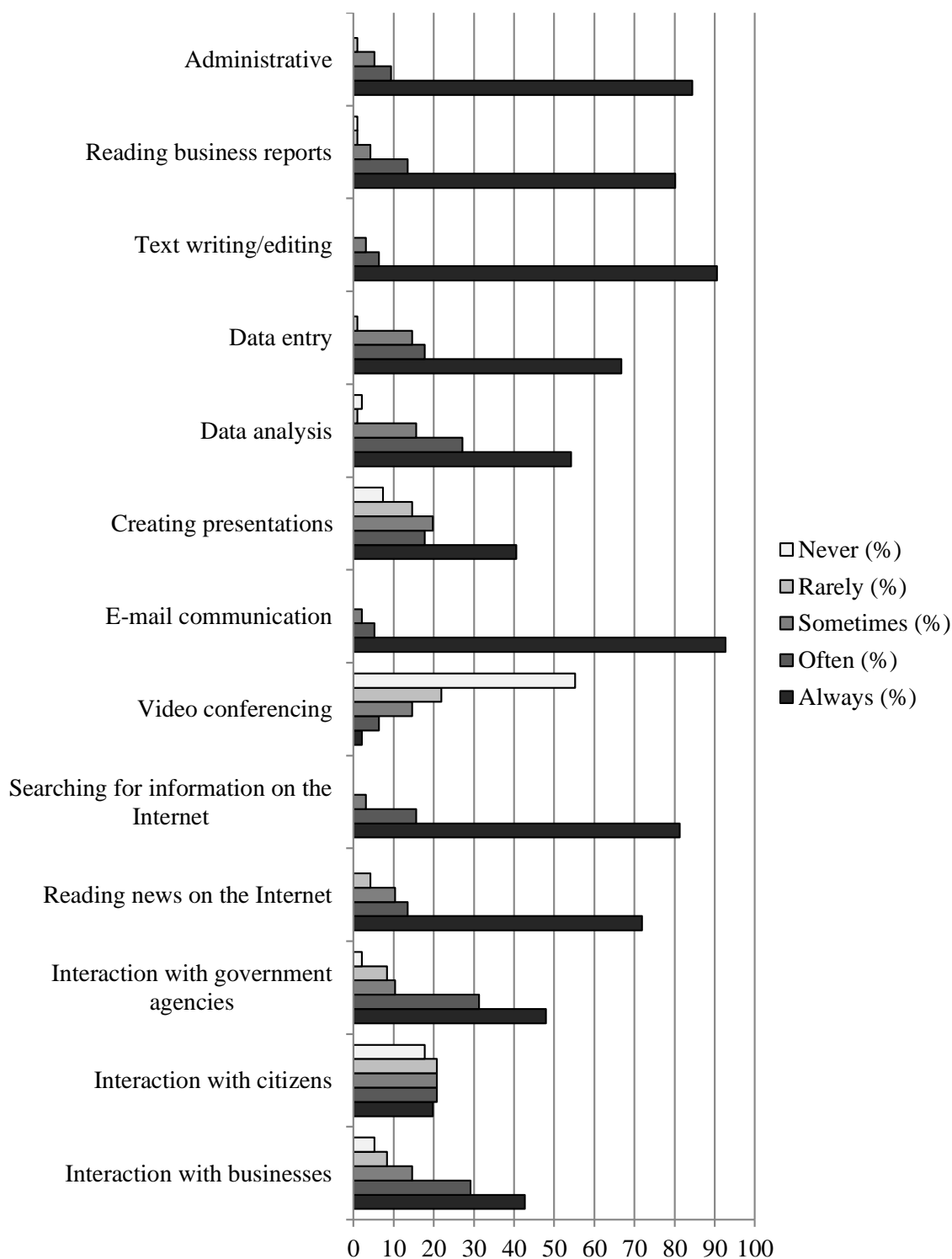


Figure 2. Purposes of ICT use by Croatian public administration managers

## 5. CONCLUSION

The widespread use of ICT has changed the world dramatically. In just a few decades, ICT have become a key driver of social and economic progress. ICT have also significantly influenced public administration. In a world dominated by technology, ICT play a major role in the development of efficient and effective public administration. Therefore, it is important to understand how ICT affect all public administration employees, and particularly managers. In this context, the main aim of this study was to examine the impact of ICT on Croatian public administration managers and their work.

The study revealed that managers regularly used desktop computers and smartphones at work, while laptops/notebooks and especially tablets were not so popular at the time when the survey was conducted. The average age of managers' computers was about two years. The majority of participants were satisfied with the ICT equipment with which they worked. It was also found that the surveyed managers regularly used ICT for purposes such as text writing/editing, e-mail communication, administration, reading business reports, data entry and analysis, and searching information and news on the Internet. They used ICT less frequently to interact with citizens, businesses, and other government agencies, and particularly to participate in video conferencing. These findings make it possible to improve ICT use in public administration, since the results indicate the areas where modern technology is underused. Without them, it is not possible to develop an effective strategy of ICT integration in public administration.

Given the importance of the problem, surveys such as this should be continuously conducted. It would be necessary to further investigate the impact of ICT on public administration managers. Such research could include other devices and more purposes of use. The further research is also needed to examine the differences between groups, since socio-demographic characteristics may influence managers' use of ICT.

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## SEVEN LAWS OF THE MACRO-ECONOMIC MOVEMENT

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### **ABSTRACT**

*Existing economics systems in the world, either in socialist form or in liberal form, with many weak points, in practice, faced with crisis or were not able to contribute to sustainable economic development. Therefore, it seems the world requires new economic rules to boom and for revolution in the liberal and socialist structures. The paper has stated the seven main rules of this revolution and the author believes by following these golden rules, economic society is able to experience explosive economic growth and prosperity. It is obvious that in the system, our definitions of government, production, services, and even culture use, are different.*

**Keywords:** *Socialist, Liberal, sustainable economy, government, services*

### **ABSTRACT OF SEVEN RULES**

1. The principle of freedom of production and services, just like freedom of expression. (Remove prerequisite for obtaining a license in economic activities)
2. The principle of monitoring of economic activities. (Monitor either the public sector or private sector, is without executive powers.)
3. The legal trial. (No economic activity cannot be closed or restricted until after the judicial procedures)
4. The flotation of standards ( Economic activities should be floating and growing)
5. Reduced economic risk (The biggest obstacle to economic growth, is increased risk of developing)
6. The desacralizing in the economics (All are equal in economic activities)
7. The intelligent protection like children's rights (Economic activities has neonatal period and they need for an incubator in the period)

## **1. INTRODUCTION**

### **PRINCIPLE OF LEGAL TRIAL**

Any economic activity may not be closed or limited except after particular judicial ceremonies.

### **ISSUE EXPLANATION**

The most important economic laws of human whether in socialistic or liberalistic form, although they could result in a limited growth limitedly and locally in some sections, but they always had some obstacles and they have acted inversely from some sections and they have deprived huge masses of people from the talents of economic mutation in the personal life [1]. Therefore, the



problem is that can we find new rules which may cause economic growth of societies in macro level and meanwhile economic growth of the units of society individuals in micro level?

In the 21<sup>st</sup> century, especially in the middle-east region, we observe encounter in the important economic thought of socialism and liberalism and its exchange in intellectual kinds caused creation of terrorism, because today, terrorism is a more profitable economic activity in this region and gradually all over the world [6].

Starting a healthy business needs taking numerous justifications which of course, it is following bureaucracy in a classic economic system and the bureaucracy is also following administrative immorality [2].

Such business may be threatened to be closed by the organization issuing the authority or tens of other supervisory institutions or its legality may be under question and as the knowledge advances increasingly, it is considered lagged rapidly despite the existence of the standard promotions and they may lose their competitive advantage [3]. No doubt in such space, despite the existence of legal or illegal competitors, the risk line is also high and this economic firm is extremely subjected to threat in an economic society which is based on discrimination even if it has passed the stages of its larval state and birth healthfully and whereas a terroristic organization has more chance to survive and grow since its formation because the organization or better say, terroristic firms have no need to take any authorities for formation, so their formation and growth is very simpler than the formation and growth of a normal economic firm in the above societies and it is exempted from the bureaucratic complexities of taking authorities. The supervision organizations common in liberalistic or socialistic systems are not able to question the legality of such organizations because formerly and in the beginning of the formation of this economic firm, the legality of the system is rejected and of course, the huge population who are harmed economically from socialistic and liberalistic thoughts have also accepted their transfer to the above systems [4]. The terroristic firms are inevitable to be benefitted from the state-of-the-art and the recent standards, so this compulsion also helps them and they precede the classic economic firms. These terroristic firms were developing in the region of middle-east and they would emerge rapidly in other locations of the world if the absolutism of the socialist or liberalist economic systems reduce relatively. They usually found ideological fundamentals for themselves and thus, they proceed to make sanctified airs at least in their fans' minds [5].

So if the status of global economy does not change in terms of economy and theoretical fundamentals, we would soon observe the emergence and development of terroristic organizations in other locations of the world in addition to middle-east. An emergence and development that perhaps form in sharper edges of economic strangulation such as middle-east and then in regions such as North Korea, Caucasus and Africa, but it would be developed rapidly in other global areas having masses of people unsatisfied of the economy. Hence, new theoretical fundamentals should be searched in the economy to keep the units of people in peace so that Montesquieu states in the first chapter of the book "The spirit of the laws" that: the [free] commerce has a great influence on

improvement of the morality among the nations. It adjusts the spirit of violence and cruelty and causes development of the civilization [11].

**Table: Comparison between creating economic firm and terroristic firm**

Economic firm	Terroristic firm
It needs taking authority	It does not need taking any authorities
The official stages of its formation is complicated	Its formation does not need passing any official stages
It should be responsible for threatening the supervisors	It is lacking supervision and it is not responding
It is luxury for it to follow the standards	It is compulsion for it to follow and develop standards
It is lacking holiness and ideology	It is ideological and holiness-oriented
It has a limited and safe profit	It has a major and immediate profit

## 2. METHODOLOGY

To write this paper, both field and library research methods are utilized. The library resources used in this research are mentioned in the end and the field method of the research is also inductive model of incomplete induction type and also modeling.

## 3. THEORY

After investigation on the advantages and disadvantages of different economic systems including liberalistic forms of Europe and America or socialistic forms of Cuba, Venezuela, Northern Korea, ex-U.S.S.R and China and also the economic models of totalitarian societies and economic mutations in the models of south America with the approach of birth, maturity and old age of a small or moderate or big private economic firm and besides, by pathological investigation on the models resulting in the birth of terroristic firms particularly in the middle-east, it seems the seven laws below could not only solve the ill economy of crisis-stricken regions and Dutch illnesses of economy in different regions of the world, but it causes preventing from generating poverty and terrorism in the world and it can treat the economic crisis of the developed countries too. Therefore, in the following, the theory of these seven laws is explained.

### **First law: principle of "freedom of manufacturing and services"**

As the freedom of speech though positional may cause quantitative and qualitative growth of publications, the freedom of manufacturing and services may also cause quantitative and qualitative growth of economy. For instance, in Iran before 1941, the number of publications was maximum 57 titles, while this variety increases to 56 titles during 6 years after August 1941 that a relative freedom of speech was dominating because of the conditions after world war 2 and before the beginning of the cold war between the blocks of liberalism and socialism and it was suddenly increased to 560 titles [7].

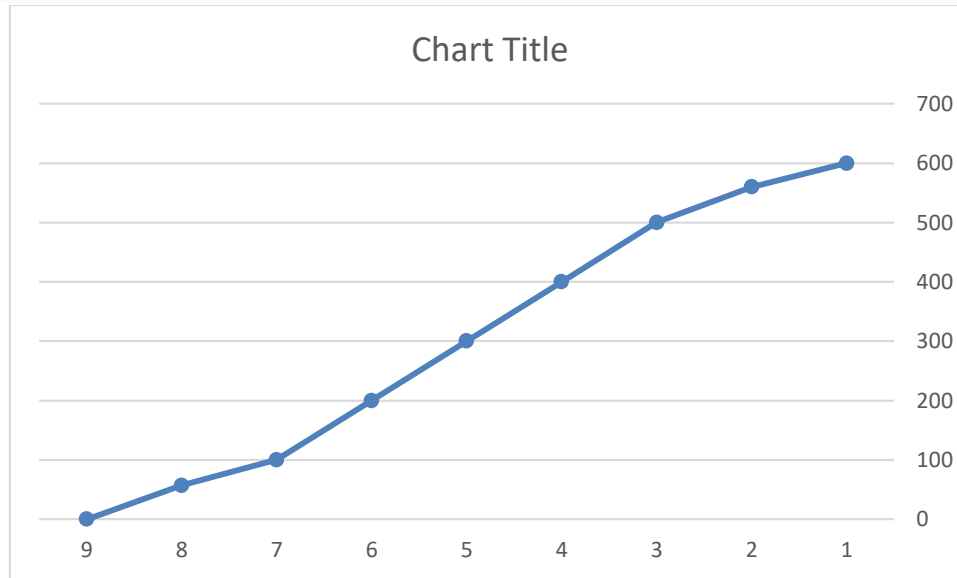


Fig.1

Based on the economic index of heritage, that class of countries having more freedom of economy have more economic growth according to the formula and  $V_i$  has a direct relation to the economic growth of countries.

$$\frac{V_i - V_{min}}{V_{max} - V_{min}} \times 10$$

In which:

$V_i$  = the value of variable for our country

$V_{max}$  = the maximum value for our country

$V_{min}$  = the minimum value for our country

The  $V_i$  in turn is constituted of 5 independent economic variables which are classified in 10 major categories.

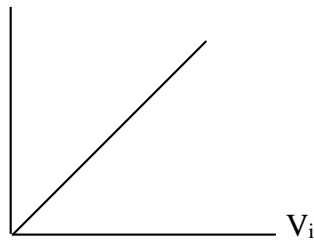


Fig.2.Economic Growth

The principle of freedom of manufacturing and services states that:

"Anybody including natural or legal person is free to produce what he/she wants and present any types of services he/she wants."

It means that the originality is along with the absolute and unconfined freedom of manufacturing and services and manufacturing and service presentation is free absolutely and there is no obstacle or limitation except the two below limitations which of course, these limitations themselves require proving according to the second principle and they are accounted as limiters only after certain issuance of the order in the court.

Limitations of the principle of freedom of manufacturing and services are:

- 1- Device
- 2- Direction

a) Device of manufacturing or services

No doubt, the main aim of this plan is to perform, manufacture, and present the free and unlimited services, but there is a given and humanistic rule that "the goal does not justify the means". Therefore, the device should not be inhuman and non-noble (illegal). So, it is not allowed and permissible to use any types of devices, for example slaveholding in manufacturing or presenting the services or abusing the work force of the children is not allowed. So if it is proved that no manufacturing or services are carried out with non-noble or illegal tools, that manufacturing and service should be closed. Of course, it is emphasized that according to the principle of exculpation, all devices are legal unless the opposite is proved. It is evident that the criterion in this field may be corresponding to the legal status of the societies [8].

b) Direction of manufacturing or services

The direction of manufacturing or services should also be noble, humanistic and legal. Therefore, if it is proved a manufacturing or service may be in the direction of injuring the human's health, it is not allowed and permissible. For instance [10], if production of weapon is in the direction of self-defense or sport, it is free, but if it is in the direction of murder and robbery and plunder, it is not allowed. Again, it is noted that the direction of all productions and services is honorable, legal and humanistic unless the opposite is proved. So nevertheless, production of opium or alcohol is also allowed in the direction of medical matters and it is non-allowable in the direction of prejudicial consumption. So, perhaps it may be stated that the production of opium is considered allowed or not allowed in the mediation of the method of its sale. If the produced opium is sold to

the pharmaceutical factory, its production is not difficult. But if this opium is offered to the laboratories of manufacturing the drugs, it is not allowed [9].

**Second rule: "the principle of information supervision on the economic activities"**

No doubt the economy is drawn to corruption without any correct supervision, but the most destructive kind of supervision is also governmental supervision. If the supervisor is government, non-noble examples are incorporated with the policy in the direction of manufacturing or services and the economy undergoes the policies of the government. Hence, the right of governmental supervision on manufacturing and services should be removed and from the other hand, the supervisor should not have the power of decision making and on the life and death of economic activities and it should only present his/her supervisory view like an impartial critic and then these are people or consumers who should make decisions to use the products or services or not.

Therefore, it seems that the supervisor should be NGO organizations and even if the government wants to have supervision, the non-implementation and non-operational section in the government may only exclaim its supervisory view merely beside the NGOs by giving stars and scores to economic activities.

The supervisors' view to economic activities was accounted merely evidence or sign for the courts and it would not have order of deterministic reasons.

**Principle of legal trial: "any economic activity may not be closed or limited without the vote of the court"**

One of the important indices in economic security based on PEST analysis is that how long does it take to establish an economic firm in a country and how long does it take to close that firm with the order of authorities. According to the principle of legal trial, shutdown of an economic firm should be carried out surely with the attendance of jury and it should be surely carried out after the certainty of the order and the temporary closing should have a long-term process and it should merely be when the private complainant complains it legally and his/her reasons represent lack of legality of direction or device in that firm. So, low quality or lack of good quality or high price and etc. are not the economic reasons for closing an economic activity, but in a free economy of the considered type of this paper, lack of quality or lack of good quality or inappropriate price is carried out automatically and inevitably through social rejection of that activity by the society which in turn is due to the existence of different economic competitors in the society and if for any reason, the economic activity which has a legal device and direction and has also an advocate and is not economical for its executives is not closable or limitable through the government. On the other hand, founding an economic firm does not demand taking authority and passing administrative stages and ceremonies and the register merely means authority and of course the process of registering a company would be executable merely and easily with authentication and claim of

legality of direction and tools. To approximate the mind to the matter of founding, an economic firm may be similar to the birth of a real human and its closing may be similar to a real human's death. As a human's birth does not need any particular authorities typically and his/her initial rights is established automatically through taking his/her identity certificate, an economic firm should be founded easily and it should also have initial rights including right of living merely through registering. And it should be prevented if possible from its death or in the worse state, closing it which may be similar to execution and perhaps a government or even a private section creates some centers to prevent from death of a juristic personality so that there are such centers to support natural persons' lives.

### **Principle of quality: "the standard should be floating and increasing"**

Change in the economy is not possible without change in the standard. Therefore, the standardizing movement should be occurred with authorization and variety of governmental and private standard organizations and the goods and services should be offered through receiving numerous signs of standards (i.e. the donors of standard sign compete with each other in gaining social acceptability and value and importance). It is evident that the responsibility is also expected for the standard institutes in exchange for presenting the standard sign and these centers should be accountable for complaints of private complainants or attorney generals correspondent to their value and validity and they should compensate the probable applied damages merely or through the help of the insurance.

The standard should not be fixed and stopped, but it should be floating and promoting with the increase in the quality and advance in the technology. If the quality has no ending, the standard should not also have any endings. Of course, culture-building should be carried out for people to consume standard goods and prevent from consuming non-standard goods which this culture-building is the task of government and the executives of standardizing. But in free economy, there is never any compulsion to use standard goods or standardizing, though it might seem that some of the important goods like drugs or medical tools or things which are related to the life of people should be standard perforce. But if a culture is built that lack of using standard goods may be deadly, then automatically, no one uses non-standard goods.

It should be noted that the courts may reprimand and punish the expert person if he/she is not using standard goods, according to "the statistic of the expertise".

### **The principle of risk reduction**

The economic activity including purchasing, sale, manufacturing, services or even consumption is always along with risks. Hence, for economic revolution, some professional organizations should exist in order to reduce the risk of producer, supplier and consumer which among them are insurance organizations, but some other support associations and institutions are imaginable and each one of them proceeds to support their addressees financially, legally and culturally from a particular angle and like the insurance organizations, they receive a small amount in lieu of these



services and accepting their responsibility. Therefore, like insurance organizations, such support organizations should be established privately and governmentally<sup>1</sup> (i.e. the establishment of the insurance organizations is also free according to the first principle and its supervisory tools would be civil institutions and of course the competition) in order to insure everything and support them to reduce their risks, because one of the important obstacles of the economic revolution is risk. An inventor or entrepreneur should have the ability to insure his/her investment risk so that a good or the services may also offer the label of the consumer's support services including financial, legal, patronage, etc. during the supplying so that if it had not the required quality or standard as the private complaint is executed and the court confirms, the insurance must pay its cost.

It is evident that also this category requires culture-building. The people should use to consume goods or services which have standard seal and consumer's insurance seal too. This is also better to give it stars or points by the supervisory (non-governmental) organizations.

**Principle of de-monopolization: "in the facility of the economic activity, all people are equal"**

There are no preferences, superiorities, sanctities, priorities or any custodian roles in the economic activities for any individual, nation, government or person to another and the natural or legal or governmental person should never be availed of any particular advantages to perform an economic activity. In the other words, no service or manufacturing task resulting in exploitation is considered to be a governmental task, and the government may not prevent the others from carrying it out in order to gain incomes or provide a part of its incomes. For example, even the tax which is a completely governmental matter could not be monopolized by the government and if another legal or natural person had the legal tools and direction and of course such acceptability that the individual/individuals paid him/her taxes by their request, he/she would be allowed to execute this task<sup>2</sup>.

Also, in the permission of the economic activities, sanctity, and religion play no roles and any economic activity by anyone from anywhere in this world is permissible if the tools and direction are appropriate and correct, and the governments should not inhibit the economic activities by tools, customs, visas or excuses of supervision and authority<sup>3</sup>, because any monopoly or any custodianship only causes manifesting the economic and administrative corruption so that whatever the commercial development and the variety are less and the economy is more monopolistic or governmental, the administrative corruption will be increasingly higher. Hence, this principle may also be explained as the principle of free and fair competition which there is no doubt that such competition causes economic dehiscence and revolution.

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<sup>1</sup> The existence of the governmental fairs beside the private ones is always dangerous and it may cause unhealthy competition. Hence, this matter should be abstained as far as possible. But when this is inevitable, it should be prevented from competition with private section.

<sup>2</sup> Maybe samples like a fifth of the net income or religious tax in the Islam religion confirm the same meaning.

<sup>3</sup> Charter of WTO (world trading organization)

**Principle of intelligently protection: "economic productivity and development requires creating centers of growth."**

Creating the centers of growth and the simulators of economic growth, provided that it does not cause discrimination and monopolization may result in economic revolution. Although the role of government is of importance to create such centers, the private section may also attempt to found centers of growth. In fact, the task of the government is not productions, sales, or even provisions or presenting any services. Yet, the government may present services to society and these services should merely be free.

Wherever the government takes money from the people, it stimulates corruption and results in creating the monopoly of the heritage. Therefore, the government may not sell petroleum or present the training services in lieu of taking money and it is not allowed. But in such system, it may have stations to supply free petroleum for weak classes of people, or schools, or free universities, or free hospitals which of course present qualified services and products too, though they may be limited in terms of quantity so that the rich individuals are not interested to use them because it is very crowded and limited and indeed, somebody would use these governmental facilities who pays its cost in the shape of time, not money.

It is evident that with this definition, the army, military and security forces, department of environment, fire station, courts, organizations of road engineering and infrastructures which are not profitable, remain monopolized by the government. First, they are not profitable and second, they have no acceptability and social implementation authority or warranty for implementation. But wherever the possibility to gain income is provided, the monopolization of government is broken immediately. For example, if a corporation may construct a road and acquire money in lieu, it should perform this task without needing any governmental authorities. Of course it is evident that the principle of legality of tools and direction is always existent and prevents from its activity in the regard of environmental destruction.

The centers of growth and the simulators of growth are some centers where facilities are provided to create small or big firms. The entrepreneurs may have bureau in the centers of growth with the least cost and sometimes free and they may benefit from its laboratory and workshop facilities. They may use its legal, advertising and financial consultants, proceed to experimental sampling and supplying, evaluate the market, write strategies and future studies and simulate their strength and weakness points and opportunities and threats in this way, amalgamate their activity from different angles and test and simulate them in a miniature way, then exit from the centers of growth for a serious and professional activity and give place to other beginner entrepreneurs.

#### **4. CONCLUSION**

Implementation of the seven stated laws which may apparently create economic anarchism has traversed the rules of economic liberalism in some fields and the rules of socialism in some others. It has created a new culture in the economy and it results in financial development of the countries,

creating occupation and removing the unemployment. Perhaps it seems apparently that the role of governments is reduced and the support is removed from the consumer, but indeed with transferring the supervision to the civil organizations and creation of competition with the eruptive increase in the firms, the final consumer which of course his/her culture and view to consumption has changed, gains the most profit financially and also the government becomes not only more powerful, but the continuum of providing its authority would also be wider.

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## THE IMPORTANCE OF EVENT IMPACTS IN THE TOURIST DESTINATION

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### ABSTRACT

*A visit to a particular tourist destination has increasingly become motivated by visiting events that nowadays make up a significant part of the integrated product of a tourist destination. In addition to responding to the motivations of tourists, events also generate multiplier effects in the tourist destination. They increase tourist traffic, encourage tourism spending, and build the identity of the tourist destination. Therefore, event monitoring and event impact evaluation has proved to be an important tool for the tourist destination.*

*Taking into account the number of benefits of events and their role in a tourist destination, the purpose of this research is to examine the attitudes of the managers employed in tourist boards regarding event monitoring and the impacts they generate in the tourist destination. The paper is based on theoretical and empirical research. In the theoretical part, the key concepts have been described. In accordance with the purpose, an empirical research was conducted on a sample of 20 managers of tourist boards within Primorje-Gorski Kotar County. The survey was conducted in April 2016 using an 11-item structured written questionnaire. Descriptive analysis was used to obtain the goals of the research.*

*The aim of the research was to obtain reliable data pertaining to the basic characteristics of methods of monitoring events in the destination and event impacts generated in the destination. The research results showed that the managers of tourist boards of Primorje-Gorski Kotar County mostly use simple methods of monitoring events, such as the observation method, financial report analysis and monitoring visitor numbers. More sophisticated methods such as SWOT analysis, monitoring police and fire department reports, cost-benefit analysis, and the suggestion box method are rarely used in event monitoring systems. The contribution of this paper is visible in proving the importance of event impacts in the tourist destination. Although it was conducted on a convenient sample, this study can serve to provide good insight into the attitudes of the respondents concerning event management.*

**Keywords:** *Events, Management attitudes, Tourist boards, Tourist destination*

### 1. INTRODUCTION

Today events hold a key position in the amalgam of a destination's components. In addition to enhancing a destination's attractiveness, events also have a direct influence on the generation of

its competitive advantages. Despite the multiple effects that events bring to the tourism offering of a destination, only recently has this phenomenon been recognized in Croatia in terms of science and practice. The Croatian Strategy of Tourism Development by 2020 refers to events in the context of enrichment of the tourism offering, within the framework of the existing tourism product. Concurrently, the only research in the field of event management so far, on a larger sample, refers to the attitudes and expenditure of visitors with regard to cultural attractions and events.

In most cases, tourist destination management is entrusted to a network of public tourism organizations, in Croatia this being the system of tourist boards. However, an adequate model of destination management is yet to be put in place in the practice of tourist boards (Blažević, Peršić, 2012). This drawback frequently results in the uncoordinated activities of destination stakeholders, the failure to keep abreast of trends on the tourist market, the inability to recognize specific preferences of tourists and the absence of the systematic development and innovation of the destination's tourism product. Hence, although events present a huge potential for generating multiple tourism effects, the impacts of events in the destination are very often neglected.

In recent years, global pressures on the economic system of tourism have been increasingly pronounced, primarily the ecological ones, but also other global issues pertinent to social and economic inequalities (Bramwell, Lane, 2008, p. 2). These impacts reflect upon event practice that is closely linked to the economic system of tourism, resulting in the development of contemporary tools for monitoring and measurement of the economic, social, and environmental event impacts, as well as upon the conclusions that event activities should become more responsible (Herman, Geldenhays, Coetzee, 2010). Therefore, the event stakeholders have the ethical and moral obligation to make events socially, economically, and environmentally accountable (Getz, 2005). Event management faces the challenge of becoming more responsible in its decision making and in minimizing, or completely eliminating, negative event impacts by means of promoting the positive effects (i.e., by generalizing the results that are sustainable) (Getz, 2009, p. 64).

Based on the above considerations, this study deals with the phenomenon of events within the context of a tourist destination. The objectives of this study were to investigate the attitudes of managers of tourist boards in Primorje-Gorski Kotar County (PGKC) regarding event impacts on the tourist destination. This framework leads to more specific research questions:

- Which methods of monitoring event impacts do PGKC tourist boards managers apply?
- To which category of impacts do PGKC tourist board managers attach the greatest importance?

This paper is structured as follows. The section after the introduction describes fundamental concepts based on previous research and is followed by a section dealing with methodology and empirical research results. The paper ends a Conclusion section which also discusses research limitations as well as recommendations for further research.

## **2. LITERATURE REVIEW**

Events indubitably represent an opportunity for the development of tourist destinations. Pasanen, Taskinen, and Mikkonen (2009, p. 112) point out that events are becoming more and more important, especially in regional areas where possible sources of income are more limited than in cities. For a long time, theoretical knowledge and event management practice have pointed to the importance of using methods which, apart from monitoring only economic event impacts, have a broader focus of research that includes the monitoring of social and environmental impacts as well.

Regardless of whether the events involved are oriented towards attracting tourists or whether their goal is to attract the local population, their economic, social and environmental significance is exceptional (Trošt, Milohnić, 2012, p. 53). In the research area of event impacts, the need arises to monitor social, cultural, environmental, political and personal impacts which are neglected in research, compared with the economic ones (Bowdin, Allen, O’Toole, Harris, McDonnell, 2004). Accordingly, in recent years, there has been an increasing amount of research on the social impacts of events, with the main research topics being social development and community pride, measured through the research of visitors’ perceptions and attitudes (Fredline, Jago, Deery, 2002; Gursøya, Kimb, Uysalc, 2004).

Computable General Equilibrium Model (CGE), input–output analysis, and cost–benefit analysis (Dwyer, Forsyth, Spurr, 2006) are the three traditional models that are used in the practice of event impact measurement. The application of contemporary methods of monitoring and measurement of economic impacts of events, such as input– output analysis (Yeoman, Robertson, Ali-Knight, Drummond, McMahon-Beattie, 2004) or the sophisticated Computable General Equilibrium Model (CGE), is currently not possible in the Republic of Croatia due to out-of-date input– output accounts, as well as the fact that no input– output table for the Croatian economy has been made for over 20 years (Jurčić, 2000). Equally, the problem is insufficient statistics, not only at the national, but also, even in a greater measure, at the regional and local levels, where particular events take place. Accordingly, it is not possible to carry out the calculation of multiplicative impacts of those events. Due to this fact, there is often a discrepancy between scientific research of events and practice, which is evident not only in Croatia, but also elsewhere (Getz, 2007)

The only activities of the Croatian Bureau of Statistics with regard to events have been the monthly monitoring of congresses and other business gatherings, using indicators such as the number of business gatherings held, number of conference rooms and seats used, number of business gatherings according to type, the type of venues where the gatherings were held, number of business gatherings held according to the expert organizer, as well as the total number of days of duration of gatherings, number of domestic and foreign participants, and earnings from business gatherings inclusive of VAT (Croatian Bureau of Statistics, 2015).

A review of the literature can confirm the statistical monitoring of various indicators and impacts, most frequently of business events or of mega-sports events, such as the Olympic Games and World Football Championships. However, the impacts of smaller events of a regional or local character most often remain outside the focus of scientific and expert interest (Trošt, Milohnić, 2012, p. 54).

In expert literature, numerous methods and/or techniques of monitoring event impacts are mentioned, such as monitoring of the number of event visitors, monitoring of the number of tickets sold, surveying of event visitors, surveying of domestic population, surveying of event participants (Sherwood et al., 2005), observation methods (Carlsen, 2004), SWOT analysis method (Getz, 2005), etc. Within the framework of the event management theory in recent years, concepts and models of event impact measurement have been developed, with the aim of achieving event sustainability.

There is no destination strategic direction and orientation when it comes to events in Croatia. However, the Master Plan of Tourism Development in Primorje-Gorski Kotar County (2005), the territorial framework of which this paper adheres to, and the subsequent Amendments to the Master Plan of Tourism Development in Primorje-Gorski Kotar County (2012) mention events as an integral part of the tourism product and perceive events as a strategic goal in enhancing the quality of the region’s fundamental tourism development. For the needs of this article, the research



sample is made up of the managers of tourist boards in Primorje-Gorski Kotar County. The reason tourist board managers were selected is that the work of tourist boards is public and is based on the principle of general benefit. Strategic documents describe Primorje-Gorski Kotar County as a region whose future in tourism is grounded on the available, and largely unique, resource bases. The County's sea, islands and highlands come together to make a unique destination mix. According to the data of the Croatian Bureau of Statistics, Primorje-Gorski Kotar County accounted for 18.3% of overnights in the overall structure of tourist overnights realized in Croatia in 2015. This ranks it third in overnights realized, immediately after Istria County and Split-Dalmatia County. In the same year, Primorje-Gorski Kotar County registered a 5.8% increase in tourist arrivals. As the tourism offering of Primorje-Gorski Kotar County includes a variety of events of local, regional and international importance it is no surprise that events in tourism have become the destination's strategic commitment within the context of a highly attractive and highly competitive tourism product.

All the above stated underlines the justification of choosing Primorje-Gorski Kotar County as the tourist destination in which to conduct the research.

### **3. METHODOLOGY**

In order to answer the research questions, research was carried out using the survey method on a sample of 20 managers of tourist boards within Primorje-Gorski Kotar County. In the following part of the paper, methods and the research instrument, as well as the data about the research sample, will be described and explained in detail.

#### **3.1. Research instrument**

In this study, the survey method was applied. The research instrument was a structured questionnaire consisting of 11 questions divided into two parts. The first set of questions was related to socio-demographic characteristics (i.e. age, sex, level of education) of the respondents. Another set of questions referred to the collection of data on managers' perceptions regarding the economic, social and environmental impact of events. The respondents were asked to rate the items with grades from 1 to 5, whereby number 1 marked absolute disagreement, and number 5 absolute agreement.

#### **3.2. Research sample**

The research was conducted by examining the managers' usage of methods of monitoring events in the tourist destinations and their estimation of the event impacts generated in the tourist destination of Primorje-Gorski Kotar County. The research was performed in April 2016 by sending the questionnaire via e-mail to the managers of tourist boards. The application of this tool for data collection is considered to be justified with regard to the topic of research.

According to the Croatian National Tourist Board, 35 tourist boards operate within Primorje-Gorski Kotar County. Out of 35 questionnaires sent, a total of 20 questionnaires were collected, which represents a rate of return of 57%. Accordingly, the pattern of the surveyed tourist boards can be considered as satisfactory. The results were analysed in Google Docs by using the method of descriptive statistics.

### **4. RESEARCH RESULTS**

The following section presents the results of research conducted. The socio-demographic profile of respondents is provided, in addition to an in-depth analysis of the methods used by tourist board

managers to monitor events. Research results relating to the assessment of the importance of monitoring event impacts are also presented.

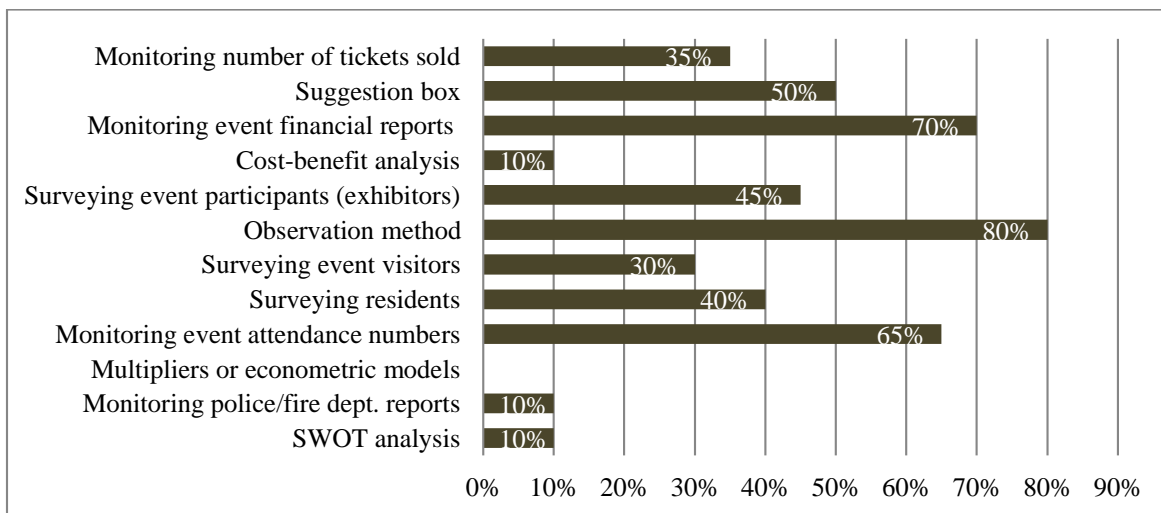
The following table presents the socio-demographic profile of managers.

*Table 1: Socio-demographic profile of respondents*

Description		Respondents (N=20)	
		Frequency	Percentage
<i>Age</i>	25-34	4	20
	35-44	9	45
	45-54	4	20
	55-65	3	15
<i>Sex</i>	Male	7	35
	Female	13	65
<i>Educational background</i>			
	Secondary school	0	0
	College	5	25
	University	14	70
	Master's degree/specialization	1	5
	Doctoral degree	0	0

An analysis of the respondents' socio-demographic characteristics leads to the conclusion that the majority of managers are highly qualified women, younger than 45.

Empirical research was used to study the methods tourist board managers apply to monitor events at the tourist destination level.



*Figure 1: Event monitoring methods applied*

It was established that 80% of managers use the observation method to monitor events, while 70% monitor events through the financial reports of events. Fully 65% of managers monitor the number of event visitors, and 45% conduct event participant (exhibitor) surveys. The methods least used by PGKC tourist board managers are SWOT analysis, monitoring police and fire department reports, cost-benefit analysis (used by 10% of managers), and the suggestion box method (used by 5% of managers).

A special set of questions focused on determining the importance of monitoring event impacts. In the most part, managers recognize the importance of monitoring social, economic and environmental impacts, as Table 2 confirms.

*Table 2: Importance of monitoring event impacts*

Impact	Average score
Social impact	4.5
Economic impact	4.4
Environmental impact	4.3

The managers gave a high average score to the importance of monitoring all three categories of event impacts. The importance of monitoring social impacts received the highest score (4.5), followed by the importance of economic (4.4) and environmental (4.3) impacts.

Empirical research also investigated the importance of individual impacts within each of the three stated categories. All elements in the group of the economic impacts of events on a tourist destination were given high average scores, as demonstrated by data in Table 3.

*Table 3: Importance of monitoring the economic impacts of events on the destination*

IMPORTANCE OF MONITORING THE ECONOMIC IMPACTS OF EVENTS	Average score
Destination promotion	4.9
Benefits from staging events	4.7
Costs of staging events	4.7
Sponsorships	4.5
Opportunities for employment and developing skills	4.1
Business development and investment opportunities	4.0
Inheritance of infrastructure and facilities	4.0

The managers gave the highest average score (4.9) to “Destination promotion”, followed by “Benefits of staging events” and “Costs of staging events”, both with a score of 4.7. The lowest scores (4.0) in the group of economic impacts went to “Business development and investment opportunities” and “Inheritance of infrastructure and facilities”.

*Table 4: Importance of monitoring the social impacts of events on the destination*

IMPORTANCE OF MONITORING THE SOCIAL IMPACTS OF EVENTS	Average score
Quality of life of residents and visitors	4.7
Damage to the destination’s image	4.7
Impact on traditional and cultural heritage	4.7
Celebrating community values and pride	4.4

In the category of social impacts of events, no less than three impacts received an average score of 4.7: “Quality of life of residents and visitors”, “Damage to the destination’s image”, and “Impact on traditional and cultural heritage”. Managers gave “Celebrating community values and pride” an average score of 4.4.

*Table 5: Importance of monitoring the environmental impacts of events on the destination*

<b>IMPORTANCE OF MONITORING THE ENVIRONMENTAL IMPACTS OF EVENTS</b>	<b>Average score</b>
Heightening awareness on the importance of a clean and preserved environment	4.5
Education and promotion of ecological programmes	4.2
Environmental protection activities	4.1
Waste generated (kg)	3.9
Selective waste collection and recycling	3.9
Consumption of paper during the event (kg)	3.7
Encouraging the use of public transport during the event	3.6
Power consumption during the event (kWh)	3.6
Water consumption during the event (l)	3.5

“Heightening awareness on the importance of a clean and preserved environment” is the environmental impact to which managers gave the highest average score (4.5). It is followed by “Education and promotion of ecological programmes” (4.2) and “Environmental protection activities” (4.1). The impacts of “Waste generated” and “Selective waste collection and recycling” both received a score of 3.9. The impacts with the lowest scores in the category of environmental impacts were “Consumption of paper” (3.7), “Power consumption” and “Encouraging the use of public transport” (3.6 each) and “Water consumption during the event” (3.5).

## **5. DISCUSSION AND CONCLUSION**

The aim of this paper was to establish the methods used by managers of tourist boards in Primorje-Gorski Kotar County to monitor events and to examine their attitudes with regard to the importance of event impacts in the destination. Research results show that 80% of managers apply the observation method to monitor event impacts; 70% use financial report analysis and 65% monitor event attendance. These results provide the answer to the first research question and indicate that tourist board managers in Primorje-Gorski Kotar County apply simple and financially acceptable methods to monitor event impacts.

The tourist board managers gave very high scores to the importance of monitoring all three categories of event impacts. Nevertheless, the importance of monitoring social impacts received the highest average score of 4.5, while the importance of monitoring economic impacts and environment impacted had scores of 4.4 and 4.3, respectively. This provides the answer to the second research question.

### **5. 1. Managerial Implications**

Event management plays a significant role in enhancing the quality and competitiveness of a destination by enriching the destination’s tourism offering through the design of new facilities and services.

The study has shown that tourist board managers recognize the importance of events for the destination, especially the social impacts of events on tourist destination development. This suggests the need for tourist board managers to disseminate new knowledge and skills for the purpose of improving the destination's tourism product, in particular by monitoring events using systems that will ensure the event is sustainable and by taking into consideration visitor attitudes, social development and community pride.

In this respect, tourist board managers must constantly monitor all aspects and potential impacts of events in the destination to ensure the planning of future events from the perspective of improved quality. At the same time, continuous education is required to develop the managers' awareness of the need to monitor event impacts and to highlight the advantages of the methods of event monitoring. Namely, in addition to conventional methods used in event impact monitoring systems, tourist board managers should also implement contemporary methods to create a holistic picture of the impact of events on the tourist destination.

## **5.2. Limitations**

The results of studying the managers' opinions show that social impacts are the most important impacts. The question arises: Would the research results be the same if the study involved event organizers outside the framework of the tourist board system, whose activities are not funded from the state budget?

When designing standardized methodologies for monitoring event impacts, the following must be taken into consideration:

- The differences in attitudes between managers who are employed in tourist boards and national tourist organizations and those who are not (tourism and hospitality operators, travel agencies, etc.)
- The differences in attitudes between managers in developed and less-developed tourist destinations (regions)
- Financial sources for organizing events (own funds or funds from the tourist board budget)
- The amount of the budget at their disposal (is there a difference in attitudes depending on the amount of funding available for organizing an event?)
- The level of knowledge of managers about events in tourism and about the impacts (positive and negative) that events may have.

Although the study included almost 60% of the sample (in the territory of the PGKC tourist destination), limitations to the research conducted can be found in the size of the sample (20 tourist board managers in PGKC), taking into consideration the statistical methods applied and the results of testing carried out. To ensure scientific objectivity in interpreting results, the mentioned spatial limitation, which gives the study a regional character, should be kept in mind. Accordingly, the results of the study can serve to provide insight into the attitudes of tourist board managers and as a starting point for further research on this subject.

Given the important role of events in the tourist destination with regard to their contribution to expanding the tourism offering and enhancing its quality, and with the aim of improving the destination's competitive ability, it is essential to continue research in the future by continuously studying the attitudes of guests on the one hand and the ability of destination management to meet guest demands on the other. In doing so, it is important to broaden the target group to include all parts of destination management (tourism operators, hotel operators, catering facilities, travel agencies and others). This would help to ensure the implementation of continuous improvements

in accordance with the demands of guests regarding events in the destination. Therefore, further research concerning event management and the importance of events is suggested that would take into consideration all partners within the tourist destination.

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## ASSESSMENT OF ACTIVITY OF UNITS ENGAGED IN AN BUSINESS ACTIVITY IN EUROPEAN UNION BY MULTI-OBJECTIVE EVALUATION METHOD

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### **ABSTRACT**

*Globalization is a leading concept which has become the main factor in business life during the last few decades. This paper examines some aspects of this process. We focus on the analysis of the changes in the activity of units engaged in an economic activity in selected UE countries between 2009 and 2014. Using one of multi-objective evaluation method, we have made a rating for this area over 5 years. The aim of study was to offer a new framework for multi-criteria assessment as international comparison of objective business activity. We prepare our rating based on Structural Business Statistics (SBS) data, which describe the structure, conduct and performance of businesses across the European Union. The primary purpose of this research is to contribute to the understanding of the main features of business activity in European countries. Based on main characteristics of SBS, such as business demographic variables, total purchases of goods and services, etc., we indicate changes of direction in the condition of business in selected countries. Because business activity is a multi-dimensional phenomenon, hence the appropriate indicator system should be capable to identify the most important underlying change of processes in this area. In this study we will apply the MULTIMOORA method which encompasses value measurement as well as reference level methods. A ranking index shows early warning signs of trends in the European business activity. In this study it's accept the assumption that the activity of units engaged in an business activity may be assessment by rating.*

**Keywords:** *business activity, European Union, multi-objective evaluation method*

### **1. INTRODUCTION**

The problem of assessment of activity of units engaged in an business activity is broadly discussed in literature as multifaceted phenomenon in many different aspects such as for example environmental management (Włodarczyk and Mesjasz-Lech, 2016, pp. 993-1011), investment risk (Włodarczyk, 2011, pp. 213-225), supply chains (Mesjasz-Lech, 2014, pp. 94-103), corporate social responsibility (Sipa, 2012, pp. 270-278) or motivation system in enterprise (Smolarek, 2014, pp. 197-211). According Farion (2013) *business activity of the enterprise can be defined as motivated at the macro and micro levels process of managing the efficiency of business activity of economic relations. This process is aimed at ensuring the development of the enterprise, increasing labor employment and efficient use of all resources in order to achieve market*

*competitiveness and the formation of modern innovation and investment potential of subjects of market relations and the national economy as a whole.*

Comparative studies in this area shown mostly selected problems of business activity such transaction cost economics (Poppo and Zenger, 1998, pp. 853-877), determinants of national innovative capacity, (Furman et al., 2002, pp. 899-933; Gorzeń-Mitka, 2015, pp. 97-109), corporate governance (Bebchuk and Weisbach, 2010, pp. 939-961) and others.

The aim of our research is indicate changes in the activity of units engaged in an economic activity in selected UE countries between 2009 and 2014. In this case we prepare a specific rating. To prepare rating we use one of multi-objective evaluation method. We presents the usability of the selected multi-objective decision making method (MultiMOORA) for evaluating assessment of activity of units engaged in an business activity in European economies. In the article, the condition of 28 European markets was assessed, based on 8 of their characteristics, using the MultiMOORA method. The article consists of the following parts: the first one – introduction, the second – a discussion of indicators defining the specificity of the business activity by Structural Business Statistics. The next part include methodological information. The last one presents the results of the business activity analysis based on MultiMOORA method.

## **2. ASSESSMENT OF BUSINESS ACTIVITY IN EUROPEAN MARKETS - THEORETICAL BACKGROUND**

Most of surveys have shown analyses of this processess from micro perspective (Janiesch et al., 2012, pp. 625-643; Vera-Baquero et al., 2016, pp. 793-807; Kang et al., 2009, pp. 3647-3657; Lemańska-Majdzik and Okręglicka, 2016, pp. 18-26). A part of researchers indicates on so-called Business Activity Monitoring (BAM). For exaple, according Faisal et al. (2016, pp. 31-35) real-time measurement and analysis of the performance of managerial activities is essential for better business performance and process improvement in enterprise. Business Activity Monitoring is currently deemed as one of core elements for the real-time performance management (Han et al., 2010, pp. 443-452; Friedenstab et al., 2011, pp. 4158-4167).

However, in studies from macro perspective, the complexity of the market environment and its interconnections on businesses is stressed as most important features in this area (Skibiński, 2015, pp.303-323). These features influence both the structure of the market as well as its functioning (Sipa et al., 2015, pp. 445-453). Analyzing a business activity of given market in the context of other economies, one should stress that such markets' operations vary in each country due to such factors as different legal or economic regulations. But we accept the assumption, that a range of common features can be defined which allow for creating a comparative area. It's will be shown in table 1.

*Table following on the next page*

*Table 1: EU Business Economy - main indicators by Structural Business Statistics (selected)*  
*(own study based on Structural Business Statistics glossary*  
*<http://ec.europa.eu/eurostat/web/structural-business-statistics>)*

Indicators	Description	Desirable values
(1) Number of enterprises	This indicator covers the number of enterprises active during at least part of the reference period. The data is broken down by size classes of persons employed.	(+)
(2) Turnover	This indicator covers total of all sales (excluding VAT) of goods and services carried out by the enterprises of a given sector during the reference period. The data is broken down by size classes of persons employed.	(+)
(3) Production value	Production value measures the amount actually produced by the unit, based on sales, including changes in stocks and the resale of goods and services. The production value is defined as turnover, plus or minus the changes in stocks of finished products, work in progress and goods and services purchased for resale, minus the purchases of goods and services for resale, plus capitalised production, plus other operating income (excluding subsidies). Income and expenditure classified as financial or extra-ordinary in company accounts is excluded from production value.	(+)
(4) Value added at factor cost	This indicator covers the gross income from operating activities after adjusting for operating subsidies and indirect taxes. It is an indicator in the domain of structural business statistics.	(+)
(5) Apparent labour productivity	Gross value added per person employed. Apparent labour productivity is defined as value added at factor costs divided by the number of persons employed. This ratio is generally presented in thousands of euros per person employed. (	(+)
(6) Wage adjusted labour productivity (%) ( <i>apparent labour productivity by average personnel costs</i> )	The wage-adjusted labour productivity ratio is an indicator of labour productivity that is derived from structural business statistics. It is defined as value added divided by personnel costs which is subsequently adjusted by the share of paid employees in the total number of persons employed, or more simply, apparent labour productivity divided by average personnel costs (expressed as a ratio in percentage terms). Given that this indicator is based on expenditure for labour input rather than a headcount of labour input, it is more relevant for comparisons across activities (or countries) with very different incidences of part-time employment or self-employment.	(-)
(7) Average personnel costs ( <i>personnel costs per employee</i> ) ( <i>thousand euro</i> )	Personnel costs are the total remuneration, in cash or in kind, payable by an employer to an employee for work carried out. This is divided by the number of employees (paid workers), which includes part-time workers, seasonal workers etc, but excludes persons on long-term leave.	(-)
(8) Gross operating surplus/turnover (%) ( <i>gross operating rate</i> )	This is an indicator of profitability that corresponds to the share of gross operating surplus in turnover. The gross operating surplus is the surplus generated by operating activities after the labour factor input has been recompensed. It can be calculated from the value-added at factor cost less the personnel costs. Turnover is the total of all sales (excluding VAT) of goods and services carried out by the enterprise of a given sector during the reference period.	(-)

## 2.1. Methodological information

During the study, we use structural business statistics database to identification and assessment of differences of business activity condition in 28 European markets. We use one of multi-objective decision making method - MultiMOORA to prepare a comparative rating. As indicated Brauers and Zavadskas (Brauers and Zavadskas 2010, pp. 5-24; Brauers et al. 2008, 245-255), this method consists of three parts: Ratio System, Reference Point and Full Multiplicative Form. It was introduced by Brauers and Zavadskas (2008, 245-255) and developed by them in 2010 (Brauers and Zavadskas 2010, pp. 5-24; Shih, 2008, pp. 720-734). These methods have been applied in different studies in many different areas such risk assessment (Liu et al, 2014, pp. 168-177), assessment a selected sectors (for exapmle - construction sector) (Brauers et al., 2013, pp. 58-78), determinants of investments (Brauers and Ginevičius, 2013, pp. 940-956), real estate markets (Gorzeń-Mitka, 2015, pp. 22-31; Gorzeń-Mitka et al., 2016, pp. 263-272) or for industrial robot selection (Athawale and , Chakraborty, 2011, pp. 831-850). Because these approaches can be presented in the many research papers, we skip description of the stepsof proceedings in this method. We use the approach set out in the work Stankevičienė and Rosov (2013, pp. 7-19).

## 2.2. Assessment of business activity in European markets - results of the multi –criteria assessmentet

With the use of the decision-making process optimization method, a decision matrix (Table 2, Table 3) was created which presents the data for the markets analyzed with reference to the indicators selected in 2009 and 2014 (Table 1).

*Table 2.: Business activity in European markets in 2009 - decision matrix*  
 (self-reported data based on <http://ec.europa.eu/eurostat/web/structural-business-statistics>)  
 - Continues on the next page -

Country/ Indicator	1	2	3	4	5	6	7	8
Austria	290 686	542 510,3	354 827,8	143 864,2	56,7	143,7	39,5	9,9
Belgium	478 627	801 249,7	543 199,0	168 267,6	:	:	:	:
Bulgaria	316 565	91 678,8	55 651,6	16 602,9	:	:	:	:
Croatia	180 430	81 773,2	62 721,1	22 305,1	19,3	153,7	12,6	11,6
Cyprus	51 178	26 859,1	18 236,8	8 816,6	36,6	157,4	23,2	13,8
Czech Republic	947 380	370 914,2	263 892,7	77 127,9	22,2	154,5	14,4	10,1
Denmark	206 289	388 470,4	293 074,2	107 774,3	69,9	140,3	49,8	9,5
Estonia	50 600	32 493,9	19 222,2	6 769,7	17,7	153,2	11,6	7,8
Finland	224 595	330 221,7	221 150,4	78 818,0	54,7	137,6	39,8	7,8
France	2 193 030	3 229 158,1	1 929 221,0	811 938,0	:	:	44,4	6,4
Germany	2 038 420	4 656 758,5	3 170 354,9	1 226 164,2	50,4	145,6	34,6	9,8
Greece	:	:	:	:	:	:	:	:
Hungary	555 947	235 535,4	128 031,1	42 704,1	17,5	160,1	10,9	8,4
Ireland	168 342	316 232,2	213 400,5	85 371,2	74,9	180,8	41,4	13,5
Italy	3 889 543	2 573 866,6	1 919 444,0	592 395,2	38,0	112,7	33,7	9,1
Latvia	78 268	34 615,3	21 024,1	7 360,4	13,3	177,0	7,5	9,6
Lithuania	113 059	46 897,9	29 870,7	8 879,8	10,8	141,4	7,7	6,3
Luxembourg	27 784	90 109,2	38 090,9	16 071,1	70,1	153,5	45,7	6,7
Malta	27 542	11 092,2	7 835,3	2 857,2	24,5	163,7	15,0	12,8

Netherlands	617 807	1 218 189,1	795 184,9	288 326,7	73,1	153,4	47,7	10,0
Poland	1 445 455	674 120,4	484 853,4	149 215,6	17,7	181,4	9,8	12,4
Portugal	908 244	320 087,5	211 716,2	77 211,1	23,0	139,3	16,6	10,0
Romania	495 228	199 394,5	131 539,8	44 494,4	11,2	197,8	5,7	11,3
Slovak Republic	62 497	109 922,4	82 818,4	21 558,5	21,4	166,1	12,9	8,0
Slovenia	111 835	72 938,4	48 147,9	16 171,4	25,9	130,8	19,8	7,1
Spain	2 604 169	1 836 449,9	1 228 624,3	491 519,1	39,0	129,7	30,1	10,0
Sweden	591 875	554 118,8	400 842,8	150 803,2	53,5	124,8	42,8	8,6
United Kingdom	1 666 947	3 023 669,2	1 929 189,6	864 266,8	47,7	170,5	28,0	13,0

*Table 3.: Business activity in European markets in 2014 - decision matrix  
 (self-reported data based on <http://ec.europa.eu/eurostat/web/structural-business-statistics>)*

Country/ Indicator	1	2	3	4	5	6	7	8
Austria	321 661	652 282,4	426 389,7	169 625,5	62,4	140,6	44,3	9,5
Belgium	593 421	992 182,4	649 847,9	194 938,2	71,0	136,1	52,2	8,5
Bulgaria	319 856	113 946,4	66 289,8	19 887,6	10,5	176,4	6,0	8,7
Croatia	147 337	74 562,1	52 034,7	20 426,7	20,4	167,5	12,2	12,3
Cyprus	46 938	24 381,5	15 773,3	6 996,1	33,4	154,5	21,6	11,3
Czech Republic	995 754	424 269,5	302 972,2	83 864,3	23,9	156,6	15,2	10,1
Denmark	212 740	462 892,5	359 938,5	127 418,5	77,8	158,4	49,1	11,1
Estonia	64 040	51 496,7	30 451,5	10 485,8	25,7	173,5	14,8	9,2
Finland	229 248	372 016,7	253 980,7	87 139,0	59,2	136,9	43,2	8,9
France	3 188 138	3 586 697,0	2 520 286,6	888 657,4	55,9	120,2	46,5	6,3
Germany	2 497 694	5 983 400,0	4 102 182,9	1 531 691,5	55,1	145,5	37,9	9,5
Greece	700 164	245 813,5	143 392,4	50 454,2	22,8	118,8	19,2	9,9
Hungary	514 537	262 975,1	154 420,1	51 089,1	20,7	175,6	11,8	9,8
Ireland	:	:	:	:	:	:	:	:
Italy	3 715 164	2 856 858,4	2 046 389,9	643 135,2	45,4	125,2	36,3	9,9
Latvia	100 491	51 102,5	28 290,6	10 086,7	16,3	184,3	8,8	9,5
Lithuania	174 611	73 183,3	45 629,4	14 557,6	16,0	173,9	9,2	9,4
Luxembourg	31 385	157 209,5	58 597,1	21 640,3	86,8	168,8	51,4	5,9
Malta	26 193	16 300,6	10 768,0	4 168,7	33,1	182,2	18,2	13,9
Netherlands	1 054 562	1 387 385,3	870 982,1	314 920,3	59,1	153,9	38,4	9,8
Poland	1 549 326	880 583,4	641 631,6	181 284,8	21,5	174,1	12,4	11,2
Portugal	781 823	306 303,2	199 079,3	68 977,5	23,8	139,1	17,1	9,2
Romania	455 852	246 217,3	172 277,2	55 859,7	14,6	208,7	7,0	12,1
Slovak Republic	400 683	162 707,3	116 899,5	30 934,4	21,5	148,0	14,5	9,5
Slovenia	130 088	81 470,5	52 067,8	18 562,8	32,1	144,8	22,1	9,3
Spain	2 377 191	1 718 929,2	1 114 068,1	430 070,4	40,4	130,9	30,8	9,6
Sweden	673 218	791 717,1	555 953,8	214 114,7	70,3	127,1	55,4	9,0
United Kingdom	1 841 715	4 155 163,7	2 648 279,1	1 212 506,6	65,6	195,0	33,6	14,8



Finally, we prepare rating for 23 European economies (Table 4). It was excluded from the analysis 5 countries (Belgium, Bulgaria, France Greece, Ireland) due to lack or incompleteness of data.

*Table 4.: Ranking of business activity in European markets by MultiMOORA method - 2009 versus 2014 (own elaboration)*

Country	2014	2009	Change
Austria	8	11	+ 3
Croatia	21	20	- 1
Cyprus	14	19	+ 5
Czech Republic	10	12	+ 2
Denmark	15	14	- 1
Estonia	19	17	- 2
Finland	11	8	- 3
Germany	1	1	0
Hungary	17	13	- 4
Italy	3	2	- 1
Latvia	20	21	+ 1
Lithuania	18	6	+ 12
Luxembourg	13	15	- 3
Malta	23	23	0
Netherlands	5	5	0
Poland	6	16	+ 10
Portugal	7	10	+ 3
Romania	22	22	0
Slovak Republic	12	18	+ 6
Slovenia	16	9	- 7
Spain	4	4	0
Sweden	9	7	- 2
United Kingdom	2	3	+ 1

A rankings of business activity in European economies, created as a result of the analysis conducted, was compared for two years: 2014- 2014. In Figure 1 have shown the rating changes for individual countries.

*Figure following on the next page*

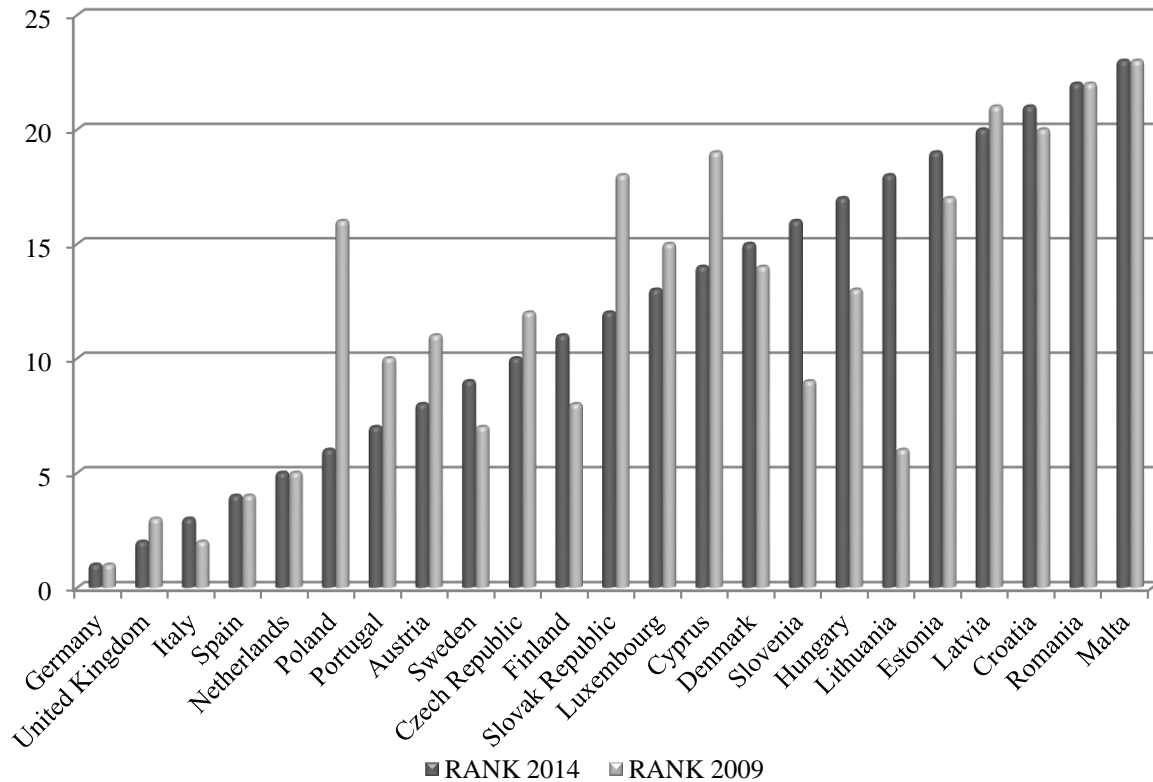


Figure1. Business activity in European markets by selected ranking (own elaboration)

A comparative analysis of the business activity rankings yielded the following conclusions:

- 9 from 23 markets has higher positions in the 2014 ranking than in the 2009 ranking;
- 9 markets has lower positions;
- 6 countries hasn't changed its position in the rating;
- the significant improvement of rating, in comparative analysis of the ratings 2009 vs. 2014, we observe in the case of Lithuania (12 position up) and Poland (10 position up);
- the most significant downgrade of rating we observe in the case of Slovenia (7 position down) and Hungary (4 position down).

Considering the above, one can state that the use of multi-criteria analysis allows to support decision-making processes while taking into account an individual set of variables. This allows for comparing the results obtained with similar sets of data in the area of interest to us.

### 3. CONSLUSION

The analysis of the related work on the assessment of a business activity in different economies shows a number of methods and models to measure and analyze. A different multi-objective decision making methods have already been proposed by researchers for economic evaluation. But they still discuss, which one is the best for analysis a different economic problems. We indicate that the proposed approach on multi-attribute assessment of business activity on the market, including many different indicators, allows to evaluate the current state of this area. According to the study we can conclude that the analysis of indicators of business activity in selected European economies in 2009 and 2014 has shown significant changes in trends of business activity condition. While this study contributes to both literature, some limitations open up avenues for further

research. The changes signalled in this paper referring to conditions of business activity in European economies certainly do not exhaust the wide range of factors affecting of them. However, the paper indicated some trends in this area. The next step of the research could be aimed at extending and verifying the proposed approach and defining the other particular attributes to determine the validity of the method.

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## INTER-SECTORAL ANALYSIS OF FINANCIAL BEHAVIOR OF MEDIUM SIZED ENTERPRISES IN CROATIA

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### **ABSTRACT**

*The paper analyzes the financial behavior of Croatian enterprises, especially the frequency and size of financial leverage used by similar medium size enterprises from different industries. Productivity and profitability rates, the share of own and borrowed capital, production and profit margins and ratios vary among industries. On the financial behavior and the use of financial leverage other market factors also affect. Some of these affect the whole economy, and some only specific industries or individual enterprises. Moreover, the financial behaviors of enterprises also affect future business results. The paper analyzes the manner in which financial leverage is being managed and used in medium sized enterprises from different industries which operate on the same market and on the same conditions.*

**Keywords:** *financial leverage, financial behavior, SME, credit flow*

### **1. INTRODUCTION**

The 2008 financial crisis that began in the US and later spread to the entire world hit the financial markets and caused the collapse of the financial sector. The crisis resulted in a slowdown of economic growth and affected almost all industrial sectors in more or less all countries including the Republic of Croatia. Each sector has its own characteristics, both in the manner in which it operates and the manner in which it deals with the crisis i.e. the way in which it responds to the crises and its way out of the crisis. The authors analyze the behavior of companies in the Republic of Croatia from 6 sectors, their reaction to the financial crisis and the recovery process. The reduced confidence in economic recovery within the banking sector has led many companies into financial difficulties and on the brink of bankruptcy due to credit crunch. Some companies have turned to new ways of financing their investments either from European funds or own sources, while others, that could not cope with the new situation, experienced insolvency and/or went bankrupt. In this paper the authors first give a brief overview of the effect of 2008 financial crisis in the Republic of Croatia. Then, based on a firm-level dataset of medium-sized Croatian firms over a 10-year period (2006-2015), the authors analyze the financial behavior of companies by

calculating and explaining the movements in the leverage indicator for companies in the analyzed sectors. Finally, the authors present their observations and predict further behavior of companies and give guidelines for further analyses and research.

## **2. FINANCIAL CRISIS BACKGROUND IN CROATIA**

The global financial crisis began in the USA in 2008 by excessive inflow of foreign capital to the US market, which led to an increase in real estate prices, lower interest rates, higher premiums on financial derivatives and low risk premiums. The decline in the pumping up of the financial markets with foreign capital, which began in 2005, led to a slowdown in economic activity and a sharp drop in real estate prices in 2008 resulting in the increase of bad loans and eventually the bankruptcy of large pension funds such as Freddie Mac and Frannie Mae (Thomas, Van Order, 2011; Frame, et al., 2015). The banking sector lost confidence in the economy and reduced loan approval. In addition to this, many banks experienced bankruptcy which all led to the 21st century worldwide financial crisis and the reduction in economic activity, investments, slower economic growth and finally economic recession. The reduced number of loan approvals by financial institutions leads to increased amount of debt in firm capital structure (Fosberg, 2014, pp. 2). In order to overcome the crisis and boost business activity it is far more important to initiate the flow of credit than the stock of credit (Biggs, M., Mayer, T., Peck, A., 2009, pp. 14; Biggs, M., Mayer, T., Peck, A., 2010, pp. 17).

Most European countries have been affected by the crisis. The Republic of Croatia also experienced the economic slowdown and decrease of production and consumption. Moreover, in 2009 GDP decreased by 5.8% (Statistical Yearbook 2010, pp. 44) and employment decreased by 3.6% (Statistical Yearbook 2010, pp. 22). Even though all sectors were affected by the crisis, the decline in their business activities and their way out of the crisis varied depending on the specifics of each sector. In order to overcome the crisis in conditions in which bank loans are less available, companies turn to other sources of financing. In this way, they change their leverage ratio and reduce the risk of insolvency. The hypothesis of this paper is that after experiencing a one-time shock, Croatian medium sized companies change the way in which they finance their operations and investments by turning to own capital resources and continue to do so regardless the reduction in interest rates (<http://www.euribor-rates.eu>, <https://www.ecb.europa.eu>).

## **3. SAMPLE SELECTION**

The authors test their hypothesis by analyzing medium-sized enterprises in Croatia from six different economic sectors. The financial details of the companies are taken from the Amadeus database (The Bureau van Dijk Database, BVD, 2010). The companies with incomplete data, those whose values vary substantially as a result of major internal crises, pre-bankrupt companies or those bankrupt and/or in liquidation are excluded from the sample. Our intention is to analyze the behavior of representative (average) companies within the selected sectors, and the behavior of the sum of companies within individual sectors. The authors also analyze the common elements in the behavior of companies in selected economic sectors. The sample includes 734 companies from six

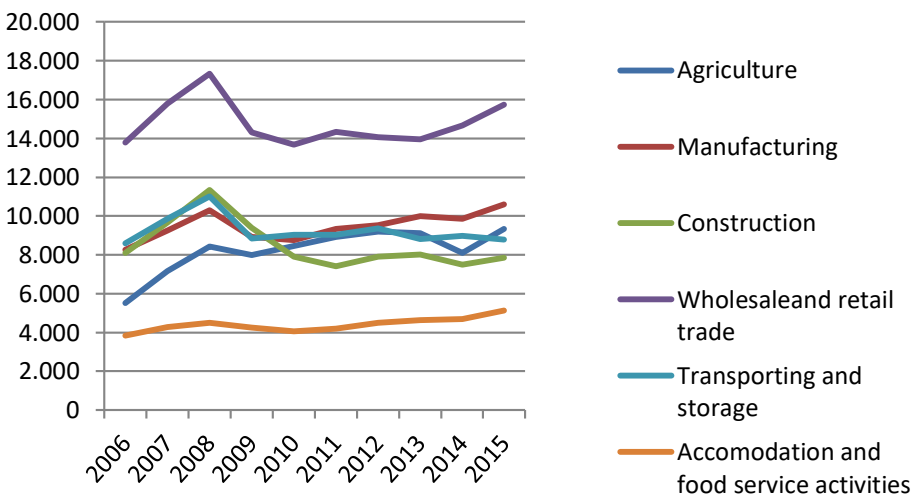


different sectors: 28 companies from the agricultural sector, 295 from the manufacturing sector, 121 companies from the construction sector, 196 companies involved in wholesale and retail trade, 55 in transporting and storage, and finally 39 companies involved in accommodation and food service activities. As each sector has its own characteristics, these characteristics should be taken into consideration when analyzing individual elements. For example, asset turnover is relatively slow in sectors such as agriculture and accommodation as long-term assets make up for a significant part in total asset structure. On the other hand, in wholesale, it is the current assets, such as inventory, that represent a significant part in total asset structure. When it comes to transporting, especially road transport (mostly covered by SMEs), the turnover of fixed assets usually occurs in five-year cycles and therefore future expectations within this sector should be analyzed by monitoring the changes in long-term asset turnover in three to five year cycles.

#### 4. EMPIRICAL ANALYSES

The analyzed period includes companies' activities from 2006 to 2015. During this period, the Croatian economy, like many others, was experiencing the global financial and economic crisis. Moreover, the end of the analyzed period was marked by the significant turbulences and warfare on the European eastern and south-eastern borders, which had an effect on the accommodation sector.

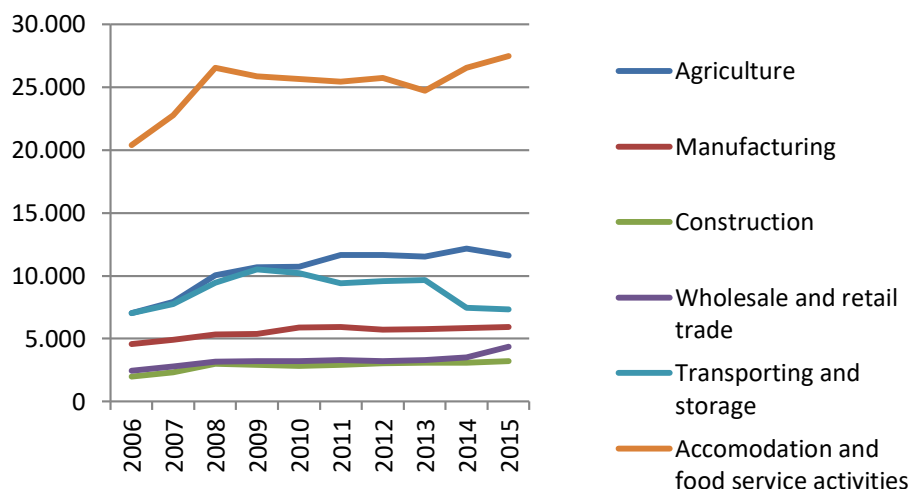
*Figure 1: Operating revenue (in 000s of EUR)(authors' calculation)*



The average movements in companies' operating revenues by sectors are given in Figure 1. All sectors demonstrate a significant drop in total revenues after 2008, but the decline curve varies across sectors. The impact of the crisis is most noticeable in the construction sector, and this sector still shows almost no recovery. The crisis has also significantly set back wholesale and transporting, but while trade is on the path of recovery, the transporting remains stagnant. The accommodation sector was least affected by the crisis and mostly stagnated upon the crises. This sector demonstrated a minor fall in revenues in the two years following the crises. Agriculture and

manufacturing felt the effects of the crisis resulting in the stagnation of their income. However, revenues in manufacturing and especially agriculture improved in relation to the period before the crisis.

Figure 2: Fixed assets (in 000s of EUR) (authors' calculation)



The values of long-term assets in the balance sheets of Croatian companies in selected sectors are significantly conditioned by the available models of financing the acquisition of assets. A significant decrease is observed in transporting and storage, while other sectors demonstrate either stagnation, which is especially visible in construction and wholesale up until 2014, or growth. The manufacturing sector shows low growth rates whereas a significant increase in long-term asset value is present in the agricultural sector. After a period of stagnation, the values of long-term assets also increase in the accommodation sector, which is, according to authors, a result of the overall increase in the quality of Croatian tourism and better ranking of its hospitality capacities. These trends bypassed the agricultural sector. According to the authors, this is primarily due to the possibility of financing assets through EU funds intended for the procurement of equipment in the agricultural sector, which became available once Croatia initiated the process of its accession into the EU (pre-accession and later accession funds).

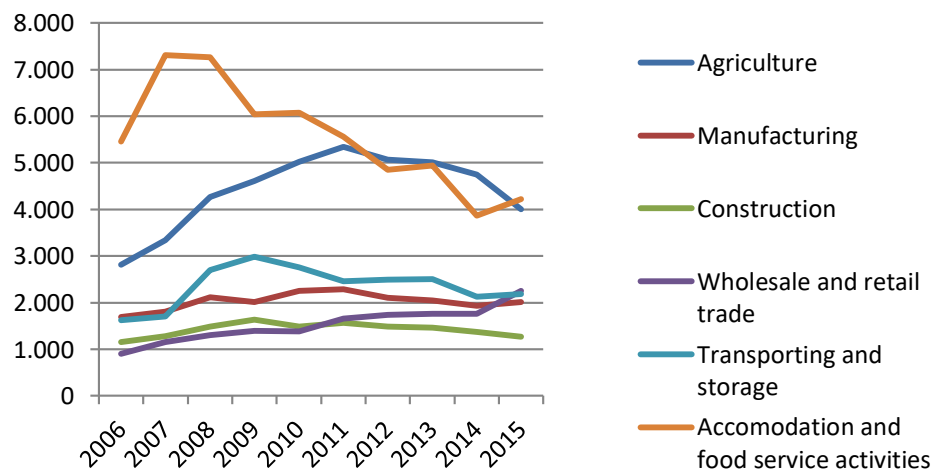
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Figure 3: Current assets (in 000s of EUR) (authors' calculation)



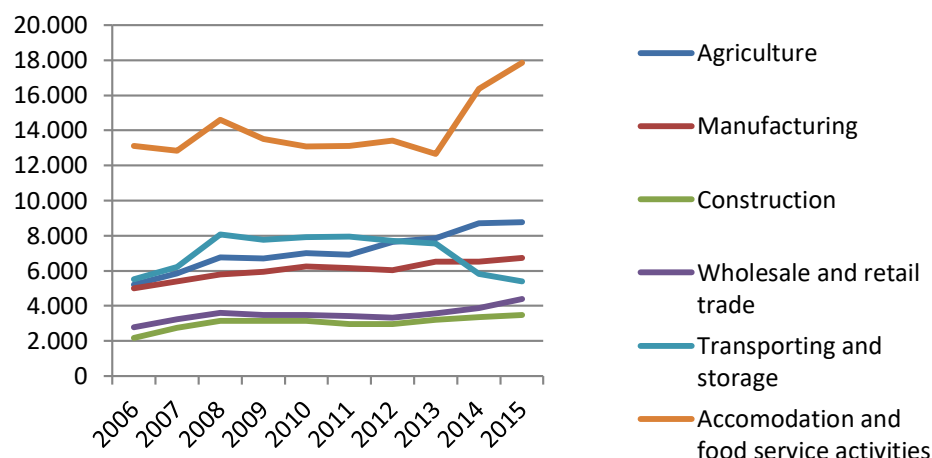
Unlike the trends in the values of long-term assets, which together with the mode and financing conditions are an indicator of business expectations, the values of current assets follow the trends in companies' revenues and overall business activity. Therefore, as expected, the values of current assets show a significant decline in the construction sector, stagnation in the transporting sector and growth in the wholesale and manufacturing sectors. The values of current assets in the agricultural sector partly depend on meteorological and agro-technical conditions during the farming seasons and are thus liable to seasonal fluctuations. In the accommodation sector, the values of current assets follow those of long-term assets. In authors' opinion this is due to the direct relation between the carrying capacity, also observable from long-term asset values, and the operational needs for current assets for orderly maintenance of capacities.

Figure 4: Non-current liabilities (in 000s of EUR) (authors' calculation)



The procurement of company assets follows the changes in liabilities and equity. Company assets are financed thorough loans, liabilities or equity funds. The models of financing the procurement of assets across sectors are given in Figures 5 and 6.

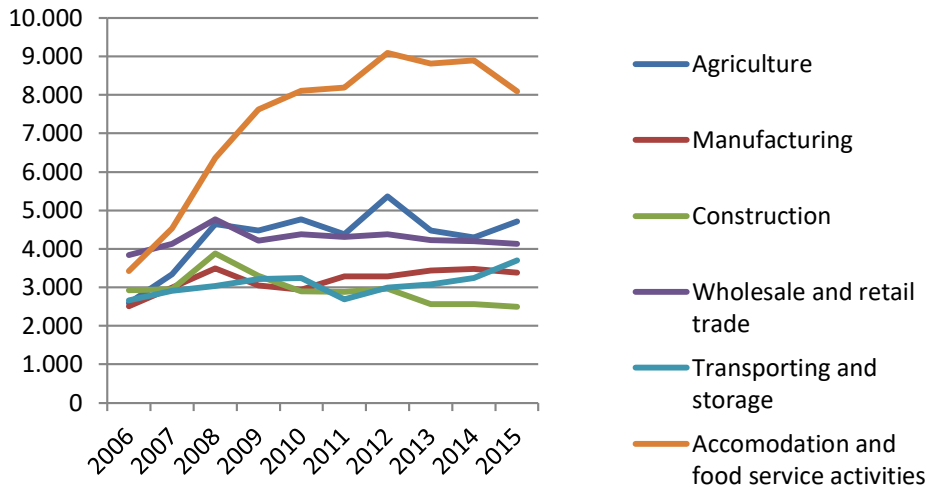
Figure 5: Shareholders funds (in 000s of EUR) (authors' calculation)



The most significant decrease in long-term debt is present in the accommodations sector. The same sector shows a significant increase in financing operations from own funds, particularly in the period after 2013. It should be noted that the analyzed medium size companies increased their investments in long-term assets upon Croatia's accession into the EU in 2013 and the occurrence of political turbulences on the Mediterranean. Up until 2011, the agricultural sector increased the amount of long-term assets and financed its growth through debt financing, after which it significantly reduced its borrowing activities and turned to own fund financing. The interconnection of the significant fall in debt financing after 2011 and the increase in equity funds at the same time, and the total increase in assets, namely as a result of the availability of EU pre-accession and accession funds, leads to the question of the manner in which the values of long-term assets and related balance sheet elements are recorded in ledgers and should be analyzed in further research. The other sectors, except wholesale, also show a decrease in debt financing. However, the trends in total liabilities and equity of the transporting sector are rather problematic since negative trends are present in both liabilities and equity funds.

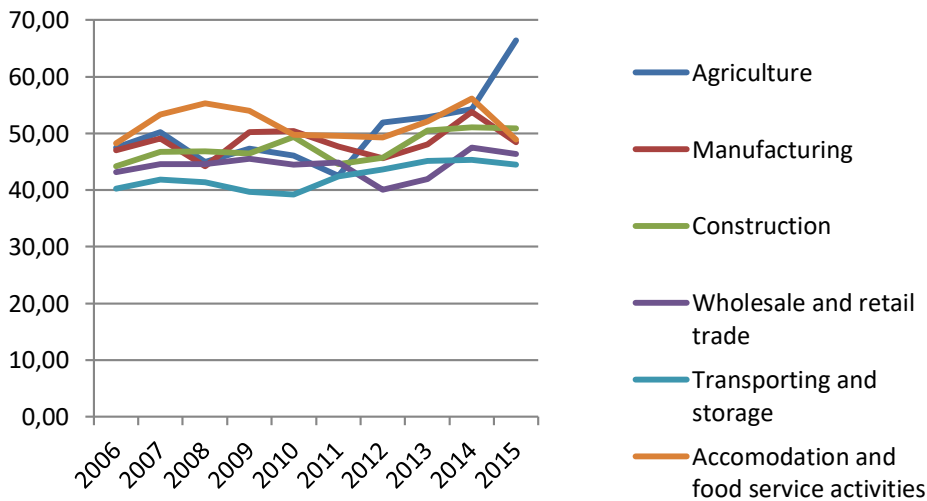
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Figure 6: Current liabilities (in 000s of EUR) (authors' calculation)



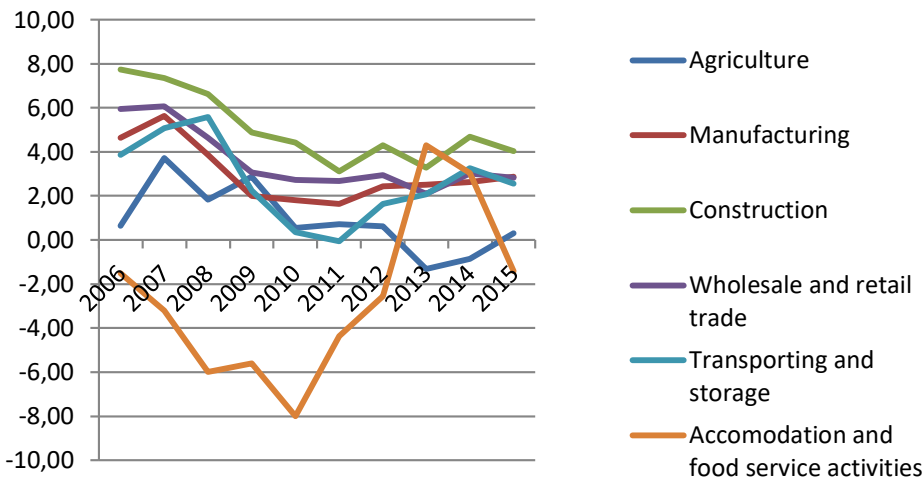
As can be seen in Figure 6, the levels of current liabilities are mostly stable in all sectors except accommodation, which shows a significant increase in the values of its current liabilities. The authors believe that this increase is indicative and potentially dangerous, and suggests further analysis of business activity, especially in terms of the use of assets acquired from short-term liabilities.

Figure 7: Solvency ratio (in %)( authors' calculation)



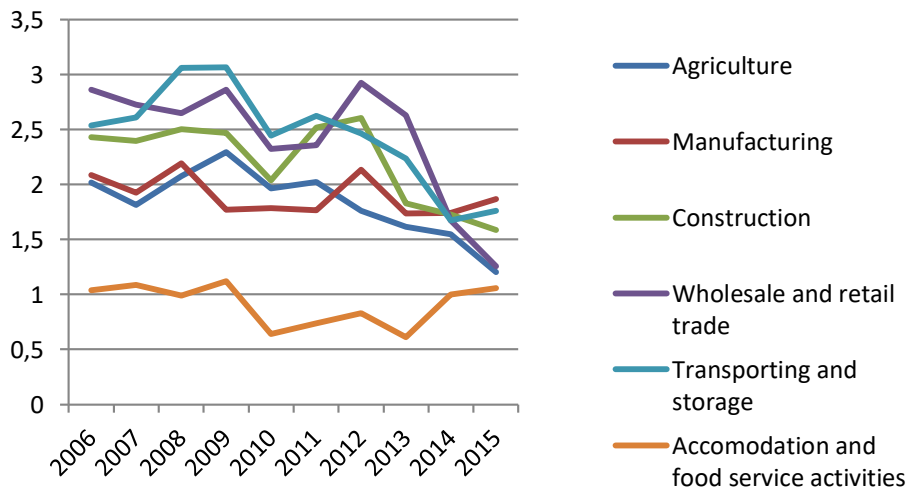
The level of solvency is relatively stable. Companies operating in the manufacturing and agricultural sector recorded drops in 2008 and 2011. Companies involved in agriculture significantly increased the share of cash and cash equivalents in 2013. The increase in the solvency ratios for agricultural companies occurred in parallel with their deleveraging. This may imply that their need for cash was smaller while the amount of funds available remained the same.

Figure 8: Profit margin (in %) (authors' calculation)



In contrast to solvency levels, which remain stable, profit margins show negative trends. The declining levels of profit margins did not lead to capital fleeing because the levels of interest rates were low. However, lower profit margins made the banking sector reluctant when it comes to lending.

Figure 9: Leverage ratio (authors' calculation)



Starting from 2009, the level of leverage financing in the Republic of Croatia has been recording a significant decline in most sectors. The sectors that continued to use more or less similar levels of leveraged financing are manufacturing and accommodations. Other sectors significantly reduced their use of bank loans. The reasons for this decrease in borrowing are not uniform. The authors believe that the reduction in the use of leverage in the agricultural sector occurred primarily due to the possibility of financing investments through EU funds which were not available prior to that. In addition to new and affordable sources of financing, the use of leverage in agriculture is



further burdened by the price of obtaining bank loans due to risk and opportunities assessment in instable conditions. This combination of elements poses an obstacle in obtaining leverage by the agricultural sector as it has an extremely slow turnover and long-term returns. The manufacturing sector is predictable enough because investment realization periods are rather short and, apart from occasional volatility, the use of bank capital is not problematic. Encouraging credit flow and adjusting interest rates to meet the specific demands of individual sectors will result in higher levels of operational activity and thus contribute to economic and business development. The maintenances of the same levels of leverage in accommodation, which is characterized by periods of return similar to those of agriculture, in addition to other indicators, is according to the authors a result of bankers and shareholders strong confidence in this sector's potential and the mortgage value of its assets. The frequency and volume of leverage as well as trends in other indicators suggest that the transporting and construction sectors have not recovered from the 2008 crisis, whereas the wholesale sector shows signs of recovery and increase in investments in 2015, primarily financed by own capital funds.

Given the size of the ratio of leverage, it is noticeable that the most affected sectors by the crises, i.e. wholesale, transport and construction, are those that had significantly benefited from the use of banking capital in the period before the crisis, which may indicate that the sustainability of their growth and resistance levels to shocks and crises are questionable.

## 5. CONCLUSION

The 2008 financial crisis that began in the US and later spread to the entire world hit the financial markets and caused the collapse of the financial sector. The crisis resulted in a slowdown of economic growth and affected almost all industrial sectors in more or less all countries including the Republic of Croatia. The reduced confidence in the economy, consumers fear and hardened credit conditions led many companies into financial difficulties and on the brink of bankruptcy due to credit crunch. In periods immediately upon the crisis, companies reduce and postpone investments, and then in later periods look for new ways of financing sustainable development. Some sectors turned to new ways of financing their investments either through EU cohesion funds or by means of own capital financing, while others, which could not cope with the new situation, experienced a major decline in business activity. In order to overcome the crisis and boost business activity it is far more important to initiate the flow of credit than the stock of credit. In the period of crises, and immediately after the crises, all sectors demonstrate a significant drop in total revenues. However, the decline curve and later regrowth varies across sectors. Sectors most affected by the crisis significantly benefited from the use of banking capital for their development in the period prior to the crisis, which lead to growth of questionable sustainability and to questionable levels of resistance to shocks and crises. With overblown values and profit margins their ability to access banking funds to stimulate economic activity is still questionable. Sectors such as accommodation that depend significantly on the overall environment are perhaps experiencing exaggerated expectations and above-average confidence of bankers and investors seen in the amount of investment of both shareholders' funds and liability. Moreover, some sectors,

such as agriculture, have at their disposal available funds to co-finance their activity which allows them to start investment cycles even though some of them are not economically justifiable. Once Croatia reaches the level of economic development similar to that in developed EU countries, it should try to establish credit flow and adjust its interest rates to meet the specific demands of individual sectors. This will result in higher levels of operational activity and thus contribute to sustainable economic and business development.

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## FISCAL TRANSFERS TO LOCAL GOVERNMENT UNITS IN POLAND

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### ABSTRACT

*The main objective this paper is a presentation, analysis and comparison of different fiscal transfer schemes that are used Polish local governments budgets (gmina, municipality). Local government revenues in Poland are supported by the three main kinds of fiscal transfers: tax shares in central government direct taxes, general grants and specific (conditional) grants. To compare the importance of these revenues a comparative analysis has been carried out. Maximum, minimum and medians estimates, but also the first and the third quartiles separately for all urban, rural and urban-rural local self governments between 1996-2014 have been taken into consideration. Division of municipalities into the mentioned three groups (urban municipalities, rural municipalities and urban-rural municipalities) comes from the classification of the Central Statistical Office and is taking into account the territory over which a municipality has jurisdiction (urban-only town, rural – only villages, or mixed – urban-rural). The analysis of accessible financial budget data proved that the most vital revenues in the case of investigated types of municipalities were shares from Personal Income Tax, Corporate Income Tax and general grants. The meaning of these transfers was different according to kind of local government. Urban type local governments were stronger supported by the tax shares, but also due to educational part of general grant (subwencja oświatowa) this kind of revenue (general grant that consist of educational part and equalization part) was also important. Looking at typical rural local government we could observe that tax shares, due to weak tax base, were low but grants – especially general were crucial for them.*

**Keywords:** Fiscal transfers- tax sharing – equalization- local government

### 1. INTRODUCTION

The revenue system of local government units in Poland has been shaped into the current form after 2004. On one hand, the adopted solutions are the result of experiences from previous years and on the other hand, they are supposed to be an implementation of theoretical postulates concerning the division of public financial resources between the central government and local governments (Blöchliger and King, 2006, p.158) (Carroll, 2005, p.605). Postulates declared in the literature concerning revenue independence indicate the need to entrust local communities with competences in the scope of taxing power in regard to local taxes and charges, as well as to equip them with stable sources of non-tax own revenues, but they also recommend the creation of fiscal flow mechanism of vertical and horizontal balancing of revenues (Shah, 2006, p.15). The reason for such situation is usually the significantly differentiated availability and efficiency of the local revenue base, which is available to individual local governments (Shunk, Proca, 2005, p.248).

The postulate of balancing revenues of local government units (EKSL, 1994) may be implemented in many ways (Endling, 1998, pp.15-17). One of the possibilities to increase own revenues of the local governments is the introduction of tax base sharing or tax sharing (Blöchliger and Petzold, 2009, p.3). In Poland, the latter solution was selected assuming the connection of PIT and CIT revenues with the given local community (Poland, 2003). This means that the state budget passes part of its revenues from these taxes to local communities, on whose territory these revenues were

generated (cf. Olejniczak, 2015, p.326). Currently, the municipalities receive about 38% share in PIT and 6,71% share in CIT. Other possible solution is to support the local government units using general grants and purpose grants. In the case of general grants, the local government unit has full freedom in regard to spending the financial resources. However, it's debatable in what way such structured transfers will affect the activation of municipalities in the scope of generating their own revenues. In the case of general grants, we also have to deal with various possibilities of shaping the base of redistribution and rules of redistribution (Shah, 2006, p146-147). Poland adopted both vertical redistribution (within educational part of general grant, which depends on specific features of the education system in the area of the given municipality) and horizontal redistribution based on the Robin Hood tax scheme, in which the richer local governments share a part of their revenues with poorer local governments. Polish system of revenue supplementation mainly takes into account the minimization of revenue differences without analyzing the demand for financial resources (see more: Olejniczak, 2013, p.541). One of the few calculation elements, which can be indicated as an attempt to implement references to the functioning costs, is the revenue supplementation that depends on the average population density in the given area. The last element of acquiring financial resources by the municipalities within the framework of fiscal transfers consists of purpose grants. Among them, from the point of view of implementation of own spending policy, the most important are categorical grants for own tasks of the municipalities (ongoing, as well as investment). However, in the case of these grants, we should note their discretionary nature and certain dependence on the financial condition of the state budget. The financial streams indicated here are not the only ones that go to the budgets of municipalities, however from the point of view of this paper they are the most important.

The purpose of presented paper is to analyze the differences in the scale and form of above-mentioned fiscal transfers in the cross-section of individual types of municipalities (urban, urban-rural and rural) and indication whether the functioning model of funding from these sources, which is the same for all, is the most beneficial out of possible solutions.

## **2. METODOLOGY AND DATA**

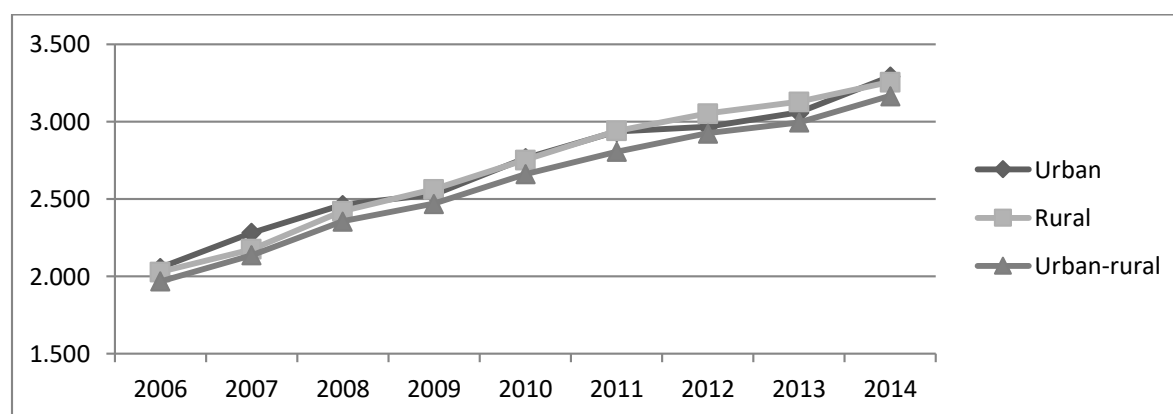
This study used data from the Local Data Bank of the Central Statistical Office (BDL GUS, 2016) concerning revenues of all municipalities in Poland in the years 2006-2014 (approx. 2480, out of which approx. 300 are urban municipalities and approx. 600 are urban-rural municipalities). The data set included total revenues, own revenues, shares in PIT and CIT, general grants (with a separate educational part), purpose grants for own tasks. In order to achieve comparability of data, the per capita revenues were calculated according to data about population number in individual municipalities from the respective years. All municipalities were divided into three groups (urban municipalities, rural municipalities and urban-rural municipalities) in accordance with the classification of the Central Statistical Office, taking into account changes in the status of municipalities in the subsequent years (acquisition of civic rights, division, merger).

Preliminary analysis included the examination of revenue structure of individual types of municipalities, taking into account above-mentioned values in relation to the median of obtained

income. Further analysis of data covered the determination of minimum value, q1, median, q3 and maximum value for individual financial flows in individual groups of municipalities. There was also a comparison made in relation to achieved results between the groups in order to determine the diversity in types of dominant revenues of a transfer nature in individual groups also in regional aspect (NUTS 2).

## 2. RESULTS AND DISCUSSION

Analysis of the revenue structure of municipalities per capita according to their individual types based on the median values (adopted as the more favourable due to the occurrence of significant deviations in regard to the maximum revenues significantly affecting the average) showed that the total revenue medians did not differ significantly from each other. In the years 2006-2014, the lowest median was usually only 4% lower than the maximum (e.g. in 2016, the maximum value of revenue median per capita amounted to 2058 PLN and minimum value amounted to 1970 PLN) (fig. 1). Whereas, the lowest minimum value among three types of municipalities was by approx. 32% lower than the highest median value in the studied period.



*Figure 1 Revenue structure of municipalities per capita according to their individual types based on the median values ( Own calculation)*

The analysis of revenue structure (per capita) in the given period indicates that there's a large differentiation between individual types of municipalities in terms of dominant fiscal transfers. In the case of municipalities with the city status, the biggest role is played by the shares in PIT and CIT generated in their area (over 20% of the total revenues). Deviations that can be observed at their level in the studied period mainly result from changes in the taxes themselves and from the crisis of 2008-2011. Not much lower share in the revenues for these municipalities has the educational element of the general grant – usually below 20%. Small importance for the urban municipalities (approx. 1-2% of revenues) has the equalizing part of the grant – which is caused by strong revenue base of these municipalities. In the case of grants for own tasks, there are no significant differences between municipalities. The grants constituted approx. 4% of total revenues per capita in all municipalities and their share is gradually increasing.

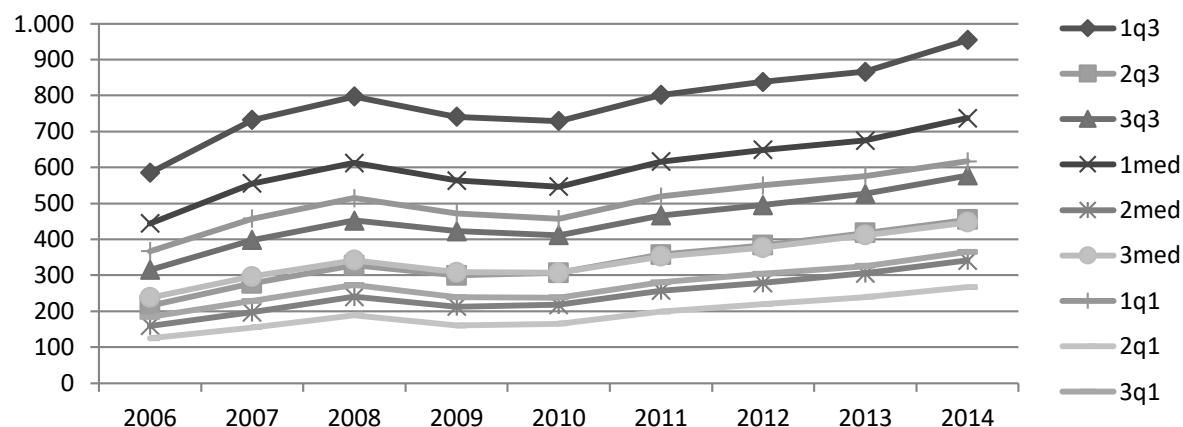
*Table 1 Revenue structure (per capita) 2006-2014 % (Own calculation)*

	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Tax shares In PIT and CIT</b>									
<b>Urban</b>	21,7%	24,0%	25,0%	22,6%	20,2%	21,6%	21,8%	22,1%	22,3%
<b>Rural</b>	7,8%	9,1%	9,8%	8,1%	7,7%	8,6%	8,8%	9,5%	10,2%
<b>Urban-rural</b>	12,2%	13,7%	14,5%	12,4%	11,2%	12,4%	12,7%	13,5%	14,3%
<b>Educational general grant</b>									
<b>Urban</b>	20,1%	19,3%	19,2%	20,0%	19,2%	19,5%	20,2%	19,7%	18,7%
<b>Rural</b>	29,0%	28,5%	28,1%	28,1%	26,6%	26,0%	26,4%	25,7%	24,6%
<b>Urban-rural</b>	25,2%	24,5%	24,4%	24,8%	23,2%	23,3%	23,7%	23,0%	22,0%
<b>Equalization general grant</b>									
<b>Urban</b>	1,7%	1,6%	1,5%	1,8%	1,5%	1,3%	1,3%	1,2%	1,2%
<b>Rural</b>	15,1%	15,2%	15,9%	18,0%	16,0%	14,7%	15,0%	15,2%	13,3%
<b>Urban-rural</b>	8,9%	8,9%	9,6%	11,3%	9,9%	9,5%	9,3%	9,4%	8,0%
<b>Conditional grants for own tasks</b>									
<b>Urban</b>	3,2%	2,9%	3,5%	3,4%	3,5%	3,3%	3,1%	4,1%	4,6%
<b>Rural</b>	3,8%	4,0%	4,4%	4,0%	4,2%	3,9%	3,5%	4,1%	4,7%
<b>Urban-rural</b>	3,8%	3,8%	4,3%	4,4%	4,4%	4,2%	3,5%	4,4%	5,2%

In the case of rural municipalities, there's a strong dependence of their revenues per capita in regard to the educational grants. It's caused by the grant structure, which favours the rural municipalities. In addition, low revenue base – noticeable in the case of low shares in PIT and CIT causes an increase in the significance of financial resources passed in the form of grants – because also the equalization grant plays a significant role in per capita revenues of these municipalities. In total, the share of grants in revenues of the rural municipalities oscillates at the level of 40% of their total revenues.

Urban-rural municipalities can be positioned due to the structure of revenues between two previous types of municipalities. They are characterized by higher efficiency of shares in PIT and CIT than in the case of rural municipalities, however the difference between them and urban municipalities still amounts to approx. 10 percentage points. These municipalities benefit to a great extent from educational grants (approx. 25%) and equalization grants (approx. 10%) and only the purpose grants for own tasks of these municipalities constitute a higher percentage in the structure of their revenues than in other types of municipalities.





Where: 1-urban, 2-rural, 3-urban-rural type of municipality, q1 – 1<sup>st</sup> quartile, med- median, q3 – 3<sup>rd</sup> quartile

*Figure 2 PIT and CIT shares per capita in different types of municipalities (1<sup>st</sup>, median and 3<sup>rd</sup> quartiles comparison) 2006 – 2014 (Own calculation)*

In the cross-section of entire country, the difference occurring between individual types of municipalities, evaluated in terms of three measures of location (first, second and third quartile), were strongly noticeable between urban municipalities (with significantly higher values) and other two types of municipalities, out of which the rural municipalities achieved the lowest values of all three measures. It should be noted that in the case of rural municipalities, the median of shares in income taxes per capita was lower compared to first quartile of these revenues for urban-rural municipalities. Additionally considering the shaping of median values of the above-mentioned revenues in the studied period in the cross-section of 16 regions (voivodeships), it can be seen that there's (fig. 3) also a significant differentiation of medians of these revenues in the regional structure. Among rural municipalities minimal shares in income taxes per capita were reported in podlaskie and lubelskie voivodeships, while maximum shares in śląskie and dolnośląskie. In case of urban municipalities maximal median shares were reported in mazowieckie and śląskie voivodship and minimal in podlaskie, warmińsko-mazurskie. Maximal median share in case of urban-rural municipalities were reported in śląskie and małopolskie voivodship, while minimal in podlaskie and lubelskie. In the regional structure, the least differentiated were the urban municipalities – relation max/min below 2, and the most differentiated were the rural municipalities, where the relation oscillated around 3-times different value.

*Figure following on the next page*

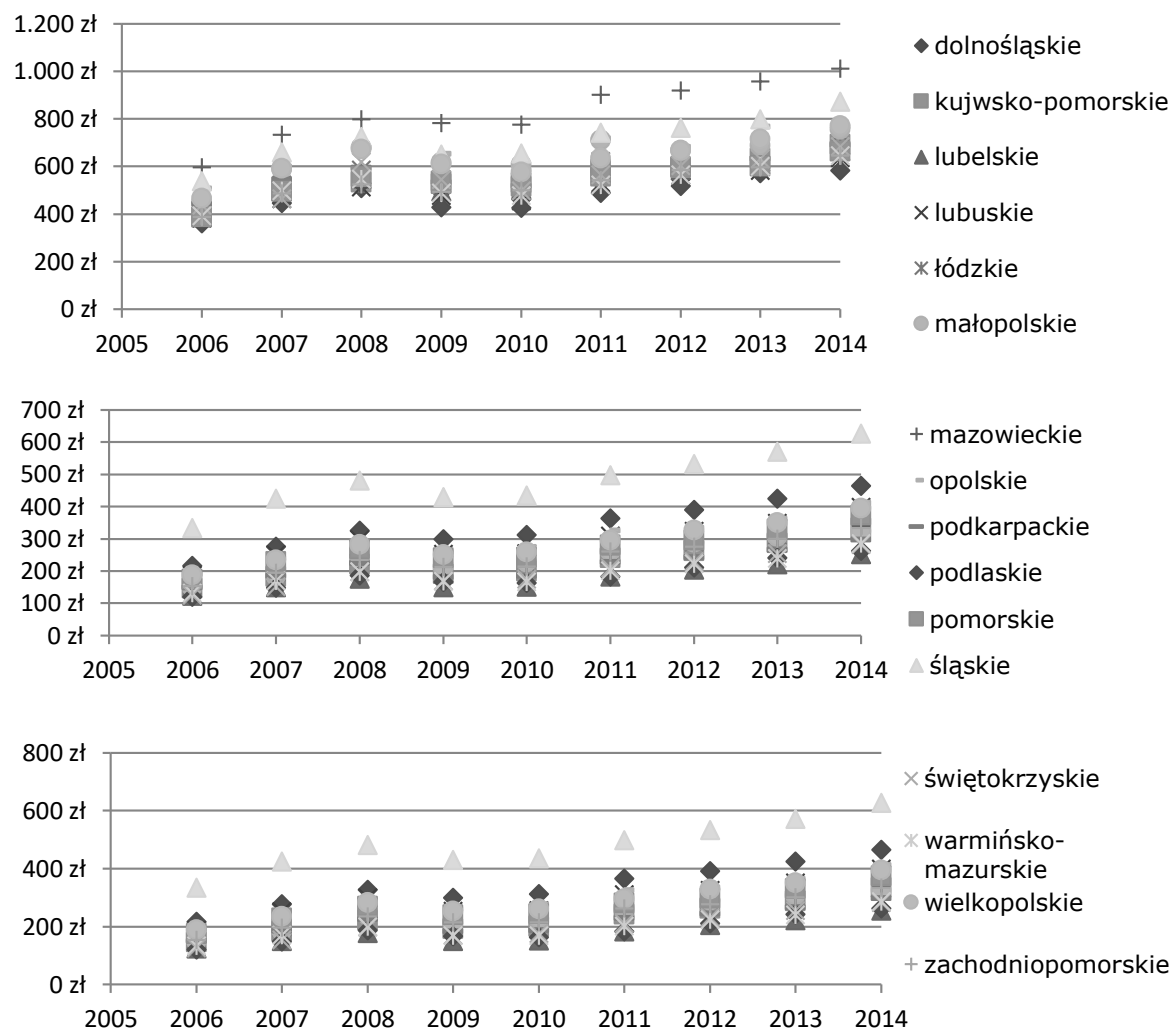
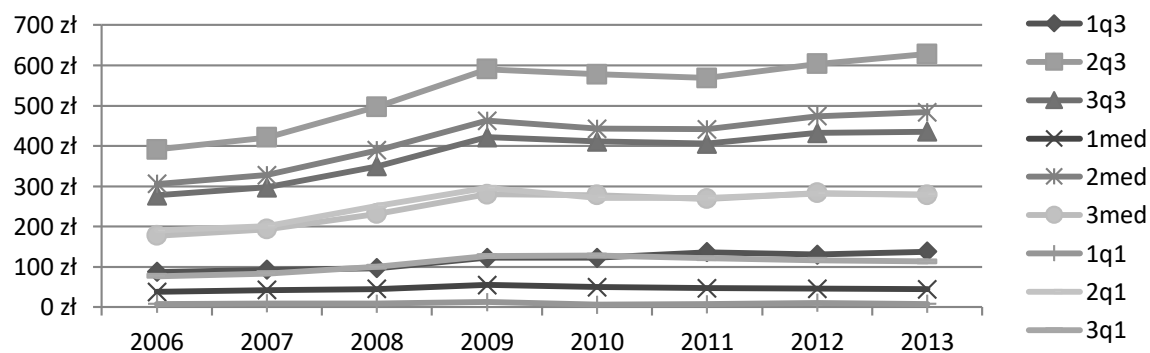


Figure 3 PIT and CIT shares per capita in different types of municipalities in different regions of Poland (in order: urban, rural, urban-rural) by median 2006 – 2014 (Own calculation)



Where: see fig. 2

Figure 4 Equalization grant per capita in different types of municipalities (1<sup>st</sup>, median and 3<sup>rd</sup> quartiles comparison) 2006 - 2014 (Own calculation)

Analyzing the value of the successive quartiles for equalization grant per capita in different types of municipalities it should be noted that, (as one would expect) the greatest financial equalization goes to rural municipalities while urban municipalities receive residual funding from this source (fig. 4). It is also visible that there is a tendency for increasing spread of per capita income in this area. In the case of analysing the data in terms of province structure, the situation is analogical. We are dealing here with almost the mirror image of the situation described in relation to shares in PIT and CIT – the biggest equalization (in terms of median) occurs in provinces, in which the shares in PIT and CIT were the lowest (fig. 5). To a large extent, it is caused by described structure of equalizing mechanism for which an important destimulant is the amount of PIT and CIT per capita.

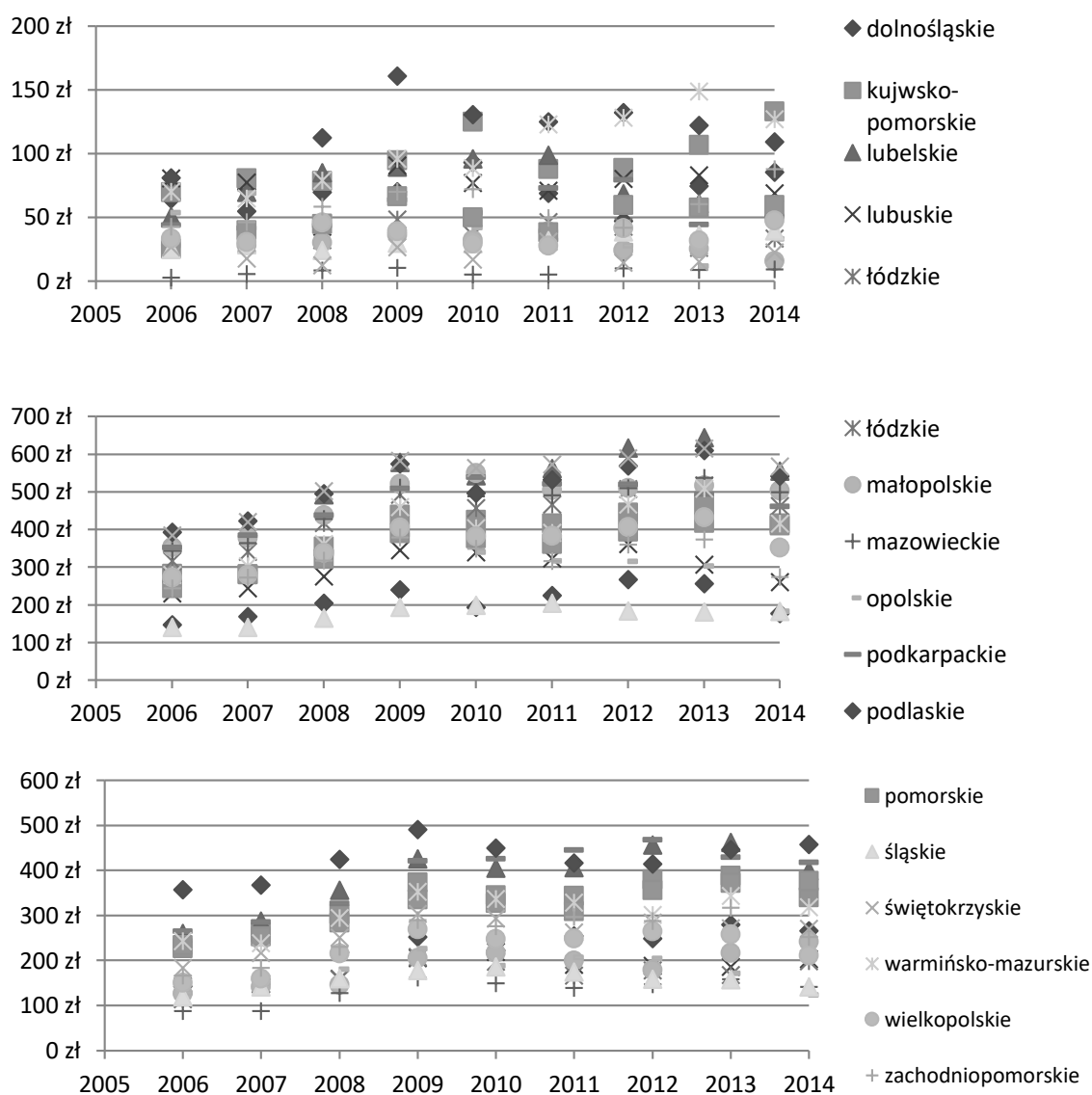
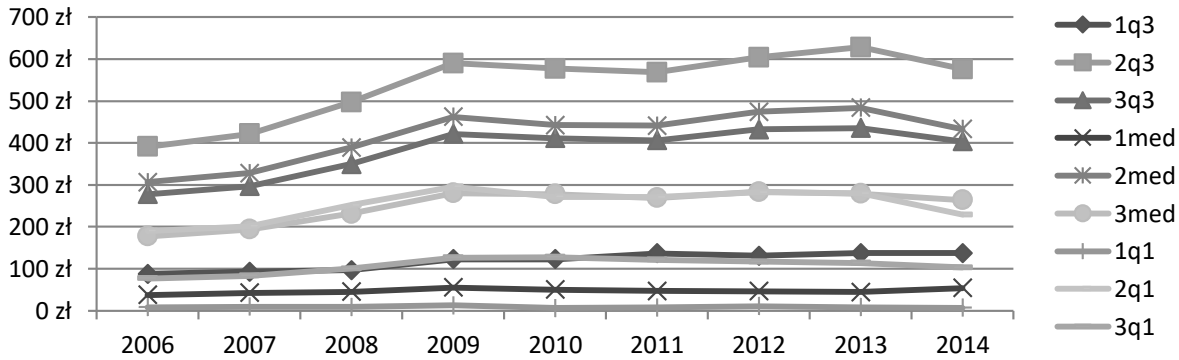


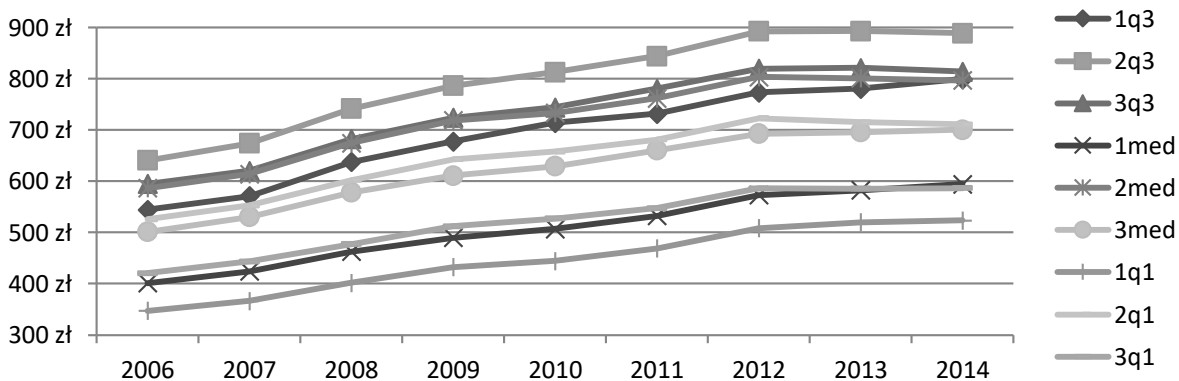
Figure 5 Equalization grant per capita in different types of municipalities in different regions of Poland (in order: urban, rural, urban-rural) by median 2006 – 2014 (Own calculation)

On the other hand, in the case of grants for own tasks, which often have discretionary nature, there's a preference (after calculating financial resources per resident) of rural municipalities and relatively low involvement of these financial resources in the functioning of urban municipalities (fig. 6). Therefore, there's an inconsistency in regard to observed tendency of occurrence of the largest share of grants in the structure of revenues of the urban-rural municipalities. However, as it can be noticed in this part of the study, the revenues are calculated in relation to the number of residents, which in the case of rural municipalities is usually several times lower than in the case of urban-rural municipalities.



Where: see fig. 2

Figure 6 Grants for own tasks per capita in different types of municipalities (1<sup>st</sup>, median and 3<sup>rd</sup> quartiles comparison) 2006 – 2014 (Own calculation)



Where: see fig. 2

Figure 7 Educational grant per capita in different types of municipalities (1<sup>st</sup>, median and 3<sup>rd</sup> quartiles comparison) 2006 - 2014 (Own calculation)

The last of analyzed financial flows is the educational grant per capita (fig. 7). In this case, it should be noted that it doesn't have direct relation with the number of residents, but it only, as it was mentioned before, reflects the granted financial resources resulting from the algorithm of distribution, based on the number of students in the given municipalities and weights assigned to specific features from the point of view of education in the given municipality. Therefore, while

analyzing financial situation of the municipalities, this transfer should not be taken into account during the assessment of efficiency of the revenue sources. Nevertheless, it should be noted that in result of analysis of three above-mentioned types of municipalities, the biggest revenues per capita from educational grants are obtained by rural municipalities – which is associated with the fact that the mechanism of redistribution has a strong preference in regard to these municipalities and there's a higher fertility rate (GUS, 2015, p. 5) in the rural municipalities.

#### 4. CONSLUSION

It can be concluded based on the conducted descriptive analysis of data concerning revenues of the municipalities with the use of measures of location that the described system of fiscal transfer, which has been shaped after 2004, resulted in the long period in significantly differentiated importance of individual transfers in regard to various types of municipalities. There's also a concern that in the case of municipalities benefiting from equalization grants and conditional grants to a large extent (rural municipalities and urban-rural municipalities), this system may be a disincentive in regard to the desire to generate own revenues and to mobilize revenue base. It should be also emphasized that the presented issue requires further in-depth statistical analysis, because based on the presented data only a very general conclusions could be drawn.

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## ACTIVITY BEYOND CLASSROOM ENHANCE UNDERSTANDING OF SCIENCE

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### **ABSTRACT**

*Science is subject which consider difficult to understand for Thai student that resulted to the achievement of learners. In classroom, students often confuse and unrecognizable the contents. It need further study and review to help them clearly understand. Therefore, finding ways to help students better understand is necessary. In this study, “Learning by teaching” method was used. The purpose of this study was to explore that learning is enhanced through the act of teaching others. Two experiments were done to compare the achievement of learning of studying from teacher in classroom and actually teaching (explaining to others for instructional purposes). 25 undergraduate students who study in Industrial Microbiology program at Suan sunandha Rajabhat University were assigned to form groups of 3-5 persons. Experiment 1, all of them studied in classroom. Experiment 2, the group had to educate the knowledge from classroom to people in public place. Student’s response were checked after that by doing post studied exam and interview. Results of experiment 1, students could get score 45-70 percent. Results of experiment 2, students could get score 65-90 percent. It found that 92 percent of students clearly understood and could remember their content. They said that the preparing to educate people enabled them to understand the contents. Also, if there were any questions, they needed to analyze the contents. These findings suggest that when students actually teach the content of a lesson, they develop their understanding than study from preparation media of professor. The outside classroom practice assisted improved science subject learning.*

**Keywords:** Activity; Science; Understanding

### **1. INTRODUCTION**

Science learning is process that search knowledge to use for problems solving and improve the quality of life. It encompasses everything in life and helps students be curious, ask questions, and make connections as to why the world exists as it does. In Thailand, science is subject which consider difficult to understand for Thai student that resulted to the achievement of learners. Students often confuse and unrecognizable the contents. These result disillusionment of learning and make low achievement.

In Thai general class, the teacher will lecture in front of class. Students have to listen and take note. This is a boring method. Good science teachers work hard to help students not only understand science, but also foster a lifelong learning in science. To develop science teaching, application of knowledge to new technology is necessary, e.g., management of the learning process, cognitive skills and mental science, communication skills. From many research, it showed that “Learning-by-teaching” made better achievement of student. “Learning-by-teaching” is a method where students learn as they teach [lesson](#) or parts of lessons to other person. This can be done by forming groups consisting of about 3-5 students. Each group is allocated some concepts to research on, discuss among members and decide on the strategies to use for teaching the concepts (Martin, 2008; Skinner, 2006). Allowing students to assume the

teaching role is deemed to allow learners' prior knowledge to promote and nurture meaningful and effective learning (Deer and Wolfe, 2001). This can be a source of motivation to learn (Shor and Freire, 1987). In this study, Learning-by-teaching was used for science learning improvement and practicing skills in undergraduate student of Industrial Microbiology program, Suansunandha Rajabhat University.

## 2. OBJECTIVE

This research study has the following objectives.

1. To study the learning achievement in Food microbiology subject which teaching by “Learning-by-teaching”
2. To study the satisfaction of the students on “Learning-by-teaching”

## 3. FRAMEWORK FOR RESEARCH

3.1 Independent variable

“Learning-by-teaching” teaching process

3.2 Dependent variable

3.2.1 Learning achievement in Food microbiology subject

3.2.2 The satisfaction of the students on “Learning-by-teaching”

## 4. HYPOTHESES

- 4.1 Achievement in learning after using “Learning-by-teaching” teaching process is significantly higher.
- 4.2 Assessment of student satisfaction on “Learning-by-teaching” is in high level.

## 5. DEFINITIONS

5.1. “Learning-by-teaching” (German: *Lernen durch Lehren*, short **LdL**) designates currently the method by Jean-Pol Martin that allows pupils and students to prepare and to teach lessons, or parts of lessons. Learning by teaching should not be confused with presentations or lectures by students, as students not only convey certain content, but also choose their own methods and didactic approaches in teaching classmates that subject. Neither should it be confused with tutoring, because the teacher has intensive control of, and gives support for, the learning process in learning by teaching as against other methods.

5.2 Learning achievement is the result had been achieved or acquired form of the subject child (Nurkencana, 1986). Learning achievement is the result of which resulted in changes within the individual as a result of activity in learning. It is understandable that learning achievement is the result or level of ability that has been achieved by students after attending a teaching-learning process within a certain time in the form of changes in behavior, skills and knowledge and will then be measured and assessed and then realized in numbers or statement.

## 6. THEORY

The Concept of Learning-by-teaching (LdL)

LdL's “father” is Jean-Pol Martin, Professor of the didactics of French language and literature, at the University of Eichstätt-Ingolstadt, Germany. He has been developing the concept of “Learning by Teaching” since the 1980's, continuously improving this method and extending it from pure language classes to other areas of learning and living over two decades. Martin used the method “Learning by Teaching” for the first time in his French lessons at high-schools. He had found out

that the dilemma that had been caused by the so-called “communicative turn” in foreign-language teaching could be solved with the help of LdL. With the “communicative turn” educators finally realized that students participate much more in class when they are allowed to talk about themselves and their own life; but as a result there was not enough focus on grammatical competence. Martin’s solution was to have the students teach grammar chapters themselves. With this, the students were enabled to train grammatical as well as communicative competence and to acquire “hard skills” as well as “soft skills”.

But LdL means much more: LdL encourages and demands creativity, independence, self confidence and fundamental key qualifications (i.e. the ability to work in a team, complex thinking, the competence to seek and find information, explorative behavior, presentation skills, project competence, internet competence, generating knowledge as well as disciplinary virtues like punctuality, reliability, patience). Rather, LdL confronts students with the realistic uncertainties in life (which have even been increasing with the spread of the internet); students have to cope with the uncertainties of life and learn to make complex topics more and more linear and thus to develop quantitatively and qualitatively improved cognitive maps. Martin shows that human beings strive for (systematically) increasing of their competence of being in (mental) control of various walks of life and fields of study (“control competence”). The achievement of this “control”, according to Martin, leads to “flow effects”, i.e. great intrinsic satisfaction and feelings of happiness. This also means that the results should give pleasure even if the route to achieving them is arduous. LdL also takes into consideration the current development from an information society to a knowledge society.

## **7. METHOD**

### **7.1SAMPLE**

The study was conducted on undergraduate students (second-year) who study in industrial microbiology program at Suan sunandha Rajabhat university.

### **7.2Variable**

#### **7.2.1Independent variable**

“Learning-by-teaching” teaching process

#### **7.2.2Dependent variable**

- Learning achievement in Food microbiology subject
- The satisfaction of the students on “Learning-by-teaching”

## **8. MEASURES**

8.1 Achievement test before and after do “learning by teaching”, 20 items of 4 multiple choice

8.2 Students satisfaction survey. Questionnaire consists ten items. The items were scored on a four point scale from strongly agree to strongly disagree

## **9. RESULTS**

The Learning achievement scores and the satisfaction score are presented and discussed

Table 1: Mean, SD, of learning achievement (before and after do “learning by teaching”),

variable	Number	$\bar{X}$	S.D.	significantly
Before “learning by teaching”	25	11.68	1.464	0.05
After “learning by teaching”	25	15	1.633	0.05

Table 1 show test results before and after learning of the students. Mean of score before did the activity was 11.68 while mean of score after did activity was 15. The after activity test scores was higher significantly.

Table 2: The satisfaction of the students on “Learning-by-teaching”

Satisfaction list	$\bar{X}$	S.D.	level
1. Get more knowledge	4.55	0.22	excellent
2. An attractive style	3.21	0.41	fair
3. Time consume	2.93	0.18	fair
4. self confidence	4.06	0.26	good
5. funny and increase interesting to lessons	4.24	0.30	good
6. Encouraged to search the answers themselves	4.37	0.31	good
7. Encouraged to think critically to solve problems as they occur	4.34	0.37	good
8. Force self-learning happily.	4.17	0.46	good
9. Help develop scientific knowledge	4.45	0.22	good
10. Help develop social skills	4.64	0.27	excellent

Table 2 shows the satisfaction of the students on “Learning-by-teaching”. Overall satisfaction is at the highest level with an average of 4.096 and the S.D. 0.3. In details, the students were very satisfied with the 3 position. First is “Help develop social skills” (= 4.64, SD = 0.27). Second is “Get more knowledge” (= 4.55, SD = 0.22). And third is “Help develop scientific knowledge” (= 4.45, SD = 0.22).

## 10. CONCLUSION

10.1 Educational achievement of before and after learning by teaching in food microbiology were found to be vary significantly. The average pre-learning score was 11.68. The average post-learning score was 15. It increased 16.6 percent.

10.2 The study on satisfaction of students toward “Learning-by-teaching” found that the highest level of student satisfaction was 4.64 and the S.D. 0.27. The lowest level of student satisfaction was 2.93 and the S.D. 0.18.

## 11. DISCUSSION

From the study, it found that using “Learning-by-teaching” as teaching and learning model made significant higher achievement. This is because “Learning-by-teaching” emphasizes on self-learning skills which make students understand the lessons better. When assessing student

satisfaction with the learning management, it found that the highest level of student satisfaction was 4.64 and the S.D. 0.27. The lowest level of student satisfaction was 2.93 and the S.D. 0.18. In detail, the most satisfaction was “Help develop social skills”. The student favored this activity because they had to communicate with other person. They had to study and clearly understand the content so that they were able to explain to others. Preparing for teacher, students need to learn more than the content. For example, they had to learn about Instruction media preparation. With this reason, the second student satisfaction rating was “Get more knowledge”. The third rating was “Help develop scientific knowledge”. This showed that the activity could help them understand the content and resulted in significantly higher confidence. At the same time, students felt they wasted a lot of time due to the urge to want to know more on certain concepts. Thus, despite needing more time, resources and tutor guidance, this model was found quite successful in raising the motivation and level of achievement in term of benefits to students.

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## THE IMPACT OF THE METHOD OF FINANCING MERGERS AND ACQUISITIONS ON THE EFFICIENCY OF THE PROCESS

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### **ABSTRACT**

*Mergers and acquisitions are part of the external strategy of a company. In order to transaction was reasonable, greatest value should be created than just strategy of internal incrementation of enterprise. Investors' expectations towards mergers and acquisitions are generally positive, yet most of these transactions fail. The aim of the article is to evaluate the profitability of mergers and acquisitions depending on the source of financing of the transaction. Author verified the hypothesis that mergers and acquisitions made by the companies from WSE in the past 10 years are not effective and the source of financing do not influence the profitability of the purchase.*

**Keywords:** *effectiveness, mergers and acquisitions, profitability, Warsaw Stock Exchange*

### **1. INTRODUCTION**

Mergers and acquisitions are part of the external strategy of a company. In order to transaction was reasonable, greatest value should be created than just strategy of internal incrementation of enterprise. In case of stock company, which value is dependent on forecasted increment, these transactions have important influence on price of share. Not only merger but even foreshadow causes reactions of investors and it brings definite results for enterprises taking part in such connection. In such case quotations of companies taken over and taking over automatically change. If investors' expectations regarding the mergers and acquisitions are positive, you can expect an increase in share prices. If the transaction is judged negatively, the share price decline.

Investors' expectations towards mergers and acquisitions are generally positive, yet most of these transactions fail. One of the factors affecting the profitability of the transaction is its method of financing. The method of financing transactions in a significant way may determine the financial condition of the acquiring company and determine the success or failure in building the company's growth.

In the case of too high a financial burden for the acquiring company, the transaction may result in bankruptcy or takeover by another competing entity. Excessive cost burden of financing the purchaser may limit its possibilities to complete the transaction and its final implementation, and thus reduce or prevent the achievement of synergistic effect.

The aim of the article is to evaluate the profitability of mergers and acquisitions depending on the source of financing of the transaction. Author verified the hypothesis that mergers and acquisitions made by the companies from WSE in the past 10 years are not effective and the source of financing do not influence the profitability of the purchase.

### **2. PROFITABILITY OF MERGERS AND ACQUISITIONS AND FINANCING METHODS**

Research results show that mergers and acquisitions more often end up with a failure rather than success. As Schuter and Jackson (2001, pp. 239 – 253) indicate, using the example of United States, up to 75% of the transactions does not meet the financial targets, measured by the value of



capital, return on investment and the level of liquidity after the transaction. In contrast, studies in European countries, conducted in 1995, indicate that as many as 50% of the transaction value of \$ 500 million and above, had a negative impact on the value of capital to shareholders, 30% had a negligible impact, while only 17% has created added value.

Results of research on transactions conducted by Brown in the period between 1971 and 2001 are not clear. However, only 20 to 30% of transactions generate profits or shareholders of companies being the target of a merger or takeover. Adolph et al. (2001) showed that more than half (53%) of analyzed transactions did not bring the expected results, and in case of mergers and acquisitions based on strategic motive the number grew up to 68% of the transaction. Impairment of the recipient companies was noted by Mitchell and Stafford (2000, pp. 287-329). The results varied depending on the method of financing transactions – for cash financed transactions a higher probability of profit was observed, while in the case of issue of shares - higher probability of loss.

The choice of method of financing mergers and acquisitions is one of the key decisions in the process. To some extent, form of financing determines the future value of the transaction and owners' income. Also, the choice of financing may be dictated by a number of factors, including kind of offers, the theme of mergers and acquisitions, availability of financing, tax regulations, the financial liquidity of the buyer and the availability and the cost of capital and is differently perceived by investors.

Literature shows that method of payment in M&A transactions matters to the shareholders. Especially in case of cross – border acquisitions which are associated with significant challenges related with integrating foreign and domestic companies. Shareholders of acquiring companies generally perceive cash offers as more attractive than stock offers.

Fuller, Netter, and Stegemoller (2002, pp.1763–1793) indicated that cash financed deals are more favourable than stock financed acquisitions due to information asymmetry and valuation uncertainty.

According to Dutta, Saadi, Zhu (2013, pp. 91-107) stock payment in M&A processes is viewed as a possible remedy for reducing asymmetry in information and decreasing risk related with corporate governance in cross – border acquisitions. In case of Canadian acquisitions majority of deals (more than 90%) is financed by cash. Stock financed deals do not generate positive effects in cross – border acquisitions in the long – term operating performance in comparison to cash financed deals. However, the positive abnormal returns around the announcement date were observed. Authors suggested that this is a result of overenthusiasm about the cross – border stocks and overestimation of synergy gains. In long – term perspective, cross – border stock – financed deals significantly underperform. In addition to payment methods – no significant differences were found. Results are similar to Eckbo and Thorburn's (2000, pp. 1-25).

Also Shleifer and Vishny (2003, pp. 295-311) claimed that companies that are overvalued may increase shareholder wealth by using stocks in financing acquisitions of less valued companies. Ang and Cheng (2006, pp. 199-216) indicated that before transaction announcements acquirers are more overvalued than their targets.

Fu, Lin and Officer (2013, pp. 24-39) showed that stock financed purchases do not deliver synergy gains. Authors do the comparison in long – term perspective of stock price performance of overvalued acquirers and similarly overvalued industry peers that were not involved in M&A transactions. Results show that overvalued companies, that were not involved in acquisitions, performed better and improved their market value.

Pinkowitz, Sturgess and Williamson ( 2013, pp. 128-149) examined the case of US cash- rich companies in the context of preferred method of payment in M&A transactions. Results indicate that cash- rich companies are 23% less likely to make cash transactions than companies that are not cash – rich. Authors also found some differences in characteristics of companies in the context of payment method in acquisitions. Stock bidders have a greater returns, sales growth and market ratios than cash bidders and usually concentrate on acquiring larger companies. Cash bidders are characterized by higher leverage and are often larger companies. Cash is often unsolicited for subsidiaries and is used in takeover defence.

A study on companies listed on the Polish Stock Exchange draws the following conclusions:

- in the case of companies, which announced their intention to merge, the impact of the merger announcement on the price of the shares is short and causes an increase of about 1.5 - 2 percent. during the few days before the disclosure of merger (Czerwonka, 2010a, pp.31 - 37),
- in the short term, the average prices for the shares, which announced the call to sales increased during +/- one session, by 4.5 percent. more compared to the situation if these companies were not targeted for acquisition; during the period of +/- 60 session of the increase it was more significant and was 22 percent. (Czerwonka, 2010b, pp. 193 - 205)
- on average, acquired companies gained as well in short and long term, while the acquiring companies were losing or at the most the value of the company remained neutral (Czerwonka, 2010c, pp. 33 - 36).

### **3. RESEARCH METHODOLOGY AND RESULTS**

The following research is based on the case study methodology. The authors goal is to verify the effectiveness of mergers and acquisitions for the acquirer company. In the undertaken study, two approaches have been proposed. Firstly, the effectiveness has been measured from the market point of view, using the stock price as a point of reference. In the second part of the study, effectiveness was measured with typical financial indicators: ROE and ROA.

Cases of acquisitions included in the study has been obtained from the EMIS database and they include 29 transactions from the period 2005-2013. Companies considered in the research are functioning in different branches of market. Because of the stock market approach, the important criteria for selecting companies was that the acquirer firm had to be listed on WSE at least two years before the merger / acquisition and also two years after it. The target company did not have to meet that criteria. Also the complete financial information about the acquisition in the EMIS database was significant while constructing the companies list for the study. The final list of the transactions that have been taken into consideration was listed in table 1.

*Table 1: List of acquisitions included in the study (own elaboration based on EMIS database)*  
 - Continues on the next page -

Acquisition date	Deal value (thousands)	Target name	Acquirer name	Deal financing	method of payment
Feb-11	198000,00	RESTAURAVIA GRUPO EMPRESARIAL SL	AMREST HOLDINGS SE	New bank facilities	Debt assumed
May-07	301674,00	AMREST EOOD	AMREST HOLDINGS SE	Capital Injection	Cash
Dec-09	66805,80	GRYCKSBO PAPER HOLDING AB	ARCTIC PAPER SA	Capital increase	Cash
Nov-12	2282512,00	ROTTNEROS AB	ARCTIC PAPER SA	Capital increase	Shares
Sep-07	524946,68	PROKOM SOFTWARE SA	ASSECO POLAND SA	Capital increase	Shares
Mar-13	5336797,00	ASSECO CENTRAL EUROPE AS	ASSECO POLAND SA	Capital increase	Shares
Dec-09	817609,09	GE MONEY BANK SA	BANK BPH SA	Capital increase	Shares
Dec-12	782283,16	KREDYT BANK SA	BANK ZACHODNI WBK SA	Capital increase	Shares
Mar-07	59381,40	BIOPARTNERS HOLDINGS AG	BIOTON SA	Capital increase	Debt assumed
Jan-05	520428,00	SCIGEN LTD	BIOTON SA	Capital increase	Shares
Nov-13	1465100,95	METELEM HOLDING COMPANY LTD	CYFROWY POLSAT SA	Capital increase	Shares
Mar-11	94443987,00	TELEWIZJA POLSAT SA	CYFROWY POLSAT SA	Capital increase	Cash
Jul-13	389429,19	PGE ENERGIA SA	PGE POLSKA GRUPA ENERGETYCZNA SA	Capital increase	Shares
Nov-10	96296,24	LEXLUX2 SARL	EUROCASH SA	New bank facilities	Deferred payment
Jul-13	63885,00	LOTOS CZECHOWICE SA	GRUPA LOTOS SA	Capital increase	Shares
Apr-11	31414,00	LOTOS JASLO SA	GRUPA LOTOS SA	Capital increase	Shares
Mar-08	20403,09	JC AUTO SA	INTER CARS SA	Capital increase	Shares
Apr-05	56206,00	PRZEDSIĘBIORSTWO BUDOWY KOPALN PEBEKA SA	KGHM POLSKA MIEDZ SA	Private placing	Cash
Aug-10	836947,00	KREDIT INKASO PORTFOLIO INVESTMENTS (LUXEMBOURG) SA	KREDYT INKASO SA	Private placing	Cash
Apr-08	80608,37	ARTMAN SA	LPP SA	Capital increase	Cash
Dec-07	3180,00	ETEL POLSKA SP ZOO	MEDIATEL SA	Capital increase	Shares
May-09	234186,00	VELVET TELECOM LLC	MEDIATEL SA	Capital increase	Shares
Jul-08	41896,32	BEM BRUDNICCY SP ZOO	MERCOR SA	Capital increase	Cash
Feb-12	1355,50	MARCO POLO TRAVEL SP ZOO	NETMEDIA SA	Capital increase	Shares
Apr-08	265,00	MARCO POLO TRAVEL SP ZOO	NETMEDIA SA	Capital increase	Deferred payment
Jul-13	389429,19	PGE ENERGIA SA	PGE POLSKA GRUPA	Capital increase	Shares

			ENERGETYCZNA SA		
Sep-12	559766,00	ORPHEE SA	PZ CORMAY SA	Capital increase	Shares
Jan-07	210003,00	GALERIA CENTRUM SP ZOO	VISTULA & WÓLCZANKA SA	Capital Injection	Cash
Feb-11	13664,00	TREND FASHION SP ZOO	VISTULA & WÓLCZANKA SA	Private placing	Cash

The important element of the analysis was to include the financing method of the acquisition transaction due to the further financial effectiveness study and the stock valuation. In the gathered operation list, most of them were financed with equity: (25) and only 4 with debt. The detailed list of financing method was included in table 2.

*Table 2: Methods of deal financing and payment (own elaboration)*

Deal financing		method of payment	
Capital increase	22	Cash	9
Capital Injection	2	Debt assumed	2
New bank facilities	2	Deferred payment	2
Private placing	3	Shares	16
<b>Sum</b>	<b>29</b>	<b>Sum</b>	<b>29</b>

Considering the data from table one and also the stock market data gathered from WSE archive quotations, an analysis of yearly rate of return has been made in the context of the mergers. In table 3, author included the results of this part of research. Cells that represent the year of the acquisition were marked yellow and they will be the reference points for the further analysis of the financial data. Secondly the rates of return from the stocks, that have been associated with the changes in the acquisition year have been marked orange or blue, depending on the conclusion from the data in them. Author calculated the standard deviation of the annual price change in the maximum historical horizon available and then referred it to the change in the merger year. Changes that were significantly higher or were breaking the decreasing trend around the merger year were considered as positive receiving news of the acquisition by analysts and investors. Those observations were marked orange. On the other hand, if the price change was negative or too low considering standard deviation, the observation was marked blue.

*Table following on the next page*

Table 3: Annual rates of return in context of acquisitions (own elaboration)

<b>AMREST HOLDINGS SE</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return		101%	81%	-64%	71%	4%	-25%	50%	-6%
<b>Arctic Paper</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	40%	29%	46%	-36%	33%	-16%	-8%	-6%	1%
<b>ASSECO POLAND SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	40%	29%	46%	-36%	33%	-16%	-8%	-6%	1%
<b>BANK BPH SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	47%	23%	-89%	-66%	139%	-15%	-56%	57%	11%
<b>BANK ZACHODNI WBK SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	46%	59%	12%	-56%	71%	13%	5%	7%	60%
<b>BIOTON SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return		-82%	-59%	-78%	15%	-35%	-60%	67%	-80%
<b>CYFROWY POLSAT SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return					1%	21%	-18%	22%	21%
<b>EUROCASH SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return		53%	54%	-17%	56%	67%	10%	53%	9%
<b>GRUPA LOTOS SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return		12%	-10%	-73%	166%	14%	-36%	77%	-14%
<b>INTER CARS SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	-36%	83%	184%	-78%	199%	-10%	10%	9%	121%
<b>KGHM POLSKA MIEDZ SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	100%	42%	19%	-73%	277%	63%	-36%	72%	-38%
<b>KREDYT INKASO SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return				-9%	-5%	8%	-7%	3%	67%
<b>LPP SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	43%	-3%	261%	-57%	39%	36%	-7%	126%	98%
<b>MEDIATEL SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	-6%	-14%	-52%	11%	-18%	-11%	-83%	-13%	-33%
<b>MERCOR SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return				-54%	-19%	6%	-53%	63%	28%
<b>NETMEDIA SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return			-3%	-24%	-1%	10%	-50%	16%	-13%
<b>PGE SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return						-5%	-11%	-12%	-11%
<b>PZ CORMAY SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return					232%	48%	179%	-23%	-37%
<b>VISTULA GROUP SA</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
annual rate of return	22%	137%	-87%	-82%	5%	-7%	-62%	33%	73%

Due to the proposed method author conclude that only in 7 cases we could observe a positive and significant reaction from the market about the acquisition. That means that in 75% of the study, market did not reacted well or strongly for the information about the merger. This situation should not be connected with the actual market trend because this weak reaction can be observed in nearly every year of the study. Author also do not see the relation to the particular market sector or company.

Second part of the analysis focused on the financial data from the companies. The assumption is that the acquisition could affect the company itself but due to the negative moods on the market it can stay unnoticed in the stock price change. Because acquisition of other company is a very important operation in the firm, author seeks its results in a permanent change of financial

indicators in area of effectiveness. A series of tests have been made to check if the average ROE and ROA levels were equal in the period before the mergers and after them. Their results are presented in table 4.

*Table 4: Verification of differences in ROE and ROA before and after the acquisition (own elaboration)*

- Continues on the next page -

AMREST HOLDINGS SE	average before	average after	The null hypothesis: the difference of two medium = 0
ROA	4,99%	4,34%	p = 0,862
ROE	-8,26%	10,43%	p = 0,6584
<b>Arctic Paper</b>			
ROA	3,46%	4,45%	p = 0,8158
ROE	182,99%	9,18%	p = 0,382
<b>ASSECO POLAND SA</b>			
ROA	5,47%	5,00%	p = 0,02833
ROE	11,43%	9,08%	p = 0,04716
<b>BANK BPH SA</b>			
ROA	3,24%	-0,19%	p = 0,05885
ROE	28,54%	-1,72%	p = 0,06015
<b>BANK ZACHODNI WBK SA</b>			
ROA	1,71%	1,84%	p = 0,7326
ROE	20,06%	13,50%	p = 0,232
<b>BIOTON SA</b>			
ROA	6,62%	-9,02%	p = 0,1157
ROE	9,71%	-14,59%	p = 0,115
<b>CYFROWY POLSAT SA</b>			
ROA	15,59%	5,69%	p = 0,2767
ROE	41,21%	12,95%	p = 0,5478
<b>EUROCASH SA</b>			
ROA	6,75%	4,29%	p = 0,0008705
ROE	24,07%	24,52%	p = 0,8945
<b>GRUPA LOTOS SA</b>			
ROA	7,41%	-0,22%	p = 0,02927
ROE	12,52%	-0,43%	p = 0,04652
<b>INTER CARS SA</b>			
ROA	1,97%	6,15%	p = 0,06457
ROE	9,05%	13,29%	p = 0,5792
<b>KGHM POLSKA MIEDZ SA</b>			
ROA	11,28%	16,57%	p = 0,5998
ROE	21,85%	23,98%	p = 0,8894
<b>KREDYT INKASO SA</b>			
ROA	3,80%	4,84%	p = 0,1634
ROE	5,61%	11,29%	p = 0,05524
<b>LPP SA</b>			
ROA	7,53%	13,43%	p = 0,06273
ROE	13,45%	24,90%	p = 0,02968
<b>MEDIATEL SA</b>			
ROA	-5,95%	-3,00%	p = 0,9173
ROE	-29,13%	-27,58%	p = 0,9936
<b>MERCOR SA</b>			
ROA	11,53%	2,22%	p = 0,01289
ROE	27,53%	4,53%	p = 0,003121
<b>NETMEDIA SA</b>			
ROA	8,03%	8,45%	p = 0,02921
ROE	12,81%	13,31%	p = 0,01637



<b>PGE SA</b>			
ROA	6,06%	2,33%	p = 0,01822
ROE	10,46%	3,22%	p = 0,01997
<b>PZ CORMAY SA</b>			
ROA	7,09%	-5,08%	p = 0,03513
ROE	9,93%	-13,69%	p = 0,0414
<b>VISTULA GROUP SA</b>			
ROA	8,31%	3,78%	p = 0,4842
ROE	11,91%	6,20%	p = 0,5435

The tests shown that in 8 companies we could noticed significant increase in ROE and ROA after the acquisition. That stands for 42% of the studied group. Considering the earlier conclusions about the stock prices, the theory about the importance of mergers from the operation side of the business seem to be correct. It is more likely to notice the improvement in financial statements than in stock prices. Nevertheless we should not forgot that over 50% of the companies have not noted increase in financial effectiveness.

#### 4. CONSLUSION

The proposed article was aimed to analyze the effectiveness of the mergers and acquisitions made by the companies from WSE in the past 10 years. The transactions analyzed in the proposed article have shown that the effectiveness of the information about the merger or acquisition is rather unimportant as a simple factor of the investment impulse. It mostly do not meet the expectations of the price change, if there will be any. Second thing is that acquisitions are only partly effective in context of improving financial results. Because of the nearly 50/50 results of the ROE and ROA analysis. Analysis shown that the method of payment and financing is not a significant factor determining the success of the operation in the company. Nevertheless, it should be noted that the undertaken study is not representative in the context of the whole market. It is a pilot study to outline the direction of the target research.

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## DEVELOPMENT OF REGIONS AND MUNICIPALITIES OF THE SLOVAK REPUBLIC BY APPLICATION OF EUROPEAN COHESION POLICY

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### **ABSTRACT**

*The Slovak republic, entering the European Union on the 1st May 2004, got the impulse on the improvement and growth also via the application of the Cohesion policy. For the programming period 2007-2013, the amount of 11.3 milliards Euros for the application of the Cohesion policy have been provided to the Slovak republic. In the present time, the programming period is finished and the Slovak republic meets the critical reviews in the area of the effective use and maintenance of projects and application of the Cohesion policy on its territory.*

*Many specialists, economists and analysts try to reveal the errors, identify the subjects that enter into the project cycle wrongly or to identify the bodies that have the most important influence on the low level of the financial instruments use and they also try to deal with the criticism of the European Commission as to the project realization.*

*From this point of view, the theme of the research is very actual and imperative because the research tries to enlighten and to analyze the application of the cohesion policy within the territory of the Slovak republic and so, to state recommendations for more effective application for the following programming period. The article is created by analyzing the application of the European cohesion policy in the programming period 2007 - 2013 in the Slovak Republic.*

*The main objective of the article is to analyze and define the cohesion policy of the European Union and one of the partial objectives is to execute the analysis on the implementation state of the Cohesion policy on the level of the chosen regions in the Slovak republic and then, to propose and to create recommendations and techniques for its effective functioning.*

**Keywords:** *structural funds, Slovak Republic, regional development, cohesion policy, programming period 2007 - 2013*

### **1. INTRODUCTION**

Regional policy is a strategic investment policy which focuses on all regions and cities in the European Union (hereinafter EU). By application and realization of the regional policy (also known as the Structural policy or the Cohesion policy) the effective and respectable development on the national level may be ensured, but also the local level is really important.

### **2. RESEARCH OBJECTIVE**

The aim is to boost economic growth and to improve the quality of people's lives. Solidarity is the main feature of the policy, because policy focuses on support for less developed regions. A fundamental aspect of regional development is to reduce disparities between the regions and cities. Cohesion policy includes ideas of solidarity policy for which main principles and objectives are based on structural policy.

The Lisbon Treaty defines this policy as an economic, social and territorial cohesion and solidarity among states. The main issue of this article is the regional development, especially we observe the application of European cohesion policy in the Slovak Republic and we analyze the situation in Nitra Self-Governing Region (hereinafter NSR). NSR represents the region at the regional level NUTS 3.

The general object of our research is the Slovak republic and their regions. We analyze the socio-economic indicators in one of our last paper - “The analysis of regional disparities in the Slovak Republic“ (Rentková – Roštárová – Mazanovský (2016)). The aim of this paper was to analyze the indicators by using which we can observe, analyze and compare the regional disparities and the regional development. Regional disparities were defined as the differences in levels of socio-economic development. Empirical research was carried out and was based on a case study. The case study analyzed the actual socio-economic situation in the Slovak Republic at the regional level NUTS 3. Economic and social indicators were detailed analyzed. We concluded that it is necessary to analyze the situation in the NSG, based on the last analysis.

### **3. METHODS AND METHODOLOGY**

The research is processed by using a wide scale of the scientific methods and procedures. The specific range of methods was based on the research needs of the individual parts. The intention is to follow the logical continuity of the articles' parts, the correctness and the adequacy of information and data. First part is focused on the different definitions – the regional policy, the cohesion policy. This section is prepared by using the analytical methods – the analysis, the casual analysis, the synthesis. We analyzed scientific publications and scientific articles, papers by various authors (e.g. Rentková, K. (2012), Pawera, R. et all. (2013), Šlahor, I. – Majerčáková, D. – Barteková, M. (2016), Roštárová – Janač (2014), Komorník – Majerčáková (2016), Janač – Mariak (2013)). The first part is based on preparation and explanation of key terms. Results part consists of the main findings.

A questionnaire survey has been carried during the research for diploma thesis (Janšíková (2016)). The survey was conducted in the NSG. 355 villages and towns are located in NSG, but only 166 municipalities answered to our questionnaire survey. Return rate was 46.7%. Analysis of the results of the questionnaire takes into account only the municipalities that responded to the questionnaire. Aim of this survey was:

- To establish whether the villages know the possibility of funding their development through the Structural Funds.
- To establish whether the municipalities use the Structural funds.
- To identify problems with application of the Cohesion policy.

### **4. LITERATURE REVIEW**

Foundations of the EU date to 1952 but the issue of the unequal development has been incorporated into Community law until 1986. The term "economic and social cohesion" was included in primary legislation through the Single European Act (hereinafter SEA). SEA, article 130a: “In order to promote its overall harmonious development, the Community shall develop and pursue its actions leading to the strengthening of its economic and social cohesion. In particular the Community shall aim at reducing disparities between the various regions and the backwardness of the least-favoured regions. “ The Council instructed the Commission to make a proposal by which the action

of structural funds would be harmonized. These funds operated independently at this time. So we can talk about definition of the regional policy since 1986. The role of regional policy is to find differences and causes of unequal development of regions. Recommendations, strategies, plans and objectives can be determined by application of this policy to eliminate these disparities.

Over time, the action of regional policy targeted at the structural differences in the sectors and subsectors, application of policy crossed the borders of one country and the action was targeted to the whole territory. Later, problems came with the accession of new countries and their degree of economic divergence and economic development. Policy was again redefined. Nowadays, regional policy exceeds the borders of EU and the support is directed not only to the Member States and candidate countries, but the EU shows solidarity and cohesion to many other countries.

Many authors, scientists and experts deal with the definition of regional policy, so we can find many definitions. Goodall (1987) mentions regional policy as "an integral part of state policy, which affects the distribution of the main economic resources and activities throughout the national territory or in its part. Regional policy includes measures to help increase the degree of economic activity in the territory where there is high unemployment and little hope for natural economic growth, on the other hand, measures serve to control the economic activities in the territories with overgrowth." Rajčáková defines regional policy as: "regional policy is represented by the activities of the state institutions and the territorial scope institutions. It is directed to the creation of favorable conditions for versatile and dynamic development of the regions in maximizing their economic, geographic and human potential." Regional policy is an instrument for removing the economic disparities. According to Lipková (2006), regional policy "is looking for the causes of the unequal development of regions, it shows how to know the consequences of unequal regional development and it forms the recommendations and strategies for the elimination of gaps in development between regions." Robson (Čihelková, 2007) defines regional policy with regard to the conclusions of the classical theory of integration. Regional Policy is defined as "controlled intervention seeking to modify the natural distribution of economic activities and to reduce social and economic disparities between regions." Robson defines regional policy through economic activities which take place in the examined regions. He analyzes a link between regional development and the reduction of social and economic inequalities through the correct allocation and management of selected economic activities.

Cohesion Policy, which operates currently, incorporates the base of the policy of solidarity, the main principles and objectives are based on structural policy. The Lisbon Treaty defines the economic, social and territorial cohesion and solidarity between states. Cohesion policy therefore represents one of the most important instruments of economic and social development of the territory. It operates through structural, regional and social policy.

Local development is carried out in a particular place - the village or town and regional development is, in terms of EU cohesion policy, largely associated specifically with regional governments, as well as with classification NUTS 2. Cohesion policy is targeted to the regional level NUTS 2. According to Skokan (Stejskal - Kovárník, 2009), regional development is represented by "complex processes in a complex system of regions. Systemic approach is needed to influence and control these processes." Stough and Roberts (Stejskal - Kovárník, 2009) have dealt with the issue of defining the regional development. According to them, it is the "application

of processes and resources available in the region by which we can observe the sustainable development and desired economic results for the region. These results satisfy the expectations of businesses, residents as well as non-residents." If a municipality or a city is the most elementary unit of regional development and their development is realized at the local level, as it is defined by the EU legislation, the local development is understood as development realized at the area which is less than the region, i.e. only in part of the observed region. (Stejskal – Kovárník, 2009) In our approach, town and village constitute only a certain part of the region in which the policy is implemented. In context of the EU cohesion policy, the municipality or city represent the elementary territorial unit in which cohesion policy is implemented. In Slovakia, the territory is divided into three regional levels (NUTS) and 2 local levels (LAU), which is made by the Statistical Office Decree no. 438/2004 Coll. as amended. Table 1 shows the classification of regions in the Slovak republic.

The role of cohesion policy is to finance concrete projects for regions, towns, cities and their habitants. Slovak Republic, as an equal member of the EU, can use resources of EU in the form of so-called Structural funds. The basic definition of the policy stipulates that all Member States and all regions can to profit from Structural funds. Of course, this is not entirely true. Not all European regions are eligible regions, i.e. regions that can benefit from one or more Structural funds. Eligible region is one that fulfills specified criteria.

Table 1 - The NUTS classification in Slovakia and the average size recommended (European Parliament and Council Regulation (EC) No. 1059/2003 of 26 May 2003 on the establishment of a common classification of Territorial Units for Statistics (NUTS) and Decree no. 438/2004 Coll., Issuing the classification of territorial units for statistics)

NUTS classification	Nombre	Territorial-administrative units falling under NUTS appropriate in the Slovak Republic	EU recommendations for NUTS - the average size of NUTS regions (population)	
			MINIMUM	MAXIMUM
<b>NUTS 1</b>	1	Slovak Republic	3 000 000	7 000 000
<b>NUTS 2</b>	4	Bratislava Self-Governing Region, Western Slovakia, Central Slovakia, Easatern Slovakia	800 000	3 000 000
<b>NUTS 3</b>	8	Bratislava Self-Governing Region, Trnava Self-Governing Region, Trenčín Self-Governing Region, Nitra Self-Governing Region, Banská Bystrica Self-Governing Region, Žilina Self-Governing Region, Košice Self-Governing Region, Prešov Self-Governing Region	150 000	800 000
<b>LAU 1</b>	79	Township		
<b>LAU 2</b>	2891	Municipalities		



We consider the main causes of regional disparities - the natural potential, residential structure, position attractiveness, demographic structure, economic specialization of regions, as well as territorial and administrative organization. The territory of Slovak Republic was divided into relevant statistical territorial units by the Government Resolution no. 156/2002. These statistical territorial units fulfill the conditions for using the pre-accession aid, but especially the financial aid through regional policy. The division of the Slovak Republic into NUTS units is shown in Figure 1. (Sloboda, 2014)

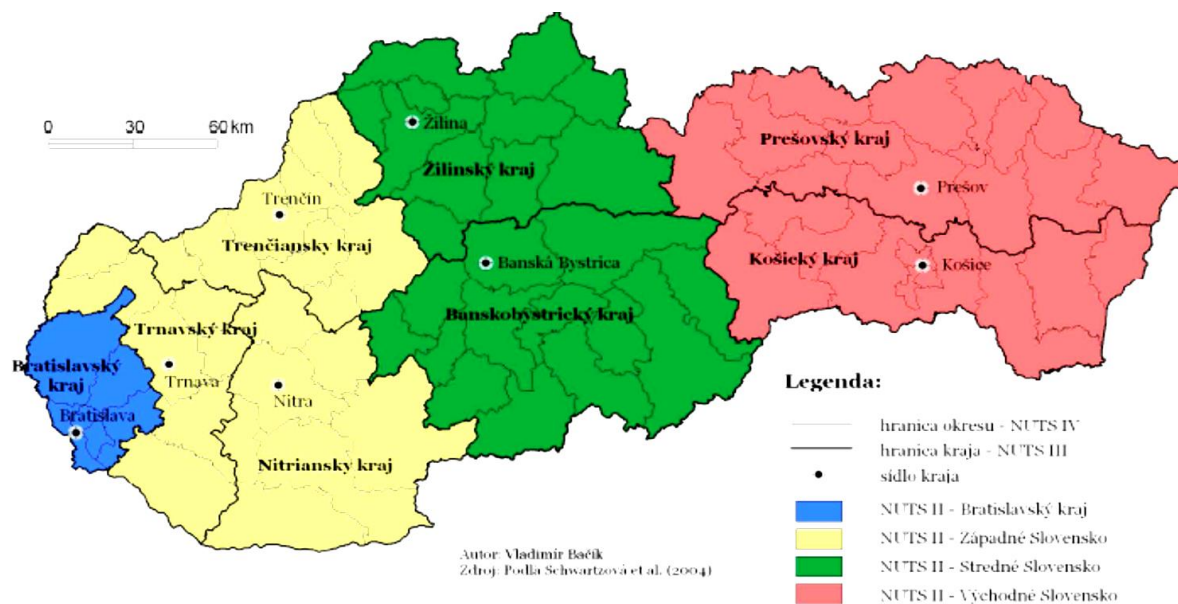


Fig. 1 - NUTS classification of territorial statistical units in Slovakia

## 5. PROGRAMMING PERIOD 2007-2013

Cohesion policy is characterized by a number of specifics that are defined in EU legislation. Financial resources from the EU budget were earmarked for the 7 year period. The objectives must be identified, tools defined and principles of implementation adopted and the policy can be implemented. In the programming period 2007 – 2013, policy fulfilled three objectives: the Convergence, the Regional competitiveness and employment and the European territorial cooperation.

1. Target – Convergence. Target aims to stimulate growth and employment in the least developed regions. It highlights on the innovation and the knowledge society, the adaptability to economic and social changes, the environmental quality and the efficiency of the administration. Activities were directed to research, innovation and upgrading skills, promotion of knowledge economy, human capital development through targeted education and training, as well as training and support the SMEs.

2. Target - Regional competitiveness and employment. The growth of regional competitiveness and employment contribute to strengthening the competitiveness and attractiveness as well as employment by emphasizing the importance anticipation of economic and social changes. The funds are used in the field of risk reduction of poverty and promotion of active labor market policies, but also to promote the role of social economy and create quality jobs, to promote

innovation. The benefits are also for the development of rural areas. Regional competitiveness and employment is financed from structural funds.

3. Target - European Territorial Cooperation. European territorial cooperation is a complement to the previous targets because eligible territories are under objectives of the Convergence, the Regional competitiveness and employment. It is a goal that smoothly follows the INTERREG. Its mission is to promote the harmonious and balanced development of urban, rural and coastal areas, development of economic relations and the establishment of small and medium-sized enterprises.

## **6. PROGRAMMING PERIOD 2007-2013 IN THE SLOVAK REPUBLIC**

Policy objectives and financial resources are defined for regions at the NUTS 2 level. The programme period of 2007 – 2013 was the first programme period during which the Slovak Republic was able to draw from the EU funds in its entire duration. The document known as the National Strategic Reference Framework for the period of 2007 – 2013 (hereinafter NSRF) provided the baseline for this drawing. This strategic document has been drawn up pursuant to the new regulations of the EU for the Structural Funds and Cohesion Fund. The Government of the Slovak Republic approved the document on December 6, 2006 and the European Commission on August 17, 2007. The main strategic goal formulated in the NSRF was "significantly increase by 2013, the competitiveness of the regions and the Slovak economy and employment while respecting sustainable development."

During the programming period 2007 – 2013, 14 operational programs was set up. The Slovak Republic had the opportunity to draw on a financial liability of 11 482.76 million EUR, but Slovak Republic exhausted only 89.47% of the funds, which is 10 394.81 million EUR (till 31.12.2015). Funding was also possible as pre-financing from the state budget, so we must adjust spending and we must increase funding. Slovak Republic exhausted 10 826.03 million EUR (93.19%, till 31.12.2015) after adjustments.

NSR is subject to the study. SWOT analysis provides the basis for building a good strategy. Appropriately selected SWOT analysis forms the basis for formulating development strategies and strategic objectives.

*Table following on the next page*

Table 2 – SWOT analysis of NSR (authors’ work according to own research and [www.unsk.sk](http://www.unsk.sk))

<b>Strengths</b> <ul style="list-style-type: none"> <li>- A good natural-geographical position</li> <li>- Plenty of brown and green zones</li> <li>- The sectors with high added value</li> <li>- Educated human potential</li> <li>- Existence of businesses - operating in the trade, services, manufacturing, transportation</li> <li>- Good conditions for the development of agriculture, forestry</li> <li>- Skilled labor</li> <li>- Potential in industry and agriculture</li> <li>- Geothermal water</li> </ul>	<b>Weaknesses</b> <ul style="list-style-type: none"> <li>- Low level of entrepreneurial activity</li> <li>- Insufficiently developed tertiary sector</li> <li>- A wide disparity in economic performance of sub-regions</li> <li>- Low level of utilization of alternative energy sources</li> <li>- The low level of economic diversification</li> <li>- Poor co - partnerships</li> <li>- High regional unemployment rate - municipalities, graduates</li> <li>- Stagnation in the development of SMEs</li> </ul>
<b>Opportunities</b> <ul style="list-style-type: none"> <li>- Development of industries based on position potential of the region (combined transport)</li> <li>- Development of industries - chemical industry, the electrical industry</li> <li>- Development of the tertiary sector - civil services, crafts, counseling and information services</li> <li>- Increasing the attractiveness of the territory for investors - completion of transport infrastructure</li> <li>- Increasing the attractiveness of the region - tourism - restoration of historical and cultural monuments</li> <li>- The possibility of using the river</li> </ul>	<b>Threats</b> <ul style="list-style-type: none"> <li>- The risk of ecological disaster - environmental burdens</li> <li>- Insufficient use of EU funds for the economy</li> <li>- Lack of participation of scientists and researchers in international research and innovation networks</li> <li>- Lack of integration of research institutions</li> <li>- Young people moving abroad</li> <li>- Strong competition market</li> <li>- Low attractiveness of the region for investors</li> </ul>

Analysis of socio-economic indicators pointed to regional disparities in Slovakia. Differences were seen throughout the period, some disparities increase. Bratislava Self-Governing Region held a dominant position. NSG lagged behind in many indicators. SWOT analysis shows that positive factors dominate over the negatives. NSG is classified among the developing regions with the growth potential. Analysis of status of implementation of the Structural Funds can help to better analyze the observed object, Nitra Self-Governing Region (NSR). In the programming period 2004-2006, NSR realized 810 projects. Table 3 shows the Status of implementation of regional projects of the Structural Funds according to the Operational program during 2007-2013 in NSG.

Table 3 - Status of implementation of regional projects of the Structural Funds according to the Operational program during 2007-2013 in NSR (authors’ work according to own research and <http://www.nsrr.sk/cerpanie/>)

<b>Operational program</b>	<b>Operations submitted (number)</b>	<b>Contracted operations (number)</b>	<b>Contracted operations (budget)</b>	<b>Realised/declared expenditure</b>
Informatisation of Society	9	8	11 602 396,00	6 278 477,60
Competitiveness and Economic growth	732	311	168 020 141,24	107 295 047,95
Research and development	87	38	104 920 162,46	84 400 152,46
Education	333	103	30 002 586,42	20 941 359,84
Environment	397	86	214 671 037,46	151 967 961,82
Bratislava region	0	0	0,00	0,00
Transportation	0	0	0,00	0,00
Technical assistance	0	0	0,00	0,00
Employment and Social inclusion	367	156	22 560 005,81	13 301 555,30
Healthcare	48	12	42 853 705,78	41 708 933,47
Regional operational program	574	333	225 507 413,05	198 254 618,90
<b>Sum</b>	<b>2 547</b>	<b>1 047</b>	<b>820 137 448,22</b>	<b>624 148 107,34</b>

We can say that the issue of drawing of funds from the European Union may be critical in NSR. 2,547 projects were submitted, but only 1,047 projects were contracted. Drawing represents also a problem. Based on statistical findings, a questionnaire survey was conducted in the region, during the research for diploma thesis. 166 towns / cities took part in the questionnaire survey. Survey result are:

- 14% of respondents have not implemented a project financed by the Structural Funds. 22% of respondents have implemented one project, 16% of respondents implemented two projects. 48% of respondents have implemented 3 or more projects.
- The issue of lack of interest on the implementation of the Structural Funds was interesting for analysis. They were the most common causes:

- corruption perceptions in drawing (40%),
- high cost of preparation of the project (39%),
- lack of funds to co-finance the project (37%),
- bureaucracy (35%).
- The least problematic areas are - lack of information, inability to develop project documentation.
- 69% said that they wanted to draw EU funds, but the project was not successful. The problems identified in the spending of EU funds were - public procurement (20%), difficulty in spending (13%), the European Commission was not satisfied with the outcome of the project (6%), loans (2%).

## 7. CONSLUSION

Implementation of cohesion policy is a complex process involving an large number of subjects and objects that make up a policy. They implement, monitor, evaluate and ultimately carry out the policy. According to the adopted plan and the objectives of cohesion policy, output is represented by a demonstrable reduction of regional disparities. The base is a strategic, financial and legislative definition of policy in Slovakia, as well as the creation of conditions for the grant applicants. Only if we will have the correct setting and application of basic criteria, the policy can be implemented effectively.

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## ARE BROKERAGE RECOMMENDATION RELIABLE? THE EXAMPLE OF M&A TRANSACTIONS ON POLISH STOCK EXCHANGE MARKET

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### **ABSTRACT**

*The market information efficiency is wide and capacious issue and its analysis in the modern economy would require hundreds of variables to take into account in terms of their impact on the market. Brokerage recommendations plays an important role in reducing the information asymmetry between company management and external market participants. Literature research indicates, that the valuation of the companies included in the recommendations differ from their real value, moreover, they are often overestimated. This phenomenon also occurs in the case of mergers and acquisitions. The aim of this article is to evaluate the usefulness of the recommendations of brokerage houses in mergers and acquisitions.*

*The author verifies the hypothesis that brokerage recommendation, prepared on M&A purpose, are miscalculated.*

**Keywords:** *brokerage recommendation, capital market, company evaluation, mergers and acquisitions*

### **1. INTRODUCTION**

The market information efficiency is wide and capacious issue and its analysis in the modern economy would require hundreds of variables to take into account in terms of their impact on the market. Data coming to the investors in the market may have a different character and a point of reference, providing information on selected aspects of reality. Stock market recommendation is usually formed by using fundamental analysis which objective is to measure the situation of the company on many levels, from the global to the situation within the company itself. This means that the final result, showing an analyst prediction about the future of the company, should be based on a wide range of information, processed and compensated in a very terse message like buy / sell. This type of information is a very clear message to the recipient of the report, and in conjunction with the prestige of the institution of the brokerage house, as a specialized company in the field of trading, may represent a strong indicator for the performance of investments in accordance with its recommendation.

It should be considered, whether the analysts are always honest and conscientious in the creation of the recommendation and whether the information presented by them are actually discounted by investors in their investments. According to the author, information capacity recommendations, the prestige of the brokerage houses and the constant search for investors reasons to invest, as a basis to analyze the actual impact of such reports on the Polish stock market. Because of the mechanisms that govern it, focusing mainly on supply and demand, the effects of the impact of the emergence of brokerage recommendation should be visible and reflected in the price movement that can be linked to this publication.

Research of literature indicates that the valuation of the companies included in the recommendations differ from their real value, moreover, are often overestimated. This

phenomenon also occurs in the case of mergers and acquisitions. This is indicated by the logic of the process itself. Investors perceive the company which is the object of the acquisition, as much worth and the process leading to the increase in the value of the company. At the same time, most mergers and acquisitions fail. The Company does not achieve the desired result of the transaction and the expected benefits tend to be overestimated (Schuler and Jackson, 2001, pp. 239-253, Mitchell and Stafford, 2000, pp.287-329 ).

The study evaluated selected brokerage recommendations that emerged shortly after the publication of the news of the merger in order to verify the correctness of the analyzes carried out in the recommendations. The aim of this article is to evaluate the usefulness of the recommendations of brokerage houses in mergers and acquisitions. The author verifies the hypothesis that brokerage recommendation, prepared on M&A purpose, are miscalculated.

## **2. THE IMPORTANCE OF BROKERAGE RECOMMENDATIONS FOR THE STOCK MARKET**

Brokerage recommendations plays an important role in reducing the information asymmetry between company management and external market participants. They support capital investors to identify profitable investment opportunities.

However, the first study on the impact of recommendations on price changes showed that most of the recommendations are not a significant source of information giving an advantage to its holder (Cowles, 1934, pp. 309 - 324). Studies of Walker and Hatfield (1996, pp. 13-29) confirmed this phenomenon. The results of the subsequent tests were not so clear.

Stickel (1995, pp. 25-39) showed that investors are guided by the reputation of the brokerage house and do not treat all of the recommendations in the same way. Hence, different is the impact on investment decisions of stock investors, which depends on the range of institution that issued the recommendation. Chang and Chan (2008, pp. 309-325) reached similar conclusions. Hall and Tacon (2010, pp.18-33) also examined whether trading according to recommendations issued by analysts who made accurate earnings in a prior year is profitable. According to authors these accurate forecasters cannot be identified on the basis of their track record. While there is statistically significant evidence that forecasting ability is persistent, it is not sufficient to generate profitable stock recommendations in the future. Authors indicated that analysts are pre disposed to recommend stocks with low book – to – market ratios and positive price momentum what may impede their ability to make profitable recommendations.

Another study, held by Liu, Smith and Sayed (1990, pp. 399-410) showed that the impact of recommendations on price change, on the day of its issue, is inevitable. Barber (1998, pp. 531-563) showed that the positive recommendations result in higher rates of return, while negative result in lower. Research results were compared to a market benchmark and indicated a significantly higher rate of return in the strategy, in which the recommendations were used as a source of fundamental information about companies. Juergens (1999) showed results indicating the fact that the publication of recommendations makes additional changes in prices and can thus achieve above-average returns. He analyzed 3679 reports coming from IT and similar sectors focusing on recommendations and other information directly given by these companies. These conclusions seem to be confirmed by Fang and Ayako (2005), who in their deliberations proved

the usefulness of the information derived from the recommendations and significantly higher profitability of investment projects based on these reports.

On a contrary Azzi's studies indicates low efficiency rate of recommendations. The information provided is often in the wrong context and tone of the recommendation is adapted to the trend in the market. This means that the market interprets the recommendations in an arbitrary manner. In case it is negative for growing market, it has less impact on the stock price, if it is positive in a declining market, the situation is analogous. Loh and Stulz (2010) observed above-average change in prices after the announcement of recommendations, mainly in the case of being in the media spotlight. Their research shows that around ¼ of recommendations does not affect the share price, while about 10% has a very significant impact.

Research conducted by Moshirian, Ng and Wu (2009, pp. 74-83) concentrates on emerging markets, that are often perceived by investors as too exotic, too risky, hard to analyse and to invest. The informational value of analysis provided by analysts is supposed to be significant. Authors found that in case of emerging markets, the number of sell recommendations is far less than the number of buy recommendations. According to authors, stock prices react strongly to stock analyst recommendations and revisions. They also found that there is a stronger positive bias in analyst recommendations and revisions in emerging markets compared with that in developed markets.

Using the example of Warsaw Stock Exchange, Keller and Pastusiak (2013, pp. 304 - 309) indicated that brokerage recommendations do not illustrate the real companies' value and information provided are misleading. For example, the number of positive recommendations is almost twice as negative ones, regardless of the situation on the market and in some cases of neutral recommendations may provide the 35% growth. According to authors, the majority of recommendations are subjective and overestimated. It is a result of lack of strict and unambiguous procedures and methods of valuation of companies listed on the stock exchange. Further studies confirmed that analytical reports are not significantly discounted by investors. Methodological ambiguity of stock recommendations hinders their reliability and unequivocal evaluation by their receivers, which respectively results in ignoring these reports while making investment decisions. Certainly, there is a group of investors who are using some of the reports in their decisions, but their strength in the general market demand is relatively low and does not result in the effects that can be associated directly with the publication of the recommendation (Keller, Pastusiak, 2016, pp. 419-437).

### **3. RESEARCH METHODOLOGY AND RESULTS**

The following research is based on the case study methodology. The authors goal is to verify the correctness and utility of their stock recommendations in context of mergers and acquisitions. The data used in the article is based on the information obtained from the Polish Stock Exchange database and then information gathered directly from the companies websites and financial statements. To verify the stated thesis outdoor also needed specified brokerage recommendations, that have been made especially due to the announced merger or acquisition. On the Polish Stock Exchange Market there is about 400 companies listed. Most of them are quoted in the continuous mode, so their price changes fluently and we can assume that those changes are effective enough for the research purposes, because we are examine the investment horizon of one year.

Author have found the information about all the acquisitions that took place between year 2003 and 2013 where the acquirer was a company from the stock exchange. The target firm did not have to be listed on WSE and even did not have to be a joint-stock company. The list of transactions that have met the following criteria had over 14000 positions.

The next step of building the database where to find the stock recommendations that were prepared and released maximum 2 months after the information about the acquisition has been released. This initial selection allowed to filter the recommendations from the 13000+ reports that have been prepared in the examined period to about 200 that have been considered separately to find the information if they were prepared as an valuation update caused by the merger information. The final selection led to a list of 38 transactions for the further analysis in the study undertaken. The whole list has been shown in table 1.

*Table 1: List of acquisitions included in the study (own elaboration based on EMIS database)*  
 - Continues on the next page -

Acquisition date	Target name	Acquirer name	Acquisition date	Target name	Acquirer name
Nov-13	METELEM HOLDING COMPANY LTD	CYFROWY POLSAT SA	Sep-15	SECAPITAL SARL	KRUK SA
Mar-11	TELEWIZJA POLSAT SA	CYFROWY POLSAT SA	Jun-05	TOP SECRET SP ZOO	REDAN SA
Dec-09	GE MONEY BANK SA	BANK BPH SA	Nov-06	INPOST SA	INTEGER.PL INWESTYCJE SP ZOO
Dec-12	KREDYT BANK SA	BANK ZACHODNI WBK SA	Jan-15	INNOVA PHOENIX SP ZOO	BAKALLAND SA
Sep-12	ITI NEOVISION SP ZOO	TVN SA	Aug-10	KREDIT INKASO PORTFOLIO INVESTMENTS SA	KREDYT INKASO SA
Sep-07	PROKOM SOFTWARE SA	ASSECO POLAND SA	Dec-13	IGA MOTO SP ZOO SP KA	INTER GROCLIN AUTO SA
Jul-13	PGE ENERGIA SA	PGE POLSKA GRUPA ENERGETYCZNA SA	Sep-15	AGRO PROVIMI SP ZOO	DUDA SA
Dec-10	TRADIS SP ZOO	EUROCASH SA	Feb-12	NP PROPERTIES POLAND SP ZOO	ZAKLADY PRZEMYSŁU CUKIERNICZEGO MIESZKO SA
Feb-11	RESTAURAVIA GRUPO EMPRESARIAL SL	AMREST HOLDINGS SE	Aug-14	MEDFINANCE SA	MAGELLAN SA
Aug-08	ABG SA	ASSECO POLAND SA	Apr-05	PRZEDSIĘBIORSTWO BUDOWY KOPALN PEBEKA SA	KGHM POLSKA MIEDZ SA
Dec-13	ZELMER MARKET SP ZOO	ZELMER SA	Sep-12	ORPHEE SA	PZ CORMAY SA
Nov-10	LEXLUX2 SARL	EUROCASH SA	Jan-05	SCIGEN LTD	BIOTON SA

Feb-08	RABAT POMORZE SA	PRZEDSIĘBIORSTWO PRODUKCYJNO- HANDLOWE BOMI SA	Nov-11	MW LEGAL 9 SP ZOO	BERLING SA
May-08	W KRUK SA	VISTULA & WÓLCZANKA SA	Dec-15	CD PROJEKT BRANDS SA	CD PROJEKT SA
Apr-08	ARTMAN SA	LPP SA	Jan-14	MIEJSKI KLUB SPORTOWY CRACOVIA SPORTOWA SA	COMARCH SA
Dec-09	GRYCKSBO PAPER HOLDING AB	ARCTIC PAPER SA	Jan-11	AGROVITA BIALYSTOK SP ZOO	MISPOL SA
Dec-07	RAST SA	PRZEDSIĘBIORSTWO PRODUKCYJNO- HANDLOWE BOMI SA	Dec-07	ETEL POLSKA SP ZOO	MEDIATEL SA
Mar-07	BIOPARTNERS HOLDINGS AG	BIOTON SA	May-07	AMREST EOOD	AMREST HOLDINGS SE
Mar-13	ASSECO CENTRAL EUROPE AS	ASSECO POLAND SA	Oct-10	PEGAS - NW AS	PEGAS NONWOVENS SRO
Jul-08	BEM BRUDNICCY SP ZOO	MERCOR SA	May-09	VELVET TELECOM LLC	MEDIATEL SA
Jan-15	ZWG SA	BUMECH SA	Sep-04	FEBER SP ZOO	INTER CARS SA
Oct-15	ZELMER PRO SP ZOO	ZELMER SA	Jan-07	GALERIA CENTRUM SP ZOO	VISTULA & WÓLCZANKA SA
Dec-15	CDA GROUP LTD, THE	AMICA WRONKI SA	Mar-09	TRIMTAB SA	ARTERIA SA
Sep-15	SECAPITAL SARL	KRUK SA	Feb-12	MARCO POLO TRAVEL SP ZOO	NETMEDIA SA
Jul-98	BIOLEK SP ZOO	BIOTON SA	Jul-11	INNOVATION ENTERPRISE LTD	PZ CORMAY SA
Nov-12	ROTTNEROS AB	ARCTIC PAPER SA	May-07	AGRO-FISH SP ZOO	GRAAL SA
Mar-08	JC AUTO SA	INTER CARS SA	Jul-13	LOTOS CZECHOWICE SA	GRUPA LOTOS SA
Jan-07	PVT AS	ASSECO POLAND SA	Apr-11	LOTOS JASLO SA	GRUPA LOTOS SA
Sep-07	PHARMATEX ITALIA SRL	BIOTON SA	Apr-08	MARCO POLO TRAVEL SP ZOO	NETMEDIA SA
Dec-13	SIGNUM SP ZOO W ORGANIZACJI SP KA	KOMPUTRONIK SA	Feb-11	TREND FASHION SP ZOO	VISTULA & WÓLCZANKA SA
Feb-07	W KRUK SA	VISTULA GROUP SA			

Author aim was to verify how useful and accurate were the recommendations that have been taken under consideration in the following research. The key variable for that is the growth potential based on the target price from recommendation and the stock price at the time of its publication. Growth potential is calculated as follows:

$$\text{Growth potential} = \frac{\text{Target price} - \text{current price}}{\text{current price}} * 100\%$$

The value is next compared to the actual annual rate of return from the particular stocks. The analysis is based on the differences that occur between those values, divided in groups with different criteria.

Also it should be noted that mergers and acquisitions are one of the most important and significant type of information that can affect the stock price, so in many cases after announcing this type of operation, many brokerage houses are preparing the valuation updates. In this research, in 34 / 38 cases this situation occurs. In the remaining 4 case, only one recommendation has been announced due to the merger information. Author decided to analyze the average growth potential from the groups of reports in particular cases.

The first part of the analysis was aimed to find the average differences associated with analyst mistakes in valuation in every acquisition in the study. Results have been shown in table 2.

*Table 2: Comparison of the growth predictions and the actual price changes in every transaction (own elaboration)*

Transaction number	growth potential from recommendation	annual rate of return	Absolute difference	Transaction number	growth potential from recommendation	annual rate of return	Absolute difference
1	-33,70%	-40,55%	6,85%	20	19,82%	-0,04%	19,86%
2	-0,09%	-6,41%	41,65%	21	25,64%	13,39%	12,24%
3	-31,70%	144,98%	176,68%	22	9,79%	-93,52%	103,30%
4	-0,74%	115,19%	115,93%	23	-11,06%	-20,99%	9,92%
5	-7,22%	8,10%	17,06%	24	21,77%	0,00%	21,77%
6	17,52%	-226,33%	243,85%	25	13,35%	6,89%	6,45%
7	10,92%	-234,18%	245,10%	26	11,71%	-6,32%	18,03%
8	7,66%	-100,17%	107,83%	27	11,55%	-9,11%	20,66%
9	37,52%	-59,38%	96,89%	28	6,79%	-12,86%	19,66%
10	6,26%	-42,08%	48,34%	29	14,93%	-17,91%	32,84%
11	8,50%	-38,05%	46,56%	30	-10,26%	-54,29%	44,03%
12	9,24%	-139,71%	148,95%	31	41,55%	-24,81%	66,36%
13	19,76%	-72,30%	92,06%	32	21,91%	-45,80%	67,71%
14	10,30%	-100,47%	110,77%	33	13,91%	77,44%	63,53%
15	34,77%	-87,07%	121,84%	34	12,57%	47,53%	34,96%
16	9,34%	-82,86%	92,19%	35	16,22%	6,12%	10,11%
17	-1,94%	-57,71%	55,77%	36	3,54%	27,81%	24,27%
18	12,63%	-191,85%	204,48%	37	7,63%	-16,87%	24,50%
19	20,12%	-63,50%	83,62%	38	13,75%	23,29%	9,54%

From the data from table 1 we can conclude that the average mistake in the recommendation was about 70,16% and the median about 47,45%. Very important thing is that in only cases the average mistake was lower than 10% from target price and in 18 cases the difference was higher than 50% so in over 47% of acquisitions considered. That leads to conclusion that despite the time of the



acquisition and the brokerage house that prepared the report, average analysts mistakes are significant and can lead to big portfolio miscalculations and in result – loses.

Next step of the study was to find the errors in reports of different type. In natural way, we assume that acquisition of other company is a positive event and should lead to the growth of the acquirer and the rise in his stock, but depending on the situation of the acquirer at the moment of recommendation and on the condition of the target company, the objective judgments of the analysts can differ. In this study, there are 90 recommendations of different type included. Most of them have positive approach (68), but also there are 10 neutral and 12 negative. In next step author verified if the differences that occur in those groups are equal or not.

*Table 3: Comparison of the growth predictions and the actual price changes in different recommendation types (own elaboration)*

<b>Recommendation type</b>	<b>Number of reports</b>	<b>growth potential from recommendation</b>	<b>annual rate of return</b>	<b>Absolute difference</b>
accumulate	29	7,08%	-30,00%	56,76%
buy	39	19,98%	-22,02%	54,09%
neutral	10	-5,88%	27,16%	66,94%
reduce	5	-15,46%	16,73%	34,74%
sell	7	-14,91%	-5,80%	40,52%

The findings from this part are that the differences are even between the 5 tested groups. Of course there are nominal differences but from the statistical testing point of view they are insignificant. The average error in this division is 53,85% which again leads to very negative conclusions.

Next criteria in the research was associated with particular acquiring companies. The reason for that is the surmise that even though the stock companies have specified disclosure requirements, there are some market branches and firm specifics that results in different level of evaluation of the company and its situation. That could lead to the bigger differences in particular branches or companies. In table 4 there are results of calculations in this division.

*Table following on the next page*

*Table 4: Comparison of the growth predictions and the actual price changes in different companies (own elaboration)*

Company	growth potential from recommendation	annual rate of return	Absolute difference
AMREST HOLDINGS SE	19,08%	-31,47%	50,55%
ARCTIC PAPER SA	9,79%	-93,52%	103,30%
ASSECO POLAND SA	6,31%	-4,32%	23,30%
BANK BPH SA	-11,06%	-20,99%	9,92%
BANK ZACHODNI WBK SA	12,57%	47,53%	34,96%
BIOTON SA	-4,93%	-31,63%	144,49%
CYFROWY POLSAT SA	14,34%	2,69%	21,19%
EUROCASH SA	11,64%	-7,48%	19,13%
GRAAL SA	6,26%	-42,08%	48,34%
GRUPA LOTOS SA	0,47%	-31,84%	32,31%
INTER CARS SA	13,85%	-38,68%	73,73%
KGHM POLSKA MIEDZ SA	-0,74%	115,19%	115,93%
KREDYT INKASO SA	21,77%	0,00%	21,77%
LPP SA	9,34%	-82,86%	92,19%
MEDIATEL SA	25,64%	13,39%	12,24%
MERCOR SA	20,12%	-63,50%	83,62%
NETMEDIA SA	9,99%	-51,76%	61,74%
PEGAS NONWOVENS SRO	13,35%	6,89%	6,45%
PGE SA	3,54%	27,81%	24,27%
BOMI SA	15,98%	-83,57%	99,55%
PZ CORMAY SA	41,55%	-24,81%	66,36%
REDAN SA	-33,70%	-40,55%	6,85%
TVN SA	13,91%	77,44%	63,53%
VISTULA & WÓLCZANKA SA	15,56%	-212,54%	228,10%
VISTULA GROUP SA	10,92%	-234,18%	245,10%

This criteria shown massive differences between the companies. The lowest differences are for: Bank BPH, Redan and Pegas. Unfortunately even if we take into consideration more companies, there is no clear pattern for this low results. BPH is a bank, Pegas is a fiber production company and Redan is in clothing industry. The biggest errors are noted in Vistula and Bioton which also function in different markets, so we cannot conclude that the branch or company itself is a significant factor in error predicting.

Next criteria is refers to the brokerage houses. In authors point of view this is an obvious criteria because we can predict that the level of knowledge of employees in brokerage house can differ which leads to potential different level of mistakes that they make. The analysis of this factor is shown in table 5.

*Table 5: Average difference between the growth predictions and the actual price changes in different brokerage houses (own elaboration)*

Brokerage house	Average difference
AmerBrokers	12,24%
BDM	52,47%
BPH	108,36%
BZ WBK	26,05%
Citi	96,78%
Deutsche Bank	18,72%
Erste Bank	52,10%
Espirito Santo	37,10%
Goldman Sachs	63,60%
HSBC	65,43%
IDM	43,37%
ING Securities	148,79%
Ipopema Securities	34,51%
KBCS	41,59%
mBank	30,45%
Millennium	56,01%
Noble Securities	21,77%
PEKAO	35,33%
PKO BP	79,07%
Raiffeisen	12,92%
Societe Generale	16,64%
Trigon	49,00%
UniCredit	88,43%
Wood & Company	61,47%

The study has shown that average error level coming from different institutions varies. Although the statistical test have shown that only few of them really differs from the rest of the group. Significantly best recommendations were coming from: AmerBrokers, Raiffeisen and Societe Generale. The worst ones from: BPH, Citi bank and ING Securities. Despite the nominal differences in other groups, we cannot prove them unambiguously.

Finally author decided to find if the time criteria was a significant factor in the recommendation process, so the reports were divided in quarters through the examined period.

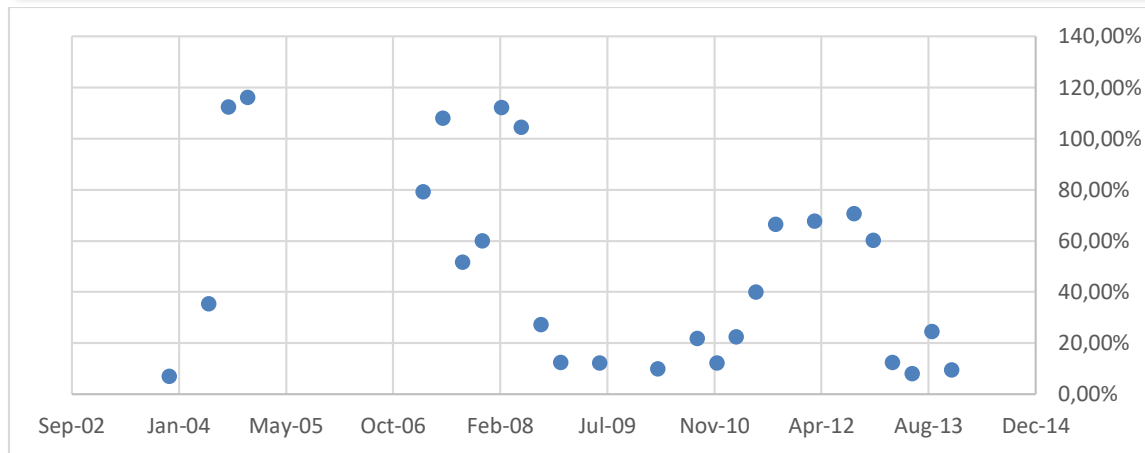


Figure 1: Average difference between the growth predictions and the actual price changes in particular quarters (own elaboration)

The graph above is showing the average errors made in every quarter of the research. Based on that we can clearly see that there were clearly periods of lower and higher mistakes in valuation. Crucial at this point is the period of 2007-2008 which can be associated to the global crisis start on financial markets that led to the trends alteration and deep depreciation of prices. Clearly analytics have not included this scenario in their predictions. Second wave fall in a year 2012. In authors point of view this was the time when brokerage mainstream thought that the crisis is over and again the valuations can rise, if the company are buying other firms. Unfortunately this prediction was wrong, and the WSE have not grew as they predicted.

#### 4. CONSLUSION

The proposed article was aimed to analyze the miscalculations in the brokerage recommendations on WSE, related to the fact of merger and acquisitions. The analysis have shown that the standard prediction errors may vary between particular brokerage houses but in general, the average errors are near 50% from the actual price change. Study also shown that there is a relation between the time of the publication and the valuation errors which leads to conclusion that actual trends may be a very important factor for the error predictions. Authors did not manage to prove any relation between the level of difference and the branch of the company or the recommendation type. The following studies should focus more on obtaining bigger database and the other criteria of division of the recommendations to gain a more full view of this market aspect.

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## THE COMMON AGRICULTURAL POLICY AND FARMERS' INCOME CONVERGENCE IN THE EUROPEAN UNION

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### **ABSTRACT**

*The Common Agricultural Policy (CAP) is one of the most important European Union policies. Instruments implemented under CAP strongly affect incomes gained by European farmers, since revenue from subsidies compose significant percent of all receipts gained by European farmers. In recent years there was the unification process of the most important instrument of CAP – direct subsidies – and farmers from each member state receive similiar payments. Together with operating on the European Single Market, which means there are no significant differences in agricultural prices among EU countries it creates conditions for cross-country convergence of farmers' income in the EU.*

*The main aim of the article is to answer two questions. The first one is, whether there was farmers' income convergence in the recent years. The second one is, whether subsidies intensify or impede this convergence. In the article data from the European database of Farm Accountancy Data Network for the years 2004-13 for farms engaged in various type of production were used. The beta and sigma convergence were estimated. The results are ambiguous and differ depending on analysed market. In general it can be stated that there are beta-convergence and sigma-divergence of farm income across member states of European Union. However, there are types of production where there are no convergence at all. Moreover the analysis results indicate that in many cases subsidies hamper the farmers' income convergence. In particular it cannot be stated that the more heavily subsidised market, the stronger income convergence appears.*

**Keywords:** *Agricultural income, Agricultural Subsidies, Common Agricultural Policy, Convergence, Income convergence*

### **1. INTRODUCTION**

According to neoclassical growth theory, there will occur in long-term convergence of income of agents as long as they operate on the same market. Taking into account that apart from agrometeorological condition all European Union (EU) farms operate on the Single European Market and get payments from the same Common Agricultural Policy (CAP), the question, whether there is a cross-country farm income convergence in EU member states became very important for all agents connected with agricultural sectors in new EU member countries.

As it is emphasized in the literature (Majchrzak, Smędzik-Ambroży, 2014, p.89), convergence topic is most often raised by the economists concerning economic growth. However when it comes to agricultural holdings income seems to be quite good measure of economic growth or economic condition (Begg et al., 2005, p. 111). This is one of the reason why there are quite broad literature related to farm income convergence researches.

The consequences of Polish accession to EU was one of the motive to evaluate convergence processes in agriculture for Staniszewski (2015, p. 295). In his study he proved high level of overall variation of analyzed variables due to huge differences between old and new EU member states. Regional farm income convergence was examined by Majchrzak and Smędzik-Ambroży. They showed that in selected type of production there was income divergence during years 2006-2011



(Majchrzak, Smędzik-Ambroży, 2014, p.97-98). Another study concerning income convergence across Polish region show that the convergence of beta type and the sigma were in place during analyzed period 2004-2008 (Brelík Grzelak, 2011, pp. 5-11). Agricultural incomes of European farmers were also analyzed in the context of comparison with the changes of farm income in USA (Brasili et al., 2007, pp. 1-15). The results of the analysis show that EU regions were converging during 1989-2002, opposite to US states, where differences in farm income persisted. Alexiadis (2010, pp. 84-96) used different method examining absolute convergence for period 1995-2004 and he showed that rate of convergence is very low. There are also many studies analyzing convergence of variables similar somehow to farm incomes, like for example agricultural productivity. For instance Lamfalusi (2007, pp. 29-46) showed that there were significant convergence between Hungary and selected old EU member states, although the driving force behind this convergence was outflow of labour force from Hungarian agriculture not efficiency improvement. Interesting study concerning regional convergence of agricultural productivity in EU was conducted by Cuerva (2011, pp. 237-258). She proved no evidence of productivity convergence. Moreover the results indicate that observed divergence in agricultural productivity will continue if differences in structural patterns persist in the future. In another paper where agricultural labour productivity were analyzed, there are evidences that are no tendency for beta-divergence on country level, but there is beta-convergence on regional level in labour productivity. On both levels sigma-divergence occurred in years 1995-2008 [Emvalomatis et al., 2013]. Presented results of various analysis show that there are still no consensus about convergence processes in EU agriculture. This is one of the reason why two questions need to be answered. The first one is, whether there was farmers' income convergence in the recent years. The second one is, whether subsidies intensify or impede this convergence.

## 2. DATA AND METHODS

Data about farm incomes comes from the European Farm Accountancy Data Network (FADN) Database. This database is accessible through Internet website ([http://ec.europa.eu/agriculture/rica/database/database\\_en.cfm](http://ec.europa.eu/agriculture/rica/database/database_en.cfm)). The FADN is the only harmonized source of micro-economic data that monitor the income and business activities of agricultural holdings and that evaluate the impacts of the common agricultural policy (EU Farm..., 2016, p. 7). It is very broad database. For example, the sample for the year 2013 consisted of approximately 86 000 holdings in the EU-28, which representing nearly 5 million farms (46%) out of the total of 10.8 million farms included in the Farm Structure Survey the same year (EU Farm..., 2016, p. 69). The Farm Structure Survey, managed by Eurostat, consists of all agricultural holdings in the EU of at least 1 ha. Since then it is the perfect source to obtain data that let perform the cross-country farm income convergence evaluation.

There are many measures in FADN database that can represent income gained by farmers. The most appropriate is the Farm Net Income (SE420 in FADN methodology). This measure less Balance Current Subsidies and Taxes (SE600) measure could be an approximation of income less subsidies value. However, the data shows that in cases of most countries that approximation shows negative value. Since the interest of the study is to evaluate the rate of income change, analyzed variable must be logarithmized. So there is a need for a value that represents positive value.

To avoid problems with negative values new approximation of farm income was defined. In this paper farm income equals Farm Net Income (SE600) less Total Farming Overheads (SE336). Total Farming Overheads are supply costs linked to production activity but not linked to specific lines of production and equals on average half of the all production costs.

Since there are considerable differences in the size of farms between countries, the income is divided by total unpaid labour unit, which refers to family labour and is expressed in Family Work Unit (FWU) or by Total Utilised Agricultural Area (TUAA) of holding expressed in hectares.

Cross-country income convergence is estimated on the basis of average farm income in particular EU member states. Although there are 28 countries available in the FADN database, not every state representatives were taken into consideration. First, countries that join FADN database recently and has no long enough time series were removed (Bulgaria, Romania, Croatia). The analysis concern the period from 2004 to 2013, which was the latest year accessible. Data for Bulgaria and Romania starts in 2007 and for Croatia 2013. Then, small countries like Malta or Luxemburg were removed since data from these countries show considerable non-regularities and were often responsible for outlier observations. In next step average values for Denmark and Slovakia were also removed. The author decided to do so after consultation with the head of Polish FADN, who informs that non-regularities observed in time series for average farm income in these countries are results of different legal form of farms in these countries. Many farms in these countries show constant large negative income. In author’s opinion FADN methodology is not always suitable for non-family farms. After removals data from all accessible countries were included in analysis.

For better understanding of impact of subsidies on income convergence the analysis was conducted in 6 different groups. According to FADN methodology farms are grouped in different types. The most numerously represented were chosen to analysis. Since some countries do not have sufficient amount of representatives in every type of production, the size of analyzed subsamples differ across analyzed groups of farms. The list of analyzed type of production together with the number of countries in every subsample is presented in Table 1.

*Table 1: The size of analysed subsamples (own elaboration on the FADN data basis)*

Type of farm	Sample size
Specialist cereals, oilseeds and protein crops	17
Specialist horticulture	14
Specialist milk	20
Specialist cattle	17
Specialist granivores	14
Mixed crops and livestock	20

Beta-convergence is a measure that helps to identify whether the analyzed variable rises faster for those units where the level of variable were primarily lower. If it occurs we can say that there is beta-convergence and weaker individuals are “chasing” the stronger ones. To estimate beta-convergence simple model is estimated, which can be written as:

$$\ln\left(y_{i,1}/y_{i,1+T}\right) = a + b * \ln(y_{i,1}) + u_t,$$

where:  $y_{i,1}$  – variable for  $i$ -th country in 1<sup>st</sup> period,

$T$  – the length of analyzed period,

$b$  – coefficient measuring occurrence and the pace of convergence,

$u_t$  – random component (Kusideł, 2013, p. 46).

Ordinary least squares regression is used to evaluate  $b$  coefficient. If  $b < 0$  and statistically significant it means that there are beta-convergence and the pace of growth of analyzed variables is higher for those countries were initially value of the variable were lower. If  $b > 0$  and statistically significant there is beta-divergence.

Sigma-convergence refers to a reduction in the dispersion of analyzed variable across sample that we examine. To estimate sigma-convergence variance of analyzed variable in the 1<sup>st</sup> ( $\sigma^2_1$ )

and the last period ( $\sigma^2_2$ ) is compared. If  $\sigma^2_1 > \sigma^2_2$  and the difference is statistically significant there is sigma-convergence. If  $\sigma^2_1 < \sigma^2_2$  and the difference is statistically significant there is sigma-divergence.

To verify statistical significance statistics  $T = \sigma^2_1/\sigma^2_2$  for  $\sigma^2_1 > \sigma^2_2$  and  $T = \sigma^2_2/\sigma^2_1$  for  $\sigma^2_1 < \sigma^2_2$  is used. This T-statistics has Fisher–Snedecor distribution with (N-2, N-2) degree of freedom, where N equals the number of countries analyzed in the sample.

Originally gamma-convergence that requires an examination of the change in the ranking of countries was also to be analyzed, however due to inconclusive results, this analysis is not included in this paper. In short it can be stated that changes in the ranking occur very rarely when it comes to average agricultural income across EU member states.

### 3. RESULTS

Results of the income convergence analysis are presented in tables. Each one demonstrates findings for one specific type of production. Every table has the same form. The upper part presents beta-convergence research analysis. There is a distinction between income per family work unit (FWU) and income per total utilized agricultural area (TUAA). The figures in lower part of the tables are dedicated to the sigma-convergence analysis. In this part the presented figures show the relation of variance in the first and the last analyzed year. After every figure there is abbreviation. The letters in bracket (inc.) indicate that the variance increased during analyzed period and the figure equals variance of analyzed variables in last year divided by variance in first year. The letters (dec.) indicate the fall of variance during analyzed period and the figure equals relation of variance in first year to variance in last year.

Asterisk after every figure shows the level of confidence. Three asterisks equals 99% confidence level, two – 95% confidence level, and one asterisk – 90% confidence level.

Table 2 shows results of income convergence for farms specializing in COP production. As it can be seen there is no cross-country  $\beta$ -convergence in real income per FWU for this type of farms. In fact, one can suppose that farms incomes are becoming rather more diverse in analyzing period, although positive b coefficient is not statistically significant. In the case of income per TUAA convergence is detected only for time series that were smoothen using Henderson filter. In general it can be stated that convergence is stronger in income less subsidies.

Obvious conclusions come from sigma convergence analysis. The value of the variance increased significantly no matter if it refers to income with or without subsidies (with the except for the smoothed time series of income). In all cases the increase is significant. It can be concluded that although the pace of the income less subsidies growth is higher in countries with previously lower farms income (beta-convergence), the initial difference of the level of farms income in EU countries were so considerable, that diversity of the observed incomes increased (sigma-diversity).

*Table following on the next page*

*Table 2: Income convergence analysis for farms specializing in cereals, oilseeds and protein crops production*  
*(own elaboration on the FADN data basis)*

	<b>β Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>0,048</b>	<b>-0,398***</b>	<b>0,145</b>	<b>-0,032</b>
Conclusion	–	<b>Convergence</b>	–	–
Income/TUAA	<b>-0,146</b>	<b>0,136</b>	<b>-0,265***</b>	<b>-0,275***</b>
Conclusion	–	–	<b>Convergence</b>	<b>Convergence</b>
	<b>Σ-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>3,731*** (inc.)</b>	<b>5,410*** (inc.)</b>	<b>2,448** (inc.)</b>	<b>4,005*** (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	<b>Divergence</b>	<b>Divergence</b>
Income/TUAA	<b>1,496 (inc.)</b>	<b>2,571** (inc.)</b>	<b>1,037(dec.)</b>	<b>1,259 (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	–

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.

Results for farm specializing in horticultural production are presented in Table 3. All b coefficients are statistically insignificant, therefore there are neither convergence nor divergence in the analyzed time series. When analyzing sigma-convergence the cross-country income per FWU divergence is detected. The level of the divergence is slightly lower for income less subsidies. Nevertheless, in general it can be stated, that differences in horticulture farms income in UE member states remains at the stable level.

*Table 3: Income convergence analysis for farms specializing in horticultural production*  
*(own elaboration on the FADN data basis)*

	<b>β Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>-0,170</b>	<b>-0,228</b>	<b>0,010</b>	<b>0,001</b>
Conclusion	–	–	–	–
Income/TUAA	<b>-0,259</b>	<b>-0,286</b>	<b>-0,172</b>	<b>-0,160</b>
Conclusion	–	–	–	–
	<b>Σ-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>4,493*** (inc.)</b>	<b>4,305*** (inc.)</b>	<b>1,890 (inc.)</b>	<b>1,872 (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	–
Income/TUAA	<b>2,120 (inc.)</b>	<b>2,141 (inc.)</b>	<b>1,001 (dec.)</b>	<b>1,044 (inc.)</b>
Conclusion	–	–	–	–

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.

As it is shown in Table 4 presenting results of income convergence analysis for farm that specialize in producing milk, the conclusions concerning this type of farms are ambiguous. Raw time series indicates that there are  $\beta$ -convergence only in actual income per TUAA, whereas smoothed time series indicate  $\beta$ -convergence in income less subsidies per FWU. Both mentioned results shows small value of the b coefficient with relatively small confidence level which suggests that in fact there are no clear convergence of incomes. When it comes to sigma-convergence figures indicate existence of divergence for both types of analyzed types of income.

*Table 4: Income convergence analysis for farms specializing in milk production  
 (own elaboration on the FADN data basis)*

	<b><math>\beta</math> Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>-0,077</b>	<b>-0,091</b>	<b>-0,037</b>	<b>-0,148*</b>
Conclusion	–	–	–	<b>Convergence</b>
Income/TUAA	<b>-0,096**</b>	<b>-0,054</b>	<b>-0,054</b>	<b>-0,042</b>
Conclusion	<b>Convergence</b>	–	–	–
	<b><math>\Sigma</math>-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>3,162*** (inc.)</b>	<b>3,222*** (inc.)</b>	<b>1,748 (inc.)</b>	<b>1,643 (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	–
Income/TUAA	<b>1,612 (inc.)</b>	<b>1,307 (inc.)</b>	<b>1,918* (inc.)</b>	<b>4,209*** (inc.)</b>
Conclusion	–	–	<b>Divergence</b>	<b>Divergence</b>

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.

The results presented in Table 5 indicate strong  $\beta$ -convergence of income for farms producing mainly cattle. However it can be seen that in general the pace of this convergence is much faster when income less subsidies is taken into consideration. Considerably large level of income convergence for cattle producing farms is consistent with occurrence of sigma-convergence. It is worth to accentuate this fact, since due to mentioned huge initial differences in farm income in particular UE member states it is not observed among farms of different type of production. Still sigma-convergence can be noted only for one out of 8 various time series. Other time series show neither convergence no divergence.

*Table following on the next page*

*Table 5: Income convergence analysis for farms specializing in cattle production  
 (own elaboration on the FADN data basis)*

	<b>B Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>-0,227**</b>	<b>-0,574*</b>	<b>-0,218**</b>	<b>-0,705***</b>
Conclusion	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>
Income/TUAA	<b>-0,410***</b>	<b>-0,312*</b>	<b>-0,184*</b>	<b>-0,619***</b>
Conclusion	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>
	<b>Σ-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>1,261 (inc.)</b>	<b>1,568 (inc.)</b>	<b>1,311 (inc.)</b>	<b>1,482 (inc.)</b>
Conclusion	–	–	–	–
Income/TUAA	<b>3,229** (dec.)</b>	<b>1,637 (dec.)</b>	<b>1,206 (inc.)</b>	<b>1,432 (inc.)</b>
Conclusion	<b>Convergence</b>	–	–	–

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.

Quite similar to results observed in the case of cattle producing farms are the ones presented in Table 6. Income of farms specializing in granivores production demonstrates distinct beta-convergence and not straightforward conclusions relating to sigma-convergence. However there are some differences. Firstly, it can be seen that is difficult to decide whether convergence is stronger in actual income or income less subsidies. Secondly, one can say that there are rather sigma-divergence than sigma-convergence, when analyzing granivores producing farms income. However this sigma-divergence can be a result of some income disturbances in boundary years, since no conclusions can be drawn from smoothened time series analysis.

*Table 6: Income convergence analysis for farms specializing in granivores production  
 (own elaboration on the FADN data basis)*

	<b>B Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>-0,195</b>	<b>-0,248</b>	<b>-0,234*</b>	<b>-0,270*</b>
Conclusion	–	–	<b>Convergence</b>	<b>Convergence</b>
Income/TUAA	<b>-0,417**</b>	<b>-0,382**</b>	<b>-0,145*</b>	<b>-0,120</b>
Conclusion	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>	–
	<b>Σ-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>5,033*** (inc.)</b>	<b>4,407** (inc.)</b>	<b>1,007 (inc.)</b>	<b>1,089 (dec.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	–
Income/TUAA	<b>1,524 (inc.)</b>	<b>1,817 (inc.)</b>	<b>1,031 (inc.)</b>	<b>1,163 (inc.)</b>
Conclusion	–	–	–	–

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.



As it is seen in Table 7 presenting results of convergence analysis for farms diversifying their production beta-convergence can be confirmed only for smoothed time series. There are no distinct differences in the level of convergence for income and income less subsidies time series. However it is noted that sigma-divergence is much larger for income less subsidies, no matter if income per FWU, income per TUAA, raw or smoothed time series are analyzed. It can lead to conclusion that unlike in many previously analyzed types of production budgetary subsidies to farms producing mixed crops and livestock do actually strengthen cross-country income convergence in EU farms. On the other hand beta-convergence is relatively small in this type of farms.

*Table 7: Income convergence analysis for farms specializing in mixed crops and livestock production  
 (own elaboration on the FADN data basis)*

	<b>β Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>-0,097</b>	<b>0,063</b>	<b>-0,194**</b>	<b>-0,240**</b>
Conclusion	–	–	<b>Convergence</b>	<b>Convergence</b>
Income/TUAA	<b>-0,157</b>	<b>-0,171</b>	<b>-0,187**</b>	<b>-0,168</b>
Conclusion	–	–	<b>Convergence</b>	–
	<b>Σ-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>2,614** (inc.)</b>	<b>4,969*** (inc.)</b>	<b>1,518 (inc.)</b>	<b>2,254* (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	<b>Divergence</b>
Income/TUAA	<b>1,843 (inc.)</b>	<b>3,060** (inc.)</b>	<b>1,102 (inc.)</b>	<b>1,117 (inc.)</b>
Conclusion	–	<b>Divergence</b>	–	–

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.

At the end the convergence of the average farm income is examined (Table 8). Results of beta-convergence analysis indicate that there was significant cross-country income convergence in the analyzed period. It was also proven that beta-convergence is higher in the case of income less subsidies time series, especially for income per TUAA. In the case of sigma-convergence it can be noted that divergence was observed only in raw time series and that divergence of income less subsidies is higher than the actual income. The result of the smoothed time series analysis do not indicate statistically significant increase of variance of analyzed variables.

*Table following on the next page*

*Table 8: Income convergence analysis for all farms  
 (own elaboration on the FADN data basis)*

	<b><math>\beta</math> Convergence (b coefficients)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>-0,077</b>	<b>-0,092</b>	<b>-0,100*</b>	<b>-0,137*</b>
Conclusion	–	–	<b>Convergence</b>	<b>Convergence</b>
Income/TUAA	<b>-0,102*</b>	<b>-0,157*</b>	<b>-0,124**</b>	<b>-0,165***</b>
Conclusion	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>	<b>Convergence</b>
	<b><math>\Sigma</math>-convergence (variance ratio)</b>			
	Raw time series (2005-2013)		5 Henderson Filter (2007-2011)	
	Actual data	Without subsidies	Actual data	Without subsidies
Income/FWU	<b>2,852** (inc.)</b>	<b>3,218*** (inc.)</b>	<b>1,557 (inc.)</b>	<b>2,511 (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	–
Income/TUAA	<b>2,151* (inc.)</b>	<b>2,300** (inc.)</b>	<b>1,044 (inc.)</b>	<b>1,091 (inc.)</b>
Conclusion	<b>Divergence</b>	<b>Divergence</b>	–	–

Confidence levels: \*\*\* - 99%; \*\* - 95%; \* - 90%.

Results displayed above indicate that although there is in general beta-convergence in farm income across UE member states, subsidies rather hamper the pace of the convergence. This conclusion concerns both analyzed variables: income per FWU and income per TUAA.

*Table 9: The average subsidies to production value ratio for analysed subsamples  
 (own elaboration on the FADN data basis)*

Type of farm	Subsidies/production
Specialist cereals, oilseeds and protein crops	<b>31,0%</b>
Specialist horticulture	<b>2,0%</b>
Specialist milk	<b>19,7%</b>
Specialist cattle	<b>45,4%</b>
Specialist granivores	<b>4,6%</b>
Mixed crops and livestock	<b>21,3%</b>

The lowest difference between the beta-convergence of income and income less subsidies refer to farms specializing in horticulture, milk, and granivores production. Apart from milk type farms, the other two groups are characterized by the lowest ratio of value of subsidies to production value. On the other hand, the biggest difference of convergence between income and income less subsidies concerns cattle production. Farms belonging to this type of production are heavily subsidized. Table 9 shows the average ratio of subsidies value to total output (production) value in years 2005-2013 for every analyzed type of production.

#### 4. CONCLUSION

The most important conclusions from the analysis is that although in most cases there is beta-convergence in cross-country income comparison in EU, there is even stronger sigma-divergence. This results indicate that differences in farm income across EU member state were so large, that despite greater percentage income growth in countries that were initially characterized by lower farm income, the diversity of agricultural income still increases. The second conclusion can be

surprising. It occurs that in general there are stronger beta-convergence and smaller sigma-divergence for income less subsidies than actual income. That means that CAP instruments disproportionately stronger supports farms in countries where already income per FVA or income per TUA is high. One can expect that policy instruments should rather diminish financial disparities. Moreover the more heavily subsidized group of farm, this difference between income and income less convergence is larger. On the other hand it cannot be stated that beta-convergence is higher in weakly subsidized types of production.

It should also worth mentioning that presented results are the effect of the first stage of income convergence analysis. There are numerous methodologic improvement waiting to be conducted. Firstly, conditional convergence need to be examined. It will be also favorable to measure income convergence not only on country level, but also on regional level. Interesting results can be obtained from analysis referring to various economic sizes of farms. This work need to be done in future.

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## VIEW ON COST ASPECTS OF QUALITY OF TECHNICAL SYSTEMS

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### **ABSTRACT**

*Correlations between costs and product quality are obvious and very strong. For example, the quality of a technical system is defined and incorporated in all stages of implementation, and its ultimate value and success in the market are the result of numerous factors such as research and development, technology, marketing and market. From an economic point of view, not only technical characteristics of the system are essential but also the extent to which it meets the needs, expectations and preferences, as well as the extent to which it does so more efficiently than its competitors.*

**Keywords:** *quality, cost, technical system*

### **1. INTRODUCTION**

The correlation between quality and economy is very strong and this relationship is generally much intertwined. Product quality is defined during its implementation, and its ultimate value and success in the market are the result of a large number of factors of developmental, technological, economic and market character. From an economic point of view, not only technical characteristics of the product are essential but also the extent to which it meets the requirements, desires, needs and expectations of customers, as well as the extent to which it does so more efficiently than the competitor's product or some other alternative product. In addition to basic technical characteristics, design and other quality indicators, the scope and trends in sales of a large number of products are also affected by the following:

- the product is adapted to wishes of a certain number of customers, i.e., customers for whom the product is primarily intended (special customer requirements),
- the price in relation to the same or an alternative product offered by competitors,
- efficiency in operations and use of the product,
- marketing activities that are undertaken,
- manufacturer's reference on the market referring to the same or other products,
- distribution and logistics system,
- terms and conditions of sale,

- cooperation with customers and assistance in the use of products, etc.

The opposite of this situation are failures of certain products on the market. If they are analyzed more seriously, then in a number of cases, in addition to shortcomings in terms of the basic technical characteristics and safety for users, the reasons are also as follows:

- lack of efficiency and effectiveness in the implementation of the basic function for which the product was produced and purchased,
- the price is not in line with the quality,
- product packaging and protection mistakes,
- insufficient information available to users and customers,
- the product is not adapted to modern forms of distribution and sales,
- the product does not match the habits and preferences of users and customers,
- poor customer service, etc.

In modern quality management systems, these factors are most frequently seen as economic, economic-commercial or marketing aspects of the quality of technical systems. The essence of the concept of a modern approach to quality is the realization that the quality of the product is improved by each feature or characteristic of the product upon which the decision of the buyer may depend whether to buy that particular product and be satisfied. In principle, it is considered necessary to satisfy the wishes of customers even if they are not entirely rational, and in the selection and design of products, or in assortment planning, manufacturers have a social and ethical obligation to take care of the taste, fashion, legislation, security and other obligations.

If we consider the quality management system and the quality of the technical system in a production system, then we can conclude that it is a result of reflection and the needs of marketing, i.e., that it also adds the marketing aspect of quality to the classical concept. The common principle of marketing and total quality management is that a product must be monitored and analyzed at all stages of the cycle, ranging from market analysis, through development activities, manufacturing, distribution and sales, to service activities (installation, maintenance, etc.). As shown, this cycle includes not only activities within the production, but also the work environment, as well as the social environment where the product is technically implemented by all interested parties. In accordance with this statement, there have been major changes to the content and character of work on quality. Organized technical control, which was previously the main and often the only quality assurance activity, is today just one segment of the overall activities related to the quality of technical systems. It is understood that technical control has not lost anything of its former importance. On the contrary, without well-organized technical control it is not possible to provide and maintain the designed level of quality. However, today the technical system is formed not only technically but also economically, and technical control alone cannot solve the problem of quality.

## **2. IMPACT OF QUALITY ON PRODUCTIVITY, EFFICIENCY AND PROFITABILITY**

Economic aspects of the quality of technical products are most studied and analyzed in terms of quality costs or quality-related costs. This is quite understandable if we bear in mind that quality costs can play an important role in the structure of total production costs and that they have a major

impact on the operating results of the manufacturer. Today, there is extensive literature devoted to quality costs and their optimization. For this reason, this paper deals with only the basic relations between the level of quality and its impact on productivity, efficiency and profitability.

The effects of doing business that can be achieved through the improvement of quality will have a positive impact on all three basic economic indicators of business success. One of the gurus of quality, Mr. Feigenbaum, said in relation thereto that quality has become the single most important force leading a business system to success and development, in both domestic and international markets. He further argues that quality is a mode in which business systems are managed. Just like finance and marketing, quality has become a necessary segment of modern management.

#### *Quality and productivity*

There is a widespread view that the quality of technical products and productivity are opposites. In fact, this is a situation where the effect is primarily observed based on the physical quantity of the product, and the quality is of secondary importance. However, the marketing concept of doing business views only products sold as the output of the production process. The productivity strategy based on investing in capital goods that will improve product quality and the speed of response to market changes is better than the productivity strategy investing in productivity techniques which only reduce costs and affect productivity observed conventionally. Focusing on a high level of quality leads to scrap and rework reduction, which then decreases the costs. According to modern views, quality and productivity are closely interrelated and conditioned (a very strong correlation), and there are actually no contradictions between them, as used to be understood before.

#### *Quality and efficiency*

As with productivity, there are certain contradictions between the views on the relationships between efficiency (quality costs) and quality. In fact, even today, there is a widespread perception that high quality of a technical product costs more, which unduly distracts our attention from efforts to achieve better business results by a higher level of quality. It is hard to understand that it is possible to achieve a better quality product at a lower cost. The logic behind this is that the higher quality of technical products in the design and construction is achieved by reducing construction costs, error costs and other defect costs. Product construction can be simplified if a smaller number of elements and less expensive materials (while retaining the necessary level of quality) are used, if a smaller number of operations is assumed, etc. The condition is that the construction of a future product meets requirements, needs, desires and expectations defined by customers. When it comes to the quality in the process of product realization, i.e., production, then this primarily refers to the conformity of dimensions, i.e., characteristics of quality, to standards and technical specifications. Costs of errors and non-compliance in the processes can be reduced if quality control software and systems are established. Production risk assessment, preventive actions and anticipation of possible errors can greatly reduce their number and thus eliminate unnecessary costs, i.e., efficiency.



### *Quality and profitability*

The economic meaning of the principle of profitability is to make a bigger profit with the minimum engagement of resources. Profitability is a global indicator of business success, and it contains the results of productivity and efficiency achieved in the same period. This is the result of the final financial effect of investing funds, i.e., an expression of overall business success. In other words, profitability is a synthetic indicator and an indicator of the overall economic quality. As it includes the concept of productivity and efficiency, which are closely linked with quality, we may draw a conclusion that profitability is directly related to quality.

### **3. SELECTION OF AN OPTIMAL LEVEL OF QUALITY**

The decision on the choice of the level of quality is an essential component of a product quality policy, and hence an organization's business policy. There are two basic motives for developing a technical product, i.e., to meet specific needs of employees and to achieve particular economic results. Both motives are equally important. The optimal level of quality is the one that equally takes into account demands and interests of both producers and buyers (users).

Generally speaking, measures to meet demands and needs of consumers (buyer) are: product quantity, quality, assortment and price, which should correspond to the quantity, the quality and the purchasing power of the buyer. For manufacturers, the primary criterion is profit that can be achieved through the implementation of specific production. Investing in a higher level of quality is justified only if an adequate economic result can be expected. Although, theoretically speaking, the highest level of quality implies the highest degree of customer satisfaction, it does not necessarily imply the highest level of manufacturer satisfaction. It is understandable that you do not need to strive for a higher level of quality that does not bring profit, i.e., that is not economically justified. The main criterion of economic efficiency of investments in a higher level of quality is the ratio of the resulting economic effect based on changes in quality and the increased costs of quality. This relationship can be expressed as:

$$e = \frac{\Delta k}{\Delta t},$$

where:

- $e$  = coefficient of economic efficiency to increase the level of quality,
- $\Delta k$  = economic result (value) achieved thanks to the increased level of quality,
- $\Delta t$  = difference between the cost of quality before and after the increase of the level of quality.

The coefficient of economic efficiency to increase the level of quality in fact occurs as a function of the level of quality:

$$e = f(Q).$$

The fundamental motto of quality management in modern business environments is: “Find solutions and methods for optimal customer satisfaction at maximum profit.” There's absolutely no dilemma here. However, misunderstandings arise when we want to define an optimal level. It

is very difficult to determine what the optimum in specific cases is. The simplest way of finding the optimum is measurement, i.e., to measure customer satisfaction, to measure costs incurred by the manufacturer, and to continuously monitor the implementation of the objectives.

Finding the optimum level represents a balance of satisfaction on both sides. This means that the “burden” of customer satisfaction with the product shall not be borne by the manufacturer, and vice versa - the “burden” of higher profit manufacturers tend to achieve shall not be borne by the buyer. However, it should be noted that the level of optimality is on the rise and that what is optimal now may not be optimal tomorrow. From one point of view, demands and expectations of modern customers are growing in all aspects including the quality, and on the other hand, needs and objectives of manufacturers are associated with an increase in profits. This imposes an obligation referring to continuous monitoring and measurement, as well as taking measures to develop and improve. Without development and customer engagement it is hard to expect business continuity and survival in the economic environment.

#### **4. CONCLUSION**

Consideration of economic aspects of quality, an optimal level of quality and the impact on productivity and other performance indicators, is an essential element of all business systems. Significant involvement of quality in business policy and decision making has become a need and obligation of management and all employees in the system.

It is important to conclude that the quality management system in any business system includes interrelated activities or aspects of economic, organizational and technical character. In the case of technical products, it is implied that monitoring of technical characteristics is very important but they gain importance only when economic indicators are met and when the organizational assumptions that the manufactured products are of the required quality are secured.

In addition, one must not forget that managers consider the issue of quality primarily as a business issue, as a market and management matter, and then as a matter of technology, tolerance, statistical samples, etc.

Relations between a manufacturer and a customer are not as simple as they seem at first glance. They are very complex and dependent on many factors. The economic issue of quality cannot be reduced only to the interdependence of costs, prices and income related to product quality. In other words, when it comes to quality optimization, in addition to a possible economic indicator, the manufacturer must also consider the broader interests and take into account all stakeholders (all those who participate in the business system, such as the local and wider community, investors, suppliers, etc.). Furthermore, the following should be taken into account as well:

- the fact that investments in quality are in large part investments in the future work,
- further development of technology and the changes that could occur in relation with the product,
- development of new products and the necessity of continuous improvement,
- development of competitive and alternative products,
- changes in the sphere of consumption and constant changes in its structure,

- a general increase in the living standard of customers and a change in lifestyle (fashion),
- large-scale globalization,
- greater democratization of society, more rights and the influence of employees on the character and quality of the product made available, etc.

This practically means that in optimization and the overall quality policy the manufacturer must reckon with a series of restrictions of external nature.

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## THE RECOMMENDER SYSTEM FOR SELECTING USED CARS

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### **ABSTRACT**

*This research focuses on the use of decision support system to recommend the used car for customers. The goal is to develop the recommender system based on collaborative filtering recommendation from a set of usability surveys while adopting a user-centered perspective. Also, the main challenge of this research is to construct a user preference model. Survey samples were select from 5 experts and 125 users by collecting information from the questionnaires and then calculated the mean and standard deviation. To evaluate the system, questionnaires for system usability and Black Box Testing were used to measure expert and user satisfaction. The prototype has been empirically evaluated in a pilot study and the results are discussed with special reference in concerning the user's opinion aspects.*

**Keywords:** *Deciosion Support System, Collaborative filtering, Reccommender system, User Interest Extracting*

### **1. INTRODUCTION**

With the rapid advancement of technology, there has significant changes the ways of human life. Technology can easily make people connect and communicate together and digital businesses also play an important role in changing consumer behavior. e-Commerce, f-Commerce and m-commerce have become familiar to customers who perfer online shopping however the growth of application and technologies make consumers flooding with data and information. Information overload is one of the important problems refering to the difficulty a person can have understanding an issue and making decisions that can be caused by the presence of too much information (Yang, C.C and et al, 2003). Therefore, it is necessary to help consumers filter overloaded information and extract relevant information.

Decision Support Systems (DSS) are computer-based information systems designed to supports business decision-making activities or to assist users to make decisions in semi-structured situations. DSS acts as a tool to support decision making process and allows users to use knowledge and methods to solve complex issues. Therefore, this research was implemented the recommender system for selecting used car to provide the suggestion for users to choose appropriated used cars. The remainder of this paper is organized as follows. Section 2 presents the objectives of this project. Section 3 we describe research methodology based on the purposed model and section 4 shows the results of this experiment. Finally, the conclusion and future research are presented in section 5.

## 2.. OBJECTIVES

- 1) To develop the Decision Support System for selecting used cars.
- 2) To test and evaluate the system by using Black Box testing and questionnaire and interview forms.

## 3 RESEARCH METHODOLOGY

The research aims to develop a web based application in how to assist for users in selecting a used car and the participants of this project consisted of experts and users. To implement the recommender application, this section illustrated the literature search and the specified methodologies used in this project.

### 3.1 RAD (Rapid Application Development)

Rapid Application Development (RAD) is the concept of software design approaches that were analyzed for design processes to gather user's requirements and develop the project instantly. RAD is an incremental software development process model that emphasizes an extremely short development cycle as shown the process in Figure 1.

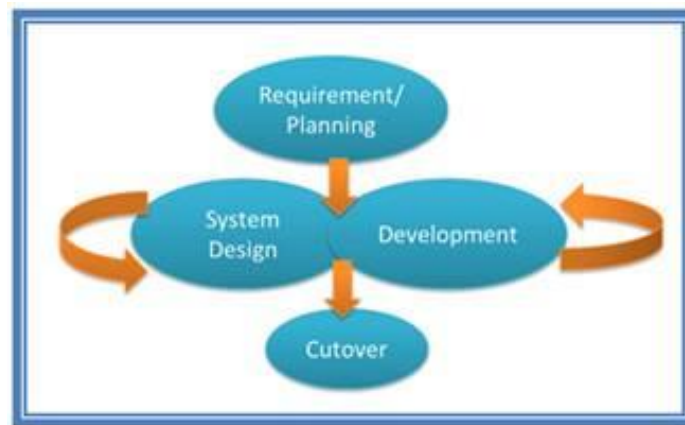


Figure 1. Rapid Application Development Process (Javatech, 2015)

Questionnaires and user's requirements were applied in the requirement and planning phase. The information was used as an important source to manage this project and database management and internet network technology were applied in order to make the system fast and easily work. Also, the main activities for the design and development included: 1) outlining the content in which questionnaire and interviews were used as the significant instrument to collect project requirements and indicate the target users : 2) creating flowchart to describe the sequence and structure of this application.

### 3.2 Collaborative filtering (CF)

Collaborative filtering (CF) is a popular approach used in recommender systems to suggest products and services for customers on e-Commerce systems. This approach advises user based on the preferences of similar users and it generally analyzes relationships between users and products or services to identify the user product/service associations (Y. Hu, Y. Koren, and C. Volinsky, 2008). This technique uses the relevant feedback from other similar users to predict or

recommend to other users. Amazon.com (Linden, G., Brent, S. and York, 2003) is the most famous recommendation system. This recommendation system incorporates a matrix of the item similarity. The process of collaborative filtering algorithms can be divided in to three steps by following this:

a) Data Description

Table 1. User rating data matrix.

User	Item <sub>1</sub>	...	Item <sub>k</sub>	...	Item <sub>n</sub>
User <sub>1</sub>	R <sub>1,1</sub>	...	R <sub>1,k</sub>	...	R <sub>1,n</sub>
...		...		...	
User <sub>i</sub>	R <sub>i,1</sub>	...	R <sub>i,k</sub>	...	R <sub>i,n</sub>
...		...		...	
User <sub>m</sub>	R <sub>m,1</sub>	...	R <sub>m,k</sub>	...	R <sub>m,n</sub>

The fundamental components of collaborative filtering include a rating matrix over  $m$  user  $\{u_1, u_2, \dots, u_m\}$  and  $n$  items  $\{i_1, i_2, \dots, i_n\}$ , whose  $(u, i)$  presents how user  $u$  rated item  $i$  (Khoshgoftaar and et al, 2008). User rating data matrix is shown as Table 1.

b) Similarity Computation

Pearson's correlation coefficient is used to compute similarity between user<sub>a</sub> and user<sub>u</sub>.

$$C_{a,u} = \frac{\text{covar}(r_a, r_u)}{\sigma_{r_a} \sigma_{r_u}} \quad (1)$$

where  $C_{a,u}$  is the Pearson's correlation coefficient between user  $a$  and user  $u$   
 $r_a$  and  $r_u$  is the received score from user  $a$  and user  $u$

$$\text{covar}(r_a, r_u) = \frac{\sum_{i=1}^m (r_{a,i} - \bar{r}_a)(r_{u,i} - \bar{r}_u)}{m} \quad (2)$$

Let  $r_{a,i}$  and  $r_{u,i}$  are the received score of product  $i$  from user  $a$  and user  $u$   
 $\bar{r}_a$  and  $\bar{r}_u$  are the average of score product from user  $a$  and user  $u$   
 and  $m$  is the number of the co-rated items

According to Herlocker et al, they suggested to weight user similarity and computed a prediction by performing a weighted average of deviations from the neighbor's mean.

$$p_{a,i} = \bar{r}_a + \frac{\sum_{u=1}^n (r_{u,i} - \bar{r}_u) \cdot w_{a,u}}{\sum_{u=1}^n w_{a,u}} \quad (3)$$

where  $p_{a,i}$  is the prediction for item  $i$  of user  $a$   
 $n$  is the number of neighbors  
 $w_{a,u}$  is the similarity weight between user  $a$  and user  $u$



### 3.3 Black-Box Testing Techniques

Software testing is an activity that should be done throughout the whole development process (Bertolino, 2001). Black box testing is one of the basic techniques of software testing that ignores the internal mechanism of a system or component and focuses solely on the outputs generated in response to selected inputs and execution conditions (IEEE standard, 1990). Black box testing is applicable to the following levels of software testing: Integration Testing; System Testing and Acceptance Testing (Softtesting, 2016; Satien and et al 2014).

## 4. EXPERIMENTAL RESULTS

This section presents the proposed framework of a recommendation system for selecting used cars. The data set used in this research is collected from 5 experts and 125 users by collecting information from the questionnaires. Black box testing was used to test and evaluate the qualities of this application as following: functional requirement test, Function test, Usability test, Performance test and Security test. Black box testing is a software testing approach that focuses on determining whether or not a program does what it is supposed on its functional requirements (Laurie Williams, 2006).

*Table 2. The results of Black box testing*

	Experts		Users	
	$\bar{x}$	SD	$\bar{x}$	SD
1. Function Requirement Test	3.90	0.61	3.87	0.57
2. Functional Test	3.87	0.57	4.07	0.69
3. Usability Test	4.03	0.61	4.13	0.63
4. Performance Test	3.83	0.65	3.90	0.61
5. Security Test	3.70	0.53	3.73	0.69

Functional Requirement test was evaluated the ability of the system in needs of the users and Functional test was assessed to evaluate the accuracy of the system. Usability test was tested the suitability of the system. Performance test was used the processing speed of the system. Finally, Security test was evaluated the security of the system Table 2 was shown the results of Black box testing between experts and users. Additionally, this research was designed to assess the viewpoints of users to evaluate user satisfaction as displayed in table 3. The table shows that assessment of the ability of the system to meet the needs of users respectively so that satisfaction in quality toward the system is well.

*Table following on the next page*

*Table 3. The assessment of user's satisfaction*

	Users	
	$\bar{x}$	SD
<b>The ability of the system</b>		
<b>1. the ability of the system to provide information</b>	4.17	0.77
<b>2. the ability of the system to link menu</b>	4.09	0.75
<b>3. the ability of the system to search</b>	4.1	0.79
<b>4. the ability of the system's response time</b>	3.9	0.67
<b>5. the ability of the system to work automatically</b>	4.09	0.76
<b>6. the ability of the system to manage the database</b>	4.38	0.65
<b>The accuracy of the system</b>		
<b>1.the accuracy of the system to display information</b>	4.67	0.60
<b>2. the accuracy of the system to information retrieval</b>	4.33	0.67
<b>The suitability of the system</b>		
<b>1.the suitability of the functions with ease of system usage</b>	4.27	0.69
<b>2. the suitability of text display clarity</b>	4.31	0.70
<b>3. the suitability of using colour</b>	4.33	0.71
<b>4. the suitability of data presentation</b>	4.84	0.42
<b>5. the suitability of user interface</b>	4.46	0.68
<b>The speed of the system</b>		
<b>1. the speed of program as a whole</b>	4.00	0.80
<b>2. the speed of search data</b>	4.72	0.51
<b>3. the speed of data presentation</b>	4.31	0.70
<b>4. the speed of showing the link</b>	4.38	0.65
<b>5. the speed of edit data</b>	3.89	0.64

## 5. CONCLUSION AND FUTURE WORKS

In this paper, we present the preliminary result showing a promising progress in decision support system to recommend the used car for customers. To develop the recommender system based on collaborative filtering recommendation from a set of usability surveys, the experimental group had significantly better performance in satisfaction achievements. However, in term of the future experiments, we attempt to add various words and categories to support in learning preferences.

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### ABSTRACT

*Due to continuous improvement of product and service quality in modern business environment, the costs required to attain the demanded, desired and expected quality level have been rising. As a result, they represent a considerably large share of a business system's total costs. Business systems today seek to reduce all types of costs; however, the costs of creating quality products and services and quality monitoring are often neglected or given inadequate attention. These costs rarely represent a small percentage of the total operating costs as they are known to reach as much as 20% of total costs in some systems. The paradox is that, on the one hand, enormous efforts are invested in reducing the costs of certain items in the overall cost structure by a certain percentage, and on the other, quality costs are paid very little or no attention, despite the fact that only a small effort is needed to reduce them, thereby reducing the total cost of the product or service. This paper presents a flexible method of systematization of quality-related costs as well as several examples from a real system.*

**Keywords:** *costs, quality, quality management system*

### 1. INTRODUCTION

Due to continuous improvement of product and service quality in modern business environment, the costs required to attain the demanded, desired and expected quality level have been rising. As a result, they represent a considerably large share of a business system's total costs. Business systems today seek to reduce all types of costs; however, the costs of creating quality products and services and quality monitoring are often neglected or given inadequate attention. These costs rarely represent a small percentage of the total operating costs as they are known to reach as much as 20% of total costs in some systems. The paradox is that, on the one hand, enormous efforts are invested in reducing the costs of certain items in the overall cost structure by a certain percentage, and on the other, quality costs are paid very little or no attention, despite the fact that only a small effort is needed to reduce them, thereby reducing the total cost of the product or service. There are several reasons for this situation in the majority of business systems in Croatia. First and foremost, it is the lack of the quality cost management system. Omission of the requirements related to the cost of quality from international quality management system standards has undoubtedly been a contributing factor to this situation.

Generally, costs make up the major part of expenditures. They are defined as a monetary valuation of labour, long- and short-term assets and third party services in a business process, for the sole purpose of producing outputs [1]. Costs can be classified based on several criteria:

- their type (type of natural cost),
- what they encompass in particular business functions,
- segments,
- cost centres,
- cost drivers,
- method of costing in a particular period,
- their impact on business result, etc.

Total operating costs include quality costs which have a quite complex structure. Quality costs need to be identified because the failure to identify them and recognize their characteristics would mean that an organization is unable to determine whether they have been incurred due to quality improvement efforts or as a result of deviation from the desired quality. When analysing quality costs, it is important to:

- identify all activities and materials incurring costs,
- determine the amount of costs,
- interpret the data collected and distribute them to the responsible parties,
- optimize costs by identifying adequate technological processes, and
- keep up with technology trends and implement improvement measures.

## **2. CHARACTERISTICS AND TYPES OF QUALITY COSTS**

Quality costs are incurred in order to achieve a specific quality level. They can be defined as the costs incurred mainly due to quality requirements, i.e. due to failure prevention activities, appraisal, and internal and external failures. As there are no two identical systems, the identification and recognition of costs associated with quality should be tailored to a particular system. On the other hand, business systems share some similarities, which allows a certain level of generalization of quality costs.

### **2.1 Types of quality costs**

The Quality Cost Committee of the American Society for Quality has recommended that the costs of quality be classified into four categories:

- prevention costs,
- appraisal costs,
- internal failure costs,
- external failure costs.

*a) Prevention costs* are costs incurred to keep failure and appraisal costs to a minimum (costs associated with the design and development, costs of implementation and maintenance of the quality management system, as well as implementation of improvement measures). They can also include planning, valuation, as well as internal and external control.

*b) Appraisal costs* are associated with the control and inspection of work processes, semi-finished and finished products, valuation of inventories and maintenance of test equipment. They also include costs associated with measuring, valuation or audits of products and components or

acquired materials carried out to ensure that they comply with quality standards and performance requirements.

c) *Internal failure costs* (internal defects) are incurred to remedy product defects and non-compliances detected before they reach the customers. They include mainly the costs of scrap and rework or rectification, and price downgrading.

d) *External failure costs* are incurred to remedy defects discovered after the products have reached the customers. They include returns and product replacements, warranty claims and repairs, as well as settlements and damages paid to customers as compensation.

The cost of quality (COQ) is the sum total of all four categories, whereas failures occurring over the course of the entire process are defined as the costs of poor quality. According to [2], total quality costs represent all costs that are incurred to remedy defects, as well as expenses incurred to prevent their occurrence. In simple terms, the costs of quality are costs that are incurred to attain the required and expected quality level, as well as losses incurred due to failure to attain that quality level. Similar to other costs incurred in business processes, COQ form part of the total costs; they can be found in different types of costs; they can be incurred in various cost centres, and are included in the price of goods and services [3]. However, quality costs also have some characteristics that set them apart from other costs. For instance, they can be found in all types of natural costs; they can be incurred within different business processes, and can be fixed and variable. They can be incurred at any cost centre and in any workplace, process or activity, which means that any worker and any workplace can be a cost driver. Quality costs are mainly direct costs because almost all of them can be allocated to the cost driver, cost centre or period [3].

In general, the costs of product or service quality are most commonly classified into two groups, i.e. preventive and corrective. The first group comprises prevention and appraisal costs, while the second comprises costs that are incurred due to internal and external failures in operation. Costs of quality are often classified into unavoidable and avoidable costs. Costs of production and quality costs are considered to be unavoidable costs, while scrap, rework, and all other expenses that are incurred as a result of errors, poor organization, failures, etc. are considered avoidable (Figure 1).

TOTAL QUALITY COSTS	CONTROL COSTS	PREVENTION COSTS
		APPRAISAL COSTS
	POOR QUALITY COSTS	INTERNAL POOR QUALITY COSTS
		EXTERNAL POOR QUALITY COSTS

**Figure 1.** *Quality costs*

The recommendation of the Quality Cost Committee (American Society for Quality) is that cost registration, analysis and control systems be established within the quality management systems according to the following categories:



- Prevention costs ..... PREVENTION
- Quality appraisal costs ..... APPRAISAL
- Loss of production ..... INTERNAL FAILURES
- Losses related to product usage ..... EXTERNAL FAILURES

Prevention costs include expenses incurred due to activities undertaken to prevent poor quality. Appraisal costs include expenses incurred to measure and appraise product quality characteristics. Internal failure costs are losses caused by poor production quality. External failure costs are losses incurred due to poor quality of products already in use.

The total cost of quality can be summarized as follows (Figure 1):

$$UTK = (TP + TO) + (ITLK + ETLK) \quad (1)$$

where:

- UTK - is the total cost of quality,
- TP – is prevention cost,
- TO - is appraisal cost,
- ITLK – is internal poor quality cost,
- ETLK – is external poor quality cost.

In recent years, many business systems around the world and in Croatia have developed special procedures and software for monitoring and analysing quality-related costs, which form an integral part of the quality control and quality management system. These costs account for a significant portion of the total costs incurred by a company and should therefore be considered as an important factor in defining quality improvement measures. In order to monitor quality costs in real processes, it is necessary to establish a clear procedure in coordination with the accounting department. It is essential to monitor all costs on a continuous basis in order to be able to determine the cost structure and calculate the total costs. Due to difficulties in the implementation of the cost monitoring programme, costs are often estimated or only partially monitored and such data are then used to take corrective actions. There is also the issue of determining the amount by which unavoidable costs have been exceeded. Unavoidable quality costs in production are common and they usually arise due to additional work, initial, intermediate, and final inspection, process start-up, calibration and the like.

## 2.2 Characteristics of quality costs

According to [3], the characteristics of quality costs are as follows:

- they can be found in all types of natural costs; they can be incurred by different business processes, and can be fixed or variable;
- they can be incurred at any cost centre and in any workplace, process or activity, which means that any worker and any workplace can be a cost driver;
- as a rule, they are hidden behind other expenses until they have been identified, defined and documented.
- traditionally, they have not been presented as a separate line item;
- as a rule, they are unknown, until one learns how to recognize them;
- their structure and their share in the total costs are unknown;
- they may pose a significant risk due to lack of adequate knowledge about their causes;

- they are potential reserves; their identification and optimization frees up a certain amount of funds that can be channelled into other activities;
- the level of knowledge about them is a measure of the level of awareness of quality in general, because they are a measure of the financial impact of the quality management system of an organization;
- they can be a relevant quality indicator; quality costs and their structure are the basis for calculating a number of indicators the management needs to make quality decisions;
- they can have a cumulative effect, which is characteristic of (poor) quality costs, that occurs when their causes have not been addressed for a longer period of time;
- they are mainly direct costs; almost all quality costs can be allocated to a cost driver, cost centre or a period.

### 2.3 Analysis of the cost of quality

The identification of a reference standard is a vital part of quality cost analysis. However, due to confidentiality of information or different approaches to measurement, more often than not reference standards are difficult to obtain. Therefore, when considering a particular case [84], it is recommended to investigate the possibility for saving on investments in quality cost reduction, because such an analysis will appeal to the decision-makers responsible for quality improvement measures.

Based on the relatively high proportion of quality costs in total costs and a monetary appraisal, a conclusion can be drawn that econometrics is a useful tool which offers great opportunities for savings in almost all business systems. It is a research area of interest to scientists, managers, analysts and various other business professionals.

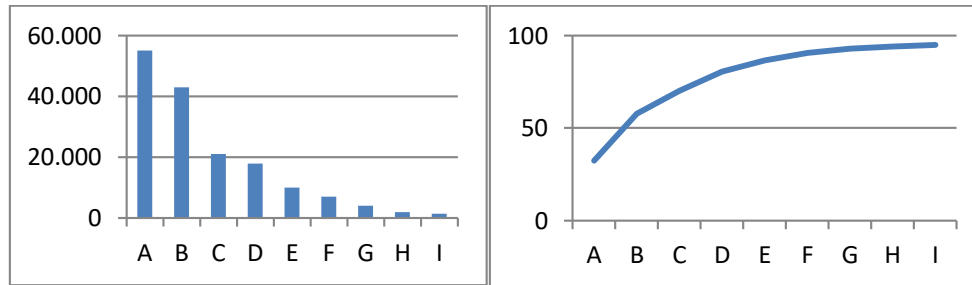
The paper presents a practical example of applying the Pareto principle in the analysis of quality costs. By monitoring complaints filed over the course of a year in one company, the sales department listed (Table 1) the causes of complaints (causes: A, B, ..... .I) and the proportion of the costs of complaints (expressed as an absolute amount and as percentage) in total costs, arranged in descending order. The table was used to create the histogram (showing the level of individual costs) and the cumulative curve (the share in the total costs of complaints by causes, for the specified observation period), as shown in Figure 15.6.

Figure 15.6 shows the six factors (causes) that account for over 80% of the costs of complaints, and the remaining percentage accounting for up to 10% includes a large number of various causes, many of which are not even listed in the table. They would be listed after causes marked with the letter I in the table.

*Table following on the next page*

**Table 1.** An overview of the complaint-related costs

Causes of complaints	Absolute amounts of costs and percentages by causes of complaint		
	Amount /EUR/	%	Cumulative percentage(%)
A	55,000	32.35	32.35
B	43,000	25.29	57.64
C	21,000	12.35	69.99
D	18,000	10.58	80.57
E	10,000	5.88	86.45
F	7,000	4.11	90.56
G	4,000	2.33	92.89
H	2,000	1.17	94.06
I	1,500	0.88	94.94
	170,000		10.00



**Figure 15.6** Application of the Pareto principle in the cost analysis

### 3. INTERPRETATION OF QUALITY COSTS

Total quality-related cost is a matter of interest to the top management of any business system. To satisfy this interest properly, one needs to have quite a lot of information. In particular, one needs to compare the cost of quality of own business system against that of other business systems of similar size and engaged in similar activities.

Eliciting data about quality costs of other business systems requires a great deal of effort because more often than not organizations are reluctant to disclose cost-related information due to different accounting methods, in order to protect customer- and supplier-related business interests, and the like.

Several major studies have looked at the quality cost analysis. For example, according to one author, the total avoidable quality cost per year, divided by the number of production workers, is typically between USD 500 and 1,000 per worker. In other words, a company employing 2,000 production workers will commonly incur avoidable quality costs in the amount ranging from USD 1 to 2 million annually. The results of one such study into the cost of quality are presented in the following table (Table 5.1).

**Table 15. Quality cost data**

No.	Type of industry	% of sales
1.	Simple industry (low tolerance)	0.5 - 2
2.	Normal industrial processes	1 - 2
3.	Precision industry	2 - 10
4.	Complex industry (electronics, space industry, etc.)	5 - 25
Cost breakdown		
No.	Cost category	% of total
1.	Internal failures	25 - 40
2.	External failures	20 - 40
3.	Appraisal costs	10 - 50
4.	Prevention costs	0.5 - 5

When interpreting the results of quality cost analysis, the most important step is to identify avoidable costs. This is done by determining which of the existing costs would disappear if the current failures were not there. The resulting amount, called gold in the mine, is crucial to deciding:

- 1) whether there are quality-related problem areas in the organisation,
- 2) how comprehensive the improvement programme should be, and
- 3) which areas should be given special attention.

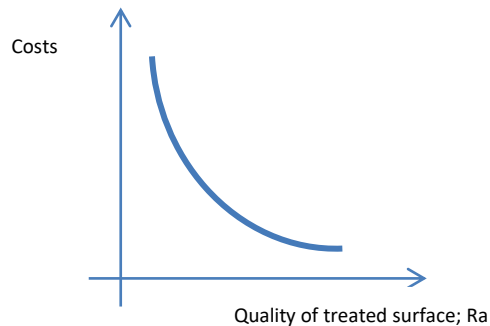
Avoidable costs normally include:

- *Internal failure costs*: costs of scrap and rework, costs of remedying failures; costs of additional production capacity necessary due to decreased production; costs of downtime and disruptions.
- *External failure costs*: warranty claims; costs associated with handling and servicing customers’ complaints; losses incurred due to reduced prices of poor quality products; loss of customers.
- *Appraisal costs*: additional appraisal costs incurred due to occurrence of defects.

The main goal of quality cost analysis is to identify methods to reduce them. According to [1], costs can be kept to a minimum by closely observing the relationship between the costs of quality and the level of compliance with consumers’ requirements. When the level of compliance is very high (few failure occurrences), the costs of poor quality are low, whereas the costs of control are high. When the level of compliance is low (frequent failure occurrences), the situation is the opposite. Between these two extremes, there is an optimal level of compliance where total quality costs are at a minimum. The cost curve is increasing, i.e. going towards infinity as it approaches the ideal quality level. This kind of curve movement is shown in the following two examples.

Various engineering design handbooks suggest that the narrowing of tolerance field causes sudden production cost spikes. The transition from tolerance field width of 0.01 mm to 0.001 mm is less costly using presently available technical and measurement equipment than the transition from 0.001 mm to 0.0001 mm. Further narrowing of tolerance field is close to exceeding the technical capabilities due to the volatility of existing materials, treatment procedures, environmental conditions and possibilities of measurement. A typical example of such products is the production of control devices of different accuracy, or the production of measuring equipment used in the industrial sector.

Figure 15.8 shows that as the quality of the surface treated using standard treating procedures increases, so do the costs. The higher the quality of the treated surface, expressed by mean arithmetic roughness – Ra, the higher the costs.



*Figure 15.8 Cost increase as a result of an increase in the quality of the treated surface*

#### 4. COST-EFFICIENT PRODUCTION QUALITY

Each product goes through several life cycles starting with the design and development (engineering phase), followed by the development of technology for production that should meet the requirements of the engineering design. The extent to which the characteristics of products meet the defined project documentation requirements is called compliance or production quality. Achieving it is the key objective of all stakeholders in the production process.

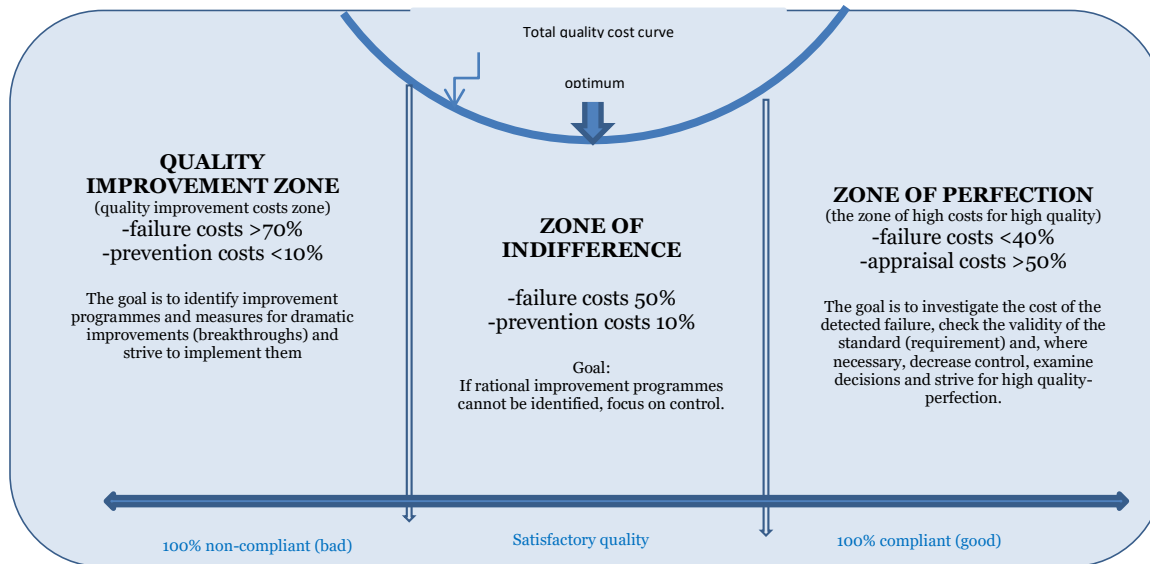
If all products meet specific requirements, they are considered to be in full compliance with the requirements (100% compliant). If all of them do not meet the requirements, they are considered 100% non-compliant. Obviously, 100% non-compliance is unacceptable. On the other hand, ensuring or expecting 100% compliance is impracticable.

The diagram in Figure 15.8 explains the cost-efficiency of (i.e. justification for) quality in the production process. The diagram shows the costs per unit of a compliant product depending on the quality of production expressed in percentages. There are three curves:

1. The first curve depicts costs incurred due to internal and external failures. These costs equal zero when the product is 100% compliant. However, as the percentage of non-compliant products increases, they increase as well.
2. The second curve depicts the sum of appraisal and failure prevention costs. These costs equal zero when the product is 100% non-compliant and approach infinity (conditionally) as the quality approaches perfection.
3. The third curve depicts total quality cost. It is the sum of all costs depicted by curve 1 and 2. It is at a minimum when the level of production quality is below perfect (below 100%). This minimum is actually an optimal level of production quality and is shown in Figure 15.9.

The total quality cost curve has a certain minimum. This minimum is not merely a philosophical concept; it has its practical meaning and application. The curve is divided into three zones. The

distinction between them is usually made based on the prevailing quality cost rate of major categories.



**Figure 15.9** Optimal segment in the quality costs model

#### *Quality improvement zone*

This is the zone on the left side of the above figure. The costs incurred due to failures account for over 70% of all quality costs, whereas prevention costs account for less than 10%. Experience has shown that in such cases effective quality improvement programmes can be initiated.

#### *Zone of perfectionism (high quality)*

This is the zone on the right side of Figure 10.15. Here the costs of control and measurement usually exceed the costs of failures. Usually, in such cases it can be determined by careful examination that the phase of perfection has been reached. Improvement efforts should be aimed at eliminating unnecessary costs of perfectionism. This can be achieved by:

- ☞ analyzing costs incurred by checking for non-compliance (failures) and comparing them against potential damage that would occur were they not detected. For example, a company is in charge of testing the quality of parameter X of a given product for a number of years. Systematic control was introduced at a time when failure X used to occur frequently. In the course of a year, the process was improved to the point that the X failure rate decreased considerably to 15 occurrences per one million. Nevertheless, systematic control continued to be implemented. The analysis has shown that failure detection cost the company EUR 2.5 per each X failure detected. On the other hand, the selling price of the product is less than 5 cents per item.
- ☞ reconsidering quality standards set in order to determine whether they are realistic,
- ☞ considering whether it would be acceptable to decrease control and use process capabilities more efficiently and maintain order.



- ☞ examining the effectiveness of a formal re-evaluation of decisions to reduce the costs of control.

### *Zone of indifference*

The middle section of Figure 15.9 represents the zone of indifference. In this zone, an optimal level or a level very close to an optimal level has been reached. The only problem here is figuring out how to maintain that level. In the zone of indifference, failure costs account for approximately half of the quality costs, whereas prevention costs account for about 10% of the total cost of quality.

Evidently, the optimal level of total quality cost does not depend only on the optimization of each category. There is interaction between categories and such a relationship is vital. In addition, individual cost categories have distinct characteristics:

1. Costs incurred due to failures have reached their optimal levels when a company is no longer able to develop an efficient cost reduction programme.
2. Control and measurement costs have reached their optimal levels when:
  - a) failure costs have reached their optimal level,
  - b) the company is no longer able to develop an efficient programme for further decrease of control costs; and
  - c) work methods implemented have been successful, and appropriate control and testing standards have been established and met.
3. Prevention costs have reached their optimal level when;
  - a) the major part of the prevention costs has been invested into the approved improvement programmes,
  - b) prevention initiatives themselves have been re-evaluated with an aim to improve them, and
  - c) prevention efforts, which are not part of the approved programmes, have been controlled based on real estimates.

In analysing the cost of quality with an aim to reduce it, care must be taken not to raise the total costs. This can occur when costs not related to quality have been increased disproportionately in order to decrease the cost of quality. All improvement programmes and measures must take into account the entire cost structure. The reduction of quality cost should not be an end in itself, but rather a tool aimed at improving the efficiency of the entire company.

Comparing quality costs against other costs is a reflection of the relationship between output and quality. For instance, an assembly line worker works at a speed that is 20% below the average speed. Consequently, annual costs in his case considerably exceed average costs. On the other hand, he has made fewer mistakes and owing to the precision of his work, significant savings on quality costs have been made over the year.

In conclusion, it needs to be emphasized that all companies should strive for excellence and aim to improve and maintain high quality of their products, i.e. strive for perfection at optimal costs. This is a permanent goal that can be reached by gradual stepwise improvement of quality or dramatic improvements as a result of innovations and incorporating latest technological advances

into work processes. This entails staying abreast of and applying the latest technology and information sciences, as well as adopting the modern principles of scientific organization of work. Doing so will reduce the cost of poor quality as well as the cost of quality control.

## 5. CONCLUSION

The philosophy of econometrics in the context of quality is reflected in the position that high quality requires high costs, whereas poor quality results in even higher costs. The ability to identify precisely the boundary between these two extremes, i.e. high and poor quality, is crucial for achieving optimal quality. When it comes to monitoring quality costs in the modern, dynamic production, having timely information, even if it may be unrefined, is better than having very detailed and accurate information when it is too late, or when it is no longer useful or cannot be acted upon.

In conclusion, it needs to be emphasized that all companies should strive for excellence and aim to improve and maintain high quality of their products, i.e. strive for perfection at optimal costs. This is a permanent goal that can be reached by gradual stepwise improvement of quality or dramatic improvements as a result of innovations and incorporating latest technological advances into work processes. This entails staying abreast of and applying the latest technology and information sciences, as well as adopting the modern principles of scientific organization of work. Doing so will reduce the cost of poor quality as well as the cost of quality control.

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## DEVELOPING OF E-LEARNING SYSTEM FOR THAI CUISINE

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### ABSTRACT

*This paper aims to develop a Cooking Royal Thai Cuisine Application based on Android Operating System and provides cartoon animation to present and teach how to cook Thai cuisine. The system also presents more information on recipe details and the process of cooking Royal Thai Cuisine in 15 recipes. The design methods and functional components of this prototype were described. To evaluate the system performance, questionnaires for system usability and Black Box Testing were used to measure expert and user satisfaction. The results were satisfactory as followed: Means for experts and users were 3.97 and 4.12 respectively.*

**Keywords:** *Cooking, Royal Thai Cuisine, Android operating system and black box technique*

### 1. INTRODUCTION

Thai food has been well known and popular across the world and Thai cuisine is more accurately described exquisite culture and history of Thailand. The Royal Thai Cuisine or "Aharn Chao Wang" or "Kapkhaao Chao Nai" was recognized in the beginning of the Rattanakosin Era and the royal Thai recipes are the same as the normal Thai cuisine but the ingredients used in the royal cuisine are fresher and the cooking processes are more exquisite and complicated (Tourism Authority of Thailand, 2015).

With the progress of developing mobile devices such as smart phones and tablets, there has been prevalently used as a significant device to support in many aspects of life. There are over 10 billion mobile Internet devices expected to be in use by 2016 and the mobile application industry will grow tremendously to match demand and keep up with ever-evolving technologies. (UAB business degrees, 2015) According to Chris Marsh (2015), the demand of new mobile applications is still very strong and there is a lot of research revealed the increased demand for mobile applications is being expected to step up across the lifecycle. Also, MoLeNet (2015) defined “The exploitation of ubiquitous handheld technologies, together with wireless and mobile phone networks, to facilitate, support, enhance and extend the reach of learning.” There is much of research that indicated how to provide requirements for design of a mobile learning. Gwo-Jen Hwang and et al (2011) conducted an experiment on an elementary school in natural science course to evaluate the effectiveness of the proposed method and the experimental results show that the proposed approach not only enhances learning attitudes, but also improves the learning achievements of the students. Schuck et al (2013) proposed design-based method to implement in smartphone. Rattanachai et al (2014) developed the lifestyles of Thai Buddhist application based on Android

operating system to learn about lifestyle of Thai Buddhist serving and the Hamster Knowledge System based on Android Application is conducted to advice user to upkeep and feed hamsters based on mobile application (Satie and et al, 2014).

Therefore, this research was implemented the development of the Cooking Royal Thai Cuisine Application based on Android Operating System to provide the convenient ways of cooking Thai Royal Cuisine. Users use their android smart phones to learn and get information and acquire Thai Royal recipes as long as users need.

The remainder of this paper is organized as follows. Section 2 presents the objectives of this project. Section 3 we describe research methodology based on the purposed model and section 4 shows the results of this experiment. Finally, the conclusion and future research are presented in section 5.

## 2. OBJECTIVES

- 1) To develop the Cooking Royal Thai Cuisine application on Android operating system.
- 2) To test and evaluate the system by using Black Box testing and questionnaire and interview forms.

## 3. RESEARCH METHODOLOGY

The research aims to develop mobile application in how to cooking Royal Thai cuisine and the participants of this project consisted of experts and users. To implement the mobile learning application, RAD (Rapid Application Development) was applied and user's requirements were analyzed for design processes to indicate user interface in a mobile learning device. Rapid Application Development (RAD) is an incremental software development process model that emphasizes an extremely short development cycle as shown the process in Figure 1.



Figure 1. Rapid Application Development Process (Javatech, 2015)

To implement the project, questionnaires and user's requirements were applied in the requirement and planning phase of this mobile application. The information was used as an important source to manage mobile apps and database management and internet network technology were applied in order to make the system fast and easily work. Also, the main activities for the design and development of animation model included:

- 1) Outlining the content in which questionnaire and interviews were used as the significant instrument to collect project requirements and indicate the target audiences.
- 2) Creating flowchart to describe the sequence and structure of this application

- 3) Specifying screen design to define the color and navigation project's schemes
- 4) Writing storyboards to provide information to implement multimedia components appeared on the application screens: including a conceptual idea of the location of images and text, related links, and general layout.

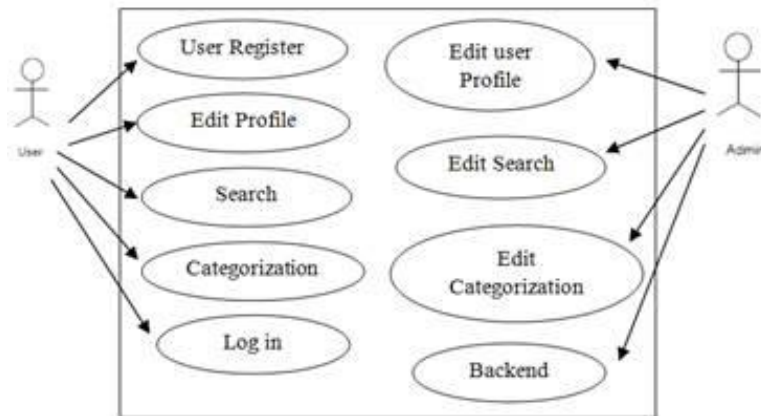


Figure 2. Use Case diagram

Architectural design was described by using Unified Modeling system. Use Case diagram shows the work flow system from the user perceptions, as shown in figure 2 and sequence diagram, figure 3, displays how processes operate with one another and in what order.

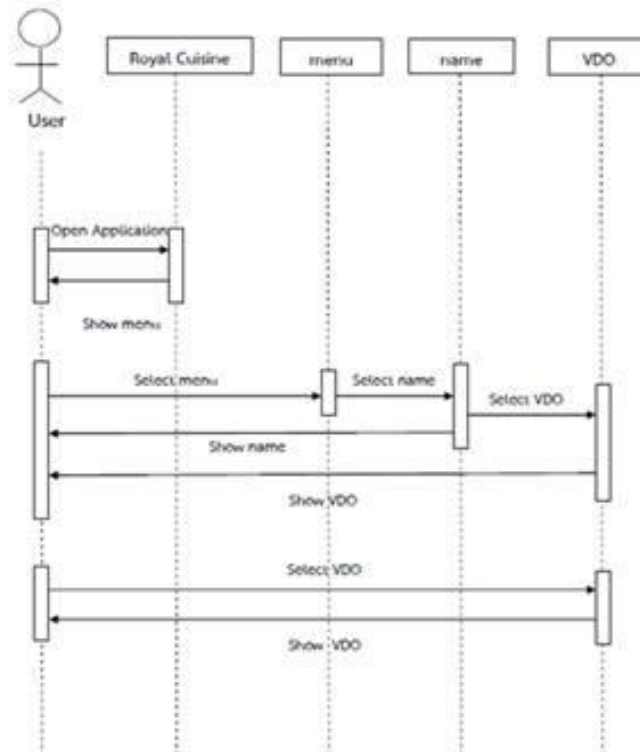


Figure 3. Sequence Diagram

The user interface design was to make an easy-to-use application which can be controlled through standard touch interactions. Users can press menus and buttons on their mobile screen for access to a variety of categorizes of Thai Royal Cuisine. The application could access data and show results on the mobile screen. The respondents used in this research are 5 experts and 20 users. Data collection was concluded by questionnaire and interview forms and the obtained data were brought to conduct an analysis by utilizing mean and standard deviation (S.D.).

#### 4. EXPERIMENTAL RESULTS

The results of this research are divided by the research objectives into 2 issues: developing the Thai Royal Cuisine application based on android system and testing and evaluating the system by using Black Box testing and questionnaire and interview forms.

##### 4.1 Developing the Thai Royal Cuisine application

To develop the Thai Royal Cuisine application based on android system, Figure 4 was shown the results of application. The animations in this application were divided into three groups including snack, chill sauce and main dishes. In the experiment of this study, users watched and learned the cartoon animation video and when finished they will be asked for to take the test and completed a questionnaire for analyzing their knowledge.

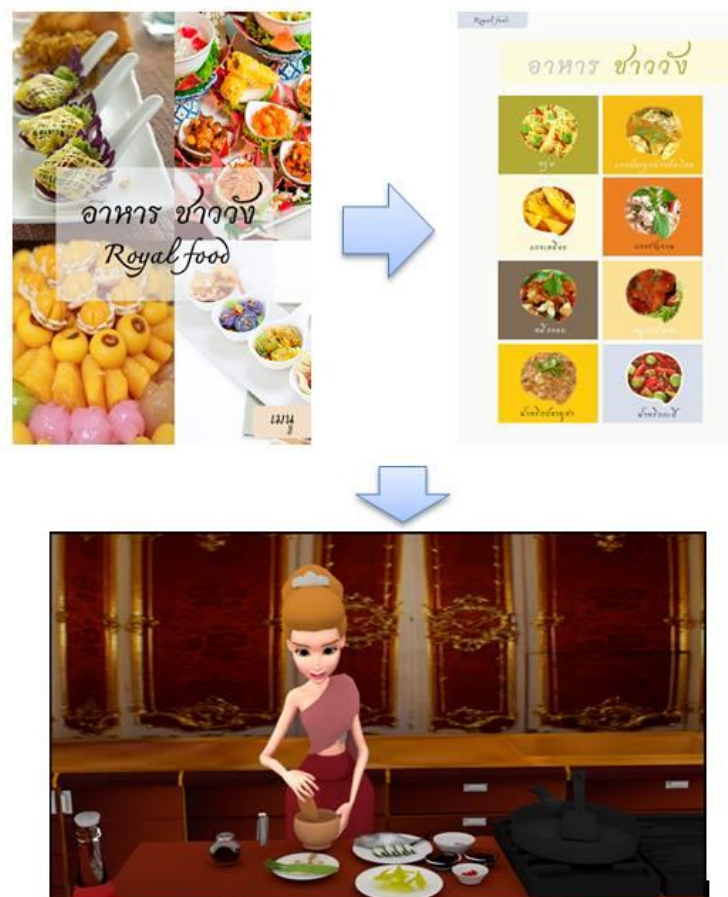


Figure 4. The example pages of the system



## 4.2. Testing and Evaluating the qualities of the System

### 4.2.1 Black Box Testing

Black box testing was used to test and evaluate the qualities of this application as following: functional requirement test, Function test, Usability test, Performance test and Security test. Black box testing is a software testing approach that focuses on determining whether or not a program does what it is supposed on its functional requirements (Laurie Williams, 2006).

*Table 1. The results of Black box testing*

	Experts		Users	
	$\bar{x}$	SD	$\bar{x}$	SD
1. Function Requirement Test	4.33	0.665	4.00	0.50
2. Functional Test	4.15	0.610	4.17	0.554
3. Usability Test	4.28	0.718	4.45	0.645
4. Performance Test	4.03	0.416	4.31	0.531
5. Security Test	4.23	0.624	4.28	0.718

Functional Requirement test was evaluated the ability of the system in needs of the users and Functional test was assessed to evaluate the accuracy of the system. Usability test was tested the suitability of the system. Performance test was used the processing speed of the system. Finally, Security test was evaluated the security of the system Table 1 was shown the results of Black box testing between experts and users

### 4.2.2 Questionnaire and Interview Forms

This research was designed to assess the viewpoints of users to evaluate user satisfaction as displayed in table 2. The table shows that assessment of the ability of the system to meet the needs of users respectively in average of 4.55 and standard deviation of 0.54 so that satisfaction in quality toward the system is well

*Table 2. The assessment of user's satisfaction*  
 - Continues on the next page -

	Users	
	$\bar{x}$	SD
<b>The ability of the system</b>		
<b>1. the ability of the system to provide information</b>	4.57	0.53
<b>2. the ability of the system to link menu</b>	4.71	0.49
<b>3. the ability of the system to search</b>	4.71	0.49
<b>4. the ability of the system's response time</b>	4.00	0.82

<b>5. the ability of the system to work automatically</b>	4.43	0.53
<b>6. the ability of the system to manage the database</b>	4.86	0.38
<b>The accuracy of the system</b>		
<b>1.the accuracy of the system to display information</b>	4.86	0.48
<b>2. the accuracy of the system to information retrieval</b>	4.43	0.53
<b>The suitability of the system</b>		
<b>1.the suitability of the functions with ease of system usage</b>	4.86	0.48
<b>2. the suitability of text display clarity</b>	3.86	0.53
<b>3. the suitability of using colour</b>	4.00	0.58
<b>4. the suitability of data presentation</b>	3.71	0.49
<b>5. the suitability of user interface</b>	4.14	0.78
<b>The speed of the system</b>		
<b>1. the speed of program as a whole</b>	4.29	0.49
<b>2. the speed of search data</b>	4.43	0.53
<b>3. the speed of data presentation</b>	4.29	0.49
<b>4. the speed of showing the link</b>	4.00	0.82
<b>5. the speed of edit data</b>	3.86	0.69

## 5. CONCLUSION AND FUTURE WORKS

In this paper, the Thai Royal Cuisine application based on Android operating system was proposed and this application can assists users to enhance user’s abilities in cooking Thai royal cuisine. The experimental group had significantly better performance in learning achievements. However, in term of the future experiments, we attempt to add various words and categories to support in learning preferences.

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## THE COMPANY'S FINANCIAL SITUATION IN THE PREVENTION OF RISK FACTORS RAIDERISM

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### **ABSTRACT**

*Raiderism in Latvia is not very widespread, however, it should be noted that Latvia has become a significant target for raiderism, because the economic situation in the country is difficult, a lot of companies are working with a loss or little profit, most companies are in debt obligations with credit institutions, therefore, these companies are easily vulnerable, and if a raider manages a successful attack, the chances of escape are quite small. The term raiderism is not found in currently existing Latvian laws, however, this word is more often used in public debates. The concept raiderism in business environment is understood as an unfair or illegal activity to take over the control of the company.*

*20 years ago, the major deterrent for Latvian business was racketeering, now it is back in a new, more complex form - raiderism. Raiderism can take a number of forms, however, the authors analyze the companies that have been subject to raider attacks and study the company's financial situation, thereby disclosing financial aspects of the situation typical for the companies that are exposed for possible raider attacks. The paper is dedicated to the company's financial and legal aspects for the analysis of the occurrence of raiderism.*

**Keywords:** *raiderism, liquidity, borrowed capital*

### **1. INTRODUCTION**

Actuality of the theme is based on the fact that manifestations of raiderism are extremely varied, but even though there are numerous cases of raiderism in Latvia, and they were with different manifestations, one of the types of raiderism is associated with the risk conditions of a company's existing financial position. Taking into account the above mentioned, it is necessary to undertake a study on various types of raiderism and assess possible retaliation – changes in laws and regulations, the improvement of the work and capacity of institutions, the use of existing means of protection. The aim of the work is to analyze financial indicators in existing cases of raiderism that may indicate to a risk for raiderism and develop proposals for reducing it. During the work systemic method of interpretation, translation method of legal acts, methods of legal interpretation, statistical methods have been used.

## **2. THE MOST IMPORTANT RESULTS OF PREVIOUS STUDIES**

The research on the leverage of the size of financial situation in the total capital has been done by such authors as Rudik, Schultz, Harris and Raviv. The model developed by Harris and Raviv shows that the higher the loan capital, the less likely the company can be added and be subject to external attack, even though the classic models say the opposite. A number of authors are investigating the legal aspects and economic aspects separately. Bunduks and Kļaviņa, as well as Allik, are paying more attention to the analysis of the legal aspects of raiderism, they are not linking them directly to the financial situation. Numerous studies are devoted to insolvency, so Sneidere's (Šneidere, 2009, p. 232) study analyzes in detail the issue of solvency aspects. Both Anspaks and Ērgle assure that insolvency and raiderism cases are closely related.

## **3. THE RESULTS AND CHARACTERISTICS OF EMPIRICAL STUDY OF RAIDERISM AND THE THEORY OF FINANCIAL ANALYSIS**

By researching Latvian legislation, as well as the academic literature, it can be concluded that raiderism is not defined in any normative act, and there is no classification or clearly defined characteristics that could allow certain activities define as raiderism. However, investigating of international academic literature, raiderism in classical sense is understood as the acquisition of the company's shares or controlling interest on legally dubious foundations or by illegal or dubious means.

The aims of raiders can be divided into two categories:

- 1) Overtaking of a company, gaining its units or shares;
- 2) Acquisition of a company's assets (usually movable and immovable property).

The first category is subject to the cases when the company is the target as a whole - both the company as such, as well as its property, but the second category includes only the cases when the purpose of raiderism attack is its assets or a separate property (Фёдоров, 2010, p.35).

Based on Chuyasov's (Чуясов 2007, p.7) classification, raiderism can be divided into 3 basic types, i.e.:

- 1) Black or criminal raiderism - based on impudent criminal activities and brutal use of force (falsification of documents, blackmail, physical takeover of a company, threats, physical coercion, etc.), that is characteristic to Russia, as well as, to the countries with a high level of corruption.
- 2) Grey raiderism - based on illegal activities on the officials of a company, bribery of its members, falsification of documents, speculative judicial proceedings, the creation of psychological pressure on the company and its members or shareholders and the desired result is gained by relatively legitimate means.
- 3) White raiderism (takeovers) - illegal methods are not used, the company's take-over is in the legislative framework and takes place with the acceptance of the members of the company or the majority of shareholders (Чуясов 2007, p.7).

Raiders mainly use five typical methods, such as follows: accumulation of debt, buying up in order to achieve the company's insolvency and bankruptcy, the rights of the minority member or a shareholder, the use of banks, state institutions and law enforcement and the use of political influence.

The indicators of financial performance, which may show a certain risk of the existence of the company to continue operations and to prevent insolvency, are used for both bankruptcy forecasting methods, as well as, for financial analysis of individual factors which may indicate the existence of certain problems (Ковалев, Ковалев 2010, p. 471). The indicators that are included

in the analysis of company's financial situation are grouped into capital movement indicators, capital structure indicators, liquidity, profitability and market activity indicators.

#### **4. THE RESULTS OF RESEARCH**

In the analytical framework the information on companies was compiled, which during the period from 2010 to 2016 were exposed to raiderism. From the selected cases such raiderism cases were chosen, which may be classified as grey and white raiderism. In all chosen cases, the situations can be characterized by the accumulation of debt, bribery in order to achieve the company's insolvency and bankruptcy, the use of banks and state institutions and law enforcement. So three methods were used.

A detailed analysis of these companies was carried out to determine in what financial situation these companies had been.

For 76% of companies, which had raiderism attacks, the overall liquidity indicators had worsened during the year, even fallen below 1. This means that short-term liabilities had increased so significantly that the company was unable to pay back its short-term obligations. At the same time, for all the companies included in the study, the absolute liquidity ratios were below 0.3, which showed that with the most liquid current assets of companies they could not repay the liabilities if required to do it urgently. Follow-up activities were the claim of insolvency from the creditors or debt capitalization. 34% of the analyzed companies were involved in the banks that were actively engaged in the reclaiming of urgent loan, disagreeing with neither debt restructuring nor supporting refinancing. Mainly on the basis of loan agreements, the arguments of a significant deterioration of the financial situation were used, which led to the reclaiming of the loan. All of these cases ended with the disposal of shares (19% of cases), by the insolvency declaration, followed by bankruptcy (81% of cases). None of the cases, which was declared as insolvent, was rehabilitated.

As the result of the analysis it was found that all the analysed enterprises were subject to a high degree of loan capital (over 70%). At the same time, among the indicators of capital movement the correlations were not identified, but the profitability of all businesses were positive, even higher than the average in industry.

Researching the further development of the situation, it must be said that economic crime investigators have failed to lead to the end any of the cases during the last few years related to the seizure of a company or raiderism. To find the truth at courts is not possible – a recently published report by the World Economic Competitiveness Forum ranks Latvia among the second hundred countries in a position of resolving disputes. (9)

In the analytical framework legal issues were also assessed. According to literal interpretation of the Civil Procedure Law Section 250 Paragraph 30 and basic objects for raiderism, it should be admitted that the Civil Procedure Law Chapter 30<sup>4</sup> regulates solving internal disputes of participants, which may include not only the cases of raiderism. (8)

The most painful issue in the context of the Civil Procedure Law, Chapter 30<sup>4</sup> is the prohibition of inter-related claims, which to the author's opinion, is the key drawback of the Civil Procedure Law, Chapter 30<sup>4</sup>.

The Civil Procedure Law in the general procedure allows to include interrelated claims in a single application. As a decisive criterion for the inclusion of several claims in the application the Civil Procedure Law, Section 128 recognizes their interdependence. According to the findings of the Constitutional Court with related claims should be understood such claims where a separate adjudication would not be feasible or appropriate, which could lead to mutually contradictory



judgments and, if decided by the same court proceeding, it would be quicker and more correct examination of the cases. Section 134, Paragraph 1 of the Civil Procedure Law allows the inclusion of interrelated claims in a single application. The used concept "interrelated claims" in the mentioned provision is an abstract concept, which is filled with the contents by the court in each individual case. (7)

According to the existing case law of Civil Procedure Law, Section 134, it is a general norm to combine a number of related claims in one application, which applies to the action that is brought on general arrangements. In the norms of Chapter 30<sup>4</sup> the exceptions have been made to these general arrangements (see Civil Procedure Law, Section 250<sup>28</sup>), so that the exceptions in the Civil Procedure Law Section 250<sup>30</sup>, as other arrangements are considered, can be regarded as a special norm against Section 134. (8)

The prohibition to include interrelated claims in one application means that the claimant who has a number of interrelated claims to protect his rights and legitimate interests, has to initiate two sets of proceedings, which will have a different jurisdiction and the terms of examination.

Admittedly, by denying the claimant to apply interrelated claims and oblige to initiate two proceedings, the legislature has unwittingly created a situation that does not comply with the Civil Procedure Law Section 1.

Another major problem is linked to the insolvency proceedings and disorder in this system. The fact that the companies, which had gone bankrupt, have been closed up and asset divestments had led to further disputes on the application of inadequate prices and other problems, show that the arrangement of the insolvency system plays an important role in reducing raiderism.

## 5. CONCLUSION AND PROPOSALS

As work progresses, the authors conclude that companies, which have undergone raiderism, were characterized by distinct features of the financial situation, that is, a high level of loan capital, the companies had rapidly deteriorating overall liquidity. A large short-term loan capital can be considered as a risk factor, when the loan agreements allow to request the repayment of the loan before the deadline, which significantly impairs the company's ability to cover the short-term loan capital rapidly. To reduce the risk of raiderism attack, companies should prefer to enter into contracts without requesting the return of loans ahead of schedule. At the same time, it is desirable for companies to evaluate the leverage of the loan capital with the company's business and risk management conditions.

The government is recommended to include interrelated claims in the same application, so that they are in line with the Civil Procedure Law, Section 1.

The government is also recommended to evaluate seriously and improve insolvency proceedings so that the process cannot be used as targets for raiderism.

For companies – with appearance of financial problems - to address and request to grant legal protection, thus gaining time and the possibility of stabilizing the financial situation and repel attacks of raiderism.

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## TOWARDS EVIDENCE-BASED POLICY MAKING IN EVALUATING THE EUROPEAN COHESION POLICY PROGRAMME

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### **ABSTRACT**

*The European cohesion policy presents the main investment policy of the EU, through which the objectives of the Europe 2020 strategy are being met for an intelligent, sustainable and inclusive growth in the EU. These objectives refer to employment, research and development, climate change and energy sustainability, education and a battle against poverty and social exclusion. A large part of the European cohesion policy resources are intended for less developed European countries and regions, with the purpose for the latter to become comparable with the others as well as to reduce economic, social and territorial disparities, which still exist in the EU. However, in addition to a successful absorption of the European cohesion funds, the efficiency of utilization of these funds is also important, especially from the point of view by the mentioned budget and efficient use of public funds. This is why the European Commission encourages the member countries to use evidence-based policy making in the new programming period. The research, which we carried out, is based on the econometric assessment of the effectiveness of the European cohesion funds and their impact on companies' revenue in Slovenian municipalities. The absorption effect was, except in one observed period, positive, however is decreasing from year to year. Based on the results we also conclude that the municipalities, which belong to the Western cohesion region, were more effective in European cohesion funds absorption in comparison to municipalities, which belong to the Eastern cohesion region.*

**Keywords:** *Counterfactual, European cohesion policy, Evaluation*

### **1. INTRODUCTION**

The European cohesion resources are located in three main funds, namely in the European Regional Development Fund, the European Social Fund and the Cohesion Fund. In addition to these funds the following funds are important as well, namely, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund. The received European cohesion funds are divided at the level of operational programmes into different development priorities, which pursue the objectives in various contextual areas of development. The European cohesion policy is goal-oriented and realizes the objectives, which would contribute to the reduction of developmental differences between member states of the EU. The acquisition of financial resources from the cohesion policy is essential for the recipient countries, since these resources represent a large and immediate capital inflow. However, the financial success followed by the absorption of European cohesion funds is not the only measure, but also the effectiveness of spent funds. In the new programming period 2014 - 2020 the European Commission has put an emphasis on evaluating the impact of programmes of the European cohesion policy based on especially highlighted limited budgets as well as the question of effective use of public funds. In this paper we pursue the European Commission's orientation and derive an econometric evaluation of the absorption effect of European cohesion funds on the companies' revenue in Slovenian municipalities. At the level of Slovenian cohesion regions, we analyse the already known fact, namely the more developed western part and the less developed eastern part. In this article, we

firstly introduce some perspectives of effect evaluation on the basis of counterfactuals, followed by an introduction of the empirical research, results and discussion. At the end is the written conclusion.

## 2. CAUSAL INFERENCE AND COUNTERFACTUALS

When trying to estimate the causal effects one has to tackle impact evaluations which are a particular type of evaluation that seeks to answer cause and effect questions. The basic evaluation question in this context can be written as: “What is the impact or causal effect of a programme on an outcome of interest?” This basic evaluation question includes important causal dimension associated only with the impact of a programme. We are therefore interested in the effect on outcomes that the programme directly causes (see, for example, Gertler et al., 2011). If we want to estimate the causal effect, we must estimate the so-called counterfactual: what would have been the outcome had participants not participated in the programme. When trying to perform impact evaluation one also has to find proper comparison group (also called control group) to estimate what would have happened to participants without the programme.

However, it is not always straightforward that the cause and effect questions are in a relationship which reflects causality. If we take into consideration certain employment programme for example, it would not be sufficient to establish causality if we simply observe participant’s income increases after the completion of such programme. The participant’s income might have increased even if he or she had not participated in the employment programme because of his or her own efforts, because of different labor market conditions or just because of any other factor that might affect income. To establish causality between a programme and an outcome, impact evaluation methods are used to cancel the possibility that any other factors other than the programme of interest explain the observed impact (see, for example, Gertler et al., 2011; Caliendo and Hujer, 2006; Caliendo et al., 2011). The basic impact evaluation formula can be written as:

$$\alpha = (Y|P = 1) - (Y|P = 0)$$

The causal effect ( $\alpha$ ) of a programme (P) on an outcome (Y) is the difference between the outcome in case of programme ( $Y|P = 1$ ) and the outcome in case of no programme ( $Y|P = 0$ ). For example, if P denotes a public works programme and Y denotes re-employment probability, then the causal effect of the public works programme ( $\alpha$ ) is the difference between a person’s re-employment probability (Y) after participating in the public works programme (that is when  $P=1$ ) and the same person’s re-employment probability (Y) at the same point in time if he/she had not participated in the programme (that is when  $P=0$ ). That means that we would like to measure re-employment probability at the same point in time for the same individual but in two different states. It is somehow straightforward that for the same individual we cannot observe simultaneously the outcome in case of programme and the outcome in case of no programme. But if we would be able to do so, then the only possible source of any difference in that individual’s re-employment probability would be the programme. By comparing the same individual with himself/herself at the same moment, we would be able to eliminate any other factors that might also have influenced the difference in outcomes. In such a manner the relationship between the public works programme and re-employment probability is causal.

We already mentioned that we cannot observe the same individual at the same moment in two different states. This represents the main obstacle to modeling the causality. The individual either participated in a programme or did not participate. It is impossible to observe the individual in two different states simultaneously. This is called the counterfactual problem. Usually it is relatively easy to obtain data on the outcome in case that individual participated in the programme ( $Y|P = 1$ ), but on the other hand the outcome in case that such individual did not participate in the programme ( $Y|P = 0$ ) cannot be directly observed for programme participants. The term ( $Y|P = 0$ ) represents the counterfactual outcome – what would the outcome ( $Y$ ) have been in the absence of a programme ( $P$ ). Because we do not have the record on the counterfactual outcome, the problem of the causal effect assessment may actually be defined as a problem of missing data (see, for example, Bachtler and Wren, 2006; Južnik Rotar, 2012; Lee, 2005; Ravallion, 2001). To obtain the information on the counterfactual outcome we typically use control groups. The main challenge of the impact evaluation is to identify a valid control group that has the same characteristics as the treatment group. Gertler et al. (2011, p. 36-37) on a conceptual level illustrates this as identifying a “perfect clone” for each programme participant. If the treatment group and the control group are statistically identical, with the only exception that individuals from treatment group participate in the programme and individuals from control group do not, then we can be sure that any difference in outcomes is due to the programme. If this is not the case, then the impact estimate will not estimate the true impact of the programme and it will be biased.

### **3. EMPIRICAL RESEARCH**

#### **3.1. Aim of the research**

The impact of the European cohesion funds is significant for the beneficiary countries and represents an important financial aid, which is goal-oriented and additionally affects the increase of domestic demand and thus economic growth (Klun, 2015). In the Financial Framework of 2007 - 2013, there were EUR 4.1 billion resources in the European fund at Slovenia's disposal. The received European cohesion funds are divided on the level of the operational programmes into different developmental priorities, which pursue objectives in various fields of development (SVLR, 2016).

The European cohesion funds, as defined in the developmental priorities of the operational programmes, are considered to have specific indicators that need to be provided during the implementation of individual operations. Beneficiaries, who participate in the operations and are recipients of funds under the required administrative procedures, report on the achieved results in the informational system ISAAR at the level of every individual operation. The Court of Audit of the Republic of Slovenia submitted in its report that the existing system reduces the possibilities of evaluating consequences of financial incentives at project level, activities and the policies of the ministries. The established finding encourages effect evaluations of received European cohesion funds based on counterfactual impact evaluation.

In evaluating the effects of the European cohesion policy programmes, there are several approaches that include both qualitative and quantitative methods (Khandker, Koolwal and Samad, 2010). In assessing the effect, we are searching for the answer to the question whether the change in outcome of interest is a consequence of an intervention and to what extent can this change be attributed to this intervention. The concept of intervention may represent the implementation of a

certain policy, measure, incentive, which influences a certain population of individuals or economic entity. One may ask, what would be the outcome, if the observed unit would not receive the intervention? This question cannot be answered because the observed unit cannot be in two roles simultaneously, namely in the role of the recipient of the intervention and in the role of the non-recipient of the intervention. This dilemma is solved with the implementation of the counterfactual, which characteristics need to be most similar to the observed unit, but had not received an intervention. The main challenge of the various methods of effect evaluation is to find an appropriate counterfactual in order to compare the outcomes of the observed units, which are under the influence of an intervention and those which did not receive an intervention.

The aim of this research is to approach the effect evaluation of the European cohesion policy programme based on facts, which is also the focus of the European Commission in the 2014 - 2020 programming period (see, for example, Bradley, 2006; Leonardi, 2006; McCann and Ortega-Argilés, 2015). Based on publicly available information and freely accessible software, we will conduct an econometric analysis, in the empirical part, of the absorption effect of European cohesion funds based on the companies' revenue in Slovenian municipalities, and based on the analysis of data at the level of cohesion regions, demonstrate the known fact for Slovenia, namely the more developed western part and less developed eastern part. The econometric analysis is based on the difference in differences approach. The outcome of interest revenue is substantially connected to the objective of developmental priority of company competitiveness and research excellence as well as economic-developmental infrastructure of the Operational Programme for Strengthening the Regional Development Potential. Based on the econometric analysis, we will verify whether the absorption of European cohesion funds for the development of company's competitive priorities and research excellence as well as the promotion of entrepreneurship in local environments, increases the revenue of companies in these environments compared to companies in the areas where there is no such absorption. In order to calculate the causal effect, we have developed a program code in the open source software R.

### **3.2. Data**

To evaluate the absorption effect of European cohesion funds we use two sources of information, which we combine into a single database.

The first source of data refers to the variable of companies' revenue. The Statistical Office of the Republic of Slovenia is the source for the statistic data of companies' revenue by municipalities and years for the period from 2008 to 2013 is. The original statistic data by municipalities contain 22 different variables, which include the information about companies' revenue, the number of companies, the number of employees, the number of population and other information. We are dealing with a wide range of information, which means, we have several observations of the same variable in one line. An example of a wider information format, the variable is the companies' revenue, as shown in Figure 1.



	A	B	C	D	E	F	G	H	I
1	Statistični podatki, občine, Slovenija								
2	regija _id	občina _id	Ime občine	Prihodek podjetij (1.000 EUR), 2008	Prihodek podjetij (1.000 EUR), 2009	Prihodek podjetij (1.000 EUR), 2010	Prihodek podjetij (1.000 EUR), 2011	Prihodek podjetij (1.000 EUR), 2012	Prihodek podjetij (1.000 EUR), 2013
3	00	000	Slovenija	95.786.283	83.060.213	86.705.208	90.789.676	90.739.422	90.625.516
4	11	001	Ajdovščina	778.127	612.078	602.787	560.707	451.042	395.043
5	01	195	Apače	21.345	20.135	19.794	23.888	25.992	26.230
6	01	002	Beltinci	131.221	106.944	62.714	68.057	74.390	73.157
7	02	148	Benedikt	11.730	10.813	12.118	13.002	13.589	15.049
8	04	149	Bistrica ob Sotli	6.559	7.964	7.602	7.160	6.689	6.773
9	09	003	Bled	279.478	219.902	226.920	277.903	273.444	205.345
10	10	150	Bloke	32.455	25.071	23.087	20.272	13.992	9.206
11	09	004	Bohinj	47.935	56.465	59.450	61.377	57.112	59.950
12	08	005	Borovnica	54.383	46.103	53.882	58.201	55.058	56.809
13	11	006	Bovec	84.917	74.658	72.686	78.326	102.895	99.835
14	04	151	Braslovče	62.865	51.492	55.408	60.657	66.546	66.671
15	11	007	Brda	49.757	50.367	51.428	56.773	61.286	63.989
16	08	008	Brezovica	176.123	152.043	160.559	179.695	197.691	199.683
17	06	009	Brežice	375.985	337.634	367.313	400.378	404.774	421.764
18	01	152	Cankova	15.353	11.938	13.315	15.442	13.359	12.596
19	04	011	Celje	3.606.916	3.248.540	3.340.000	3.495.404	3.290.732	3.179.620
20	09	012	Cerkije na Gorenjskem	183.725	168.237	347.287	376.033	375.851	408.307
21	10	013	Cerknica	288.677	257.697	261.729	277.795	301.811	321.765
22	11	014	Cerkno	131.414	112.156	112.881	103.174	102.292	93.278

Figure 1: Source data format with the variable of companies' revenue (Source: SORS)

The wide data format is not suitable for further processing with the statistical programmes, therefore we convert it into an ordered form, where each line contains only one value of the variable. The data in ordered form, after we carried out the conversion of the data model from the wide form into the ordered form, are shown in Figure 2. Every individual row contains a code, with which we define the variable (region code, code of municipality, year), additional information is the municipality's name as well as the name and value of the variable. The presented example of an ordered arrangement of statistical data contains all 22 variables, and thus contains an additional row, namely VAR, which hereinafter enables simple combining of variables from the same database.

Figure following on the next page

	REG.SIF	OBC.SIF	OBC.IME	LETO	VALUE	VAR
	All	All	All	All	All	prihodekPodj
22897	0	0	Slovenija	2008	95786283	prihodekPodj
22898	11	1	Ajdovščina	2008	778127	prihodekPodj
22899	1	195	Apače	2008	21345	prihodekPodj
22900	1	2	Beltinci	2008	131221	prihodekPodj
22901	2	148	Benedikt	2008	11730	prihodekPodj
22902	4	149	Bistrica ob Sotli	2008	6559	prihodekPodj
22903	9	3	Bled	2008	279478	prihodekPodj

Figure 2: Presentation of arranged statistics by municipalities in the program RStudio (Source: own)

The second data source includes information about payments of cohesion funds by operations, development priorities and years. The source of paid cohesion funds is the information system ISARR. The administrator of the information system ISARR is the Slovenian Government Office for Development and European Cohesion Policy, which acts as the managing authority in Slovenia. The information system ISARR is the reference information system for financial management, monitoring, control and evaluation of operational programmes for the period 2007 - 2013. The information about the disbursement of cohesion funds is publicly available via the website. A particular problem in the preparation of this information was the missing municipality code, which is crucial for our analysis of the data. The data contains a column that includes the name of the municipality (See Figure 3). Merging the data of cohesion funds with the code names of the municipalities via municipalities' names has not been successful. This was due to differently written municipalities' names or to recorded places that are not actually municipalities. Since the integration of data through the registered code of municipalities is crucial, it was necessary to write an assigned program with which we adjusted the names of the municipalities with the names of the municipalities in the register and then obtained a code from the register of the municipality provided by the Statistical Office of Republic of Slovenia.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Naziv JR/NP	Naziv upravičenca	Višina dodeljenih sredstev [€]	Od tega sredstva EU [€]	Od tega nacionalni viri [€]	Naziv operativne a programa	Naziv operativneg a programa	Sklad	Regija	Občina	Leto dodelitve sredstev	Način dodelitve sredstev	Področje	Vir
2	JAVNI RAZPIS ZA PRIDO NEBESA D.O.O.		743.432,80	631.917,88	111.514,92	ODSTRAN OP RR	ESRR		GORIŠKA	IDRIJA	2009	JAVNI RA/POVEZOV	OU	
3	IZ FAKSA TAKOJ PRAKS ZAVOD RS ZA ZAPOSLO		5.000.000,00	4.250.000,00	750.000,00	IZ FAKSA OP RČV	ESS		PROJEKT VEČ OBČI	2014	NEPOSRE ZAPOSLO	OU		
4	URGENTNI CENTER NOV MINISTRSTVO ZA ZDRA		4.918.735,00	4.180.924,75	737.810,25	URGENTN OP RR	ESRR		JUGOVZH	NOVO ME	2014	NEPOSRE GOSPODI	OU	
5	OBNOVA STARE STAVB KEMJSKI INŠTITUT		1.658.867,96	1.410.037,77	248.830,19	OBNOVA OP RR	ESRR		OSREDNJ LJUBLJAN	2014	NEPOSRE GOSPODI	OU		
6	VZPOSTAVITEV DRŽAVI MINISTRSTVO ZA NOTR		14.427.360,00	12.263.256,00	2.164.104,00	VZPOSTA OP RR	ESRR		PROJEKT VEČ OBČI	2014	NEPOSRE GOSPODI	OU		
7	POSLOVNI OBJEKT ODSINŠTITUT JOŽEF ŠTEFA		6.690.489,44	5.686.916,02	1.003.573,42	POSLOVN OP RR	ESRR		OSREDNJ LJUBLJAN	2014	NEPOSRE GOSPODI	OU		
8	SPODBUJANJE IZVAJAN JAVNI SKLAD RS ZA RA		1.400.000,00	1.190.000,00	210.000,00	SPODBUJ OP RČV	ESS		PROJEKT VEČ OBČI	2014	NEPOSRE IZOBRAŽE	OU		
9	OBNOVA PRIZIDKA KEM KEMJSKI INŠTITUT		2.164.417,48	1.839.754,86	324.662,62	OBNOVA OP RR	ESRR		OSREDNJ LJUBLJAN	2014	NEPOSRE GOSPODI	OU		
10	PROJEKT OBNOVA LAB ZAVOD ZA GRADBENIŠ		1.889.375,11	1.605.968,84	283.406,27	OBNOVA OP RR	ESRR		OSREDNJ LJUBLJAN	2014	NEPOSRE GOSPODI	OU		
11	JAVNI RAZPIS ZA IZBOR JAVNI ZAVOD ŠPORT L		7.126.733,00	6.057.723,05	1.069.009,95	GINASTI OP RR	ESRR		OSREDNJ LJUBLJAN	2014	NEPOSRE POVEZOV	OU		
12	PROJEKT E-POLICIST MINISTRSTVO ZA NOTR		1.243.505,00	1.056.979,25	186.525,75	E-POLICIS OP RČV	ESS		PROJEKT VEČ OBČI	2014	NEPOSRE MODERNI	OU		
13	PROGRAM DVIG POKLIC CENTER REPUBLIKE SI		481.000,00	408.850,00	72.150,00	DVIG POK OP RČV	ESS		PROJEKT VEČ OBČI	2014	NEPOSRE IZOBRAŽE	OU		
14	PROGRAM ZDRAV ŽIVLJ ZAVOD ZA ŠPORT REPI		2.100.000,00	1.785.000,00	315.000,00	ZDRAV ŽI OP RČV	ESS		PROJEKT VEČ OBČI	2014	NEPOSRE IZOBRAŽE	OU		
15	VZPOSTAVITEV OPTIČNI MINISTRSTVO ZA IZOB		14.700.000,00	12.495.000,00	2.205.000,00	VZPOSTA OP RR	ESRR		PROJEKT VEČ OBČI	2014	NEPOSRE GOSPODI	OU		
16	URGENTNI CENTER SLC MINISTRSTVO ZA ZDRA		4.699.254,34	3.994.366,18	704.888,16	URGENTN OP RR	ESRR		KOROŠK/ SLOVENJ	2014	NEPOSRE GOSPODI	OU		
17	JAVNI RAZPIS ZA IZBOR OLIMPIJSKI KOMITE SLO		900.000,00	765.000,00	135.000,00	RAZVOJ KOP RČV	ESS		OSREDNJ LJUBLJAN	2014	JAVNI RA/IZOBRAŽE	OU		
18	JAVNI RAZPIS ZA SOFIN MEDNARODNA PODIPL		99.760,20	84.796,17	14.964,03	INTERNAC OP RČV	ESS		OSREDNJ LJUBLJAN	2014	JAVNI RA/IZOBRAŽE	OU		
19	JAVNI RAZPIS ZA SOFIN VISOKA ŠOLA ZA TEHN		99.999,40	84.999,49	14.999,91	INTERNAC OP RČV	ESS		KOROŠK/ SLOVENJ	2014	JAVNI RA/IZOBRAŽE	OU		
20	JAVNI RAZPIS ZA SOFIN UNIVERZA NA PRIMORS		999.907,09	849.921,03	149.986,06	INTERNAC OP RČV	ESS		OBALNO-KOPER	2014	JAVNI RA/IZOBRAŽE	OU		
21	JAVNI RAZPIS ZA SOFIN UNIVERZA V MARIBORU		998.015,33	848.313,03	149.702,30	INTERNAC OP RČV	ESS		PODRAVSKO	MARIBOR	2014	JAVNI RA/IZOBRAŽE	OU	

Figure 3: Presentation of information about the cohesion funds (Source: ISARR)

The arrangement of data from both public sources required a lot of time and effort. For the arrangement of the cohesion funds data, programming was also necessary, due to the size of the database, manual editing of municipalities' names would be time consuming. For the analytical processing of data it would be preferable for the institutions to publish information in a universal text format, which is more suitable for further use of software tools.

After compiling data from both sources, we merged the data into a single database. For the preparation of data, combining data sources into a common database, descriptive statistics and calculation by the method of difference-in-differences, we used the programming language R. We have intentionally written the procedure for calculating the causal effect with the programming language R.

The total revenue of companies in a given period is the sum of revenue of all the companies that are active in this period. The increase or decrease of the total revenue in different periods is due to an average increase or decrease in the revenue of all active companies in the observed period. Our analysis is based on the average change of revenue of companies in the group at which the company is listed. The criterion, according to which companies are classified into the experimental or control group are the acquired European cohesion funds in a given year by the individual municipality.

### **3.3. Difference in differences approach**

The difference in differences method is used for measuring the effect of treatment. The observed variable is measured in two time periods, prior to treatment and after treatment. The difference in the value of the variable can partly be attributed to the treatment and partly to other unexplained factors. In addition to the experimental group (the one which has received treatment), method of difference in differences also includes a control group (the one which has not received treatment). The values of the dependent variable of the experimental and control group differ in the initial and final period, however, we are interested only in the difference of the difference between the initial and final period, which is the result of the received treatment. The idea of the method is that both groups are equal in all respects, with the exception of the treatment. The starting assumption of the difference in differences method is that both groups have the same trend (see, for example, Abadie, 2005; Angrist and Pischke, 2008; Cameron and Trivedi, 2005; Wooldridge, 2010).

*Figure following on the next page*

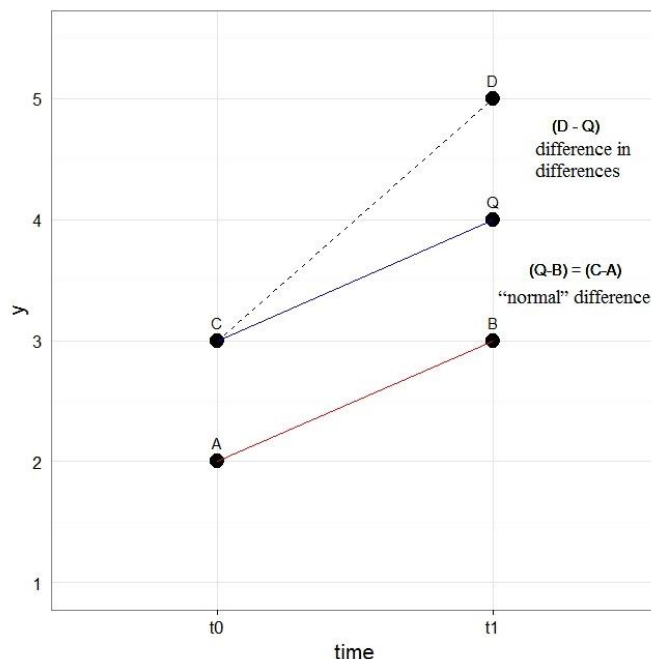


Figure 4: Graphical display difference in differences approach (Source: own)

Entire differences (D-B) between the experimental and control group cannot be attributed to the treatment effect, but can be divided into the so-called normal difference and the difference due to the treatment. The difference (Q-B) is called the normal difference between the experimental and control group, assuming the same trend for both groups. The difference (D-Q) represents the difference in difference, which is the consequence of the treatment that influenced the experimental group.

#### 4. RESULTS AND DISCUSSION

The total revenue of companies by Slovene statistical regions for the period from 2008 to 2013 is shown in Table 1. The cohesion region east includes the following statistical regions: pomurska, podravska, koroška, savinjska, zasavska, spodnjeposavska, Jugovzhodna Slovenija and notranjsko-kraška. The cohesion region west includes: osrednjeslovenska, gorenjska, goriška and obalno-kraška statistical region. In 2008, the total revenue of companies amounted to slightly more than EUR 95.7 billion. In 2009, the total revenue of companies fell to EUR 12.7 billion. Since 2010, the revenue of the companies resumed growth and then stopped at the level of slightly more than EUR 90.6 billion.

*Table following on the next page*



*Table 1: The revenue of companies by Slovene statistical regions (in EUR 1,000) (Source: SORS)*

Region	2008	2009	2010	2011	2012	2013
1 Pomurska	2.680.297,00	2.300.870	2.305.183	2.465.324	2.614.531	2.586.961
2 Podravska	10.955.344	9.192.508	9.632.117	10.092.168	9.863.598	9.921.337
3 Koroška	2.283.660	1.752.658	1.840.289	2.058.025	2.020.237	1.955.144
4 Savinjska	10.013.476	8.684.502	8.973.184	9.552.070	9.208.415	9.231.086
5 Zasavska	926.541	805.109	819.968	853.627	810.746	768.467
6 Posavska	2.049.176	2.000.585	2.155.738	2.689.568	3.171.426	2.934.390
7 Jugovzhod.Sl	5.961.848	5.422.208	5.728.914	5.685.051	5.395.271	5.101.823
8 Osrednjeslov.	42.402.573	37.744.272	39.188.142	40.716.582	41.303.727	41.831.525
9 Gorenjska	7.185.300	5.822.294	6.213.259	6.437.932	6.456.508	6.340.948
10 Primorsko-n.	1.303.637	1.120.466	1.209.091	1.278.751	1.255.205	1.299.626
11 Goriška	4.448.113	3.670.648	3.885.528	4.028.942	3.837.850	3.709.795
12 Obalno-kraš.	5.576.322	4.544.093	4.753.790	4.931.631	4.752.540	4.893.092
Total	95.786.287	83.060.213	86.705.203	90.789.671	90.690.054	90.574.194

Osrednjeslovenska statistical region deviates from other regions significantly according to companies' revenue. In 2008, the osrednjeslovenska statistical region was accounted for 44.3% of the total companies' revenue, while the zasavska statistical region was accounted for only 1% of the total companies' revenue. In 2008 the total revenue of companies in the East cohesion region amounted to 37.8% (37.3% in the year 2013), while the total revenue of companies in the Western region amounted to 62.2% (62.7% in the year 2013). Figure 5 shows the revenue of companies for the Eastern and Western cohesion regions during the period 2008 - 2013. The difference in companies' revenue in the cohesion regions is immense, there is also a great gap in the development. From Figure 5 it is clear that after the decrease of the companies' revenue in both mentioned cohesion regions, the latter began to increase in 2009. The increase of companies' revenue was higher in the Eastern cohesion region than in the Western cohesion region in 2011, however, after the year 2011 the growth of companies' revenue in the Eastern cohesion region resumed to decrease.

*Figure following on the next page*

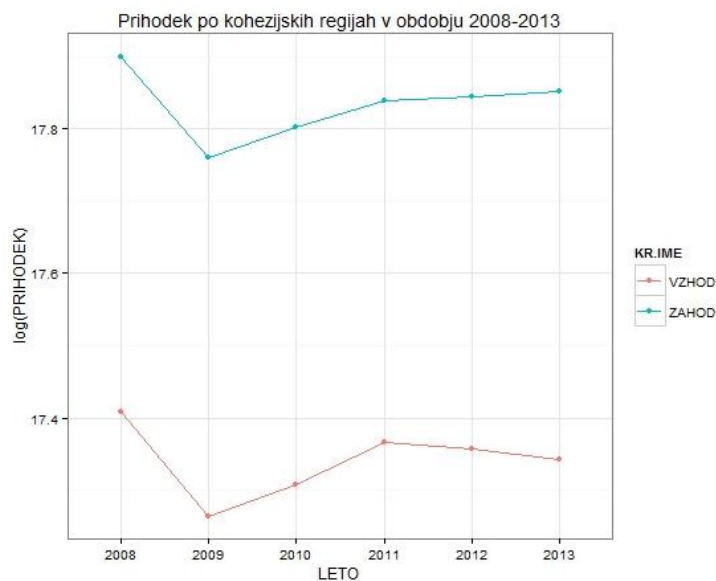


Figure 5: The revenue of companies for the Eastern and Western cohesion regions, 2008 – 2013  
 (Source: SORS)

The average revenue of companies in the researched period between 2008 - 2013 (Figure 6) in some municipalities in the pomurska statistical region, significantly deviates downwards, while the average revenue significantly deviates upwards in some municipalities of the podravska and osrednjeslovenska statistical regions.

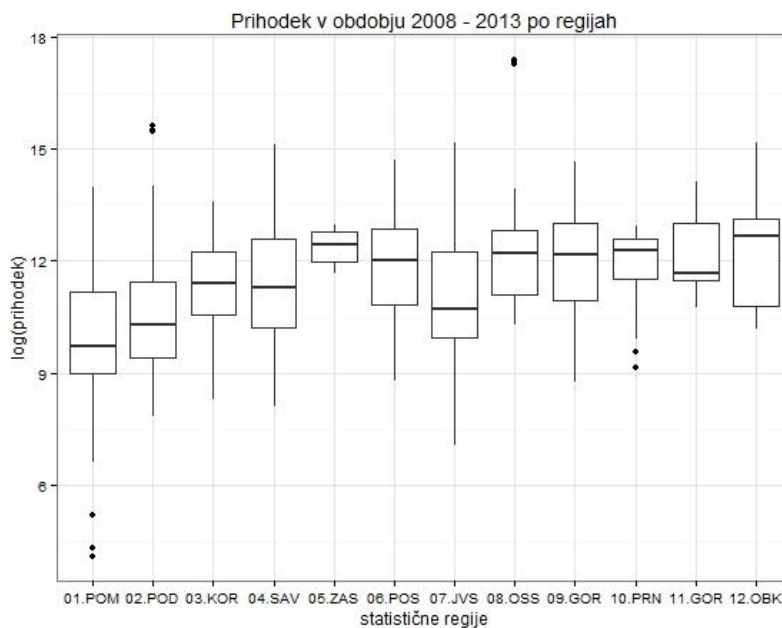


Figure 6: The average revenue of companies in the statistical region in the period 2008 – 2013  
 (Source: SORS)



Table 2 shows the number of employees in the Slovene statistical regions. The number of employees has been continuously decreasing since 2008 until 2013. In the year 2008, the number of employees was 789,870, and 698,167 in 2013, which represents a decrease in the number of employees by 11.6%. During the observed period the dynamics of the decrease in the number of employees in the statistical regions remained approximately the same, especially pronounced was the decline of employees in the year 2009, as a result of the economic crisis and the fact that changes in the labour market appear with a delay.

*Table 2: The number of employees in Slovene statistical regions (Source: SORS)*

Region	2008	2009	2010	2011	2012	2013
1 Pomurska	36.002	34.193	32.387	32.045	31.819	30.881
2 Podravska	114.924	109.830	106.704	103.719	100.775	97.976
3 Koroška	24.211	22.824	21.541	20.988	20.990	20.314
4 Savinjska	98.978	95.590	92.069	89.370	87.398	85.063
5 Zasavska	12.264	11.556	11.118	10.719	10.293	9.766
6 Posavska	21.189	20.718	19.909	19.052	18.649	18.084
7 Jugovzhod. Sl.	50.681	48.499	47.147	45.646	43.975	43.092
8 Osrednjeslovenska	261.020	258.914	254.839	250.815	251.343	246.234
9 Gorenjska	67.255	64.342	63.254	61.720	60.067	59.332
10 Primorsko-n.	16.342	16.312	15.795	14.790	14.090	13.756
11 Goriška	44.636	42.498	40.904	39.713	38.441	36.966
12 Obalno-kraška	42.368	42.105	41.530	40.468	38.651	36.703
Total	789.870	767.381	747.197	729.045	716.491	698.167

Figure 7 displays the income per employee in the statistical region. The revenue of the companies, expressed in nominal value do not offer an objective comparison between the territorial units, as the number of employees by these units differs as well. During the observed period between 2008 - 2013, the posavska statistical region recorded significant growth of revenue per employee, while in other regions of the Eastern cohesion region, there is no such detectable growth dynamics of revenue per employee.

*Figure following on the next page*

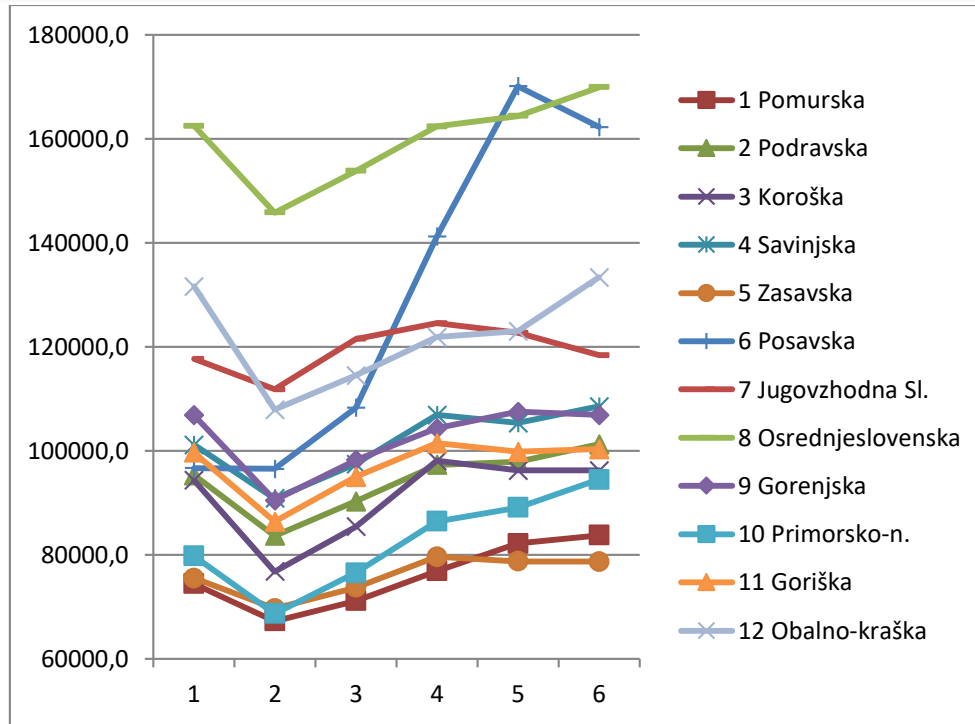


Figure 7: The income per employee in the statistical region (Source: SORS)

The econometric analysis of the absorption effect of European cohesion funds based on the companies' revenue in Slovene municipalities is based on the difference in differences approach. For the calculation of the causal effect we used the freely available software R, in which we have developed a software code for the calculation of the difference in differences. The outcome of interest of companies' revenue is substantively connected to the objective of the development of the company's competitive priorities and research excellence (KPR) of the operational programme for Strengthening the Development Potential as well as the objective of priorities development to encourage entrepreneurship (POD) by the operational programme Human Resource Development. We considered the received resources of both mentioned development priorities, which are substantively related to entrepreneurship. In the period 2008 - 2013, more than EUR 944 million have been disbursed, from both of the development priorities (Table 3).

Table 3: Disbursed European cohesion funds (Source: ISARR)

Year	KPR	POD	Total
2008	85.343.869	24.195.456	109.539.325
2009	256.580.743	61.755.281	318.336.024
2010	139.460.596	97.679.022	237.139.618
2011	179.581.338	23.719.323	203.300.661
2012	7.982.133	14.839.913	22.822.046
2013	41.531.424	11.680.771	53.212.195
Total	710.480.103	233.869.766	944.349.869

The receipt of European cohesion funds for the Competitiveness Operational Programme for companies and research excellence (KPR) and the promotion of entrepreneurship (POD) at the level of municipalities in a given year, constitutes as a criterion for the classification of municipalities into either the experimental or the control group. On the basis of the econometric analysis we want to verify whether the absorption of the European cohesion funds, of both mentioned development priorities in local environments increases the revenue of the companies in these environments, in comparison with the companies in environments where there is no absorption. The results are presented in Table 4.

*Table 4: Difference in differences calculation (in EUR 1,000) (Source: own calculations)*

Period	Control group	Experimental group	Difference
<i>2008-2009</i>			
Before	67.897	844.354	776.457
After	58.326	732.724	674.398
Difference	-9.571	-111.630	-102.058
<i>2009-2010</i>			
Before	57.736	733.314	675.578
After	60.680	765.084	704.403
Difference	2.945	31.770	28.825
<i>2010-2011</i>			
Before	95.942	1.328.485	1.232.542
After	103.101	1.383.442	1.280.340
Difference	7.159	54.957	47.798
<i>2011-2012</i>			
Before	131.577	1.710.540	1.578.963
After	129.356	1.715.490	1.586.135
Difference	-2.221	4.950	7.172
<i>2012-2013</i>			
Before	98.388	1.209.175	1.110.787
After	97.367	1.209.764	1.112.397
Difference	-1.020	589	1.610

Based on the econometric analysis, we calculated the causal effect of the absorption of the European cohesion funds based on the revenue of companies in Slovenian municipalities and discovered that there was, with the exception during the period 2008 - 2009, a positive effect (for example, in the period of 2009 - 2010 the effect amounted to EUR 28,825,000). Based on the results we can conclude that there is a positive relationship between the absorption of the European cohesion funds along with the revenue of companies and that they were used effectively, with the exception of the period 2008 - 2009. On the other hand, the results show that the impact of received European cohesion funds is becoming smaller from year to year, but remains positive.

The effects of received European cohesion funds usually appear over time, but there are also the general economic conditions, which influence the results. The economic crisis has also affected the reduction of investments, weakened the domestic demand and unemployment, and thus impacted the revenue of companies in the observed local environments. Based on the obtained results, we conclude, that municipalities, which belong to the Western cohesion region, are more effective with the absorption of European cohesion funds in comparison with the municipalities belonging to the East cohesion region.

## 5. CONCLUSION

The European cohesion policy is intended to reduce the differences in development between the Member States of the community. The short-term effects of gained European cohesion funds are important, because it means a financial inflow for the recipient countries. The long-term effects should be implemented through projects that achieve set objectives, defined in the operational programme, which is the basis for the disbursement of funds. However, the effectiveness of cohesion funds absorption does not necessarily mean the fulfilment of long-term objectives pursued by the cohesion policy. In the new programming period, the European Commission encourages the record-based policy making by using counterfactual impact evaluations. In this article we evaluated the effect of the European cohesion funds absorption on the companies' revenue in Slovenian municipalities. The outcome of interest revenue of companies is substantively connected with the objective of the development of the company's competitive priorities and research excellence within the operational programme for Strengthening the Development Potential as well as the objective of development priorities to encourage entrepreneurship with the operational programme Human Resource Development, all of which was considered whilst calculating the difference in differences. During the observed period 2008 - 2013, with the exception of the period 2008 - 2009, the causal effect of the European cohesion funds absorption on companies' revenue in the Slovene municipalities, is positive, although this effect is lower each year. On the basis of data analysis, we also found that the municipalities of Western cohesion regions are more efficient in absorption of the European cohesion funds in comparison to the municipalities belonging to the Eastern region, which only confirms a known fact for Slovenia, namely the developed Western part and less-developed Eastern part.

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## **DIVESTITURE, CORPORATE PERFORMANCE AND OWNERSHIP EXPROPRIATION: EVIDENCE ON MALAYSIA PUBLIC-LISTED COMPANIES**

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### **ABSTRACT**

*This paper investigates the impact of divestiture strategy on Malaysia listed company performance. This paper attempts to determine ownership expropriation and use of proceeds associated based on the Agency Theory. We consider a sample of more than 100 companies between 2008 and 2013. We focus on Malaysia listed firm which is developing country. Our findings provide that return on asset as accounting measures performance will tend to increase when divestiture strategy is adopted while Tobin's q as market-based measures performance will decrease when divestiture strategy is used by firm.*

**Keywords:** *Corporate Governance, Divestiture; Firm Value; Ownership Structure*

### **1. INTRODUCTION**

Earlier studies in the performance of corporate strategy emphasizes on diversification strategy (e.g. Denis et al, 1997; Khanna and Palepu, 2002; Denis et al, 2002; Lins and Servaes, 2002; Fauver et al, 2004; Chen and Yu, 2012; Lee et al, 2012). Thus far most of the existing literature has rarely discussed divestiture strategy in optimizing firm's performance. Comparatively, firms are most likely doing divestiture through selling business operation or restructuring more often rather than diversification. It is the solution in the restructuring of firms and industries during the 1990s in the United States. Divestiture strategy is normally used to channel firm focus on core businesses



especially when economic downturn. According to Lang, Poulsen, & Stulz, (1995) and Shleifer & Vishny (1992), firms could depend on divestiture as an alternative way to raise fund for paying back their debts. Firms could also use divestiture to rectify past investment mistakes by put resources back to their best use (Hearth & Zaima, 1984; Hite, Owers, & Rogers, 1987).

In addition, divestitures of such tangible corporate assets are indication of efficient transfers of corporate resources to enhance shareholder wealth (Weston, Mitchell, & Mulherin, 2003). By pruning through divestiture, not only could stimulate corporate growth, also may solve the managerial problem (Schmidt, 1987). In fact, Moschieri and Mair (2011) argued that divestitures were efficient strategic decisions that could improve market performance by enhanced profitability and corporate reputation. Moreover, many studies found positive and significant relationship between divestitures and company performance (Hanousek, Kocenda, & Svejnar, 2009; Owen, Shi, & Yawson, 2010; Sun, 2012; Lee, Nor, & Alias, 2013; Nguyen, 2013). This is consistent with past event studies indicated that the market reaction to divestiture announcements was positive (Hearth & Zaima, 1984; Hite et al., 1987).

This trend of divestiture has been followed by some Malaysian firms in the era after the few years after the economic downturn which was due to devaluation of Ringgit Malaysia in 1997 such as Telekom Malaysia (TM) and Land and General (L&G). In 2011, the Malaysia's Government had identified 33 government-linked firms were under the divestment programmer. There is also Malaysian family owned such Computer Sciences Corporation, also took divestitures as a strategy and aimed at selling its non-performing businesses and investing that capital in next generation technology solutions and services. Those cases in Malaysia reminds us with earlier divestiture in developed countries such as Home Depot, Praxair Inc, Good Technology, Campbell, PepsiCo, Westinghouse, and might be Cognizant.

This study aims to explore the merits of divestiture strategy in Malaysia companies across different ownership expropriations and industry sectors. We believe that studying influence of divestiture on firm performance is an important and timely addition to corporate value research. We explore on the moderating roles of ownership expropriation. Not only ownership concentration is analyzed. Moreover, we also control some elements that will give effect to the corporate value. In this paper, three control variables are controlled such as size, leverage, and growth.

In the following section, we briefly explain the literature and theoretical by exploring the association between divestiture strategy and firm performance across the ownership expropriation. We empirically test our hypotheses using a sample of Malaysia listed companies for the period 2008 until 2013. Next, we present research methodology and discuss the research findings. Finally, the research findings are summarized, followed by compilation of limitations for the study, and recommendations for future study.

## **2. THEORY AND HYPOTHESES**

### **2.1 Divestiture**

We define divestiture actions as the restructuring cost, discontinue operation, discontinue of line of business and discontinue geographic region in order to increase firm efficiency. Divestiture played an important role in nurturing economic efficiency over the last century (Maksimovic, Phillips, & Prabhala, 2011; Ravenscraft & Scherer, 1987). There are different arguments to define the divestiture strategy. Some of previous studies found that divestiture strategy may involve activities such as changing of asset structure, discontinuing of line of business, discontinuing geographic region, and changing top management (Ofek, 1993; Khan & Mehta, 1996; John &

Tina, 1999). Moreover, John & Tina (1999) also documented that divestiture involved the actions such as disposal of a division in any subsidiary company.

Early divestiture studies focused on divestiture announcement, in general, divestiture is positively related to company performance (Jain, 1985). According to Jain (1985) and Sicherman and Pettway (1992) showed that when the asset sales were announced, the divesting firm shareholders received significant excess returns of about 1.3%. This is consistent with event studies indicated that the market reaction to divestiture announcements was positive (Alexander, Benson, & Kampmeyer, 1984; Gleason, Mathur, & Singh, 2000; Hearth & Zaima, 1984; Hite et al., 1987; Owen, Shi, & Yawson, 2010). In addition, a lot of studies also concur positive association between divestiture and company performance (Hanousek, Kocenda, & Svejnar, 2009; Owen, Shi, & Yawson, 2010; Sun, 2012). Recently, Lee et al. (2013) posited that divesting companies in Malaysia would lead to increased firm value. Furthermore, Schlingemann et al. (2002) argued that firms with a higher excess value were less likely to divest while others determined insignificant association (Alexander, Benson, & Kampmeyer, 1984).

Generally, companies that adopt the divestiture strategy will improve the company performance according to the wealth-maximizing hypothesis. In addition, Hofstede (1980) and Donaldson and Davis (1989) stated that managers act as stewards for the corporate and in the best interests of the principals and not motivated by individual scope. However, firms may forego value enhancing divestitures because of agency problems. Agency theory could be most suitable theory to explain the corporate restructuring (Markides and Singh, 1997; Lee, Nor and Alias, 2013). The agency theory suggests that managers tend to be maximize their own personal utility at shareholders' expense. As such, Lang et al. (1995) argued that managers would be unwilling to divest assets that would harm their personal interest. Moreover, Denis and Shome (2005) found managers would hesitate to run divestiture actions under their control since managers' personal profits increased with company size. As a result, company performance might deteriorate because of the agency problem. This study then hypothesizes that the relationship between divestiture and firm performance would be significant and positive.

*H<sub>1</sub>: There is a positive significantly relationship between divestiture and firm performance.*

*H<sub>1a</sub>: There is a positive significantly relationship between divestiture and return on asset.*

*H<sub>1b</sub>: There is a positive significantly relationship between divestiture and Tobin's q.*

## **2.2 Ownership Expropriation**

In this study, ownership expropriation was investigated as moderate variable in order to find out the relationship between divestiture strategy and corporate value. Firstly, ownership concentration was denoted by ultimate ownership (UO) to determine the impact of ownership concentration towards the firm value. From the previous researcher, we realized that firms generally with high concentrated ownership might be detrimental to firm performance due to agency problem (Shleifer and Vishny 1997; Baek et al. 2004). In addition, several researcher such as Lins and Servaes (2002) Filatotchev and Toms (2003) and Pajunen (2006) found that poor decision that owner decides based on their interest without concern with the interest of minority shareholders tend to have discount value to the performance.

This can be explained by agency theory. Normally large ownership represent their own interest, which does not need to coincide with the interest of minority shareholders (Shleifer and Vishny, 1997). This is consistent with Barclay and Holderness (1989) who documented that large ownership stakes reduce the probability of bidding by other agents or ignoring other better firms outside the group, choosing related party, thereby reducing the value of firm. More specifically,

large controlling shareholders may prefer to retain the assets in order to extract private benefits of control at the expense of minority shareholders. This explained why divestiture firms with high ownership concentration tend to have discounted value.

*H<sub>2</sub>: There is a negative significantly relationship between ownership concentration and divestiture firm performance.*

### 3. METHODS

#### 3.1 Data and sample

This study primarily focuses on the divestiture strategy in Malaysia. We use a sample of Malaysia listed firms to examine divestiture in the years 2008 until 2013. This study removes industries that classified as financial and investment institutions as their ways of financing are significantly different from those of firms from other industries. Data used in this study is from annual report for each companies and financial database compiled from Thompson Reutter DataStream. We focus on Malaysia firms listed on Kuala Lumpur Exchange main market. Our final sample cover around 100 held publicly listed firms on the Malaysian main board of Bursa Malaysia with the total pooled observations of 600 firm years over the period of six years with complete data. Besides that, firms that have missing data throughout the six-year period from 2008 until 2013 are removed from the initial sample. The firm performance such as Tobin's q and ROA, divestiture and ultimate ownership data are retrieving from the annual reports of the sample firms. The ultimate ownership data is retrieved from the annual reports of the sample firms. The ultimate ownership is determined through the list of substantial shareholders.

#### 3.2 Measures

*Firm Performance.* We measure our dependent variable, firm performance, as (1) Tobin's Q (Chung & Pruitt, 1994; Thomas & Waring, 1999; Morrow, Johnson, & Busenitz, The effects of cost and asset retrenchment on firm performance: the overlooked role of a firm's competitive environment., 2004), and (2) return on assets (ROA) (Meeks & Meeks, 1981; Schmitt & Raisch, 2013). Tobin's Q is measured as the sum of the market value of equity, the book value of debt, and deferred taxes divided by the book value of total assets. This type of measurement is an appropriate indicator of the perceived ability of the firm's strategy to achieve the required returns of investors (Woo, Willard & Daellenbach, 1992). Meanwhile, ROA is the earnings before interest tax and amortization (EBITA) divided by total assets. ROA indicates how a firm's wealth is relative to its total assets, and shows how efficient management is at using its assets to generate earnings.

*Divestiture.* We estimate divestiture by calculate the total cost of restructuring, discontinue operation expenses, discontinue of product segment and discontinue geographic region. The related data about the action through divestiture strategy can be retrieved from annual reports of the sample firms. The annual reports will be downloaded from the Bursa Malaysia website. Normally, the data will be retrieved from the notes of financial statement that explain the company revenue. Divestiture strategy is a popular strategy for firms to focus on their own core businesses and become less diversified. Divestiture can get rid of an unprofitable organization of businesses, that require too much capital, or that do not fit well with the firm's other activities (David, 2013). Actions taken in divestiture including restructuring cost, discontinue operation, discontinue of product segment and discontinue geographic region. For example, Louisville, Kentucky, the maker of Jack Daniel's whiskey, Brown-Forman Corp., is trying to divest its wine business, which

consists of weight wine brands that generated \$310 million in sales in fiscal 2011 to improve their sales and profit. The formula is as follow:

$$DIV = \text{cost of restructuring} + \text{discontinue operation expenses} + \text{discontinue of product segment expenses} + \text{discontinue of geographic region expenses}$$

*Ownership expropriation.* Ultimate Ownership as a moderate variable. This study takes ultimate ownership (UO) to represent ownership structure in aligning with the objective of this study, which is to investigate how divestiture may affect the value of a firm across its ownership structure. Prior research of Claessens et al. (2002) showed that ownership concentration can be measured by using the control rights of the ultimate owner of the largest shareholder, which consists of direct and indirect shareholdings, as a proxy for UO. We estimate the ultimate ownership value by review the firms' annual report through the list of substantial shareholders.

$$UO = \text{the ultimate owner's total direct shareholdings of the company} + \text{the ultimate owner's total indirect shareholdings of the company}$$

Since there is a lot of firms in Malaysia that are owned indirectly through a chain of family held firms. There is only indirect shareholding by the ultimate owner when the gap between the cash flow and control rights arises. UO2 is added to investigate whether or not the relationship between ultimate ownership and firm value is nonlinear or not. Prior researcher documents that there is a non-linear relationship existed (Morck, Shleifer, & Vishny, 1988; Wiwattanakantang, 2001; Cui & Mak, 2002; Davies, Hillier, & McColgan, 2005).

*Controls.* There are three control variables in this study. Company size (SIZE) was the natural logarithm of a company's total fiscal year assets as the proxy of firm size (Bain, 1968; Zimmerman, 1983; Berger & Ofek, 1995; Firth, M.; Fung, P.; Rui, O.M., 2006a; Firth, Fung, & Rui, 2006b; McClelland, Liang, & Barker, 2010; Schmitt & Raisch, 2013). In past research study, size was a factor that majorly used to determine the firm value. We use the logarithm of total assets (LTA) to control for company size and expected positive relationship with company performance. Second, a growth opportunity was measured by the capital expenditure to sales ratio (CES). A positive and significant relationship between CES and firm value is expected. Likewise, Lins and Servaes (1999), Chen and Hambrick (2012), Schmitt and Raisch (2013), Lim, Celly, Morse and Rowe (2013), and Vithessonthi and Tongurai (2015) showed the leverage is computed with book value of debt over the total assets. In this paper, LEV is expected to be positively related to company performance.

### 3.3 Analysis

We select around 100 Malaysia listed firm as sample of divested firms in this study. The descriptive statistics and correlations for the final sample of the divested firms are provided in Table 1, indicating no significant issue in terms of correlations between key variables. This approach provides three control variables referred to as log of assets, leverage, and capital expenditure sales ratio. Furthermore, the highest variance inflation factor (VIF) in the regression model was 8.94 which less than 10, indicating no multicollinearity concerns. Perhaps most commonly, a value of 10 had been recommended as the maximum level of VIF (Hair, Anderson,

Tatham, & Black, 1995; Kennedy, 1992; Marquardt, 1970; Neter, Wasserman, & Kutner, 1989) to stable the variance of the regression estimates.

In Table 1, the performance either ROA or TOBINSQ are negatively correlated with the divestiture strategy. STATA command was used to analyze the data in all cases. In this paper, panel regression involve running several OLS models. We test the divestiture effect on return on asset (Hypothesis 1a) by hierarchical inclusion of the interaction terms in the OLS regression models. First, we include the control variables. Then, we add the main effect (divestiture). Lastly, we test the moderation effects of ultimate ownership on divested firm performance using a hierarchical regression analyses, which involved TOBINSQ and ROA.

**Table 1**  
**Summary of descriptive statistics**

Summary report shows the descriptive statistics for our sample of 600 Malaysia listed firm-years between 2008 and 2013. For mean values show the coefficient and values in parentheses are standard deviations while SW-t test refers to the Satterthwaite-Welch t-test and values in parentheses are standard error. \*, \*\*, \*\*\* Denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Code	Mean	SW-t test					
		TOBINSQ	ROA	LTA	CES	LEV	RET
<b>TOBINSQ</b>	0.1653 (0.14508)						
<b>ROA</b>	0.1181004 (0.2595)	0.0472 (0.0121)***					
<b>LTA</b>	5.5169 (0.5456)	-5.3516 (0.0230)***	-5.3988 (0.0247)***				
<b>CES</b>	0.0673 (0.1106)	0.0981 (0.0075)***	0.0508 (0.0115)***	5.4497 (0.0227)***			
<b>LEV</b>	0.4494 (1.8893)	-0.2841 (0.0774)***	-0.3313 (0.0779)***	5.0675 (0.0803)***	-0.3822 (0.0773)***		
<b>DIV</b>	5.2594 (0.8439)	-5.0940 (0.0350)***	-5.1413 (0.0360)***	0.2576 (0.0410)***	-5.1921 (0.0347)***	-4.8099 (0.0845)***	

## 4. RESULTS

### 4.1 ROA and divestiture strategy

*ROA and divestiture strategy.* We hypothesize that divestiture is positively associated with performance in measurement of return of asset ratio (Hypothesis 1a). We use the final sample of Malaysia listed companies to test this hypothesis. **Table 2** reports the result of the three model of the ROA regression. Firstly, we control the regression by using three control variable. Three models results show that LTA (-0.3545) and LEV (-0.0101) are negative and significant related to the ROA, 10% and 1% level respectively. However, CES (0.5756) is significantly positive relationship with the ROA in the three models.

Furthermore, the estimated coefficients on divestiture variable in model (2) and model (3) are positive and significant with the ROA. For model (2) and model (3), a unit increase in DIV leads to a 0.04 unit change in the ROA. This is consistent with our hypothesis states that there is a positive significantly relationship between divestiture and return on asset. This is supported by several researcher such as Alexander, Benson, & Kampmeyer (1984), Gleason, Mathur, & Singh, (2000), Hearth & Zaima (1984), Hite et al. (1987), Owen, Shi, & Yawson, (2010) who determined



a positive association between divestiture announcement and company performance. Recently, Lee et al. (2013) posited that divesting companies in Malaysia would lead to increased firm value.

**Table 2**  
**Panel regression estimates of ROA**

Table 2 presents the coefficient value, with standard error in parentheses. Three control variables that affect ROA such as LTA is the log of assets (firm size); CES is the capital expenditure to sales ratio (growth opportunities); LEV is the ratio of debt to common share equity (leverage). DIV is the divestiture strategy; UO is the ownership concentration. \*, \*\*, \*\*\* Denote statistical significance at the 10%, 5%, and 1% levels, respectively. Results for ROA is as follows:  
 $ROA_{i,t} = \beta_0 + \beta_1 LTA_{i,t} + \beta_2 CES_{i,t} + \beta_3 LEV_{i,t} + \beta_4 DIV_{i,t} + \beta_5 UO_{i,t} + \beta_6 UO2_{i,t} + \varepsilon_{i,t}$

ROA	Model 1	Model 2	Model 3
_CONS	2.0405 (0.1074)***	2.2548 (0.5977)***	2.2683 (0.6336)***
LTA	-0.3545 (0.1074)***	-0.4308 (0.1127)***	-0.4382 (0.1139)***
CES	0.5756 (0.1320)***	0.5699 (0.5699)***	0.5732 (0.1358)***
LEV	-0.0101 (0.0056)*	-0.0100 (0.0055)*	-0.0100 (0.0056)*
DIV		0.0394 (0.0183)**	0.0387 (0.0183)**
UO			0.0002 (0.0084)
UO2			0.0000 (0.00001)
R2	0.0031	0.0031	0.0028

Moreover, we find that UO is not significantly with the ROA. This results reject our hypothesis 2 which has mentioned that there is a negative significantly relationship between ownership concentration and divestiture firm performance. This indicates that divested firms with different concentrated ownership do not affect to the firm performance. This is supported by Lins and Servaes (1999), Caprio, Croci, and Del Giudice (2011), and Lee, Hooy and Hooy (2012) who also found that there was no relationship between ownership concentration and firm performance.

#### 4.2 Tobin's Q and divestiture strategy

*Tobin's q and divestiture strategy.* For robustness test, we consider the Tobin's q. We hypothesize that Tobin's q would be positively related to divestiture strategy (Hypothesis 1b). We use the same sample of ROA firms to examine hypothesis 1b. In **Table 3**, there are three models in which model 4 is baseline model; model 5 that includes divestiture variable; and model 6 is model with interactive variable. We find that all the control variables are significant and positive relationship with the Tobin's q in the three models. This is similar with our expectation.



Table following on the next page

**Table 3**  
**Panel regression estimates of Tobin’s q**

Table 3 shows the coefficient value, with standard error in parentheses. Three control variables that affect Tobin’s q such as LTA is the log of assets (firm size); CES is the capital expenditure to sales ratio (growth opportunities); LEV is the ratio of debt to common share equity (leverage). DIV is the divestiture strategy; UO is the ownership concentration. \*, \*\*, \*\*\* Denote statistical significance at the 10%, 5%, and 1% levels, respectively. Results for Tobinsq is as follows:  $Tobinsq_{i,t} = \beta_0 + \beta_1 LTA_{i,t} + \beta_2 CES_{i,t} + \beta_3 LEV_{i,t} + \beta_4 DIV_{i,t} + \beta_5 UO_{i,t} + \beta_6 UO2_{i,t} + \varepsilon_{i,t}$

Tobinsq	Model 4	Model 5	Model 6
_CONS	-0.7101 (0.0269)***	-0.8691 (0.1440)***	-0.9299 (0.1523)***
LTA	0.1569 (0.0494)***	0.2136 (0.02715)*	0.2188 (0.0326)***
CES	0.0562 (0.0331)	0.0604 (0.0128)***	0.0675 (0.0675)**
LEV	0.0129 (0.0014)***	0.0128 (0.0013)***	0.0128 (0.0013)***
DIV		-0.0292 (0.0044)***	-0.0290 (0.0044)***
UO			0.0020 (0.0020)
UO2			0.0000 (0.0000)
R2	0.0687	0.0734	0.0727

The estimated coefficients on divestiture variable is negative in all the Tobin’s q regression results. There is a strong significant relationship between the DIV and Tobin’s q, at the 1% levels. This result is different with our hypothesis. The agency theory can be one of the explanation of this result. This is supported by Lang et al. (1995) and Denis and Shome (2005), company performance might deteriorate because of the agency problem. Lastly, in **Table 3** also documents that there is no significant relationship between UO with Tobin’s Q which similar with **Table 2**. This indicates that concentrated ownership of divested firms does not affect to the firm performance.

## 5. DISCUSSION

This study aims to examine the performance of divestiture strategy. Significantly, we find that divestiture has a positive impact on ROA. This positive effect is amplified because firm divested all the unprofitable organization of businesses, that required too much capital, or that did not fit well with the firm’s other activities in order to get rid (David, 2013). According to the wealth-maximizing hypothesis, the firm value would increase by eliminate the unprofitable asset or operations and manager act as stewards for the corporate (Hofstede, 1980; Donaldson and Davis, 1989). This is supported by several researcher such as Alexander, Benson, & Kampmeyer

(1984), Gleason, Mathur, & Singh, (2000), Hearth & Zaima (1984), Hite et al. (1987), Owen, Shi, & Yawson, (2010) who determined a positive association between divestiture announcement and company performance. Moreover, Lee et al. (2013) posited that divesting companies in Malaysia would lead to increased firm value.

For Tobin’s q, we expect that divestiture will have a positive impact on performance. However, our results are not consistent with this view. A number arguments can be deployed to explain this result. Based on agency theory, agency problem may occur between shareholder and managers. Generally, divestiture happens when the firm face poor situation in economic. Tobin’s q market-based measures will be influence on the news or actions of the divestiture. Firstly, managers tend to maximize their own personal utility at shareholders’ expense (Jensen and Meckling 1976; Baker and Anderson, 2010). Besides, Lang et al. (1995) argued that managers would be unwilling to divest assets that would harm their personal interest. Moreover, shareholders may sell the shares of company to ensure their profit. Therefore the share price and market value of firm may decrease. For the ownership expropriation, even though there is a lot of researchers who find that ownership expropriation play its important monitoring role in either reducing or increasing agency problems. However, our result shows that UO is not significantly with the ROA. This indicates that divested firms with different concentrated ownership do not affect to the firm performance. This is consistent with Lins and Servaes (1999), Caprio, Croci, and Del Giudice (2011), and Lee, Hooy and Hooy (2012).

**Table 4**  
**Panel regression estimates of firm value ROA and Tobin’s Q**

Table 4 documents the comparison between ROA and Tobin’s q. The value reports is the coefficient value, with standard error in parentheses. The expected sign is the expectation from the hypothesis. Three control variables that affect Tobin’s q such as LTA is the log of assets (firm size); CES is the capital expenditure to sales ratio (growth opportunities); LEV is the ratio of debt to common share equity (leverage). DIV is the divestiture strategy; UO is the ownership concentration. \*, \*\*, \*\*\* Denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Expected sign	ROA	Tobinsq
<b>_CONS</b>		2.2683 (0.6336)***	-0.9299 (0.1523)***
<b>LTA</b>	+	-0.4382 (0.1139)***	0.2188 (0.0326)***
<b>CES</b>	+	0.5732 (0.1358)***	0.0675 (0.0675)**
<b>LEV</b>	+	-0.0100 (0.0056)*	0.0128 (0.0013)***
<b>DIV</b>	+	0.0387 (0.0183)**	-0.0290 (0.0044)***
<b>UO</b>	+	0.0002 (0.0084)	0.0020 (0.0020)
<b>UO2</b>	+	0.0000 (0.00001)	0.0000 (0.000)

In sum, our study highlights on the divestiture strategy may influence the performance in different way. Agency theory could be most suitable theory to explain the corporate restructuring (Markides and Singh, 1997; Lee, Nor and Alias, 2013). Our findings provide that accounting measures

performance will tend to increase when divestiture strategy is adopted while market-based measures performance will decrease when divestiture strategy is used by firm. Specifically, our work demonstrated the importance of divestiture strategy. Divestiture strategy generally should bring efficiency to firm by selling the unprofitable operations and assets. However, there might be factor caused by agency problems and thus incur agency costs, which will drag down the firm performance. Therefore, the firms should be careful when adopt the divestiture strategy. The findings of this study provide guidelines to Malaysian firms and managers when using divestiture strategy. In the future, a few extensions can be built such as divestiture strategy might be categorised based on different actions. This could be extended to other countries as well, particularly, East Asian countries and investigate beyond the industry.

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## DO EU STOCK MARKETS BEHAVE LIKE GLOBAL STOCK MARKET?

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### **ABSTRACT**

*The paper explains the dynamics of the main European market indices across quantiles during analysed period from January, 4, 2000 to November, 11, 2016. We analyse the dependence structure between European stock markets and influential global markets: the S&P 500 index, the RUSSELL 1000 market index, the Shanghai A-Share Stock Price Index SHASHR, the stock market uncertainty VIX and spot exchange rate of gold in USD using quantile regression approach. Our results show that EU stock markets exhibit asymmetric dependence with the Russian stock markets. S&P 500 returns move in the opposite direction to the analysed European stock markets. The Chinese market has a statistically significant effect on the analysed markets especially during bear markets. As the only influences the examined markets show across the entire quantiles except quantiles 95% and 99%. The stock market uncertainty (VIX) has a significant negative weak influence across selected analysed quantiles. Our findings may have implications for international investors in terms of risk management, which should vary according to changes in global financial markets.*

**Keywords:** *quantile regression, asymmetric, symmetric dependence, world markets, EU market*

### **1. INTRODUCTION**

Financial markets help to efficiently direct the flow of investment in the economy. The combination of well-developed financial markets and institutions, as well as a diverse array of financial products and instruments, suits the needs of investors and therefore the overall economy. Current dynamically changing political situation like sanctions against Russia, Brexit UK, the elections of the president of USA have raised interest of many researchers about the dependencies of the financial markets on these events. Our analyses are motivated by these facts. Actual financial conditions are transmitted to the EU stock markets and affect the economic growth. Our main interest is to discover co-movement of European and world markets.

This paper contributes to the existing literature by using a quantile regression approach to investigate how world financial markets, FX rate price affect main European stocks returns. We analyse the dynamics of the major European stock market indices (*EU STOXX50*), major Germany index (*DAX*) and the U.K. index *FTSE 100* across selected quantiles. We investigate the co-movement and the dependence structure between them and influential global market conditions expressed in risk factors. As the risk factors we take into account the stock market index returns Russell 1000 (*RIY*), S&P 500 (*SPX*), Shanghai A-Share Stock Price Index (*SHASHR*), global stock markets uncertainty index (*VIX*), exchange rate of the gold in USD (*XAU*). Our findings could provide a new insight into the behaviour of European stock markets, thus leading to meaningful implications for policy makers, investors and risk managers dealing with this market.

We use linear quantile regression approach. While OLS regression model estimates the expected value of the dependent variable, linear quantile approach expresses conditional quantiles of the dependent variable given by the independent variable. Quantile regression has been used in many papers concerning the risk analysis (Engle and Manganelli, 2004), (Alexander, 2008), (Naifar, 2016), (Aymen, Mongi, 2016), (Birău, Antonescu, 2014), (Engle, Manganelli, 2004), etc.

The aim of our paper is to find the dependence between a selected stock markets of the European Union (the *EU STOXX 50* index), Germany (the *DAX* index) and the U.K (the *FTSE 100* index) and the influential risk factors under consideration. Is there a symmetric or asymmetric dependence? Which factor has the highest influence to the EU market? The paper gives answers to these questions.

In our empirical study, we have used and compared linear quantile regression results for the analysis of the stability of European markets (the *EU STOXX 50*, the *DAX*, the *FTSE 100*) indices. The data used in our empirical study are based on the period from January 4, 2000 to November 11, 2016. We have analysed the impact of *S&P 500* market index prices, the *S&P 500* volatility index *VIX*, *RUSSELL 1000* market index prices, Shanghai A-Share Stock Price Index *SHASHR* and gold prices *XAU*. All data are expressed in *USD*.

Our findings may have implications for portfolio risk managers, energy traders, policymakers, international investors in terms of risk management which should vary according to changes in economic and financial risk factors.

The remainder of the paper is organized as follows: Section 2 describes the quantile regression methodology. Data and statistics analysis with our results are presented in section 3. Conclusions and discussions are presented in the last section.

## 2. QUANTILE REGRESSION METHODOLOGY

Quantile regression technique was developed by Koenker and Bassett in 1978 (Koenker, Bassett, 1978) as an extension of the traditional least squares estimation of the conditional mean to a compilation of models for different conditional quantile functions. Quantile regression gives tools to describe the conditional distribution of the dependent variable using its quantiles (Alexander, 2008, p. 301-307). The quantile regression expresses the conditional quantiles of  $Y$  given  $X$ , based on an arbitrary joint distribution while it is assumed that the errors of the quantile regression are i.i.d with specific error distribution function  $F_\varepsilon$ .

Let  $q$  be a quantile of the error determined by  $F_\varepsilon^{-1}(q)$ ,  $q \in (0,1)$  and simultaneously  $q$  denote the conditional quantile of the dependent variable  $Y$ , which is found from the inverse of  $F(Y|X)$ , by  $F^{-1}(q|X)$ . Now, we take conditional quantile  $q$  of simple linear regression model

$$Y = \alpha + \beta X + \varepsilon \quad (1)$$

and we get a simple linear quantile regression model (Alexander, 2008, p. 307):

$$F^{-1}(q|X) = \alpha + \beta X + F_\varepsilon^{-1}(q|X). \quad (2)$$

The aim of the simple quantile regression is to estimate regression line parameters  $\alpha$  and  $\beta$  based on a paired sample of  $X$  and  $Y$ , while quantile regression line passes through a quantile of the

points. Dependence of  $Y$  based on explanatory variable  $X$  could be constant when the values of  $(\alpha, \beta)$  are not changed for different values of  $q$ , or monotonically increasing (decreasing) when  $(\alpha, \beta)$  increases (decreases) with the value of  $q$  and symmetric (asymmetric) when the value of  $q$  is similar (dissimilar) for lower and upper quantiles (Aymen and Mongi, 2016). The coefficients  $(\alpha, \beta)$  for a given  $q$  are estimated by minimizing the weighted sum of the absolute errors as

$$\min_{\alpha, \beta} \sum_{t=1}^T \left( q - 1_{Y_t \leq \alpha + \beta X_t} \right) |Y_t - (\alpha + \beta X_t)|, \quad (3)$$

where

$$1_{Y_t \leq \alpha + \beta X_t} = \begin{cases} 1 & \text{if } Y_t \leq \alpha + \beta X_t \\ 0 & \text{otherwise} \end{cases} \quad (4)$$

The solution  $(\hat{\alpha}_q, \hat{\beta}_q)$  that minimizes the quantile loss function (3) satisfies

$$\hat{F}^{-1}(q|X) = \hat{\alpha}_q + \hat{\beta}_q X + F_\varepsilon^{-1}(q|X), \quad (5)$$

where  $\hat{F}^{-1}(q|X)$  is the sample estimate of the conditional  $q$ -quantile.

Quantile regression model (3) allows us to examine the dependence structure in European stock markets or in other words how the dependence structure is affected due to different risk factors.

### 3. DATA ANALYSIS

The major European markets are represented by the *EU STOXX 50*, the *DAX*, and the *FTSE 100* market indices. The *EU STOXX 50* index provides a Blue-chip representation of the super sector leaders in the Eurozone. The *DAX* measures the performance of the Prime Standard's 30 largest German companies in terms of order book volume and market capitalization. The *FTSE 100* market index consists of the 100 largest qualifying U.K. companies by full market value. Risk factors include the global stock market represented by the *S&P 500* stock returns, the gold prices expressed in USD per ounce, the implied volatility of the *S&P 500* market index represented by the *VIX* index, *RUSSELL 1000* market index prices and Shanghai A-Share Stock Price Index *SHASHR*.

We assume global stock market conditions expressed in the *S&P 500*, *RUSSELL 1000*, *SHASHR* and *VIX* have affected the global investor decisions. Gold is considered to be the main currencies depended on the gold standard in a not so distant past. Gold is also considered to be one of the most important storage of value today and the most important component of the global economy since 1945. We expect price movements of gold exchange rate to have important influences on stock prices in EU countries.

The data was collected on a daily basis from January, 4, 2000 to November, 11, 2016. Data provider is Bloomberg. All data are expressed in USD. The closing prices of time series are nonstationary, and we have therefore used logarithmic returns (log returns are obtained by formula:  $r_t = \ln P_t / \ln P_{t-1}$ ,  $t = 1, \dots, T$ , excluding account dividends).



We have used the quantile regression model that explains the relationship between *EU STOXX 50* or *DAX* or *FTSE 100* log returns as dependend variable and log returns of financial variables and it can be presented as

$$Y = \alpha + \beta_1 RIY + \beta_2 SPX + \beta_3 XAU + \beta_4 VIX + \beta_5 SHASHR + \varepsilon \quad (6)$$

with  $Q(q/X) = X\beta(q)$ ,

$X = (RIY, SPX, XAU, VIX, SHASHR)$ ,

$Y = EU\ STOX\ 50$  or *DAX* or *FTSE 100* log returns.

We evaluate the coefficients across nine quantiles  $q = \{0.01, 0.05, 0.1, 0.25, 0.5, 0.75, 0.90, 0.95, 0.99\}$ . We present the estimates for quantile regression coefficients with intercept  $\alpha$ .

Table 1 provides the results for the European market, **Error! Reference source not found.** gives results for the German market and **Error! Reference source not found.** gives results for the U.K. market. We show numerical results for nine quantiles from 0.01 to 0.99.

We found a significant positive effect of the Russian market index on the index *EU STOXX 50* for quantiles 0.05, 0.1, 0.25, 0.5 and 0.75. The strongest dependence is on 10% quantile, then on 5% quantile it is slightly lower. The other higher quantiles do show significant dependence with decreasing tendency. The effect of the *S&P 500* is negative with decreasing dependence as quantiles increase to 90%. The higher quantiles do not show significant dependence. The gold in USD shows fluctuating weak dependence starting from 5% quantile. *VIX* shows negative significant dependence only for 1% quantile. Shanghai market index shows smoothly decreasing dependence as quantiles grow to 90% quantile. The dependence for the higher quantiles is non-significant (see Table 1).

Table 1: Quantile regression coefficients estimation for *EU STOXX 50*

	Q(0.01)	Q(0.05)	Q(0.1)	Q(0.25)	Q(0.5)	Q(0.75)	Q(0.9)	Q(0.95)	Q(0.99)
$\alpha$	-0.040	-0.020	-0.010	-0.010	0.000	0.010	0.010	0.020	0.040
<i>t-statistics</i>	-25.286*	-36.512*	-36.533*	-29.061*	0.000	29.356*	45.974*	39.522*	30.389*
$\beta_{RIY}$	2.250	1.840	2.080	1.510	1.360	1.370	0.170	1.110	2.540
<i>t-statistics</i>	0.927	2.007*	3.326*	4.495*	3.772*	4.312*	0.354	1.451	1.303
$\beta_{SPX}$	-1.930	-1.200	-1.410	-0.810	-0.630	-0.630	0.600	-0.380	-1.900
<i>t-statistics</i>	-0.788	-1.296	-2.237*	-2.409*	-1.738	-1.958*	1.249	-0.488	-0.966
$\beta_{XAU}$	0.020	0.170	0.150	0.150	0.150	0.140	0.140	0.210	0.260
<i>t-statistics</i>	0.159	3.118*	4.244*	7.823*	7.345*	7.321*	5.057*	4.634*	2.254*
$\beta_{VIX}$	-0.090	-0.020	-0.020	-0.010	0.000	0.000	0.000	-0.010	-0.050
<i>t-statistics</i>	-2.353*	-1.462	-1.859	-1.761	-0.364	0.303	-0.009	-0.718	-1.611
$\beta_{SHASHR}$	0.250	0.130	0.100	0.070	0.040	0.040	0.050	0.050	-0.060
<i>t-statistics</i>	2.527*	3.441*	3.709*	4.714*	2.887*	3.382*	2.562*	1.611	-0.690
<i>Log Likelihood</i>	9914.9	11846.9	12852.9	14211.1	14987.2	14347.8	13154.8	12173.2	10024.9

Source: Author's calculations

The analysed period ranges from January 4, 2000 to November 11, 2016.

Note: The table shows the quantile regression estimates for market index *EU STOXX 50* according to the empirical model defined by Eq. (6). The asterisk (\*) denotes statistical significance at the 5% level.

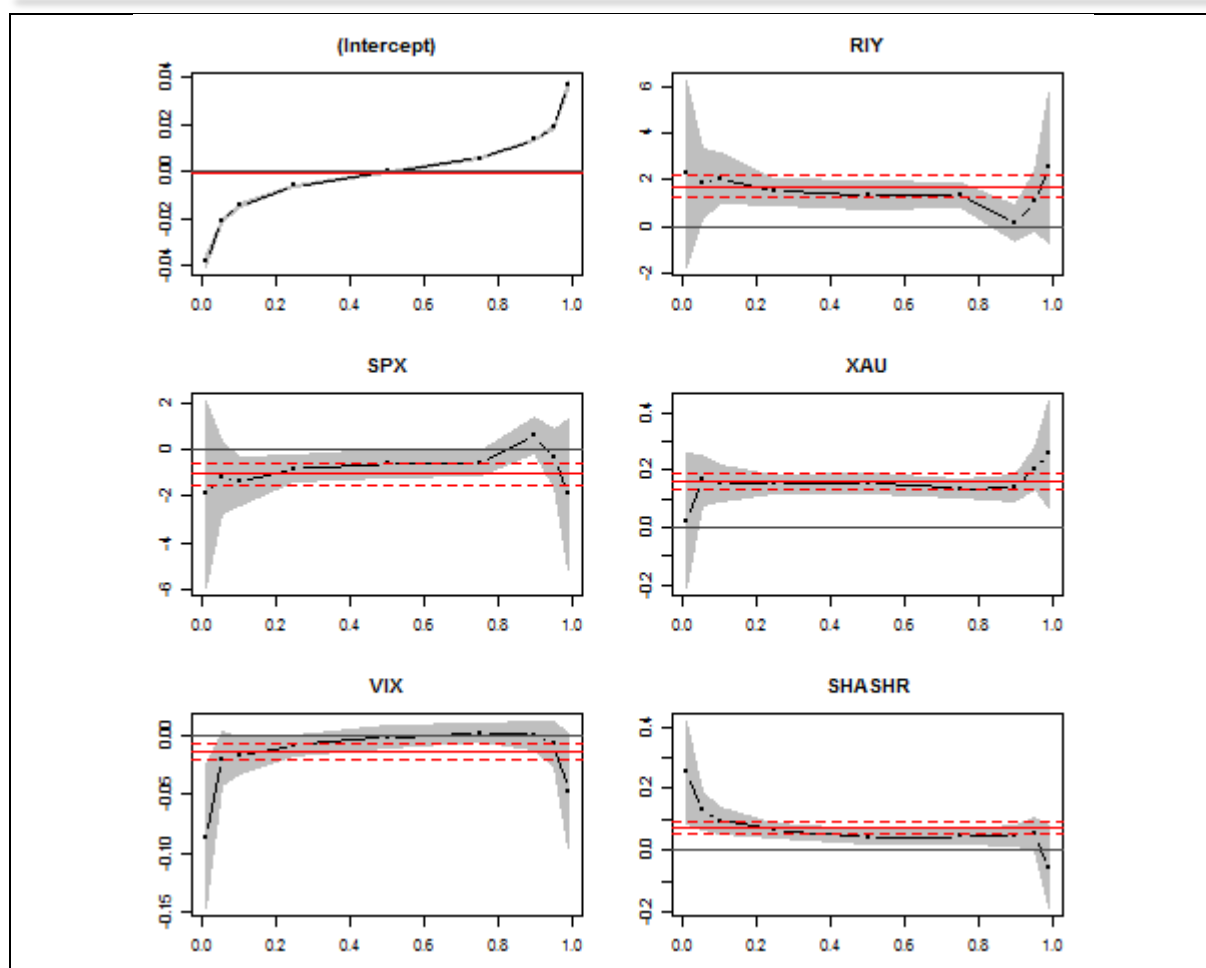


Figure 1: Quantile regression estimates of the regression parameters for *EU STOXX 50*

Notes: The dashed line shows the quantile regression estimates of the regression parameters across the quantile ranging from 0.01 to 0.99. Gray band depicts a 95% confidence intervals for the quantile regression parameter estimates.

Source: Author's illustrations

The impact of Russian market index on the German market represented by *DAX* is the highest positive at 1% quantile. Then it varies with higher impact at 10% quantile and 50% quantile. After 90% the impact is non-significant. Similarly to *EU STOXX 50* the impact of the *S&P 500* index on the *DAX* index is negative with the strongest impact at 1%. *S&P 500* index has significant negative impact also at 10%, 25% and 50%. Gold in USD has weak fluctuating impact starting at 5% quantile. *VIX* has very small positive significant effect on the *DAX* index only for 50% and 75% quantiles. Shanghai market index shows decreasing dependence as quantiles grow until 10% quantile and from 25% until 90% quantile it shows small constant impact on the *DAX* index. The dependence for the higher quantiles is non-significant (see Table 2).

Table 2: Quantile regression coefficients estimation for DAX

	Q(0.01)	Q(0.05)	Q(0.1)	Q(0.25)	Q(0.5)	Q(0.75)	Q(0.9)	Q(0.95)	Q(0.99)
$\alpha$	-0.040	-0.020	-0.010	-0.010	0.000	0.010	0.010	0.020	0.030
<i>t-statistics</i>	-30.586*	-44.855*	-39.838*	-26.923*	0.000	35.998*	47.686*	29.173*	33.090*
$\beta_{RIY}$	4.410	1.690	2.400	1.590	1.770	1.300	0.910	1.660	1.000
<i>t-statistics</i>	2.218*	2.423*	4.225*	4.754*	5.054*	4.830*	1.959*	1.550	0.617
$\beta_{SPX}$	-3.930	-0.920	-1.620	-0.780	-0.940	-0.460	-0.080	-0.890	-0.280
<i>t-statistics</i>	-1.962*	-1.306	-2.830*	-2.323*	-2.675*	-1.706	-0.176	-0.824	-0.169
$\beta_{XAU}$	0.070	0.150	0.140	0.140	0.160	0.140	0.150	0.140	0.200
<i>t-statistics</i>	0.614	3.647*	4.258*	6.986*	7.747*	8.937*	5.514*	2.282*	2.059*
$\beta_{VIX}$	-0.040	0.000	-0.010	0.010	0.010	0.020	0.010	-0.010	-0.020
<i>t-statistics</i>	-1.449	-0.145	-0.920	1.044	2.498*	3.791*	1.413	-0.359	-0.847
$\beta_{SHASHR}$	0.290	0.110	0.090	0.050	0.050	0.050	0.050	0.050	0.010
<i>t-statistics</i>	3.485*	3.678*	3.797*	3.671*	3.532*	4.365*	2.541*	1.176	0.197
<i>Log Likelihood</i>	9948.8	11933.4	12943.1	14273.2	15061.5	14431.2	13232.2	12310.4	10540.1

Source: Author's calculations

The analysed period ranges from January 4, 2000 to November 11, 2016.

Notes: See the notes of Table 1.

Figure following on the next page

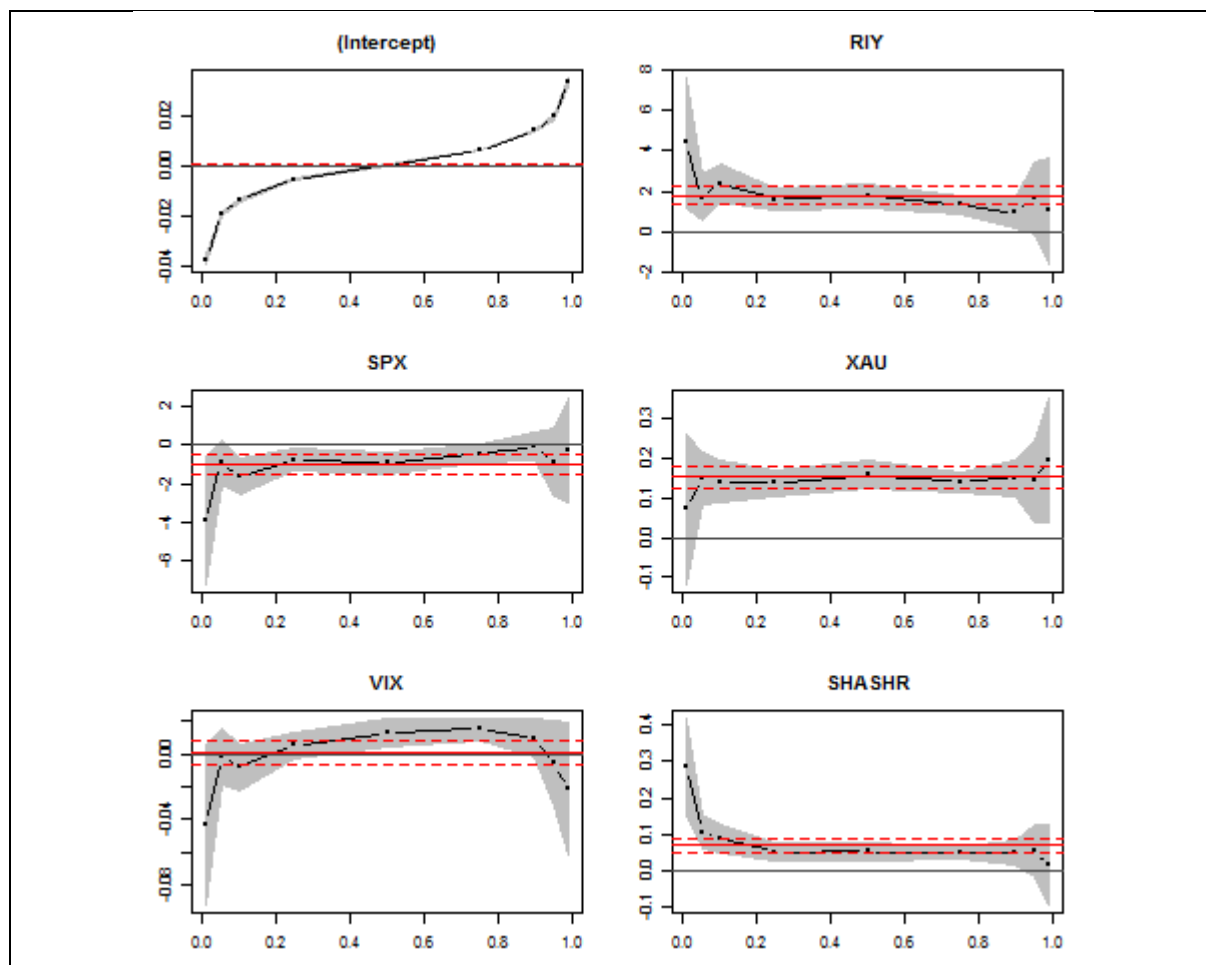


Figure 2: Quantile regression estimates of the regression parameters for *DAX* index

Source: Author's illustrations

Notes: See the notes of Figure 1

The significant effect of Russian market index on the U.K. market represented by *FTSE* 100 is the highest positive at 5% quantile. Then it decreases until 50% quantile and grows for 75% and 90% quantiles. After 90% quantile the effect is non-significant. Similarly to *EU STOXX* 50 and *DAX* indices the impact on the *FTSE* 100 index is negative with the significant effect at 10% and 75% quantiles. Gold in USD has weak fluctuating impact starting at 5%. *VIX* has very small negative significant effect on the *FTSE100* index only for 1% and 10% quantiles. Shanghai market index shows decreasing dependence as quantiles grow from 1% quantile to 75% quantile. The 90% quantile has slightly higher value than 75% quantile. The dependence for the higher quantiles is non-significant.

Table 3: Quantile regression coefficients estimation for FTSE 100

	Q(0.01)	Q(0.05)	Q(0.1)	Q(0.25)	Q(0.5)	Q(0.75)	Q(0.9)	Q(0.95)	Q(0.99)
$\alpha$	-0.030	-0.020	-0.010	0.000	0.000	0.000	0.010	0.020	0.030
<i>t-statistics</i>	-24.831*	-31.570*	-35.836*	-27.158*	0.000	25.956*	35.818*	26.701*	23.565*
$\beta_{RY}$	3.820	2.010	1.800	0.940	0.920	1.290	1.490	1.080	3.190
<i>t-statistics</i>	1.749	2.328*	3.480*	3.248*	3.611*	4.302*	2.991*	1.135	1.560
$\beta_{SPX}$	-3.580	-1.520	-1.300	-0.370	-0.340	-0.710	-0.930	-0.580	-2.720
<i>t-statistics</i>	-1.627	-1.746	-2.487*	-1.278	-1.311	-2.336*	-1.847	-0.607	-1.320
$\beta_{XAU}$	0.120	0.150	0.170	0.180	0.180	0.150	0.140	0.140	0.200
<i>t-statistics</i>	0.962	2.908*	5.497*	10.655*	12.000*	8.757*	4.669*	2.441*	1.710
$\beta_{VIX}$	-0.090	-0.020	-0.020	-0.010	0.000	0.000	-0.010	-0.020	-0.020
<i>t-statistics</i>	-2.688*	-1.490	-2.189*	-1.692	-0.191	0.053	-1.049	-1.504	-0.556
$\beta_{SHASHR}$	0.270	0.110	0.100	0.080	0.060	0.030	0.050	0.050	0.010
<i>t-statistics</i>	3.048*	3.015*	4.662*	6.328*	5.234*	2.722*	2.642*	1.371	0.170
<i>Log Likelihood</i>	10352.6	12580.6	13672.6	15098.6	15907.3	15223.3	13926.2	12854.8	10577.7

Source: Author's calculations

The analysed period ranges from January 4, 2000 to November 11, 2016.

Notes: See the notes of Table 1.

Figure following on the next page

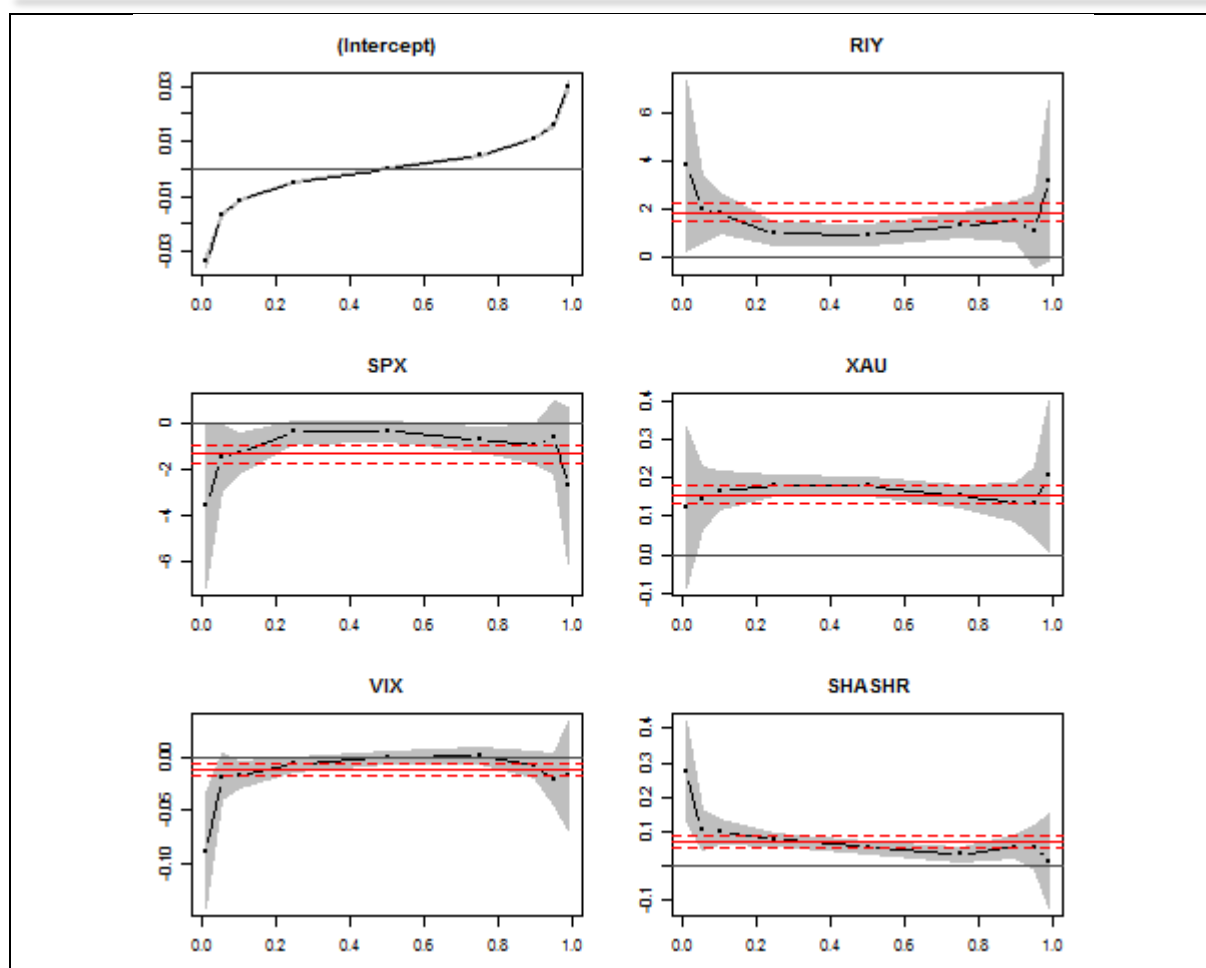


Figure 3: Quantile regression estimates of the regression parameters for *FTSE 100*

Source: Author's illustrations

Notes: See the notes of Figure 1

#### 4. CONCLUSION

The stock market performance depends significantly on the changing structure of the risk factors. The quantile regression method appears to be the most flexible and gives the response of a variable to the external shocks with respect to its different threshold values.

We found that the most vulnerable market is a German one, then English, and the EU markets is the last in the order. The German market is mainly influenced by the Russian market. The impact is asymmetric. Bear markets influence more *DAX* index than bull markets. US influence on the *DAX* is up to the second place. The Chinese market has a statistically significant effect on the German market especially during bear markets. As the only influences show the examined markets across the entire quantiles except quantiles 95% and 99%. We found moderate to fluctuating statistically significant effect of the exchange rate of gold in USD for all three markets. The stock market uncertainty (*VIX*) is a relevant factor, it has a weak impact or no impact on the analysed markets. This paper contributes to existing literature by assessing the impact of risk financial variables on European stock markets presented by EU, German and U.K. stocks markets across different quantiles of the return distributions and indicates an asymmetric dependence between EU stock markets and the risk factors within considerations.



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## DOES CORPORATE RETRENCHMENT GAIN VALUE? A STUDY FROM MALAYSIA

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### ABSTRACT

*Retrenchment strategy has gained its popularity and is being regarded as a common strategy in the corporate world to cut down cost. Firm owners are sceptical whether it would be a value-added strategy for their organisations. A problem arises: “Does retrenchment strategy really contribute to the firms?” Empirical research was conducted to investigate retrenchment as an influence component of the company performance. Evaluation outcomes for a sample of Malaysia firm years from 2008-2013 are analysed that included excess value, retrenchment cost, and corporate use of financial variables. From the results, we document a positive association between the excess value of retrenchment cost. Our finding is consistent with prior research where it concluded retrenchment is positively related to turnaround performance. We also examine a special moderator variable for ownership expropriation and find there is negatively and significant relationship between ownership structures and excess value, where foreign and government underperformed in imposing retrenchment strategy. However, our research further indicates that ownership concentration does not play significant role on the association between excess value and retrenchment cost. Based on the results, it suggests that retrenchment cost and ownership structure plays a monitoring role in organization strategy decision making. The implication of this research lies in two main points. Firstly, it enriches the body of knowledge by showing the effectiveness of retrenchment strategy in value creation, and the role of corporate governance on that relationship. Secondly, it contributes to regulator or policy maker that retrenchment strategy might have a good corporate governance to create value. As such, this research implies to industry that retrenchment strategy might gain value to certain type of firm and certain level of ownership.*  
**Keywords:** *Corporate Strategy; Excess Value; Retrenchment*

### 1. INTRODUCTION

Retrenchment strategy is a common strategy that used in organization all over the world especially when firms are hampered by string of bad performances. Theoretically, retrenchment can increase performance among poorly performing firms. This strategy is not only saving troubled companies, but also it secures future potential profit. In addition, retrenchment strategy have both its benefits (Hitt, Hoskisson, Johnson, & Moesel, 1996; Lim, Celly, Morse, & Rowe, 2013) and costs (Bergen, Dutta, & Walker Jr, 1992; Morrow, Johnson, & Busenitz, 2004; Koch & Nafziger, 2012). Nowadays, many Malaysian companies have incorporated concept of retrenchment strategy into their firm strategy plans. Therefore, this study is important to determine the merits of retrenchment strategy to the Malaysia companies across different ownership expropriations

There are also many Malaysian companies who have conducted retrenchment strategy, such as job cuts, selling off property, and closure of a plant, factory, to improve firm efficiency and performance. In addition, retrenchment strategy also defined as reduction in assets and costs as means to mitigate the conditions responsible for financial downturn (Robbins and Pearce, 1992). One of the most popular cases is the Malaysia Airlines which is restructured and privatized to ensure the air carrier remain afloat after the MH370 and MH17 crisis. Another example of retrenchment strategy in Malaysia is Tesco Malaysia. Tesco's Malaysia CEO announced a plan to restructure, standardizing job grading and transfer of jobs to improve Tesco Malaysia's earnings. The example is Nokia, where the chief executive officer (CEO) issued his famous “burning platform” in Feb 2010 and there had been over 30,000 job losses at Nokia as the firm refocused its strategy on partnership with Microsoft. Another retrenchment case happened on Abbott Laboratories in 2011 cut about 3,000 jobs, or 3 percent of its workforce, as part of a major retrenchment strategy to streamline operations and improve firm's going concern. As such, this is in line with the suggestion from former Malaysian Prime Minister, Tun Dr Mahathir Mohamad, who promoted retrenchment strategy to Malaysian firms for going-concern purpose.

For this study, five primary retrenchment actions are included through reduction in assets and costs, especially in respect of (1) the reduction of the finished goods and inventory, (2) the reduction of the number of employees, (3) the reduction of selling, general, and administrative expenses (SGA), (4) the reduction of Plant, Property, and Equipment (PPE), and (5) the reduction of R&D costs (Hofer C. , 1980; Robbins & Pearce, 1992; Morrow, Johnson, & Busenitz, 2004; David, 2013). Mostly researcher found that there is a statistically significant relationship between retrenchment and firm performance (Schendel, Patton, & Riggs, 1976; Hambrick & Schecter, 1983; O'Neill, 1986; Lim et al., 2013).

Yet, retrenchment strategy is rarely investigated compared to another strategy like diversification. The relationship between performance and retrenchment continues to be heavily studied amid the conflicting empirical evidence and theoretical disagreement documented in the extant empirical finance and strategic management literature. Thus far most of the existing literature is based on the developed market such as United States, Singapore, Germany, and Japan (Lim et al., 2013; Schmitt and Raisch, 2013; Love and Nohria, 2005; Fisher et al. 2004). In addition, comparatively, the capital markets are less developed and ownership concentration is higher which could offer different results of the relationship between retrenchment and excess value. Building on these minds, we want to empirically test the value impact of retrenchment with excess value in a relatively small emerging market like Malaysia.

Malaysia firms offer a good platform for further exploration of this topic as those firms have high degree of retrenchment. In addition, Malaysia provides a unique institutional setting to examine the performance of retrenchment with its small and open economy, and the capital market is not well developed. The ownership structure of Malaysian firms is another interesting point where most of the prevalence of the highly concentrated ownership and control through pyramiding or crossholdings might provide us different insights into the literature of this research area.

Generally, study on retrenchment strategy is important as Malaysia economy is slowing down and placing tremendous pressure on companies to revisit their portfolio and their operational business strategies. Overall, the core idea in this study is to examine whether retrenchment strategy creates more value and better performance. In addition, the findings are related to the exploration of the role of retrenchment strategy in excess value, and also to reveal the role of good corporate governance in imposing firm's strategy. In term of corporate governance, this research focuses on two aspects, ownership concentration and ownership identity. For ownership identity, we re-run the sub sample based on firm identity, namely, family, foreign, and government. This is significant to test the agency theory and stewardship theory with regards of strategy management.

The fundamental purpose of this study is to examine the effects of retrenchment strategy used on association performance and deepen the understanding of the influence of ownership expropriation on defensive strategy use. In order to mitigate some of the shortcomings of existing studies

mentioned above, the research objectives of this research can be split into three parts:

- (i) To investigate the ultimate ownership on the firm retrenchment-excess value relationship.
- (ii) To investigate the significant relationship between retrenchment strategy and excess value.
- (iii) To determine the role of ownership identify on the relationship between retrenchment strategy and excess value.

The content of this study is as follows. First, the introduction section highlights the problem statement and motivation of the study. Then, literature review is added by exploring the association between retrenchment strategy and firm performance across the ownership expropriation. It is worth to note that the relationship between firm value and retrenchment strategy is a relatively new topic and has received less attention from researchers. Next, this study will discuss the methodology to be used in this research. The overall and detailed results is presented and data interpretation is sustained with arguments and conclusions are drawn. Finally, study ended with general conclusions in details, together with the list of consulted bibliography, followed by the limitations of the study, and recommendations for future study.

## 2. LITERATURE REVIEW

This study defines retrenchment as reduction in assets and costs especially in action of the reduction of the finished goods and inventory, the reduction of the number of employees, the reduction of selling, selling, general, and administrative expenses (SGA), the reduction of plant, property, and equipment costs (PPE), and the reduction of research and development costs (R&D) (Hofer, 1980; Michael & Robbins, 1998; Morrow et al., 2004; Schmitt & Raisch, 2013). According to David (2013), firms use retrenchment when an organization regroups through cost and asset reduction in order to help declining performance. Those actions include entailed selling off land and buildings to raise much needed cash, cutting the number of employees, knock off product lines, discontinuations of the marginal businesses, closures of obsolete factories, automations, and institution of expense control systems.

Previous literatures find that retrenchment strategy also might induce firm performance in two manners: asset retrenchment and cost retrenchment (Hofer, 1980; Robbins and Pearce, 1992; Morrow et al., 2004; Lim et al., 2013). Asset retrenchment refers to the net reduction of assets (Robbins and Pearce, 1992), such as closing plants, divesting equity and reducing stocks of property, equipment, and inventory (Morrow et al., 2004; Lim et al., 2013). Meanwhile, cost retrenchment refers to the net reduction of total costs such as SGA expenses, interest expense and miscellaneous costs. (Robbins and Pearce, 1992; Lim et al., 2013).

Via this strategy, firms usually might able to face the problem of the poor performance by reducing the asset and cost. Morrow et al. (2004) argues that firms throw all their less effective, and less productive assets in order to improve the performance. Results show that retrenchment strategies have significant effect on firm value. Furthermore, Robbins and Pearce (1992) documents retrenchment as “a term that denotes a strong emphasis on cost and asset reductions as means to mitigate the conditions responsible for financial downturn”. It is consistent with the prior literatures shows that retrenchment actions that reduce assets will increase firm profitability and strengthen the firm’s industry position. (Robbins & Pearce, 1992; Robbins & Pearce II, 1993; Love & Nohria, 2005; Lim et al., 2013; Schmitt & Raisch, 2013).

For the case of Malaysia, a lot of Malaysian firms adopted retrenchment strategy to combat with poor performance especially during economy turbulence. For example, Malaysia Airlines, Tesco Malaysia, Nokia which are the large companies in Malaysia adopted the retrenchment to boost up their performance. Furthermore, Nokia, where the CEO issued his famous “burning platform” err in Feb 2010 and there had been over 30,000 job losses at Nokia as the firm refocused its strategy on partnership with Microsoft. Another retrenchment case happened on Abbott Laboratories in 2011—cut about 3,000 jobs, or 3 percent of its workforce—as part of a major retrenchment strategy

to streamline operations and improve efficiency. Based in Abbott Park, Illinois, the company said most of the layoffs would be in its European operations. Abbott recently acquired Solvay SA's pharmaceutical division for about \$6.1 billion. Abbott's restructuring activities included closure of the Solvay facility in Marietta, Georgia.

Starbucks, one of the global brands in food and beverage, had launched a massive retrenchment strategy in efforts to save the company in the past. CEO Howard Schultz said Starbucks would soon close 300 underperforming, company-operated stores worldwide, including 200 in the United States. These shutdowns are on top of 600 recent Starbucks shutdowns in the United States and 61 closures in Australia. However, the firm planned to open 140 stores in the United States in 2009 and open 170 stores outside the United States. Starbucks planned to cut 700 corporate and nonretail positions globally. In addition, as part of Starbucks's strategy to survive the global recession, the company would enter the value-meal race to combat McDonald's new McCafe coffee bars, which are springing up like mushrooms after the rain.

Pursuing a heavy retrenchment strategy to survive, Citigroup recently announced that it had cut another 52,000 more jobs. This is the largest corporate layoff announcement since 1993, when International Business Machines Corporation cuts 60,000 jobs. Citigroup had already cut 23,000 jobs in 2008 as its stock price fell 70 percent in that year alone. A total of 157 banks in United States ceased operations in 2010 due to financial insolvency. Many more banks followed suit in 2011, such as First Tier Bank in Louisville, Colorado and Enterprise Banking in McDonough, Georgia. In 2008, most banks are pursuing retrenchment. A total of 25 banks failed in 2008, including 16 with less than \$1 billion in assets. The three largest bank failures by size in 2008 are Washington Mutual in Seattle, Washington, IndyMac Bank in Pasadena, California, and Downey Savings and Loan Association in Newport Beach, California.

The theory that is adopted in this study are agency theory which is originated from economic study and Stewardship theory, evolved from psychology and sociology. Agency theory is concerned with agency problems that can occur in agency relationship. Jensen and Meckling (1976) and Baker and Anderson(2010) explain that the agency problem arises when company managers attempt to maximize and fulfill their interest at shareholders' expense. According to the Markides and Singh (1997), agency theory is the most suitable explanation among prior literature regarding corporate restructuring. Lang, Poulsen, & Stulz (1995) develops and tests that managers will be reluctant to restructuring the corporate such as reducing the assets. Denis and Shome (2005) comments that company size will influence the managers' private benefits as they will hesitate to reduce the assets under their control without considering their effects on firm performance. Moreover, agency problem happens especially when the firm is in bad conditions and the controlling shareholders are not paying dividend in order to enrich themselves (Claessens, Fan, Djankov, & Lang, 2009).

On the other hand, based on the concept of the stewardship theory, steward's utility functions are maximized, the firm performance also can be maximized (Davis, Schoorman and Donaldson, 1997). In addition, stewardship concept suggests that successful organisation brings happiness, improves the motivate stewards and enables stewards maximize the long term return of firm (Daily, Dalton , & Canella, 2003; Abdullah & Valentine, 2009). Thus, stewardship theory holds that there should not be any problem related to conflict between principal and manager. Both theories have different concept on performance, however, based on Donaldson & Davis (1989), it is of the view that combination of both theories can bring advancements in firm value.

According to the comprehensive review of the retrenchment literatures, mostly studies have indicated the performance of firms would be induced by adopting retrenchment because of increased efficiencies brought about by the reduction of costs and the reduction of assets. (O'Neil, 1986; Miles, Snow, & Sharfman, 1993; Dodge, Fullerton, & Robbins , 1994; DeWitt, 1998). Those researchers indicate retrenchment has a significant and positive effect on performance. In addition, due to reducing expenditures and eliminating assets, retrenchment is positively related to improved performance. (Schendel , Patton , & Riggs , 1976; Hambrick & Schecter, 1983; Robbins & Pearce, 1992; Robbins & Pearce II, 1993). In addition, Robbins and John (1993) also found retrenchment



is positively related to turnaround performance. Besides that, Love & Nohria (2005) also find the firm performance in the retrenched year is positive and significant. More recently from Lim et al. (2013) and Dominic et al. (2013) found there is a statically significant relationship between retrenchment and firm performance. This is consistent with Schmitt & Raisch (2013), a survey type analysis scholar that indicate the retrenchment create a significant and positive effect on performance.

More topical findings, Morrow et.al (2004) find that retrenchment strategies will have different effects on firm performance which asset retrenchment is positively related to performance improvement while cost retrenchment is unrelated in growth industries meanwhile cost retrenchment is positively related to improved performance while asset retrenchment had a negative effect on firm performance in declining industries. According to the Pearce & Robbins (2008) argues that retrenchment and recovery can create additional costs that impact turnaround performance negatively. Moreover, Castrogiovanni & Bruton(2000) expose there is no retrenchment performance linkage. In addition, Barker & Mone (1994) and Fisher et al. (2004) also come up with the result shows that there is no retrenchment effect on performance. After reviewing all the related scholar, this study hypothesizes there is a significant and positively relationship between the retrenchment and excess value.

*H<sub>1</sub>: There is a positive relationship between retrenchment and excess value.*

*H<sub>2</sub>: There is a positive relationship between ownership concentration and excess value.*

*H<sub>3</sub>: There is a positive relationship between the excess value of foreign defensive firms.*

*H<sub>4</sub>: There is a negative relationship between the excess value of government defensive firms*

### **3. METHODOLOGY**

In this study, proxy of each variable will be inserted into the final panel regression model. The dependent and independent variables will be explained, and this is followed by a description on the excess value, which was used to calculate the value of the companies. The estimation model for this study will be built based on the previous study but the model will be further extended by adopting retrenchment strategy as new and main independent variable, in order to investigate the effect due to retrenchment strategy on the performance of firm. In addition, the sampling and data collection procedures in this research will also be explained.

#### **3.1. Firm performance**

The primary measure of this study of firm performance is excess value. It has also been discussed earlier that the main objective of this research is to analyze the effect of corporate governance and defensive strategy on corporate value. In this study, corporate value is the presumed cause. Therefore, excess value is used as dependent variable that refers to the status of the 'effect' in which this research is interested excess value is a value declared for a company greater the origin value limit. The existing literature has various implications concerning the potential link between conglomerates' excess values and their restructuring decisions. Specifically, the expected relationship can be positive, negative, or insignificant, depending on what the estimated excess values reflect and how managers use this information.

There are several methods to calculate the firm performance. In this study, excess value is used compared to the others method. Another popular measurement tool of performance, Tobin's q model, is one of the popular methods used to calculate the ratio of the market value of firm's assets to the replacement cost of the firm's assets (Tobin, 1969; Chung & Pruitt, 1994; Thomas & Waring, 1999; Morrow, Johnson, & Busenitz, The effects of cost and asset retrenchment on firm performance: the overlooked role of a firm's competitive environment., 2004). This measure of performance is not used as often as either rate of return or price-cost margins. If a firm is worth



more than its value based on what it would cost to rebuild it, then excess profits are being earned. These profits are above and beyond the level that is necessary to keep the firm in the industry. Therefore, Excess Value Model which is using natural logarithm of the ratio of actual to imputed market value of each individual firm which much more suitable and advantage to this study. This study follows the techniques developed by Berger and Ofek (1995), and later modified by Fauver et al (2004) in constructing the value of each firm. The value of each firm can be estimated using natural logarithm of the ratio of actual to imputed market value of each individual firm. The formula is as follow.

$$\text{Excess Value} = \log \left( \frac{\text{Actual Value}}{\text{Imputed Value}} \right)$$

The actual value of a firm can be calculated using capital-sales ratio, capital-earnings ratio, and or capital-asset ratio. Since they all yield similar results (Berger & Ofek, 1995; Fauver, Houston, & Naranjo, 2004), this study is solely employ market-sales ratio for the actual value of each firm in the analysis due to lack of segment assets and earnings for our sample data.

$$\text{Actual Value} = \frac{\text{Total Firm's Capital}}{\text{Total Revenue}}$$

On the other hand, imputed value is calculated as a median market-sales ratio. The median market-sales ratio is taken from all industry firms in the same industry. Finally, this median value is taken from the average of all the imputed values computed for each of the firm's industry. Firms have a positive excess value if the overall company's value is greater than the “sum of the parts”. Conversely, firms may have a negative excess value if their value is less than the imputed value that would be obtained by taking a portfolio of pure-play firms that operate in the same industries.

$$\text{Imputed Value} = \text{median} \left( \frac{\text{Market Capital}}{\text{Total Revenue}} \right)_{\text{Different Industries}}$$

### 3.2 The estimation model

The baseline model of this research controls with four factors of firm performance, such as firm size, growth, leverage, and profitability (Hambrick & D'Aveni, 1988; Lu & Beamish, 2001; Morrow, Johnson, & Busenitz, 2004; McClelland, Liang, & Barker, 2010; Lim et al., 2013; Schmitt & Raisch, 2013). The log of assets (LTA) is used to represent the firm's size. The operating–sales ratio (OIS) is employed as a proxy for the firm's profitability. Capital expenditure–sales ratio (CES) acts as a measure for growth opportunities and ratio of debt to common share equity is taken to proxy for firm leverage status (LEV). In the regression, we follow Fauver et al. (2004) to transform all the independent variables into relative terms since the dependent variable (value) is measured in relative term. Moreover, excess value is the dependent variable is the natural log of the ratio of firm's market capital value to its imputed value. Dependent variable of this study is retrenchment strategy and moderate variables variable is ownership expropriation. In the regression, we follow Fauver et al. (2004) to transform all the independent variables into relative terms since the dependent variable (value) is measured in relative term. Noted that the symbols *i* and *t* are the firm and time dimensions of the data.

$$EV = f(\text{size, growth, opportunity, profitability, leverage, defensive, retrenchment, divestiture, liquidation, ultimate ownership, ownership structure})$$

$$EV_{it} = \beta_0 + \beta_1 LTA_{it} + \beta_2 OIS_{it} + \beta_3 CES_{it} + \beta_4 LEV_{it} + \beta_5 LRET_{it} + \beta_6 UO_{it} + \beta_7 UO^2_{it} + \beta_8 (LRET_{it})(DFOR_{it}) + \beta_9 (LRET_{it})(DGOV_{it}) + \varepsilon_{it}$$

Where:

EV = excess value

UO = ownership concentration

LTA = the log of assets or the firm size       $UO^2$  = the square root of ownership concentration  
 OIS = the ratio of operating income- sales ratio      DGOV = dummy government ownership  
 CES = the capital expenditure-sales ratio (benchmark)      DFAM = dummy family ownership  
 LEV = the ratio of debt to common share equity      DFOR = dummy foreign ownership  
 LRET = the log of retrenchment value

The symbols  $i$  and  $t$  are the firm and time dimensions of the data; Value is the natural log of the ratio of firm's market capital value to its imputed value. The log of assets (LTA) is used to represent the firm's size. The operating–sales ratio (OIS) is employed as a proxy for the firm's profitability. Capital expenditure–sales ratio (CES) acts as a measure for growth opportunities and ratio of debt to common share equity is taken to proxy for firm leverage status (LEV). In the regression, we follow Fauver et al. (2004) to transform all the independent variables into relative terms since the dependent variable (value) is measured in relative term.

### 3.3 Retrenchment strategy

Retrenchment strategy usually occurs when an organization regroups through asset reduction to improve or reverse declining turnover of the firm. Retrenchment can entail selling off land and buildings to raise needed cash, closing obsolete factories, reducing the number of employees, and changing the top manager (David, 2013). Retrenchment at Tesco Malaysia in 2012 is one of the examples. CEO for Malaysia, a plan to restructure, standardizing job grading and transfer of jobs are announce by Mr. SH Do from Korea and this move transform Tesco Malaysia to be more efficient to deliver its customer promises.

In this study, retrenchment strategy (RET) is defined as the reduction in assets and costs especially in action of the reduction of the finished goods and inventory, the reduction of the number of employees, the reduction of SGA, the reduction of PPE, and the reduction of R&D costs (Hofer, 1980; Robbins & Pearce, 1992; Morrow, Johnson, & Busenitz, The effects of cost and asset retrenchment on firm performance: the overlooked role of a firm's competitive environment., 2004; David, 2013). The formula calculation is presented in index measurement. Higher value of retrenchment indicates how active a firm imposing retrenchment strategy. The formula is as follow:

$$RET = \Delta Inventory + \Delta Sales \& General Expenses + \Delta Properties, Plant \& Equipment cost + \Delta Research \& Development cost + \Delta No. Employee \quad (11)$$

### 3.4 Ownership expropriation

Ownership Expropriation as extraneous variable also known as moderate variable is used in this study. The objective of this study is to investigate the role of ownership expropriation on the impact of defensive strategy. Firstly, this study uses ultimate ownership (UO) to represent ownership concentration. As pointed out by Lee, et al. (2012), the ownership concentration is denoted by ultimate ownership (UO) to determine the impact of ownership concentration towards the firm value. Besides that, square of ultimate ownership ( $UO^2$ ) is use to detect the nonlinear relationships between the variables. It is appropriate to use UO since pyramidal and cross-holding ownership structures among firms are pronounced in many East Asian countries where the control rights are not equal to cash flow rights. This study follows Claessens et al. (2002) as the control rights of the ultimate owner of the largest shareholder that is comprised of direct and indirect

shareholdings as a proxy for UO to determine the ownership concentration. In short, ultimate ownership is the sum of the ultimate owner's direct or indirect shareholding in the company.

After controlling for ultimate ownership, this study is based on Fauver et al. (2004) in investigating further the value of firm strategy by introducing identity of firms. Ownership structure is an important factor in determining firm value (Demsetz & Lehn, 1985). According to Jensen and Meckling (1976), concentrate downer ship by owner-managers minimizes the agency problem that arises from the separation of ownership and control. Joh (2003) found that during the 1993–1997 period, Korean firms whose controlling family shareholders had more ownership outperformed those where the family members had less. Mitton (2002) also showed that higher block ownership by the largest shareholder is associated with higher crisis-period stock returns. There are three categories of type of firms, which are: family owned, government owned, and foreign owned.

Moreover, in the study of Lee, et al. (2012), it formed two dummy variables which are dummy foreign and dummy government to represent the main owner of the firm while used the family firms as their yardstick. In the result of Lee, et al. (2012), they are able to distinguish which ownership identity influences the excess value. Two dummy variables are constructed in this study, DFAM (family) and DGOV (government), to indicate whether a firm is owned by family investors or the government, respectively. Family investors are referring to either an individual or a group of family members. The government is either the federal or the state government. Another group is firms owned by foreign, either a foreign family or corporation. . The dummies enable us to identify whether foreign and government firms outperform or underperform family firms. The results of this study is examined whether the net excess values are significantly different on the three categories of corporate defensive strategies along two dimensions of ownership identity. Thus, our final model also includes the interaction effects between corporate defensive strategies with ownership identity. We have added interactive dummy variables: to answer whether the there is any firm value differential between family (the benchmark), foreign and government firms. In this study, the dummy variables is scored following scale as either “1” for family ownership or “0” for not family ownership; either “1” for government ownership or “0” for not government ownership; either “1” for foreign ownership or “0” for not foreign ownership.

As aforementioned, the companies' annual reports are used to gather the necessary information. These are downloaded from the official website of Bursa Malaysia and corporates' website. Information that is missing from the annual report, is gathered from company announcements, newspapers, books, and journals. The financial data, such as., Revenue, Operating Income, Receivable, Total Equity, Total Debt, Total Liabilities, Capital Expenditure, Total Asset, Total Current Assets, PPE are collected from the Thomson Worldscope Datastream, the annual financial statements , and corresponding notes. In this study, secondary sources of data is used. Secondary data sources is permanent and readily available (Denscombe, 1998) comparing to the primary data. In addition, according to Stewart and Kamins (1993) stated that primary data can be manipulated, while secondary cannot be manipulated easily which means that the quality of secondary data is higher than the primaries.

Moreover, the data of ownership of the ultimate owner is obtained from the annual reports of the sample firms, particularly through the list of substantial shareholder. The value of ultimate ownership is collected from the list of substantial shareholder by sum of the ultimate owner's direct in the company and indirect shareholding in the company. Furthermore, the ownership structure is identified. Through the list of substantial shareholders, firms which are owned by privately held firms can be determined and recorded. However, when the information is not sufficient to trace to the ultimate owner, then the respective firm is excluded from this study. From the observation, the ownership of the ultimate owners is only experienced changes within a small range of percentage or generally remaining the same or over the years from 2008 to 2013. Similarly, the changes in the identity of the ultimate owner also rarely happened. These financial and non-financial data sets are then inserted into excel worksheets. The final sample size is determined after the data is screened. Again, this study mainly relied on used data from the annual financial report and data stream to

explore the relationship between defensive strategies and the firm's performance across ownership expropriation.

### **3.5 Data and sample**

This study primarily focuses on the defensive strategies in Malaysia. This study involves data collected from the year 2008 to 2013 (six years). Several further restrictions is used to compile this study sample. First, this study follows the Ronan, 2005 to restrict the sample to Industries with less than five firms per year are excluded in order to get more accuracy data.

Secondly, this study removes industries that classified as financial and investment institutions as their ways of financing are significantly different from those of firms from other industries. Those two restrictions reduce the sample to 742 companies. Thirdly, the sample of the study must have the necessary data that needed for defensive strategy and control variables. It is worth to note that the firms that have missing data throughout the six-year period from 2008 until 2013 also is removed. Fourthly, firms that are without necessary data on firm performance, defensive strategies, control variables, and ownership expropriation is dropped. Furthermore, the data scope is only limited to firms that listed on Bursa Malaysia. By following the above criteria, the final sample comprises 596 firms with the total observations of 3,576 firm-years over the period of 6 years with completed data. **Table 1** summarises final sector-wised distribution of sample.

As aforementioned, the companies' annual reports are used to gather the necessary information. These are downloaded from the official website of Bursa Malaysia and corporates' website. Information that is missing from the annual report, is gathered from company announcements, newspapers, books, and journals. The financial data, such as., Revenue, Operating Income, Receivable, Total Equity, Total Debt, Total Liabilities, Capital Expenditure, Total Asset, Total Current Assets, PPE are collected from the Thomson Worldscope Datastream, the annual financial statements, and corresponding notes. In this study, secondary sources of data is used. Secondary data sources is permanent and readily available (Denscombe, 1998) comparing to the primary data. In addition, according to Stewart and Kamins (1993) stated that primary data can be manipulated, while secondary cannot be manipulated easily which means that the quality of secondary data is higher than the primary's.

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## **4. RESULTS**

### **4.1 Summary of descriptive statistics**

**Table 1** summarises that final sector-wised distribution of sample on the main board comprise 596 which 74.04 percentage over overall main board public listed companies from 2008 to 2013. This shows our sample result enough represent the overall public listed companies in Malaysia. Meanwhile, **Table 2** presents the industrial that included in the sample such as construction,

consumer product, industrial product, plantations, properties, technologies, and trading services are included. The top three industries that is the industrial product (30.54%), trading services (22.98%) and consumer product (17.95%). Meanwhile properties (10.4%) are in the fourth for family held firms. This indicates that Malaysia public listed companies generally involve in huge businesses line that require for large number of consumers, large market segment and large amount of capital. The results in **Table 3** show the summary statistics for our sample of 596 public listed companies on the main board of bursa Malaysia. The mean values are calculated for each variable to facilitate comparisons between the all the variables. On the right side of the table, Satterthwaite-Welch t-tests for differences in the mean value for each variable reported. From the **table 3**, different Satterthwaite-Welch t-test mean of excess value is positively correlated with OIS and negatively correlated with RET, CES, OIS and LEV. As the correlation matrix also shows, excess value have a stronger relationship with all the variables.

Besides that, this sample residuals or error term is analysed and considered as normally distributed either through numerical methods or graphical methods. The diagnostic analysis was also being run. This study applies fixed effect model with heteroscedasticity and serial correlation problems. Lastly, the model is rectified for both with heteroscedasticity and serial correlation problems by cluster option.

**Table 1**  
**Frequency and per cent of sample data of public listed company**

	Public listed company		
	Frequency	Total	Per cent
Main board (KLSE)	596	805	74.04

**Table 2**  
**Frequency and per cent of by industry**

	Public listed company	
	Frequency	Per cent
Construction	36	6.04
Consumer Product	107	17.95
Industrial Product	182	30.54
Plantations	36	6.04
Properties	74	12.42
Technology	24	4.03
Trading Services	137	22.98
Total	596	100.0

*Table following on the next page*

**Table 3**

**Summary of descriptive statistics**

This table reports the summary statistics for our sample of 3,576 public listed firm years between 2008 and 2013. For the mean values, values in parentheses are standard deviations; SW-t test refers to the Satterthwaite-Welch t-test and the values in parentheses under SW-t test are standard error. \*, \*\*, \*\*\* Denote statistical significance at the 10%, 5%, and 1% levels, respectively.



Variable	Code	Mean	Standard Deviation	Min and Max Value	SW-T test		RET	LTA	OIS	CES	LEV	UO
Excess Value	EV	0.0558	0.4613	Min: -2.1565 Max: 3.2327								
Retrenchment	RET	63928.61	396486.90	Min: 0.00 Max: 16200000	-9.6419 (0.0000)***							
log of assets	LTA	5.7272	2.2648	Min: 4.0689 Max: 42.0300	-150.0000 (0.0000)***		9.6411 (0.0000)***					
Operating Income/Sales	OIS	-0.0093	1.4061	Min: -66.1227 Max: 0.7486	2.6297 (0.0043)**		9.6420 (0.0000)***	128.6814 (0.0000)***				
Capital Expenditures/Sales	CEV	0.1423	0.4419	Min: 0.0000 Max: 14.2187	-8.0985 (0.0000)***		9.6419 (0.0000)***	144.7354 (0.0000)***	-6.1503 (0.0000)***			
Leverage Ratio	LEV	0.4841	2.3927	Min: -99.1923 Max: 45.5546	-10.5120 (0.0000)***		9.6419 (0.0000)***	95.1664 (0.0000)***	-10.6320 (0.0000)***	-8.4013 (0.0000)***		
Ultimate Concentration	UO	39.7676	016.9412	Min: 2.3000 Max: 97.7600	-140.0000 (0.0000)***		9.6360 (0.0000)***	-120.0000 (0.0000)***	-140.0000 (0.0000)***	-140.0000 (0.0000)***	-140.0000 (0.0000)***	
N			3,576									
n			596									
T			6									

#### 4.2 Retrenchment strategy and excess value

Retrenchment results in all models show positive and significant results with the excess value. Size, LTA results have positive relationship between excess value in pooled and random effect models but negative relationship in fixed effect and fixed effect with cluster models. Profitability and leverage predict negative and significant relationship with excess value. Meanwhile, growth opportunities points out there is positive and significant relationship with excess value. For the interactive terms, ownership concentration shows the negative sign with excess value but not

insignificant with excess value. In addition, dummy of government show negative and significant with excess value but dummy of foreign not. Moreover, the dummy of foreign and dummy of government across retrenchment strategy find that there is a negative and significant relationship between them and excess value.

Again, the result from retrenchment model shows that retrenchment denotes the positively statistical significance on excess value. Retrenchment depicts the statistical significance at the 1% level, where the coefficient value is 0.0899. A unit increase in retrenchment leads to a 0.0899 unit change in excess value. Thus, the hypothesis (H<sub>2</sub>) is accepted and it is concluded that there is a positive relationship between divestiture and excess value. Equation 4.1 is created as shown below:

$$EV = 0.0899 * LRET - 0.0461 * LTA - 0.0356 * OIS + 0.0832 * CES - 0.0046 * LEV \\ - 0.0004 * UO + 0.0000 * UO^2 + 0.1452 * DFOR - 0.0171 * DGOV - 0.0865 \\ * (DFORG * DEF) + 0.0894 * (DGOV * DEF) + 0.2766$$

This is consistent to early literature documents that retrenchment strategic is positively related to firm performance because of the increased efficiencies brought by reduction (Schendel , Patton , & Riggs , 1976; Hambrick & Schechter, 1983; O'Neil, 1986; Robbins & Pearce, 1992; Robbins & Pearce II, 1993 Miles, Snow, & Sharfman, 1993; Dodge, Fullerton, & Robbins , 1994; DeWitt, 1998). Furthermore, Lim et al. (2013), Dominic et al. (2013) and Lim et al. (2013) and Dominic et al. (2013) found there is a statistically significant relationship between retrenchment and firm performance.

## 5. DISCUSSION

The results from this study have indicated that retrenchment, as one type of the defensive strategy, denotes the positive association with the excess value. The hypothesis, i.e., There is a positive significantly relationship between retrenchment and excess value, is thus been accepted. There are several explanations that can be supposed based on the previous documented literatures to the findings in this study. Firstly is by reducing costs and assets to increase the efficiency of firm through the retrenchment actions. The reduction and elimination of non-profit goods, inventories, assets, activities, and inefficiency employees might maximize the profitability and minimise the losses. This is supported by the early literature documents that retrenchment strategy is positively related to the firm performance because of the increased efficiencies brought by reduction (Schendel , Patton , & Riggs , 1976; Hambrick & Schechter, 1983; O'Neil, 1986; Robbins & Pearce, 1992; Robbins & Pearce II, 1993 Miles, Snow, & Sharfman, 1993; Dodge, Fullerton, & Robbins , 1994; DeWitt, 1998).

*Table following on the next page*

**Table 4**

*Results of panel data analysis of excess value with retrenchment strategy*

The values reported is the coefficient value, with standard error in parentheses. The regression is performed using four control variables that affect excess value in four models. LRET is the retrenchment strategy that focus on in this study which is defined log of sum of the retrenchment actions as reduction in assets and costs, especially in respect of the reduction of the finished goods and inventory, the reduction of the number of employees, the reduction of SGA, the reduction of PPE, and the reduction of R&D costs; LTA is the log of assets (firm size); CES is the capital expenditure to sales ratio (growth opportunities); OIS is the operating income to sales ratio (profitability); LEV is the ratio of debt

to common share equity (leverage); UO is the ownership concentration; UO<sup>2</sup> is the square root ownership concentration; DFOR,DGOV,DFORG\*DEF, DGOV\*DEF are the dummies for the ownership structure such as foreign and government-controlled firms.

EV	Pooled OLS	Random Effect	Fixed Effect	Fixed Effect with Cluster
<b>LRET</b>	0.1245 (5.76)***	0.0959 (7.35)***	0.0899 (6.78)***	0.0899 (5.39)***
<b>LTA</b>	0.0077 (2.33)**	0.0048 (0.69)	-0.0461 (-1.58)	-0.0461 (-0.73)
<b>OIS</b>	-0.0347 (-6.2)***	-0.0362 (-11.31)***	-0.0356 (-10.73)***	-0.0356 (-4.73)***
<b>CES</b>	0.1433 (8.21)***	0.0877 (7.86)***	0.0832 (7.33)***	0.0832 (3.83)***
<b>LEV</b>	-0.0127 (-4.1)***	-0.0052 (-2.99)***	-0.0046 (-2.6)***	-0.0046 (-2.07)**
<b>UO</b>	-0.0038 (-1.94)**	-0.0015 (-0.71)	-0.0004 (-0.18)	-0.0004 (-0.13)
<b>UO2</b>	0.0001 (2.58)*	0.0000 (1.16)	0.0000 (0.53)	0.0000 (0.39)
<b>DFOR</b>	0.2174 (9.95)***	0.1929 (4.67)***	0.1452 (1.43)	0.1452 (0.99)
<b>DGOV</b>	0.1379 (5.56)***	0.0667 (1.47)	-0.1708 (-1.81)*	-0.0171 (-1.68)*
<b>DFORG*RET</b>	-0.1164 (5.32)***	-0.0921 (7.00)***	-0.0865 (6.46)***	-0.0865 (-5.16)***
<b>DGOV*RET</b>	-0.1236 (5.71)***	-0.0953 (7.30)***	-0.0894 (6.73)***	-0.0894 (-5.35)***
<b>_CONS</b>	-0.0405 (-0.94)	-0.0340 (-0.56)	0.2766 (1.6)	0.2766 -0.76
<b>R-SQUARED</b>	0.0836	0.0784	0.0136	0.0136
<b>ADJ R-SQUARED</b>	0.0807	-	-	-
<b>WALD CHI2(11)</b>	-	(364.4)***	-	-
<b>F-TEST</b>	(29.53)***	-	(30.20)***	(10.38)***

Note: Figures in the parentheses are t-statistics except for random effect model, which are z-statistics. \*\*\*, \*\*, and\* indicate the respective 10%, 5%, and 1% significance levels. Cluster is the option to solve heteroscedasticity and serial correlation problems.

The agency theory can also support the findings of the positive relationship between the retrenchment strategy and the excess value in this study. The theory mentions that an effective monitoring function in a firm can protect the shareholders and management from the conflict of interest by reducing the agency costs (Fama & Jensen, 1983). This is because by alleviating the agency problems, the agency costs might be reduced, thus, the performance of firm can be increased. After eliminated all the non-profit, and inefficiency costs and assets through the retrenchment actions, a systematic and efficient monitoring system has to be formed in the firm. Such monitoring system is important to prevent the agency problems such as the agency agents from taking selfish actions for their own benefits. Moreover, by adding in the threat of firing can ensure the managers or agents of the firm to act in the shareholders' best interests and benefits to avoid themselves from being dismissed. When some of the employees are dismissed or sacked, the

remaining managers or agents are usually work at their best, and therefore it might benefit to the company, as well as in order to maintain their own self-interests for not losing the job. This is supported by McColgan (2001), managers may to take shareholder maximizing actions in order to keep their jobs.

On the other hand, the negative relationship between excess value with both government and foreign retrenchment firms exists. For the government-controlled firms, based on Razak et al. (2008) who argued that government firms are generally guided by social altruism and will make their performance poorer. In addition, Zeitun and Tian (2007) and Gürsoy and Aydoğan (2002) also defined government involvement is significantly negatively related to the company's performance. There are several reasons. First, social altruism controls the government. Second, the government has no real ownership expropriation, but the citizens. The latter might not have any profit motive, while the bureaucrats are the one who exercise the governance. As there is no common agreement about the profits for both sides, therefore, it is hard to ensure a good governance.

Meanwhile, for the foreign-controlled firms, the previous chapters indicate that there is a significant negative relationship between the excess value and the foreign defensive firms. This is supported by Munday et al. (2003) and Phung and Le (2013). One of the issues that let this situation happen due to it is not concentrated. The foreign-controlled firms face difficulties in solving the problems or adjusting the operations when retrenchment strategy happens. Based on the agency theory, the managers who work in the foreign company might not feel that they belong to the company. Lack of the loyalty from the managers or employees can cause the increment in the agency cost. This is because personal benefits are emphasized more than companies' future especially during the economic downturn.

## 6. CONCLUSION

In a nutshell, this study concludes that retrenchment strategy has the significant positive effect with the excess value. The reduction of the costs and assets, the efficiency of monitoring structure, the threat of firing, and stewardship can enhance the firm benefit. Low profitability is found to be better for the firm performance. Growth opportunities and leverage can help a business to grow quickly, but in the case of leverage, it does not enhance the firm value due to the increase of higher risk. The ownership structure remains as a big issue that influences the retrenchment actions. There is a negative relationship between excess value and retrenchment across the ownership structure in both of the government and foreign-controlled firms. It means that the ownership expropriation will adversely affect the firm performance. Retrenchment strategy has gained its popularity and is being regarded as a common strategy in the corporate world to cut down cost. As Malaysia offers unique background high degree of retrenchment among Malaysia firms, small and open economy and highly concentrated ownership expropriation. We provide a link between excess value and retrenchment cost. A balanced panel data regression model is established to implement and test the relationship between excess value and retrenchment cost. From the results, we document a positive association between the excess values of retrenchment cost. Our finding is consistent with the Robbins and John (1993) also said that retrenchment is positively related to turnaround performance. This also support by Love and Nohria (2005) and Schmitt and Raisch (2013) find that retrenchment actions that reduce assets will increase firm profitability and strengthen the firm's industry position. The result of ownership structure find there is negatively and significant relationship between ownership structures and excess value, where foreign and government underperformed in imposing retrenchment strategy. Based on the results, it suggests that retrenchment cost and ownership structure plays a monitoring role in organisation strategy decision making. The implication of this research lies in two main points. Firstly, it enriches the body of knowledge by showing the effectiveness of retrenchment strategy in value creation, and the role of corporate governance on that relationship. Secondly, it contributes to regulator or policy maker that retrenchment strategy might have a good corporate governance to create value. As such, this

research implies to industry that retrenchment strategy might gain value to certain type of firm and certain level of ownership.

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## **RELATIONS OF UNEMPLOYMENT ON THE METROPOLITAN AND SUBURBAN LABOUR MARKETS IN GERMANY, POLAND AND SPAIN**

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### **ABSTRACT**

*This paper presents the results of an analysis of long- and short-term relations of numbers of the unemployed between the big cities and their suburbs in Germany, Poland and Spain. In the analysis, the cointegration method and the VAR models are applied. The obtained results indicate great diversity of these relations and the specificity of particular cities. In general, cities and suburbs in Germany have been characterised with stronger long-term relations than in other countries. In Poland and Spain these relations have been usually short-term.*

**Keywords:** *Labour Market, Long and Short -Term Relations, Unemployment*

### **1. INTRODUCTION**

Cities play a key role in modern economy. They exert a significant influence on the size of GDP, economic growth rate and functioning of the labour market (Dijkstra et al., 2013, pp. 334-354; Henderson, 2010, pp. 515-540). Their significance results more and more from the role they play in the concentration of knowledge, human capital, and, as a consequence, innovativeness (Sassen, 2002). Attractiveness of the cities as a place of work and residence results not only from the salary conditions, but also from various facilities they offer. In the past decades, the urban evolution, especially of big cities, was accompanied by changes in their close vicinity. As a result of an outflow of employment and residents to the suburban areas, the centralised systems were replaced with polycentric systems, changing the significance and roles of central cities (Henderson, 2003, pp. 515-540). The issue to be discussed is whether the relations between the cities and their suburbs are competitive or complementary. An assumption of the industry separateness in the centres and suburbs leads to the conclusion that these relations are competitive, which arises mainly from the competition for work (Sullivan, 1983, pp.235-255). Alternative models assume the complementarity of industries located in the cities and suburbs (Haugworth and Inman 2002, pp. 45-88; Hollar, 2011, pp. 231-252). Therefore, the city-suburb relations may be diversified and highly dependent on the central city (Voith, 1998, pp. 445-464). Changes in the economic conditions may affect the relations between the cities and suburbs, including those concerning the



labour market (Leichenko, 2001, pp. 326-354). In addition, these relations are complicated by the fact that even within the city the labour market does not have to be homogenous, but may be divided into many submarkets (Morrison, 2005, pp. 2261-2288).

A significant share of medium and small towns constitutes the European specificity. Cities with more than one million residents have a relatively low share in the EU states in a number of residents, while the majority of urban population lives in small and medium towns (European Commission, 2011). In most European countries, especially in the Western Europe, changes in the population size and rate of the economic growth of the cities and extra-urban areas have been similar, while in many cities of the Eastern Europe the population size has been reduced (Turok and Mykhnenko, 2007, pp.165-182). This paper is to analyse the relations of numbers of the unemployed between the big cities and their suburbs in Germany, Poland and Spain. The subject of interest constitutes the assessment of long- and short-term relations. One has tried to define whether these relations are similar for all the cities regardless of a country, or whether they are specific for particular countries or for particular cities.

## 2. METHOD

A theoretical assumption of analyses conducted in the paper is constituted by the equilibrium models on labour markets separated in space and the models describing journeys to the place of work (Hollar, 2011, pp. 231-252; Mathä and Wintr, 2009, pp. 735-738). While describing the establishment of employment on particular local markets, these models indicate also the relations of employment and unemployment among the markets. Due to the specificity of particular markets, the strength and character of these relations may be diversified. In the paper, these relations have been analysed with use of the cointegration tests and the VAR models. An analysis of long-term relations has been conducted with use of the Johansen cointegration test. In an analysis of short-term relations, the VAR model has been applied as follows (Enders, 2010):

$$U_t = \alpha_0 D_t + \sum_{i=1}^k \alpha_i U_{t-i} + e_t$$

where  $U_t$  is a vector of a number of the unemployed on  $n$ -markets within the period of  $t$ ,  $D_t$  is a vector of deterministic variables,  $\alpha_i$  – a vector of coefficients for delayed variables of the vector  $U_t$ , and  $e_t$  – a vector of random components. In the paper, relations between two markets were analysed, thus the model consisted of a system of two equations. If variables in the model were cointegrated, it would be possible to apply the model with the VECM error correction mechanism. Cointegration has been declared only for some markets, thus in the paper the VAR model has been applied by introducing the transformed variables to stationary variables, calculating deviations of a number of the unemployed from a trend with use of the Hodrick-Prescott filter<sup>1</sup>. A number of lags in the VAR models has been specified based on the Hannan-Quinn criterion. On the basis of the VAR models, the Granger causality tests have been conducted, as well as the functions of impulse response and variance decomposition have been specified. In the analyses one has applied the time series transformed to the form of logarithms, from which seasonal components were removed with the Census X12 algorithm.

In the paper the following data on a monthly number of registered unemployed in particular cities and adjoining local units for the following cities and their suburbs have been applied:

- Germany: Berlin, Dresden, Hamburg, München, Stuttgart,
- Poland: Cracow, Poznan, Tri-City (Gdansk, Gdynia, Sopot), Warsaw, Wroclaw,
- Spain: Barcelona, Madrid, Seville, Valencia, Zaragoza.

The selected cities had more than 500 thousand residents and were located in different parts of particular countries. The analysis included the years 2006-2015. In that period tendencies for changes in a number of the unemployed were different. Generally, on the German market the

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<sup>1</sup> Stationarity of deviations from the trend has been verified with the ADF method

number of the unemployed was subject to the long-term downward trend. On the Polish market it was decreasing until the third quarter of 2008, then it was increasing until the middle of 2013 and decreasing again. In Spain, from 2006 to 2007 a number of the unemployed was not significantly changed, from 2008 to 2009 it rapidly increased, then stabilised on a high level and since 2014 it has started to slowly decrease.

### 3. RESULTS

The first stage of the conducted analyses was the test of long-term relations of a number of the unemployed on particular markets. That analysis was conducted in reference to the relations between the selected cities in particular countries and between the particular countries and their corresponding suburbs. Table 1 presents the results concerning cointegration among the cities. They allow for the assessment whether particular cities in a given country are subject to similar or different long-term changes in a number of the unemployed. The fewest cases of cointegration were declared among the cities in Spain, while the most – between the cities in Germany. In Spain only Zaragoza manifested long-term relations of a number of the unemployed with other cities, except for Barcelona. In turn, among the majority of German cities cointegration was declared, except for Dresden that did not manifest any cointegration with three cities of the Western Germany (Hamburg, München, Stuttgart). Results of the cointegration tests still show a spatial division of labour markets into the western and eastern part of Germany. Indirect results were obtained for the Polish cities.

*Table 1: Long-term relations of the number of the unemployed – tests of cointegration between the pairs of cities (p-value for the hypothesis  $r=0$ , above the diagonal maximum eigenvalue test, below diagonal trace test) (own calculations)*

Poland	Kraków	Poznań	Trójmiasto	Warszawa	Wrocław
Kraków	-	0,0166	0,2136	0,0601	0,4077
Poznań	0,0342	-	0,0019	0,1476	0,0274
Trójmiasto	0,2930	0,0076	-	0,0639	0,1484
Warszawa	0,0946	0,2287	0,0350	-	0,2762
Wrocław	0,1568	0,0204	0,1851	0,1924	-
Germany	Berlin	Dresden	Hamburg	München	Stuttgart
Berlin	-	0,0103	0,0278	0,0169	0,0185
Dresden	0,0100	-	0,0981	0,3319	0,1314
Hamburg	0,0167	0,0591	-	0,0488	0,0938
München	0,0036	0,1641	0,0277	-	0,0646
Stuttgart	0,0061	0,0672	0,0281	0,0621	-
Spain	Barcelona	Madrid	Sevilla	Valencia	Zaragoza
Barcelona	-	0,5594	0,9160	0,4989	0,8534
Madrid	0,4436	-	0,4573	0,0845	0,0007
Sevilla	0,8446	0,1714	-	0,1583	0,0098
Valencia	0,3846	0,0840	0,0793	-	0,0265
Zaragoza	0,7914	0,0134	0,0097	0,0104	-

Source: own calculations

Table 2 presents the results of cointegration tests between a number of the unemployed in the cities and in the corresponding suburbs. The results indicate that long-term relations of a number of the unemployed characterise mainly the German cities and suburbs. Except for München, a number of the unemployed in all other German cities was cointegrated with a number of the unemployed in their suburbs. In Poland and Spain, the lack of cointegration was declared more often. Results of the cointegration tests constituted also an indicator concerning the modelling of relations of a number of the unemployed among the markets. In the majority of pairs the city-suburb cointegration was not declared, so in a further analysis only short-term relations were analysed with use of the VAR models, to which a deviation of the number of the unemployed from the trend was

introduced as variable. The results were illustrated with the Granger causality tests, as well as with the functions of impulse response and variance decomposition.

*Table 2: Tests of cointegration for the city-suburb pairs<sup>1</sup>(own calculations)*

Country, city	Trace test		Maximum eigenvalue test	
	$r=0$	$r \geq 1$	$r=0$	$r \geq 1$
Poland:				
Kraków	13,0931 (0,3564)	1,7799 (0,8210)	11,3133 (0,2295)	1,7799 (0,8210)
Poznań	16,1972 (0,1654)	2,7088 (0,6364)	13,4884 (0,1151)	2,7088 (0,6364)
Trójmiasto	17,9757 (0,1001)	3,0523 (0,5710)	14,9234 (0,0705)	3,0523 (0,5710)
Warszawa	21,5645 (0,0329)	8,4097 (0,0694)	13,1438 (0,1285)	8,4097 (0,0694)
Wrocław	21,3299 (0,0355)	4,0835 (0,3998)	17,2465 (0,0305)	4,0835 (0,3998)
Germany:				
Berlin	25,0891 (0,0100)	6,6516 (0,1461)	18,4375 (0,0195)	6,6516 (0,1461)
Dresden	29,1419 (0,0023)	6,5870 (0,1500)	22,5549 (0,0039)	6,5897 (0,1500)
Hamburg	26,3870 (0,0063)	5,4822 (0,2347)	20,9048 (0,0075)	5,4822 (0,2347)
München	12,9370 (0,2689)	3,6168 (0,4722)	9,3205 (0,4002)	3,6168 (0,4722)
Stuttgart	22,9192 (0,0270)	2,8071 (0,6174)	20,1121 (0,0102)	2,8071 (0,6174)
Spain:				
Barcelona	11,4059 (0,5035)	4,1113 (0,3958)	7,2945 (0,6334)	4,1113 (0,3958)
Madrid	18,0600 (0,0977)	6,3426 (0,1659)	11,7174 (0,2030)	6,3426 (0,1659)
Sevilla	19,7612 (0,0585)	5,0739 (0,2754)	14,6879 (0,0765)	5,0739 (0,2754)
Valencia	20,3653 (0,0484)	3,8798 (0,4303)	16,4854 (0,0403)	3,8798 (0,4303)
Zaragoza	21,0856 (0,0384)	8,4104 (0,0694)	12,6753 (0,1501)	8,4104 (0,0694)

<sup>1</sup> – In paranthesis p-value

Results of the causality tests may be interpreted in the context of a question whether, and if yes, then on which market – a suburban or urban, changes in the number of the unemployed precede changes in the number of the unemployed on the other market. Therefore, if e.g. changes in unemployment on the suburban market cause changes in unemployment on the urban market, it means that changes in unemployment start from the suburban market. The causality tests indicate large differences towards the short-term relations of unemployment among the markets. In Spain, almost all markets were connected with bilateral cause and effect relationships. Zaragoza constituted an exception, as there a unilateral cause and effect relationship was confirmed. For all Polish cities it was stated that changes in unemployment on the suburban markets were a cause of changes in unemployment on the urban markets in the Granger sense. For two markets (Krakow and Tri-City) a reverse cause and effect relationship was confirmed. For the German cities very diverse results were obtained. For two of them (Berlin and Dresden) no causal relations were indicated, while for two others (Hamburg and Stuttgart) relations were bilateral and for München the causal relation was unilateral.

*Table following on the next page*

*Table 3: Causality tests for the number of the unemployed in the cities and suburbs (own calculations)*

City (number of lags in the VAR model)	Causality direction			
	S $\Rightarrow$ C		C $\Rightarrow$ S	
	$\chi^2$	p-value	$\chi^2$	p-value
Poland:				
Kraków (2)	18,5266	0,0001	13,7848	0,0010
Poznań (3)	10,8868	0,0279	6,8322	0,1450
Trójmiasto (8)	35,5104	0,0000	23,9174	0,0024
Warszawa (3)	62,9961	0,0000	6,7294	0,0810
Wrocław (3)	29,0356	0,0000	5,7454	0,1247
Germany:				
Berlin (2)	0,9858	0,6108	2,0489	0,3590
Dresden (2)	1,4118	0,4937	1,1207	0,5710
Hamburg (3)	10,4031	0,0154	9,6018	0,0223
München (3)	0,2991	0,9602	16,3962	0,0009
Stuttgart (4)	21,1639	0,0003	14,5103	0,0058
Spain:				
Barcelona (2)	21,1634	0,0000	8,1882	0,0167
Madrid (4)	39,5353	0,0000	15,3245	0,0041
Sevilla (2)	19,1094	0,0001	9,9150	0,0070
Valencia (3)	19,4406	0,0002	12,8302	0,0050
Zaragoza (2)	4,3368	0,1144	12,3434	0,0021

The VAR modelling results were illustrated also with the functions of impulse response and variance decomposition of a forecast error. The impulse response function describes the response of endogenous variables in the VAR model to an individual shock in a random component. Variance decomposition of a forecast error delivers information on a relative significance of this shock in the formation of endogenous variables. While assessing the results obtained for the cities and suburbs in particular countries, it may be stated as follows:

- Poland: strength of a response to impulses from the other market was increasing together with an extension of time horizon to six months, and then was decreasing. Variance decomposition indicates that impulses from the domestic market have the largest share in the formation of variability of unemployment in the big cities. Only Warsaw is an exception, as there impulses from the suburbs had larger share when the period exceeded six months. Share of impulses from the cities in the formation of variability of unemployment was significant and increasing together with the extension of time horizon. Warsaw suburbs constituted an exception;

*Figure following on the next page*

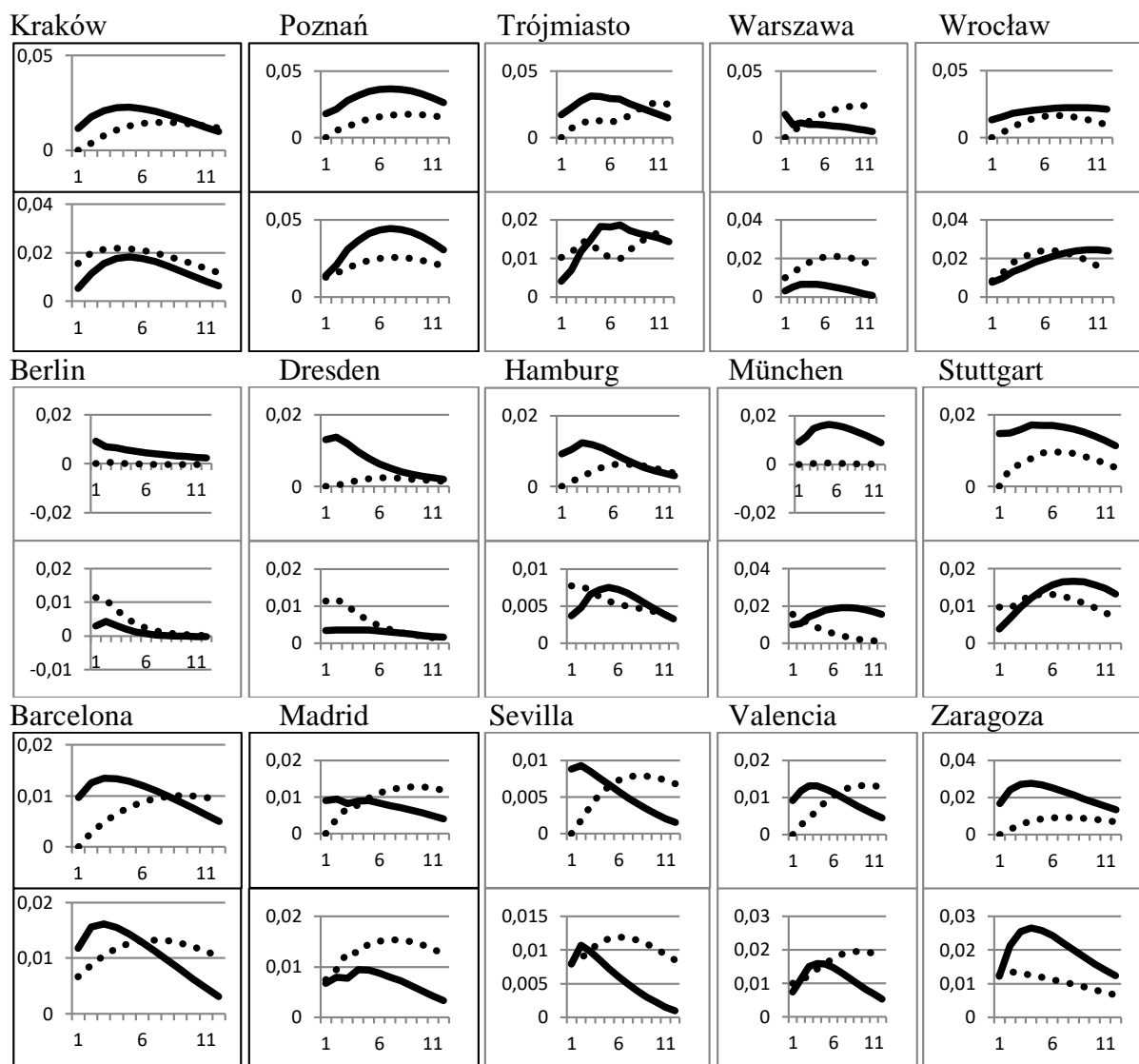


Figure 1: Impulse response functions (continuous line – cities, dotted line – suburbs, upper graphs for cities, lower – for suburbs) (own elaboration)

- Germany: The cities' response to impulses from the domestic market was usually decreasing upon the extension of time horizon over three months. In the event of Berlin and Dresden suburbs, contrary to other suburbs, a response to impulses from the cities' central market was insignificant and not increasing together with the extension of time horizon. Impulses from the domestic market were decidedly prevailing in the formation of variability of the number of the unemployed in Berlin and Dresden and in their suburbs. In the event of suburbs of other cities, together with the extension of time horizon the share of impulses from the city's central market was greatly increasing;

Figure following on the next page

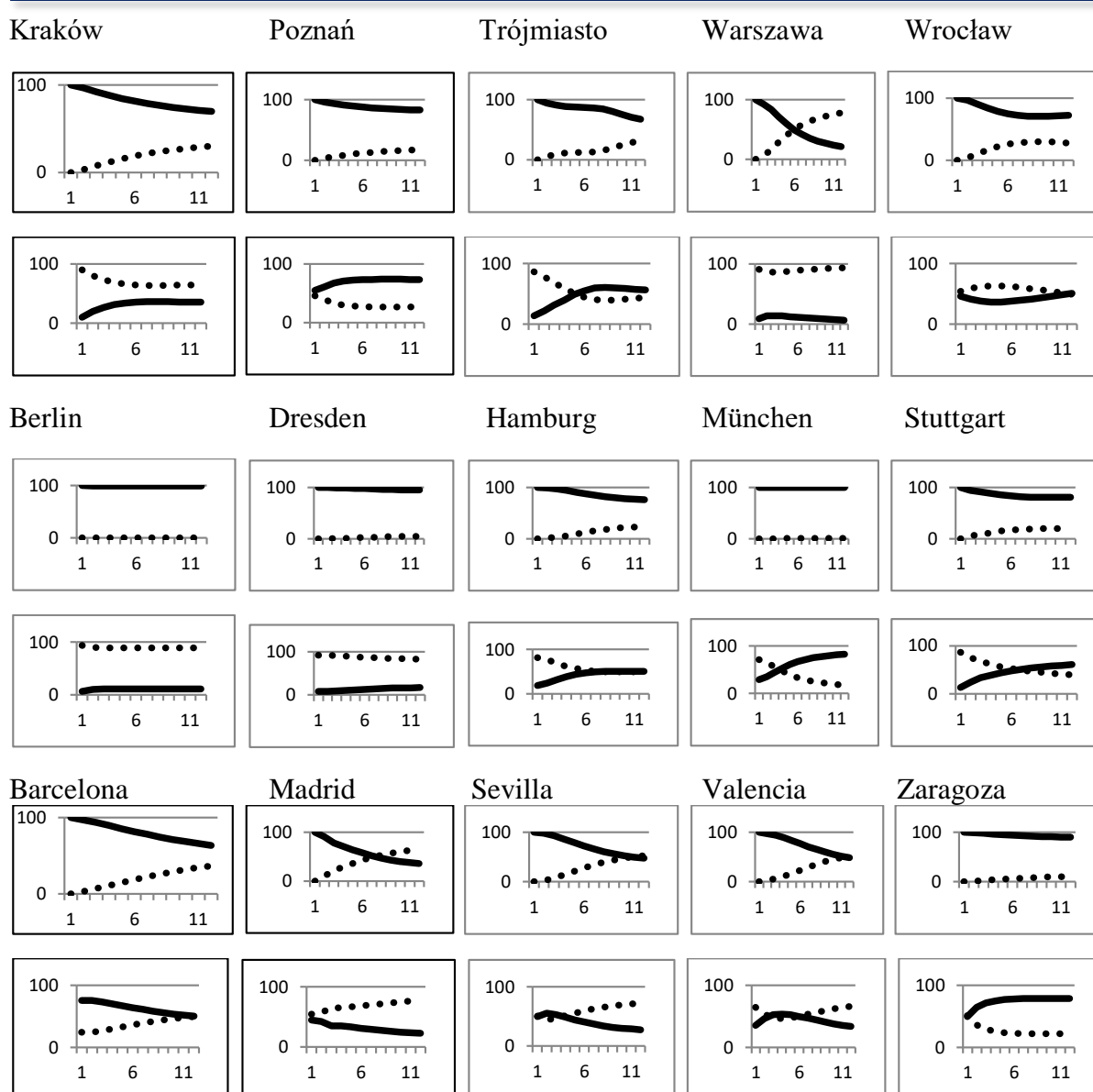


Figure 2: Variance decomposition (symbols as in Fig. 1) (own elaboration)

- Spain: except for Zaragoza, a response of the city's central market to impulses from the suburbs was increasing together with the extension of time horizon. In turn, upon exceeding a three-month time horizon, a response of the suburbs to impulses from the central market was decreasing. In the big cities, together with the extension of time horizon the share of impulses from the domestic market in the formation of variability of unemployment was decreasing, while the share of impulses from the suburbs was increasing. In the suburbs, together with the extension of time horizon the share of impulses from the big cities was decreasing, while for impulses from the domestic market it was increasing. Zaragoza again constituted an exception.

#### 4. CONSLUSION

Economic relations between the central cities and their suburbs may be diversified, as their character depends mainly on the specificity of big cities. Economic and social changes within the particular cities usually have no identical distribution in time or even a direction of changes. As a consequence large differences in the relation of metropolitan and suburban labour markets may be expected. Analyses conducted for the number of the unemployed have significantly confirmed these expectations. Generally, in Germany relations of the number of the unemployed between the



big cities and their suburbs have been more long-term than in the two remaining countries. The obtained results indicate also that in Germany differences among cities of the western and eastern states are still noticeable. In Spain, short-term changes in the number of the unemployed have usually been the reason of changes in the number of the unemployed in the suburbs. In Poland, a reverse direction of causal relation has usually been stated. However, in the light of the obtained results it is difficult to indicate one model of unemployment relations in the cities and their suburbs independent of the country and region.

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## ASSESSMENT OF INTER-REGIONAL CONVERGENCE IN THE SOCIAL WELFARE BASED ON THE A. SEN FUNCTION: RUSSIAN CASE STUDY

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### ABSTRACT

*The aim of this study is estimation of social welfare in Russian regions in 2004-2014 based on the A. Sen abbreviated function, the assessment of regions convergence in welfare and factors contributing to it. We adjusted the A. Sen welfare function by the cost of living in regions and presented it as a four-factor multiplicative model.*

*By use of the coefficient of variation (CV) we estimated the inter-regional inequality in welfare in statics and dynamics. The technique of decomposition of the squared CV for logarithm of welfare function enabled us to evaluate the contribution of main and intersect factors to Russian regions' convergence in welfare. As a result we assessed Russian regions social welfare in dynamics and evaluated factors contributing to its growth. Based on the weighted CV we discovered the negative impact of the recession of 2009 on the regions convergence in welfare, and unweighted CV even more revealed the turning point in the convergence tendency occurring in 2012.*

*We discovered that in statics the redistributive factor makes the greatest and increasing contribution to inter-regional convergence in welfare, whilst the cost of living and intra-regional income inequality factors have moderate and decreasing influence on it.*

*The dynamic analysis revealed two factors predominantly contributing to regions' temporal convergence in welfare, namely growing convergence in GRP per capita and significant but unstable influence of distributive factor.*

*Two other factors, the cost of living and intra-regional income inequality, counteracted to temporal convergence mainly due to attenuation of their negative correlation to nominal and real income per capita respectively. The results obtained may be applicable to both inter-budgetary and regional policy development.*

**Keywords:** *Abbreviated functions, Convergence, Decomposition, Factors, Inequality, Region, Coefficient of Variation, Welfare*

### 1. INTRODUCTION

The inter-regional inequality in welfare is a phenomenon naturally occurring in countries with considerable spatial diversity in the resources provision and in the level of regional economic development. Such an inequality may increase because of migration of resources and may decrease due to redistributive policy and management of institutional environment. Many authors study inequality in gross regional product (GRP) or income per capita (Lakner, Milanovic, 2013). Apparently, these indicators are incomplete and do not fully describe the well-being. The welfare in a broad sense includes a number of elements beyond and behind GDP ensuring people satisfaction with life.

The simple welfare functions are based on the main development indicator and its adjustment by other indicators characterizing the socio-economic processes accompanying the economic development and affecting the people well-being. The economists who initially studied the problem usually considered two main side effects of development commonly appearing at its lower stages: environmental (pollution) and social (increase in inequality) costs.

Later researchers proposed complex assessment of welfare based on various parameters of development, such as consumption, leisure time, life expectancy, level of health and education, pollution etc. They devised integrated indices of welfare, e.g. the Human Development Index and the Quality of Life Index, now frequently used for comparison of states or regions and for

measurement of spatial inequality (Grasso, Canova, 2008; Jordá, Sarabia, 2015). These indices are applied for assessment of welfare of Russian regions as well (Rating of Russian regions, 2015; Human Development Report, 2013). Nevertheless, the more complex measurement of welfare was presented by H. Daly and J. Cobb (Daly, Cobb, 1989) who developed the Index of Sustainable Economic Welfare (ISEW). Following some modifications it was transformed into the Genuine Progress Indicator (GNI). Today these measures are also employed in a range of comparative studies (Bleys, 2013; Andrade, Garcia, 2015).

However, the calculation of the integral index of welfare requires collection and processing of a large amount of information, and some data may be obtained only through sociological surveys. Accordingly to (Lawn, 2003), the methods of construction of integrated indices are still controversial. Whilst (Jordá, Trueba, Sarabia, 2013) indicate that these methods should take into account that welfare components may be complementary or substitutionary. Therefore, we postpone the complex assessment of the welfare of Russian regions until appropriate time.

In the current research we focus on abbreviated welfare functions taking into account only level of development and income inequality because they are evidently interrelated. According to previous researches, the vast majority of Russian regions demonstrate growing inequality over the last decade and movement on the ascending branch of the S. Kuznets curve (Malkina, 2014a). It explains our primary interest to adjustment of the regions average income with income inequality that would obviously lower the estimations of regions' convergence. At first the inequality-based approach to welfare was suggested by A. Sen in the form of “the abbreviated social welfare functions” (Sen, 1976). The A. Sen welfare function takes the following form:  $S = \mu \cdot (1 - G)$ , where  $\mu$  – average income per capita,  $G$  – the Gini coefficient.

Alternatively, N. Kakwani (Kakwani, 1981) incorporated a penalty for inequality in the welfare function and additionally took into account the reduction in life expectancy. R. Lambert represented the welfare function as direct dependency on income and inverse dependency on inequality (Lambert, 2002). Some advanced welfare functions incorporate people's attitude to inequality. Thus, in the C. Dagum' approach an individual's welfare depends on the number of people with higher earnings (Dagum, 1990). In other approaches the Gini coefficient was replaced by the A.B. Atkinson index, based on the utilitarian function of income with the diminishing marginal utility and taking into account the society perception of inequality (Atkinson, 1970). In this function the “e” parameter indicates the level of public aversion to inequality (Carlsson, Daruvala, Johansson-Stenman, 2005; Howarth, Kennedy, 2016). Some authors used all the family of “inequality-adjusted aggregate welfare functions” to complete the picture (Grüen, Klasen, 2008).

In our paper, we employ the A. Sen abbreviated function for assessment of the Russian Federation regions social welfare. Bearing in mind different level of prices and the cost of living in Russian regions, we substitute the nominal income for the real income. Further, based on the calculation of indices of inter-regional inequality we evaluate the degree of convergence / divergence of Russian regions in welfare in 2004-2014 years. Then we propose the method of decomposition of inequality index, which allows us to assess the factors' contributions to the inter-regional convergence (divergence) in the A. Sen welfare.

## 2. DATA AND METHODS

Our research is based on the official sources of information provided by the Federal Service of State Statistics of RF. We used annual data on 80 Russian regions for 2004-2014, including the number of population, GRP, personal incomes, the cost of a fixed basket of consumer goods and services, incomes inequality (measured by the Gini coefficient).

The algorithm of our study includes several stages.

## 2.1. Measurement of regions welfare

We presented the A. Sen social welfare function as the product of the following factors:

$$S_i = \frac{Y_i}{N_i} \times \frac{D_i}{Y_i} \times \frac{\bar{CI}}{CI_i} \times (1 - G_i) = \underbrace{y_i \cdot \partial_i \cdot c_i}_{r_i} \cdot g_i, \quad (1)$$

where  $y_i = \frac{Y_i}{N_i}$  – nominal gross regional product (GRP) per capita in “ $i$ ” region;  $\partial_i = \frac{D_i}{Y_i}$  – the

ratio of personal incomes to GRP in each region;  $c_i = \frac{\bar{CI}}{CI_i}$  – index, inverse to the relative cost of

living in “ $i$ ” region, calculated as the ratio of the cost of a fixed basket of consumer goods and services in the country to the cost of this set in each particular region;  $g_i = 1 - G_i$  – income erosion,

$G_i$  – intra-regional Gini coefficient for the nominal personal incomes in “ $i$ ” region. Note that due to the lack of statistical data on the cost of the consumer basket for the various groups of the population it is impossible to calculate the Gini coefficient for the real incomes. At each subsequent stage we obtained new parameter of the model:  $n_i = y_i \cdot \partial_i$  – nominal personal incomes per capita;  $r_i = y_i \cdot \partial_i \cdot c_i$  – real personal incomes per capita in “ $i$ ” region.

Further we calculated the logarithms for the A. Sen welfare for three reasons. Firstly, by this way we pass to the welfare utility function with diminishing marginal utility. Secondly, thus we approach normal distribution of welfare. Thirdly, the indices based on logarithms of some variable are easily decomposed, when this variable is represented in multiplicative form.

$$\ln(S_i) = \ln(y_i) + \ln(\partial_i) + \ln(c_i) + \ln(g_i). \quad (2)$$

Next, to simplify we make the following substitutions:  $S^*_i = \ln(S_i)$ ;  $y^*_i = \ln(y_i)$ ;  $\partial^*_i = \ln(\partial_i)$ ;  $c^*_i = \ln(c_i)$ ;  $g^*_i = \ln(g_i)$ .

## 2.2. Evaluation of inter-regional inequality in welfare

The inter-regional inequality is usually assessed with different methods (Ayala, Jurado, Pedraja, 2010, p. 240). In our study for this purpose we chose the coefficient of variation (CV) both for the logarithms of the A. Sen welfare and its components. The *population-weighted CV* for each “ $x$ ” variable measures the scale of inequality, while the *unweighted CV* measures the sharpness of inequality. The first one takes the form:

$$CV_x = \frac{\sqrt{\sum_{i=1}^n \rho_i \cdot (x^*_i - x^*)^2}}{x^*}. \quad (3)$$

Here  $x^*_i$  – average value of some variable in “ $i$ ” region,  $\rho_i$  – the share of “ $i$ ” region in total population of the country,  $x^* = \sum_{i=1}^n \rho_i x^*_i$  – the mean value of  $x^*_i$  variable,  $n$  – the number of regions. To obtain the unweighted CV we should replace the shares of regions in population  $\rho_i$  for their shares in number of regions,  $1/n$ .

### 2.3. Decomposition of inter-regional inequality in welfare

We propose following method of decomposition of the squared CV for the logarithm of the A. Sen welfare function:

$$CV^2[S_i^*] = \left(\frac{y_i^*}{S^*}\right)^2 \cdot CV^2[y_i^*] + \left(\frac{\partial_i^*}{S^*}\right)^2 \cdot CV^2[\partial_i^*] + \frac{2 \cdot Cov[y_i^*, \partial_i^*]}{S^{*2}} + \left(\frac{c_i^*}{S^*}\right)^2 \cdot CV^2[c_i^*] + \frac{2 \cdot Cov[n_i^*, c_i^*]}{S^{*2}} + \left(\frac{g_i^*}{S^*}\right)^2 \cdot CV^2[g_i^*] + \frac{2 \cdot Cov[r_i^*, g_i^*]}{S^{*2}}. \quad (4)$$

We denoted  $\left(\frac{x_i^*}{S^*}\right)^2 \cdot CV^2[x_i^*]$  as  $M(x)$  for all main  $x^*$  variables. Accordingly we made substitutions  $\frac{2 \cdot Cov[z_i^*, x_i^*]}{S^{*2}} = Inter(z, x)$  for all intersections of each main  $x^*$  variable with the collected parameter  $z^*$  achieved at each previous stage of the A. Sen function formation. Consequently, full decomposition of the squared CV takes the form:

$$CV^2[s_i^*] = M(y) + M(\partial) + Inter(y, \partial) + M(c) + Inter(n, c) + M(g) + Inter(r, g). \quad (5)$$

Thus, inter-regional inequality in budget expenditures per capita is fully decomposed to the contribution of main parameters and intersections of the model (1).

Based on our previous research (Malkina, 2014b), we can assume the positive correlation between the Gini coefficient and average real personal income in Russian regions. Besides, in the regions with higher nominal personal incomes a higher level of consumer prices should be observed on average. Finally, regions with a higher GDP per capita tend to have lower share of personal incomes in GRP. Given our parameters designed, all the *Inter* values should be negative.

Now we can formulate **the hypothesis of the study**. We presume that in the chain “nominal GRP per capita → nominal personal incomes per capita → real personal incomes per capita → the A. Sen welfare per capita” each subsequent parameter should demonstrate even less inter-regional inequality compared to the previous one.

Ultimately, the decomposition of the squared CV for the A. Sen welfare function by components enables us to evaluate the contribution of main and intersect parameters of the model (1) into the Russian regions’ convergence (divergence) in welfare both in statics and dynamics.

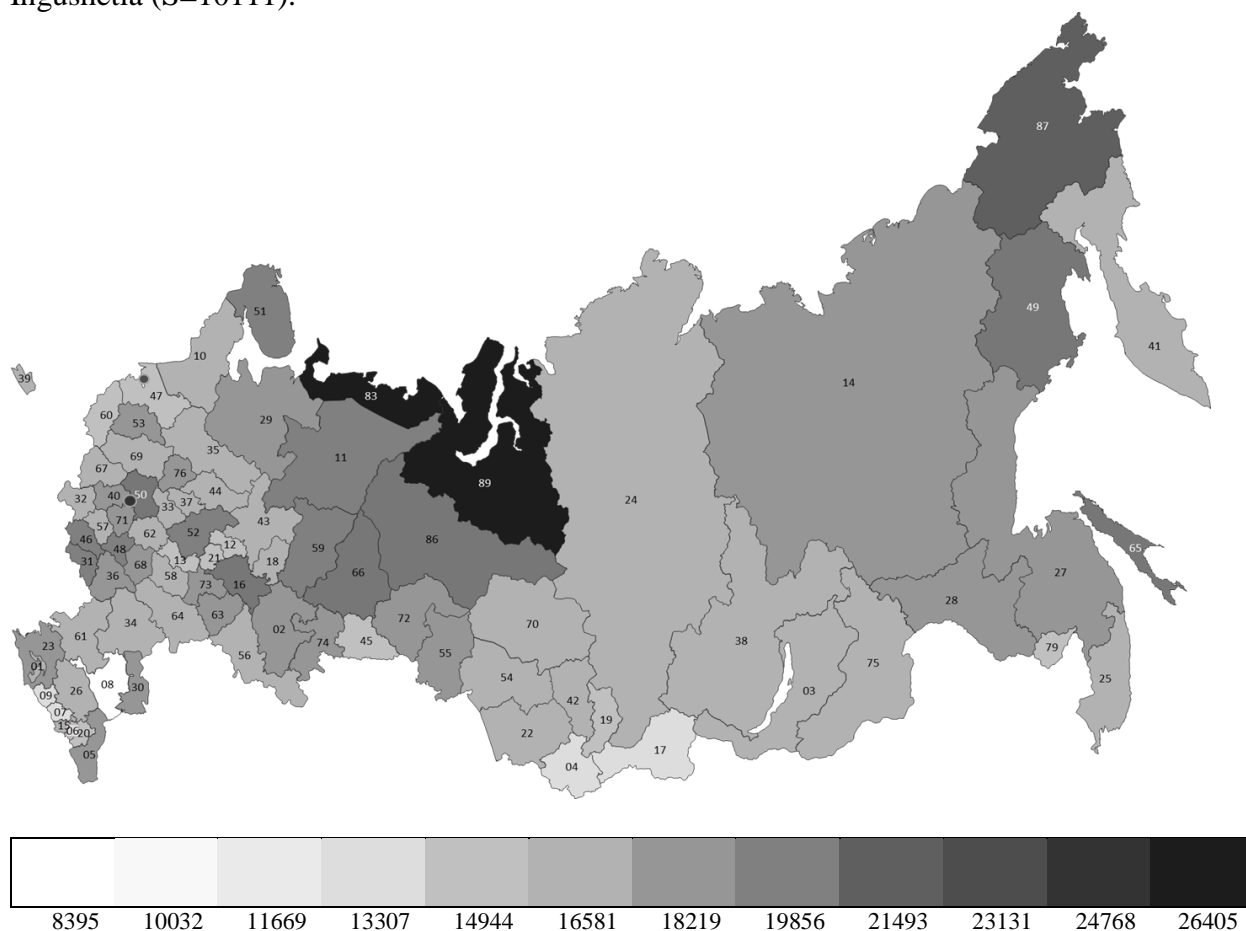
## 3. RESULTS AND DISCUSSION

### 3.1. Analysis of the A. Sen welfare functions in Russian regions

By calculation of social welfare using formula (1) we have obtained the estimations and ranks of Russian regions by welfare in dynamics. The figure 1 demonstrates the distribution of welfare among Russian regions in 2014. According to the A. Sen function, the most affluent Russian regions are neighboring mining territories with gas and oil production, namely: Yamalo-Nenets (S=26245) and Khanty–Mansi Autonomous Okrug – Yugra (S=19622), located in the Ural Federal District, and Nenets Autonomous Okrug (S=26405), subject of the Northwestern Federal District. They are followed by the Moscow city (S=21257), Russian managerial and financial center, and some extra mining territories located in the Far East: Chukotka Autonomous District (S=20640) and Sakhalin Oblast (S=19193), and Republic of Tatarstan (19184), located in the Volga Federal District. The least prosperous regions, according to the A. Sen function, are also some boarder territories: Republic of Kalmykia in the Southern Federal District (S=8395), Republic of Tyva (S=9405) and neighboring Republic of Altai (9858), located in the Siberian Federal District.



The group of deprived regions also includes three backward North Caucasian republics: Karachay-Cherkess Republic (S=10481), Kabardino-Balkar Republic (S=11084) and the Republic of Ingushetia (S=10111).



*Figure 1: The map of the Russian regions by the A. Sen social welfare in 2014  
 (author calculations based on the Russian Federation Federal State Statistics Service data)*

The average population-weighted welfare in Russian regions has increased 4.48 times over 2004-2014. At the same time the largest increase in the welfare is observed mainly in the poorer regions: Chechen Republic (8.47 times), Republic of Ingushetia (7.75 times), Republic of Dagestan (6.56), Ivanovo Oblast (6.61), and the Republic of Adygea (6.43). The first three are again the subjects of the North Caucasian Federal District. The lowest growth of welfare is marked both in some rich regions: Tyumen region, including Khanty-Mansi and Yamalo-Nenets Autonomous Okrugs (3.53 times), the city of Moscow (3.73) and St. Petersburg (3.69), and in some relatively poorer regions: Republic of Karelia (3.59), Kemerovo Oblast (3.59), Republic of Komi (3.62) and the Tomsk Oblast (3.69). The last four regions have lost in the welfare ranking 38, 26, 11 and 39 points respectively. Besides, the large drop in welfare ranking is observed in Pskov Oblast (39 p.), Volgograd Oblast (32 p.) and Leningrad Oblast (26 p.).

By means of logarithmic method of factor analysis we have decomposed welfare growth in Russian regions and measured the main components' contribution. Some results are presented in the table 1. It indicates that the welfare increase is predominantly attributable to the growth of GRP, whereas two other components, the share of personal income and income inequality, have demonstrated a moderate influence on welfare growth.

Meanwhile, the factors contributions to the welfare growth differ a lot in the regions. Thus, the GRP factor showed a greatest impact on welfare of some North Caucasian republics: Chechnya,



Ingushetia and Dagestan, and again of the Republic of Adygea, the subject of the Southern Federal District. These are all backward regions, in fact demonstrating catching-up effect in development. But simultaneously large increase in GRP per capita has been observed in the Sakhalin Oblast, one of the highest-level welfare regions. On the contrary, the lagging growth of GRP per capita in Vologda, Pskov, Kemerovo, Tomsk, Omsk and Tyumen regions has considerably let them down in the welfare ranking.

*Table 1: The results of decomposition of the welfare growth rate, % (author calculations)*

	Minimum value (region)	Maximum value (region)	Average (Russian Federation value)	Standard deviation
GRP	196,9 (Vologda Oblast)	700,5 (Chechen Republic)	331,9	85,8
Share of personal incomes in GRP	-173,7 (Sakhalin Oblast)	179,1 (Lipetsk Oblast)	8,6	51,6
Relative cost of living	-35,3 (Vladimir Oblast)	68,0 (Chukotka Okrug)	0,0	18,4
Income inequality	-45,4 (Chechen Republic)	54,2 (City of Moscow)	7,3	11,5
Welfare (based on the A. Sen function)	253,0 (Tyumen region)	746,9 (Chechen Republic)	347,8	87,1

The advancing increase in the share of personal income in GRP has picked Ivanovo and Lipetsk Oblast up in the welfare ranking. However, the negative contribution of this factor to welfare of the Moscow city (-80.2%) has not influenced its rank, albeit has decreased its gap with less prosperous regions.

In some regions the relative cheapening of the consumer basket compared to the average state-wide one has led to additional gain in welfare. Apart from Chukotka mentioned in the table 1, it is the case of some other Eastern territories such as Sakhalin Oblast and the Republic of Sakha (Yakutia), and also of the Republic of Ingushetia. Simultaneously, some Western and Central regions, specifically Smolensk, Pskov and Vladimir Oblast, have demonstrated significant negative impact of the relative growth in cost of living on change in the welfare. The similar negative influence is established in some Northern Caucasian regions: Karachay-Cherkess and Chechen republics.

Ultimately, considerable decrease of intra-regional inequality in the Moscow city proved to be an important factor maintained its welfare gap with other regions as well as its high position in the ranking. The backward Northern Caucasian republics, although growing at a higher rate, have been again thrown back in welfare due to rise in intra-regional inequality accompanying their development.

### **3.2. Analysis of the Russian regions convergence / divergence in the A. Sen welfare**

Both population-weighted and unweighted regional disparities in welfare, assessed by the formula (3), point at the regions convergence (Fig. 2). In general, the inter-regional inequality in welfare has decreased approximately by 43% over 11 years.

However, the unweighted approach demonstrates a smooth process of regions' convergence in welfare with decreasing rate after 2008, turning to inverse tendency of divergence since 2012. In comparison, the weighted approach demonstrates irregular tendency of convergence during the entire period analyzed, but it proves to be more sensitive to the 2009 recession. The distinct results obtained through the two approaches are obviously related to the concentration of population in the more prosperous regions, as well as different impact of crises on poor and rich regions.

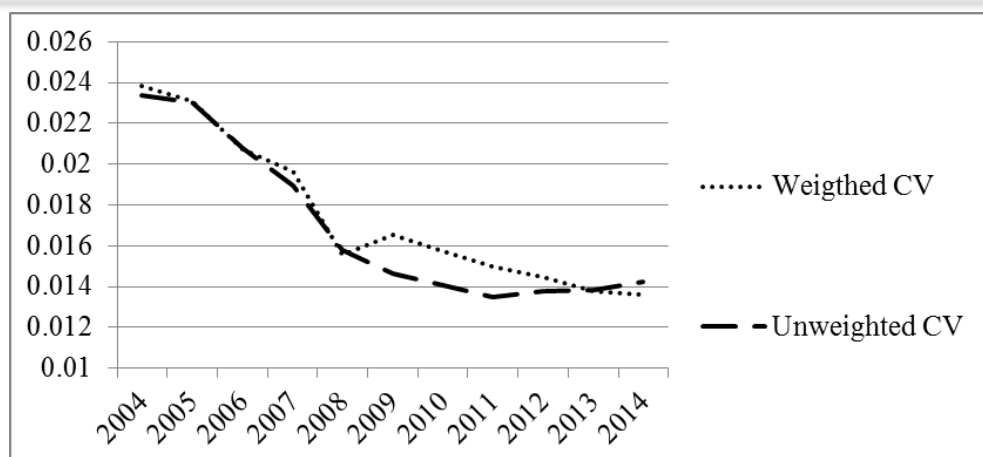


Figure 2: Tendencies of convergence of Russian regions by the A. Sen welfare function (author calculations based on the Russian Federation Federal State Statistics Service data)

### 3.3. The results of decomposition of the Russian regions inequality in welfare

The decomposition of the squared CV based on the formulae (4) and (5) demonstrates positive impact of the main four factors and negative impact of three intersect factors on the total inequality for each year (Figure 3).

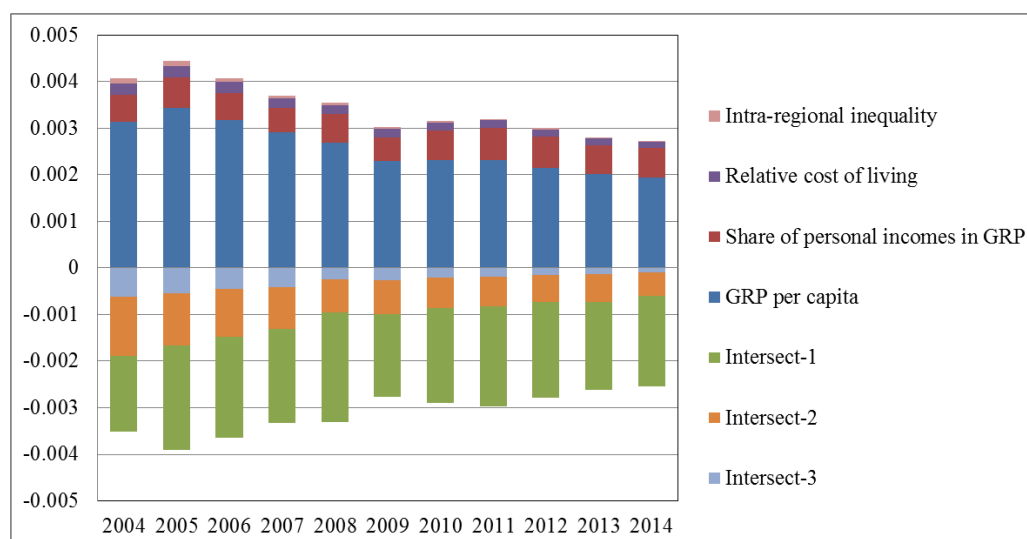


Figure 3: The results of decomposition of the inter-regional inequality in welfare in Russia (author calculations based on the Russian Federation Federal State Statistics Service data)

Initially, we consider the group of the main factors of inequality as independent. The inter-regional differences in welfare are largely attributable to uneven distribution of GRP relatively to distribution of population in the regions. The share of this factor among all main factors of the model has been predominant throughout all the period under study, but gradually decreasing (76.9–71.0%). The inter-regional unevenness of another factor, the share of personal incomes in GRP, has increased, thus its relative influence has grown, but even in 2014 it did not exceed 24%. On the contrary, the contributions of the cost of living and intra-regional inequality to welfare disparities were smallest and only decreasing over time.

However, it should be noted that the main factors were acting along with intersect factors, all of which negatively contributed to regions' welfare inequality, thereby supporting their convergence in statics.

Firstly, in the regions with higher level of GRP per capita the share of personal incomes in GRP proved to be lower on average. This factor, *(re)distributive by nature*, had the greatest impact on

convergence. Moreover, its contribution has increased 1.81 times over 11 years, supporting equalization of the welfare at the stage of income distribution.

Secondly, in the regions with higher level of nominal income per capita the average level of consumer prices turned to be higher. However, due to contraction of potential convergence in cost of living, the impact of *inflationary factor* has decreased almost twice (by 48%).

Thirdly, in the regions with higher level of real income per capita the intra-regional income disparities are again higher on average. Due to the Sigma-convergence of poor and rich regions, the contribution of the “income erosion” factor to the welfare leveling has fallen 3.8 times.

The proportional method of factor analysis allowed us to calculate the factors’ contributions to the regions welfare convergence in dynamics. In the table 2 we have combined the influences of each main component of our model (formula 1) and its intersection with the parameter achieved at previous stage of the welfare formation.

*Table 2: The factors’ contribution to Russian regions convergence in the A. Sen social welfare, by an accrual basis since 2004, % (author calculations)*

	Contribution to the convergence				
	GRP production	Distribution	Inflation	Intra-regional inequality	Total
2005/2004	51.67	-90.62	22.29	10.55	-6.12
2006/2004	6.23	-93.20	39.14	23.39	-24.43
2007/2004	-37.71	-77.66	54.09	29.28	-32.00
2008/2004	-79.48	-118.99	86.98	53.97	-57.53
2009/2004	-146.95	-38.04	82.53	50.41	-52.04
2010/2004	-142.90	-63.23	92.13	57.36	-56.64
2011/2004	-144.29	-70.99	95.15	59.70	-60.44
2012/2004	-175.26	-56.81	102.59	66.25	-63.23
2013/2004	-195.71	-40.17	101.86	67.49	-66.53
2014/2004	-211.37	-43.63	114.77	72.73	-67.50

Based on the results obtained, we may affirm the positive increasing influence of GRP convergence as well as positive unstable influence of incomes (re)distribution on the reduction in regions’ welfare disparities. On the contrary, two other factors, the cost of living and the intra-regional inequality, have been evidently counteracting to the process of convergence in dynamics.

#### 4. CONSLUSION

The previous researchers have developed a number of approaches to assessing the welfare of countries and regions, some of which were referred to the abbreviated social welfare functions based on income per capita and income inequality. The adoption of the A. Sen welfare function allowed us to estimate the welfare of Russian regions in dynamics for 2004-2014. Based on the measurement of inter-regional inequality in welfare we have revealed the tendency of the Russian regions convergence, which was temporarily disrupted with the shock of divergence in 2009 (according to the weighted coefficient of variation for logarithm of the A. Sen function) and even turned to the opposite tendency in 2012 (according to the unweighted coefficient of variation for this function).

We suggested the four-factor multiplicative model for the A. Sen welfare function and proposed the logarithmic technique for its decomposition. This allowed us to evaluate impact of the main components and the intersections on the regions’ convergence in welfare. The growing influence of production factor along with significant yet unstable impact of re-distribution factor indirectly indicates the efficiency of inter-budgetary equalization policy. It also confirms the findings of one

previous econometric study (Yushkov, 2015). The positive correlations between regions' average income, on one side, and cost of living and internal inequality, on the other side, have contributed to some reduction in regional disparities in statics. This result is consistent with (Malkina, 2014a). However, the faster growth of the cost of living and inequality in the poorest regions restrained the regions convergence in welfare in dynamics.

The further extension of the research is possible by way of adaptation of complex welfare functions, e.g. Index of Sustainable Economic Welfare and Genuine Progress Indicator for the Russian regions, with paying attention to embedded features of the Russian statistics. The development of such measures should facilitate a more accurate assessment of convergence / divergence of the Russian regions in terms of welfare, taking into account diverse social, environmental, demographic and other costs and benefits of development.

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## CASE STUDY OF THE PERCEIVED ADVERSE EFFECTS OF THE USE OF MOBILE INFORMATION AND COMMUNICATION TECHNOLOGY MEANS IN BUSINESS PRACTICE IN SLOVAK REPUBLIC

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### ABSTRACT

*In times of discontinuous turbulent dramatic changes shaping the current business world, the pace of information collection, sharing and dissemination is increasing with rising significant importance. With the development of the mobile digital information and communication technology, the receiving and sending of information became independent on space and time, no longer limited to office hours and the office room itself. Nowadays, the small mobile cutting edge technology that became omnipresent impacts our lives in every aspect of it enabling the end user to be reachable and available at any time needed. The tiny smart phone integrated several devices in one small gadget that can accompany the owner almost everywhere continuously providing all the features and services. Yet, the extending accessibility is boosting the pressure on the worker who has to be accessible all the time, even during his/her spare time – the relaxing time. The workers are being equipped with cell phones with the aim to provide their attainability, yet the devices are not being shut down after working hours creating a never/ending ongoing on call duty for each worker – an additional stress factor present also during free time. The continuous checking of the mobile phone device for new mails, messages or missed calls is causing concentration loss and disruption of efficiency and productiveness. The concerns of the society connected to the pathological uses of mobile phones resulting in adverse effects of human mental health are continuously growing with further uses. This paper describes research endeavor aiming to investigate the disruptive adverse effects of cell phone usage that are present among individuals whose availability became their must: entrepreneurs and management professionals. Based on a survey, the advantages and disadvantages of cell phone utilization are being investigated.*

**Keywords:** *Business Operations, Globalization, Mobile Gadgets, Information and Communication Technology, Digital Threats, Smart Phone*

### 1. INTRODUCTION

Humans communicate since the earliest moments of human existence mutually exchanging information through various channels, by diverse means (Dávideková, Greguš and Bureš, 2016, in press). With the development of digital technology the known ways of human interactions changed evolutionary significantly influenced by the enormous technological impact. The development of information and communication technology (ICT) changed every aspect of the daily life and became present in almost any activity we can think of (Dávideková and Hvorecký, 2016, pp. 283-284). There was no earlier technology that has had such a global impact as ICT (Al-Rodhan, 2011, p. 18). ICT bolstered productivity more efficiently than any other technology before (Hidalgo-Peréz, O’Kean Alonso and Rodríguez López, 2015, pp. 450-451). The development of mobile cellular and telecommunication technology are the dominant technology drivers (Kumar, Stauvermann and Samitas, 2015, pp. 102-104). In today’s business environment individuals interact with the help of ICT to carry out working tasks on a daily basis and to benefit from the possibilities offered by the technology (Dávideková and Greguš, 2016, pp.102-103). ICT promotes



technological innovation, standardization and globalization (Mandorf, and Greguš, 2014, pp. 237-238). ICT made it possible to quickly find and distribute information. In the current technology-driven society, obtaining information as fast as possible became crucially important (Ogbomo and Ogbomo, 2008, pp. 1-2). If compared with the past, when dissemination of information took days, weeks, months or years, sharing information now takes seconds. Spreading of information is essential for enabling fast reactions and allowing to respond to an existing situation with an action in real time (Dávideková and Hrdličková, 2016, pp. 151-152).

The emergence of smartphones integrated several individual gadgets into one tiny device that is always at hand (Dávideková, 2016, p. 316). The smartphone changed everything as it seems (Agger, 2011, p. 119-120). Mobile devices, in particular the smart phone, represent cutting edge technology that allows collecting of information through web search, receiving of emails, messages or other notifications as well as sending, sharing or disseminating of information to further recipients or broad public through various communication channels. Smartphones represent very powerful mobile devices that can be used in many innovative ways (Guenaga, Mentxaka, Eguiluz, Romero and Zubia, 2012, pp. 1-3).

Since the first device concepts combining computing and telephony proposed by Nikola Tesla in 1909 (Lim, 2010, web), the development of digital technology enabled their present day handy shape and full range of features they dispose of. Since first prototypes and models, a combination of many technological advances made modern smartphones the enormous success they are today (Mallinson, 2015, pp. 60-62).

Boasted through the broad usability and small dimensions of smart phones providing convenience to our lives, the spread of smart phones became not only physically, but also psychically: their use became quite often obsessive. Its pathological use has already created increased mental health concerns (Lee, Ahn, Choi and Choi, 2014, pp. 1-10). Among the emerging mental health issues with extending importance especially adverse effects like distraction influencing concentration and addiction are being considered and recognized. In some countries, people become obsessed with their cell phones, e.g. “most teenagers in America are nearly inseparable from their cell phones” (Porath, 2011, pp. 86-99).

Disruptive effects on concentration are caused by the distractive sound notifications of incoming emails or messages that make people curious instantly drawing the attention of the phone owner towards the peeping phone instead of happenings around (Guenaga, Mentxaka, Eguiluz, Romero and Zubia, 2012, pp. 1-5). Due to these negative adverse effects that impacts the young generation at schools, some academic institutions already introduced bans on mobile phones during classes and achieved as a consequence improvement of their students performance by an average of 6% (Beland and Murphy, 2015, pp. 1-45). Concentration is essential not only for learning at school, but also for working and represents a necessary attribute for an efficient execution of duties. A person permanently distracted by a smartphone is not sufficiently concentrating on the task he/she is performing. The temptation for checking emails, chatting etc. is strong and becoming more intense if somebody is awaiting a very important notification (Dávideková, 2016, p. 316).

Furthermore, the society is concerned also about the effects of the antenna radiation to which the end users of mobile phone devices are exposed to. Since 1993 international health organizations like the World Health Organization (WHO) began its long term research of the effects of cell phone uses on human health (WHO, 1993, pp. 1-13).

Therefore, the authors of this paper aim to identify the adverse effects of phone uses on mental health of individuals who are to a larger extent exposed to disruptive impact of cell phones, namely entrepreneurs and management professionals.

This paper is organized as follows: Next section 2 depicts used methodology in carried out research. Section 3 briefly describes sample characteristics. In section 4 research findings are presented accompanied with corresponding discussion. Conclusion summarizes research results emerging from performed research.

## 2. METHODOLOGY

For the convenience of the reader, this section describes the methodology used during the carried out research effort in further details including deeper depiction of the collection techniques used during the research performed.

The analyzed and described case study of the perceived adverse effects of the utilization of mobile ICT means in daily business practice was executed through a complex surveying of respondents. The questionnaire contains a variety of sections investigating different aspects. Questions contained in the carried out survey included various types: open and closed questions, categorizing, etc.

Objective of first part of the questionnaire was to examine additional details about the participants for further comparisons of various groups if necessary. In other words, first investigative enquiries aimed at:

- Gender belonging,
- Age category,
- Employment state,
- Income level,
- Educational background, etc.

Such a potential division of the sample may show further tendencies present for a specific group determined by above mentioned characteristics.

Second interrogative part of the survey carried out aimed to examine the availability of different types of phone devices (line phones, simple traditional cell phones, and smart phones) by the respondents. Questions included aspects of:

- Phone ownership at all (if everyone possesses a phone),
- Number of phones devices in respondents' possession,
- Types of phones used, etc.

These questions were open as there are no limitations to these answers.

Third part of the questionnaire aimed to investigate:

- Brand favored by the phone owners as well as
- Frequency of phone device exchange.

The intention of it was to identify the subjective perception of the devices and subjective evaluation of its features that seem to be of the highest importance to the survey participant.

Last but not least, the enquiries of the questionnaire were also directed to the negative aspects of mobile phones in today's digital era: the possible addictiveness of it. This section included inquiries examining:

- Frequency of phone check,
- Phone ringing profiles uses,
- Shutting down of cell phone device.

The last part of the survey dealing with above mentioned aspects included questions directly and indirectly interrogating respondents for their perception of positive and negative effects of mobile phone utilizations on their life balance of working path and spare time.

## 3. SAMPLE

This section deeper describes various characteristics of available sample participated in this research described.

The sample consisted of participants attending a business conference oriented on new trends in technology and its use for business operations. Among participants, entrepreneurs as well as managerial employees were present.

The sample covered both genders: male and female in unequal numbers as depicted in subsequent figure. The authors consider this gender coverage to be influenced by the unproportioned gender

coverage of the position type that is by the majority executed by men. Authors do not assume any considerably relevant impact of the gender disproportion on survey results.

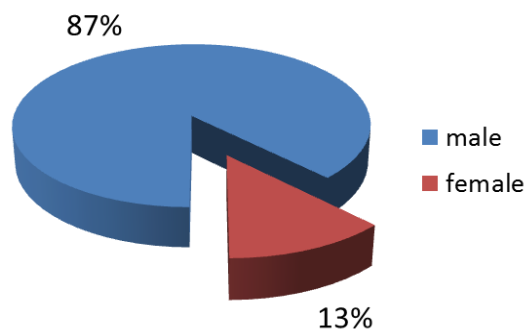


Figure 1: Sample by Gender (Source: Survey)

Respondents were mostly in productive age (26-60) almost equally distributed in age categories of 26-35 years, 36-46 years and 47-59 years. No participant was under 25 and 6% of all respondents were already retired.

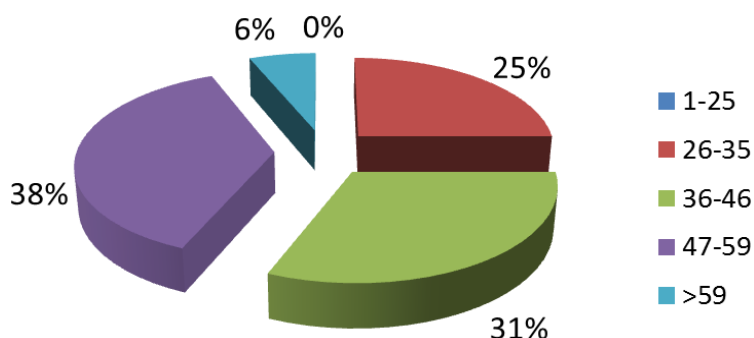


Figure 2: Sample by Age (Source: Survey)

Survey participants covered the desired group of respondents: in other words, the majority of survey respondents consisted of entrepreneurs or workers employed in managerial positions or by government (together 82%: 6% employed by government, 76% employed in private sector). No one participant was neither unemployed, nor working part time. No participant belonged to seasonal worker or student category at the time of the research survey.

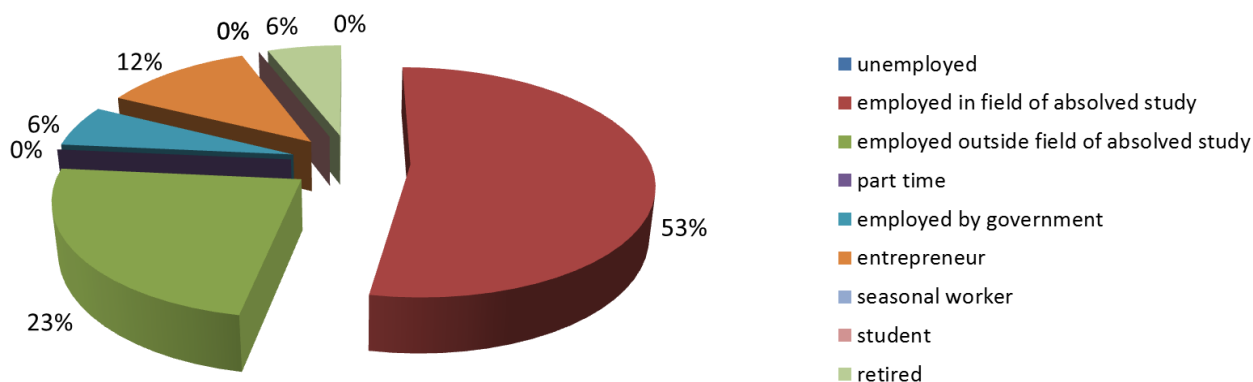


Figure 3: Sample by Employment (Source: Survey)

## 4. RESEARCH FINDINGS AND DISCUSSION

This part describes findings achieved through assessment of the survey results divided into individual categories for the convenience of the reader.

### 4.1. Ownership of phone devices

Today, in the current digital Era, the information and communication technology is becoming to be omnipresent. The ubiquitous technology is facilitating the communication between communication parties through various channels represented by diverse features of a modern mobile phone device that allows interaction of people across time and space (Dávideková and Greguš, 2016, in press; Agger, 2011, pp. 119-120). Even though, the spreading of smart phone gadgets is being perceived as inevitable and the smart phone seems to have found its way into everyone's possession penetrating many facets of everyday life (Wang, Xiang and Fesenmaier, 2014, pp.1-4), research findings resulting from the collected data show, that there are still entrepreneurs and managerial professionals who do not own one and are still equipped by the traditional simple cell phone that provides services as calling and messaging through SMS.

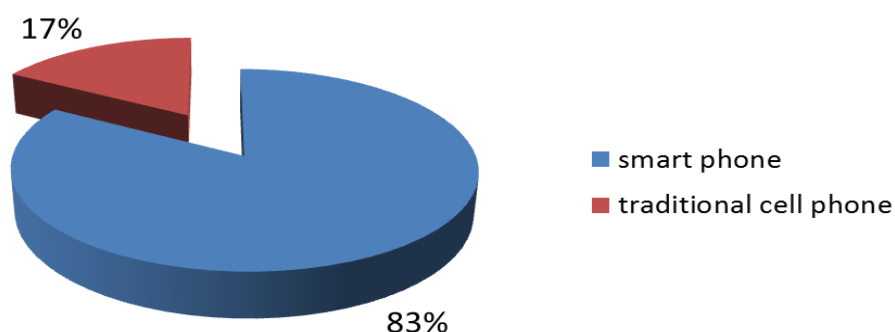


Figure 4: Types of Cell Phones in Possession (Source: Survey)

Surprisingly a considerably large portion of the respondents (17%) still owns a traditional cell phone device that does not provide data exchange services including internet and email. Authors consider this being an interesting research result that shows also the adverse effect of smart phones: the ubiquitous omnipresence that is perceived as unlimited availability of the owner for the other communication party. Owning a smart phone is becoming wrongly perceived as to represent a synonymous statement to “being always available to any communication through any channel” (email, call, messaging, etc.). Individuals, entrepreneurs or managerial professionals in particular, are busy during the execution of business activities and working tasks. Therefore, some participants are keeping traditional phones or returning to traditional phones.

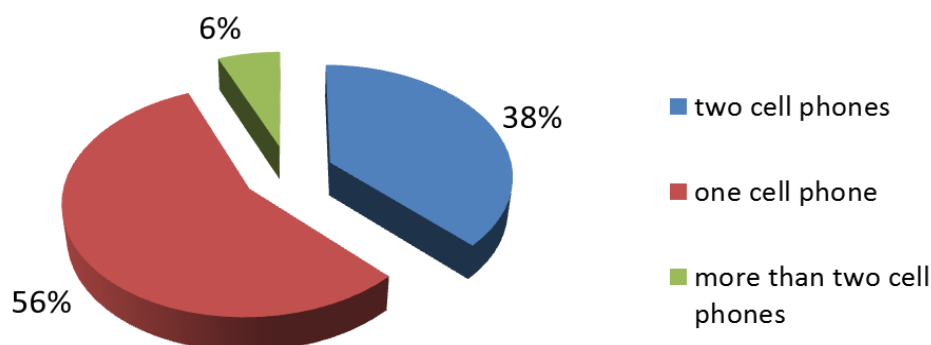


Figure 5: Number of Cell Phones Owned/Possessed (Source: Survey)

The number of owned phones by participants was expected to be two cell phones in majority as a private and work cell phones are becoming a common custom in the business practice. Two smartphones denote two sources of constant distraction (Guenaga, Mentxaka, Eguiluz, Romero and Zubia, 2012, pp. 1-5; Beland and Murphy, 2015, pp. 1-45; Dávideková, 2016, p. 314-320). However, the research findings showed, that the majority of respondents is in possession of only one mobile phone. This is assumed to be influenced by the character of entrepreneurship, where the entrepreneur is the head of the company himself/herself and the wellbeing of the company represents his/her major objective for which he/she is available around the clock not distinguishing between private and working life as strictly as the respondents employed by an employer. Despite this explanation, the number of managerial employees owning only one cell phone was considerably high as depicted in following figure.

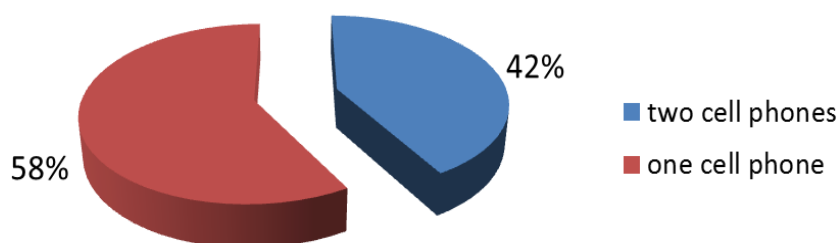


Figure 6: Number of Cell Phones for Category of Managerial Employees (Source: Survey)

#### 4.2. Frequency of phone device exchange

The development cycles of mobile phone devices are being shortened today and the product offer of cell phone producers is increasing over time. The survey interrogation aimed to investigate the frequency of device switch, in other words, what is the reason for the shift from one product to another in the field of mobile phoning.

The Research findings showed that the end users are usually exchanging their gadget at time the old one is no longer working or at the moment the operator offers the cell phone device switch for free (is included in their monthly flat).

The number of respondents who shift from one device to the cutting edge technology at new product arrival was very small: only 6% of participants.

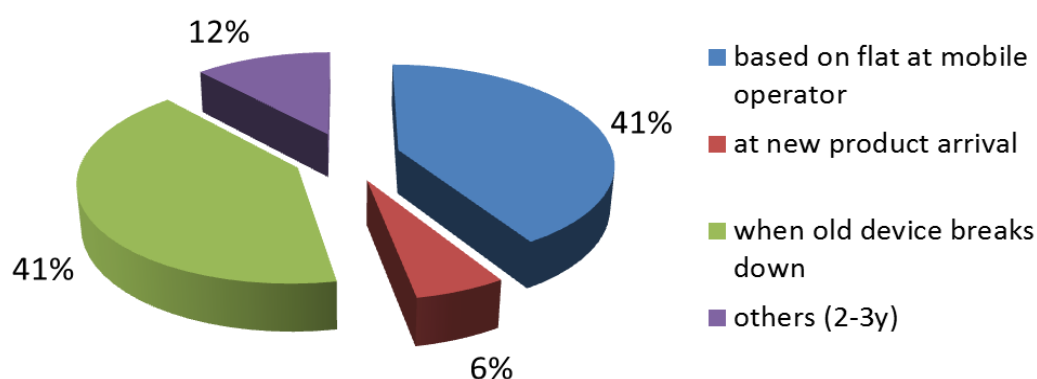


Figure 7: Frequency of Device Exchange (Source: Survey)

#### 4.3. Frequency of phone check

The omnipresent smart phone always connected to the network (wifi or mobile data) is repeatedly at regular interval checking any new messages over internet and the end user regularly checks the display of the phone if anything arrived (Dávideková, 2016, p. 314-320). The mobile phone device represents a source of temptation for checking it, leading to concentration loss, not paying attention what is going around, what somebody is telling to the one. Smartphones use us, bending us to their

compulsive rhythms and demanding our attention (Agger, 2011, p. 119-120). Some people cannot stop using their mobile devices and became enslaved by this small equipment (Dávideková, 2016, p. 314-320), obsessed and addicted to it, not being able to get separated from it (Porath, 2011, pp. 86-99).

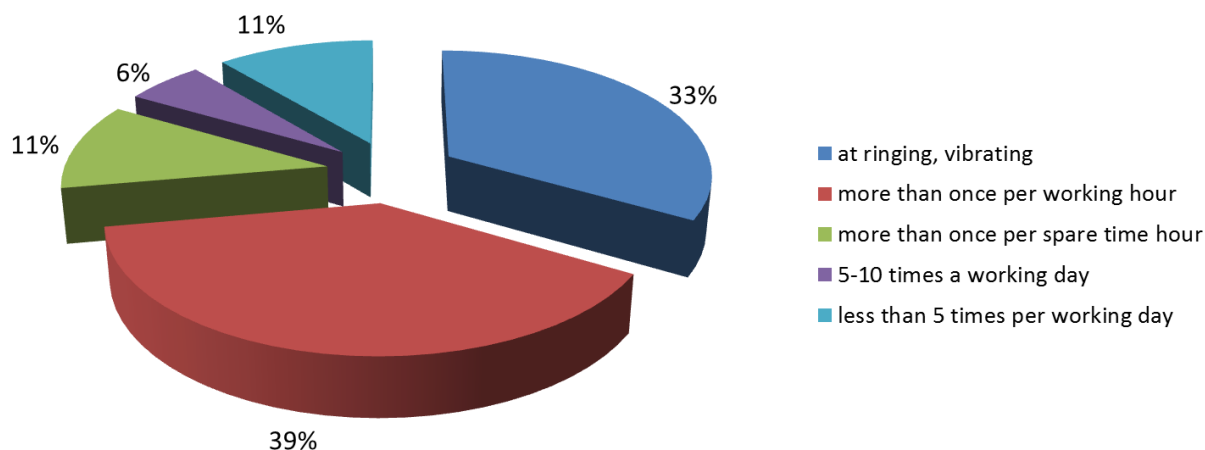


Figure 8: Frequency of Phone Check (Source: Survey)

As it can be seen in fig. 8, 33% of phone owners are checking it immediately after ringing sound or vibration and even more often than once per hour. Such a distraction is decreasing the concentration of the phone owner abruptly. Only 11% of the respondents are checking their cell phone less than 5 times per working day.

#### 4.4. Phone contact on business card

The protection of privacy and establishing a healthy work-life balance may be achieved through clear definition of working time and spare time. Mixing up these two parts may lead to persistent conscious or unconscious stress as the individual person is still keeping ready to act or react to a might be coming information during the whole time. An indication for such a long exposure of stress might be also the information of phone number type printed on the business card, not only the number of mobile phone devices. Therefore, one of the inquiries dealt with the phone number type printed on the business card: private or work phone number?

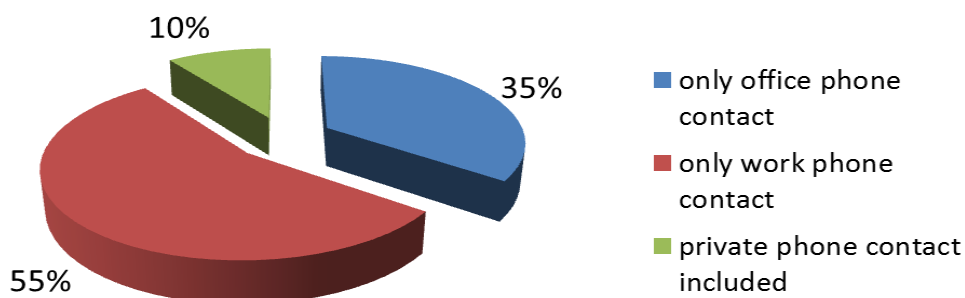


Figure 9: Phone Contact Type on Business Card (Source: Survey)

The research findings showed that the majority of the survey participants are aware of the disruptive effects to their private sphere through giving their private number to colleagues/business partners, and are providing only work phone number on their business card (90% of all participants: 55% work phone contact, 35% office phone contact). Furthermore, 35% of respondents print only the



office contact on their business card avoiding further disturbance during the day when being outside the office.

#### 4.5. Phone shutting down

An interesting factor showing the dependence on mobile phones is the shutting down of the device. The temptation that somebody could be contacting the owner is causing the device keeping switched on. Yet, even during the night, emails are coming (even mostly only advertisements or spams), messages and notifications are arriving, the mobile device is peeping, disturbing the sleep phase of the owner. For a healthy relax phase for the body and soul, the human needs sufficient sleep undisturbed by unnecessary peeping or ringing device. Insufficient sleep has an adverse effect on concentration during the following day.

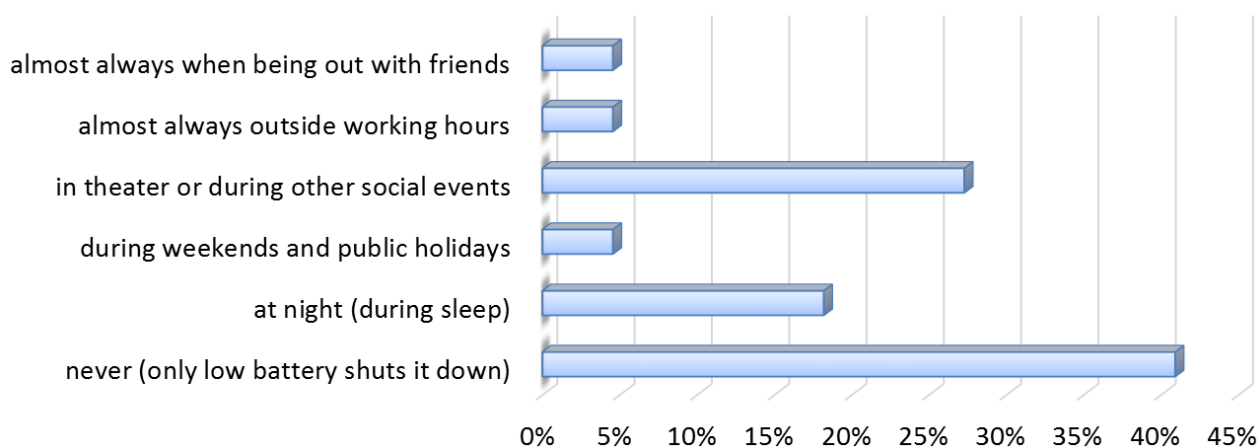


Figure 10: Shutting Down of Mobile Phone (Source: Survey)

As it can be seen, 40% of all respondents never shut down their small wonder device – the smart phone, disrupting their own sleep by doing so. Only 18% of participants are regularly switching off their device for the night. This may be an alarming number highlighting how disruptive the obsession with smartphones became.

#### 5. CONCLUSION

This paper provides a case study of the daily business practice of handling mobile phone device by entrepreneurs and management professionals based on a complex survey. The ubiquitous handy mobile device that is accompanying us everywhere providing unlimited access to the world through phone and internet connection at any time is also exposing us to permanent temptation and stress disruptive affecting our concentration and performance on that way. Clear differentiation between private and working life may have supportive effects on our daily performance and condition.

Research results from surveyed group of individuals that are mostly exposed to these adverse effects of mobile phones, the entrepreneurs and management professionals, showed that the awareness of negative influence of persistent availability is present. However, the research findings also showed room for improvement highlighting some areas that are still being overseen and underestimated: e.g. the night sleep.

This research provides results for further investigation of detected phenomena and search for solutions.

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## THE ROLE OF GOVERNMENT IN THE DEVELOPMENT OF INNOVATIVE ACTIVITY IN THE REPUBLIC OF KAZAKHSTAN

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### ABSTRACT

*Permanent and continuous creation and implementation of innovations is the main factor of succeeding in the competition of any enterprise, region and country as a whole. Implementation of novelty, innovation, and new scientific and technological achievements in the production of new products, technologies and services is crucial for the development of the national economy and raising the living standards of the population. In order for constantly improvement of welfare level, it is necessary to continuously improve and transform the products, services, improve production and management functions on the basis of innovation and innovative technologies. Competitive advantage on the market now have countries that provide long-term strategy of innovative development, aimed at various market needs. Experience of foreign countries shows that in issues of innovative development of the national economy it is impossible to rely entirely on market automatism. State regulation in the economy during difficult times is an effective tool for accumulation, appropriate expenditure of funds for the construction of an innovative infrastructure, focused on the use of the competitive advantages of the country. The experience of developed and rapidly developing countries in the field of activation of innovative activity and organizing processes of accelerated commercialization of new developments highlights the need for systematic state approach in all processes relating to the accelerated economic modernization based on a comprehensive stimulation of innovative activity in all sectors of the economy. There is no country in the world which national innovation system has been formed by the market, the private sector alone. Therefore, in Kazakhstan the state should play a significant role in promotion on the market scientific-technical and innovation results, creation of a national innovation system. The future of Kazakhstan - is not simply the creation of ideas, but the direct application of innovative methods on practice.*

**Keywords:** *Competitiveness, Innovation, Innovation activity, Investment, Innovational infrastructure, Innovational potential, Intellectual potential, National innovation system, Potential risk, State regulation of innovative activity, Venture business*

### 1. INTRODUCTION

The development of the processes of globalization encourages countries to pursue an active policy of forming a new technological structure to advance own economy. In this regard, the establishment

and development of a competitive innovative economy is one of Kazakhstan's top priorities. Creation and implementation of technological innovation in the long term is the basis for increasing the efficiency of the economy and improving living standards. Creation of innovations requires availability of a profitable environment for development of innovation activity, which should be supported by both public and private sectors. This implies adequate investments in research, especially from the business sector, high-quality research institutions, cooperation between research institutes, universities and industry, as well as the guarantee of protection of intellectual property and potential investments. The problem of innovative development of Kazakhstan has been researched by many Kazakh scholars, including the authors this article: 1) Kupeshova, S., Lazanyuk, I. and Kareke, G. (2016). Risk Management in the Innovation Project Eurasian Journal of Social Sciences and Humanities. Vol 2., No 1., pp. 9-12. 2) Mukhtarova, K., Kupeshova, S. (2015, July 08-11). International Conference on Business and Economics (ICBE2015): Innovative Development of Kazakhstan: Problems and Perspectives. Seoul, South Korea. (pp. 311-314). 3) Mukhtarova, K., Mylytkbayeva, A. and Asanova, A. (2016). Analysis of the mechanism of state regulation of innovative projects in the regions of the Republic of Kazakhstan. Vestnik KazNU (economic serie), №2 (114), pp. 60-64. 4) Mukhtarova, K., Mylytkbayeva, A. (2016). Innovation Potential of Kazakhstan's Regions: Evaluation and Ways for Development. Eurasian Journal of Social Sciences and Humanities, Vol 1, No 2, pp. 33-36. 5) Mukhtarova, K., Mylytkbayeva, A. and Nurmagambetova, A. (2016). Analysis of the Mechanism of State Regulation of Innovative Projects in the Regions of the Republic of Kazakhstan. Vestnik KazNU (economic serie), №2 (114), pp. 66-71. [4- 8]. The course of industrial-innovative development of Kazakhstan, founded in the beginning of 2000 year strategically identified the main risks and priorities for the development of Kazakhstan's economy: the direction without any alternative was chosen to diversify, increase the economy's competitiveness through innovation and stay away from dependence on raw materials. According to the analysis of innovative development in the Republic of Kazakhstan, the innovative activity in the country plays a big role, but it is not a major factor in improving the country's competitiveness in the global market. In the context of creation of an innovative system, economy based on knowledge, the only right strategy is to intensify the development of innovative capacity. The innovative potential of the country lies in the establishment and formation of educated nation, compiling and combining different types of sources, such as material, financial, intellectual, and others. The most important factor in the growth of an innovative economy is the country's intellectual potential.

## 2. CHAPTER 1

In all developed countries of the World the state plays a very important and central role in the development of innovative activity of the country's national economy because through the state mechanism of regulation innovative potential of the country is created. In all economically and innovatively developed countries of world currently concentration of intellectual and innovative capabilities increases including the reason of brain drain from developing countries. The reason for an outflow of talented young people is in providing learning opportunities in higher education, internships, and grants. The most capable and hopefulness professionals get high-paying job. Thus, with the help of the state in economically developed countries occurs the process of intellectualization of society and the formation of an economy based on knowledge, as well as creation of profitable socio-economic conditions and incentives for intellectual creativity and self-realization. Therefore, due to the influx of highly skilled experts in the world economy is actively carried out innovative activities. In today's world around human potential concentrates material, information, financial and other resources. The World Bank on an example of a survey of 192 countries came to the conclusion that only 16% of growth in countries with transit economy are specified by physical capital, 20% - natural capital, the remaining 64% are related to the human and social capital (Figure 1). Developed countries up to 40% of the gross national product of most receive as a result of an effective education and training systems. [1]



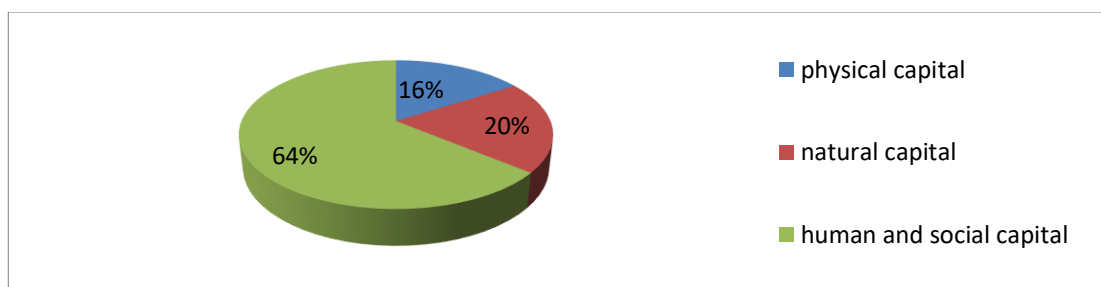


Figure 1: The capital structure as a result from research of the World Bank [1]

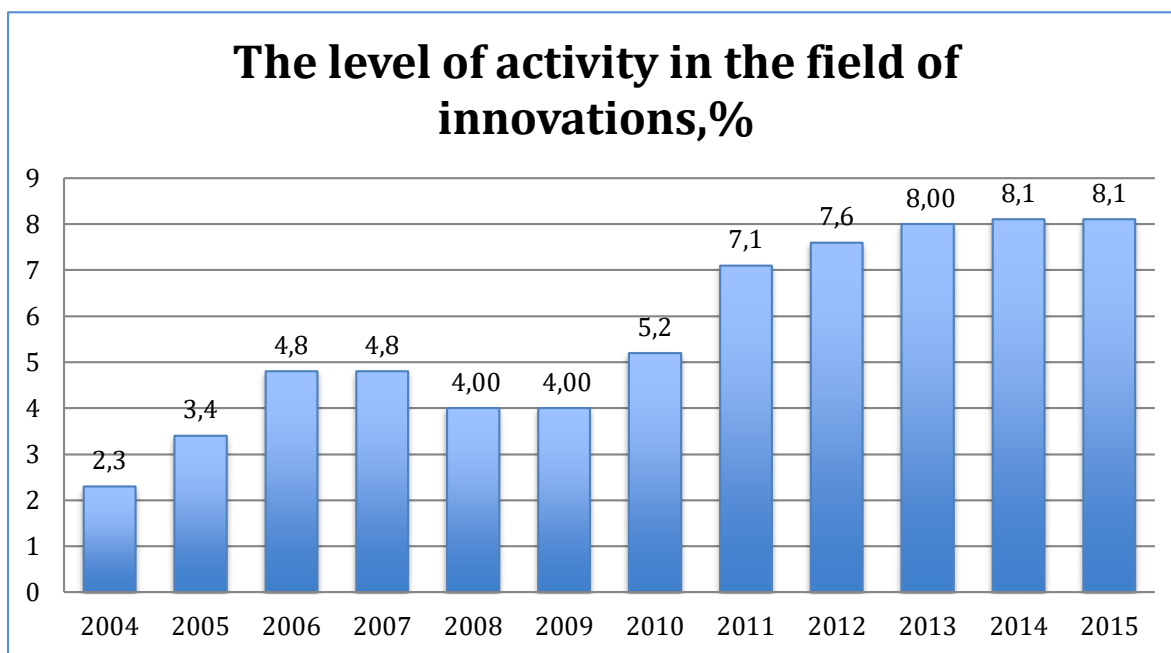
Therefore, it is obvious that as a national priority today should be proclaimed not the GDP growth and low inflation, but the improvement of quality and duration of human active life. It is necessary to proceed from the fact that the purpose and result of transformation should be expressed in the capitalization of human intellectual potential - the most important factor for sustainable development of economy. It becomes noticeable that at low levels of development of human capital investment in high-tech and innovative industries do not provide an effective return. The successes of the European countries and the states of South-East Asia justify that the orientation on investment in development of human capital and innovation potential is the most effective strategy for economic growth. Unfortunately, the level of innovation activity of enterprises in Kazakhstan for several years remained consistently low. According to the report «The Global Innovation Index 2016, published by Cornell University, the business school INSEAD and the World Intellectual Property Organization (WIPO), China entered the list of 25 leading countries-innovators in the world and it is headed by Switzerland, Sweden, United Kingdom, United States of America, Finland and Singapore. Based on the results of research of The Global Innovation Index according to the level of innovative activity Switzerland takes 1st place with 66.3 coefficient of global innovation index, the United States - 61.4, South Korea - 57.1, Japan - 54.5 Kazakhstan this index is 31.5 [3] Innovative development index evaluates the totality of all factors of countries innovative development and highlights the importance of productive interaction between the subjects of innovation - the public sector, businesses, the scientific community in the modern innovation ecosystems. The study is based on the hypothesis that success of economy is linked to the same extent with the presence of the innovation potential so and with conditions for its implementation. A significant backlog in terms of innovative development of Kazakhstan illustrates a number of indicators. Thus, the aggregate level of innovative activity of organizations in 2015 in Kazakhstan was 8.1%, while in developed countries this figure exceeds 50% (Figure 2).



This level of innovation activity will not help to overcome the technological gap, a change in the characteristics and volume of production in all sectors of the economy [10].

Figure 2 : The organization's level of activity in the field of innovations,% \*

\*Remark: Compiled by the author based on the data [Statistical data on the Statistics



Committee of the Ministry of National Economy for 2015. // [www.stat.gov.kz](http://www.stat.gov.kz). [10]

Also, low level of funds allocated for the development of science and innovation, which is (as according 2015) 0.17% of GDP, making government funding inadequate and ineffective. The share of domestic expenditure on research and development of the gross domestic product in the US is 2.73%, in Sweden - 3.31%, South Korea - 4.15%, Japan - 3.47%, in the Republic of Kazakhstan - 0.17 % and if research costs within 5-7 years continue to be stable and do not exceed 0.20% of GDP, it can lead to irreversible destruction of scientific and technological potential of the country [9]. Research and development expenditure (% of GDP) [9].

Expenditure on research and development per capita in the Republic of Kazakhstan are ten times less than in developed countries. This attitude towards science has led to a decline of scientific research activity, reduce of population of innovative activity and, as a consequence, the coefficient of inventive activity in one of the lowest – only 1, whereas, for example, it is 28 times higher than in Japan.

As we see, the ongoing processes of intellectualization of modern society, bearing itself a significant positive start at the same time involve certain costs and do not always lead to the expected economic effect. Of course, at this stage it is very premature to make any final conclusions on the analyzed changes characterized in the scientific literature as the "new economy", "economy of knowledge", "informatizational economy", etc. Much remains to comprehend, but now it is possible to speak about the presence of serious reforms in different spheres of public life of industrial powers: in science and technology, economics, processes of production management, labor relations, social structure and social policy.

It is thought what we are witnessing now in countries of so-called "golden billion" is associated with informatization and intellectualization of society. This is one of the first stages of development of the "new economy", which combine only prerequisites for the formation of its highest stage - innovative economy.

## 2.1. Subchapter title

In recent years, Kazakhstan's economy growth allowed to raise the standard of living of the population. This greatly affected the human development. In order to achieve a high level of index of human capital development in Kazakhstan, which has rich natural resources, it is necessary to conduct qualitative changes in the structure of the economy. This is the guarantee of economic growth and welfare. Over 25 years of independence Kazakhstan has created all necessary base for investments in human education since birth and throughout life. The results speak for themselves. According to the UN index of human development for 2015 Kazakhstan takes 56 position among the countries with the highest potential of the human development. (See. Tab.1) [2]

*Table 1: United Nations Development Programme: Human Development Index 2015.*

In the developed countries all over the world investment in intellectual capacity make up a significant share of GDP, passing ahead investment in physical factors of production, in this regard an increased role and importance of social sectors (education, health, culture, etc.) can be observed. For example, in the US the proportion of investment in people is more than 15% of GDP, and now they are 4 times exceeded gross private and public investment in the means of production. Five countries - the US, Japan, France, Germany and the United Kingdom account for about 80% of

COUNTRIES WITH HIGH HUMAN DEVELOPMENT INDEX		
PLACE	COUNTRY	IHD
50	<b>Belarus</b>	0.798
50	<b>Russia</b>	0.798
52	<u><b>Oman</b></u>	0.793
52	<b>Romania</b>	0.793
52	<b>Uruguay</b>	0.793
55	<b>Bahamas</b>	0.790
56	<u><b>Kazakhstan</b></u>	0.788

government spending on R & D, and therein is concentrated about 50% of the world's scientific staff [3].

Historical facts show the importance of education in the world community. The decision of F. Roosevelt about the unprecedented support of the universities during the Great Depression helped America to overcome the crisis and achieve a global leadership position in the field of modern manufacturing and high technology. We can remember the catch phrase, "America is rich because she has a lot of universities."

The state, taking care of the future should create intellectual reserve. In order to do this is essential to create a complete education system, producing manpower, qualified to make a serious competition in the market.

### 3. CHAPTER 2

World experience shows that the transition to an innovative economy can be implemented as through use of predominantly market-based mechanisms, and through the basis of the state regulation system. The first way is realized in a conditions of stable running economy, developed market relations, a high level of knowledge-based industries and intellectual potential, the existing legislation, stimulating innovative activities that occurred during the formation of the modern US economy.

Another variant is related to the state regulation of processes, ensuring the formation of market relations and the construction of innovative economy. Germany and Japan were developed according to this type in the second half of the last century, and China had the same way in the last forty years.

The last option, we believe, is more suitable for our country, playing within the context of innovation economy an important role in the dissemination of knowledge in the state. Focused structural policy realized by state regulatory instruments and market mechanisms allow to ensure high conjugation and interrelation of all elements of the sectorial structure of the economy. Regardless of the specific weight of sectors and industries, and the pace of their development, subjects to a deep renewal were raw materials, manufacturing processes, consumer properties of the final product.

The role of the private sector is to develop and promote innovation in the market based on their own research, as well as with domestic and foreign technologies. The role of government is to promote the production of basic knowledge, the creation of the complex nature of strategic technologies, as well as the formation of innovation infrastructure and favorable institutional environment for innovative activity.

In developed countries, the financing of innovation activities is carried out mainly by non-governmental sources, applied science, the introduction of innovative products into production is financed by the private sector. In world practice, about three-quarters of all the innovative projects carried out by private firms, the United States - the undisputed leader of the global innovation process. Every year, this country spends on R&D \$ 343 billion that is 40% of R&D expenditures in the world. From total expenditure on innovation in the United States more than 71% funded by private corporations, 14% - universities and only 11% by government. For example, in 2012 the company "Ford Motor" spent on R&D \$ 7.4 billion, "Microsoft" \$ 6.2 billion, thus becoming the most innovation-active companies. In countries with low motivation of participation of private capital in the financing of research and innovation and with little demand for new technologies, specific to Kazakhstan, the state has to bear the brunt of the costs of the development of science and to a large extent on the development and promotion of innovation. According to statistics of the RK Agency for Statistics, investment in the sphere of science and education today is still low. (Figure 3) [10]

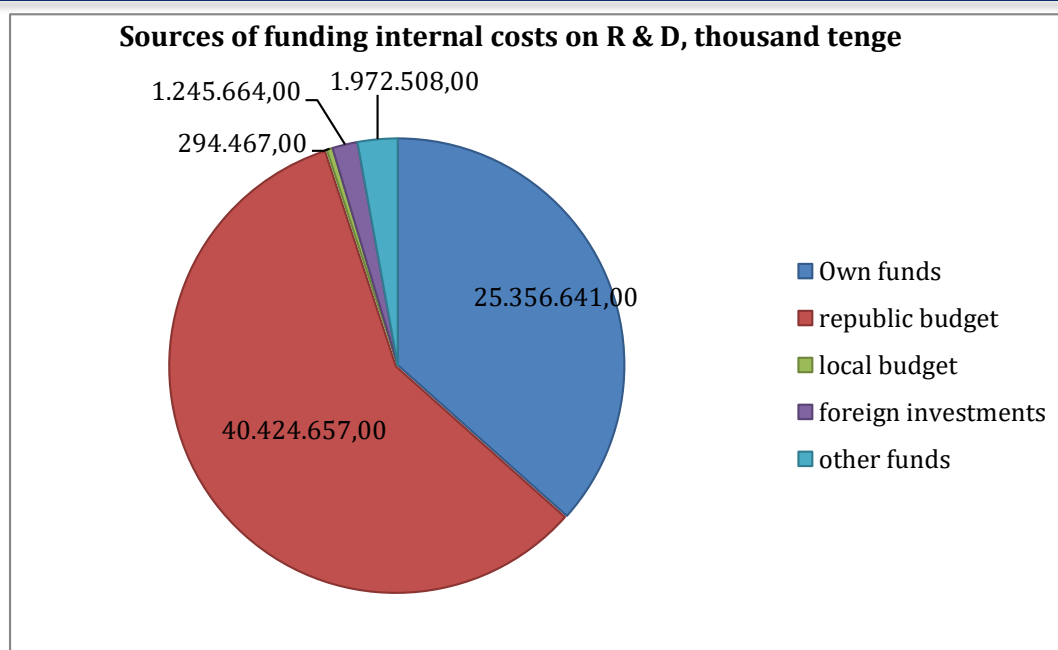


Figure 3: Sources of funding of internal costs on R&D for 2015

A successful solution of the problem of financial support of innovative development presupposes the existence of specific forms of funding as well as the correct selection of the key stages of the implementation of innovative projects to the greatest extent in need of financial support.

#### 4. CONSLUSION

Now, in many developed countries public and private partnerships (PPP) in the field of innovation are being actively developed. In high-tech industries PPP arises, as a rule, from the initiative of the State, because projects in this area are characterized by high degree of risk and resource consumption. The state's efforts are aimed at support of science and education, the creation of innovation infrastructure, while business takes on the commercial risk and receives most of the profits from the project. During the project the state receives dividends in the form of increased tax revenue, increase employment, improve the overall level of production while increasing the competitiveness of products and services in the global market.

The PPP mechanism increases the return of scientific research that can effectively solve issues of subsequent commercialization results. This mutually beneficial cooperation between the state and the business sector contributes to the growth of innovation activity of enterprises and meets the interests of civil society as a whole.

In developed countries are common such forms of PPP as government contracts, concessions, joint ventures, leases. They belong to the traditional forms of partnership. In recent years intensive develops and new forms of cooperation between the state and business, which include: the creation and functioning of special economic zones, research and production and technical innovation zones, venture capital funds and others.

The use of any form of PPP depends on the tasks assigned to the partnership, as well as the specific applications of this mechanism. For example, infrastructure facilities are generally built and operated by a concession forms for the development of information technologies and research projects is preferable to use venture capital funds, technology parks, business incubators, special economic zones.

Now for Kazakhstan PPP development in the field of innovation and research activities is very important. Therefore, a system of measures stimulating private investment is required, in

particular, the creation of tax privileges for investors, funding of R & D, and for companies, introducing domestic technology. It is necessary to legislate a system of tax privileges for customer-investors. Kazakhstan has established certain tax privileges for research organizations, but today it is important to stimulate not the offer of research services but the demand for them from the private sector. There is practically no tax incentives for increasing a demand for science, those benefits that is declared in the Tax Code does not work because of the absence of tax administration mechanism.

Thus, in our view, formation of foundations of a sustainable and competitive innovation economy in Kazakhstan should be carried out in the following areas:

- 1) development environment for innovative development;
- 2) improving the quality of innovation and intellectual potential
- 3) increasing companies' expenditures on the development and research activities;
- 4) expansion of cooperation of universities and industry in research activities;
- 5) acquisition of advanced technology products by the government;
- 6) PPP development in the field of innovation and scientific research.

Today for Kazakhstan the most important prerequisites for increasing innovation activity of enterprises is to improve the scientific, educational and industrial components of the innovation potential. If a large proportion of the industries will invest in innovation – it will promote the rise of innovative industry as a whole and stimulates the remaining companies to upgrade technologies. If innovation activity in industry is small, the optimal strategy for enterprises is to refrain from investments, which with time can lead the country to so-called "Trap of underdevelopment".

At the forefront should be nominated the spheres where can be applied intellectual and creative labor of people: science, education, culture. If we look at creativity as the main factor of development, than in the structure of social reproduction science, education and culture can be seen as a kind of the first unit, where creative abilities are created and developed. This is not an accident, because sustainable economic growth in the environment of global competition is defined by the high level of implementation of new technologies and developments in production.

Creation of innovations and preparation for this process, of highly qualified personnel are inextricably linked to the intellectual capital. Therefore, in industrialized countries, special emphasis is placed on the intellectual growth of the scientific potential. The fact that investment in intellectual capital increases the overall efficiency of the economy, making it more competitive, has not been a secret for anybody: this is proved by the experience of several countries.

It is proved that a qualitatively new level of development of a modern market economy is its highest stage - an innovative economy, one of the main characteristics of which is the existence of a civilized institute of intellectual property, allowing the development of intellectual capital and the efficient transformation of knowledge into innovation. Kazakhstan, despite some potential for innovative development, is only at the initial stage of transition to an innovative economy, the formation of which the author is associated with an active role of the state on creation of a favorable institutional regime and infrastructure.

It is clear that in the environment of innovative economy can be traced the transformation of the role and importance of human capital: in the foreground comes the intellectual component and the ability to implement innovations. Modern modifications in the content of human capital turn it to a key factor in industrial and innovative development of the society.

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## **PAY-OFF TO PARTICIPATION IN GLOBAL VALUE CHAINS: HOW MUCH ARE NEW EU MEMBER STATES LAGGING BEHIND THE REST OF EU COUNTRIES IN TERMS OF DOMESTIC VALUE ADDED IN EXPORTS?**

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### **ABSTRACT**

*International trade has for centuries mainly represented an exchange of goods, but now it can be regarded as a trade in tasks (Grossman & Rossi-Hansberg (2008)). Simply, value is added in many different locations across the globe and countries are more specializing in specific business functions than in specific industries (Backer & Miroudot, 2013). The rapid expansion in offshoring of manufacturing and other business tasks in countries where some production factors may be hired at much lower prices than at home (the emergence of global value chains), called into question the traditional Ricardian and Heckscher-Ohlin models (i.e., ‘old trade theory’), where each country specializes in types of products with a comparative advantage (Escaith, Lindenberg, & Miroudot, 2010).*

*The phenomenon of global value chains highlighted the issue of domestic value-added in exports (DVA) and led to the development of alternative trade measures in value-added terms. These, inter alia, enabled an estimation that shows that New EU countries from Central and Eastern Europe (NMS-10) experience an approximately 5 percentage points lower DVA share as compared to old EU countries (EU-15). The lag is on average the highest in knowledge-intensive manufacturing sectors (8 percentage points) and the lowest in knowledge-intensive services (0.3 percentage points). However, this paper follows the assumption that NMS-10 have acquired new knowledge by participating in Global Value Chains (GVCs), and thus gradually started increasing their DVA. Based on the empirical application of the EU trade data, I found that convergence in terms of DVA in exports can be observed in manufacturing, and especially in the services sectors. Additionally, I find that for NMS-10 countries negative relationship between participation in GVCs and DVA in exports is slightly decreasing over time in both sectors.*

**Keywords:** *global value chains, international trade, value added in exports*

### **1. INTRODUCTION**

The new organization of world trade, known as global value chains (henceforth GVCs), highlighted the problem of so-called ‘double counting.’ Namely, raw material, obtained in one country, can be exported for processing to affiliates in another country. This country then re-exports intermediates to a plant in the third country, which further exports finished products to the fourth country where final consumption takes place. Thus, the value of raw materials and intermediate products is counted in the value of world exports each time they cross a border (UNCTAD, 2013, p. 122), and the full value is attributed to the last country and industry that shipped the product. This is reflected in the world exports data, expressed as a percentage of the total output, which has increased almost three fold since 1960. New EU member countries from Central and Eastern Europe (i.e. former transition economies, henceforth NMS-10) have doubled their export share from 1990, which in 2013 represented more than 60 per cent of the GDP.

Recognition of these features led to the development of alternative approaches for measuring trade in value-added terms (Daudin, Riffart, & Schweisguth, 2011; Johnson & Noguera, 2012; Koopman, Powers, Wang, & Wei, 2010; Koopman, Wang, & Wei, 2014), that require detailed data on exports and imports of intermediate goods in different countries and industries. Trade in value-added terms may provide information about whether a country participates (and to what extent) in

these new trading patterns created by the fragmentation of international trade (Dean, 2013, p. 51), and may give an insight into the position of a country's sectors within GVCs (Koopman et al., 2014, p. 485). The value or the part of exports created in the country is referred to as the ‘domestic value-added (henceforth DVA)’ and represents a part of exports which contributes to its GDP (UNCTAD, 2013, p. 126).

Since the country's export success (by volume of exports) is not necessarily reflected in its economic growth, the question is whether export restructuring of NMS-10 countries is reflected in the increase of DVA in exports. Based on the empirical application of the EU trade data, I intend to examine the following issues: (1) Do NMS-10 create lower domestic value-added in exports compared to the old EU member states (henceforth EU-15)?; (2) Do these differences diminish over time, i.e. does the gap between NMS-10 and EU-15 close over time?; and (3) What are the differences in the levels and trends at the sectoral level? This will enable the provision of more insights into the issue whether EU-15 countries gain more in terms of DVA from participation in GVCs than NMS-10, and as well whether and why this gap closes over time (or not).

This paper's contribution lies in the analysis of possible evidence of convergence in terms of domestic content in exports between NMS-10 and EU-15 countries. Since GVCs, as stated by Baldwin (2011), represent the way of cross-border dispersion of advanced know-how, I follow the assumption that NMS-10 have acquired new knowledge by participating in GVCs, and thus gradually started increasing their DVA. The main methodology used in the paper represents the decomposition of gross exports into value-added exports, as developed by Koopman et al. (2010). Since NMS-10 states represent former transition economies (in the past relatively isolated from international trade), I expect their domestic value added in export is on average smaller than in EU-15. At the beginning of transition in 1990s, NMS-10 were mostly selected for routine offshoring activities due to lower labour costs and real estate prices. Since EU accession, these costs have increased (compared to countries from Asia and Latin America), however they have remained below those in Western economies (Gál, 2014). Consequently, NMS-10 countries started to attract high value-added activities, especially due to skilled labour and strategic location, so I expect that the initial differences will diminish over time. Relying on data from the World Input-Output Database, my regression analysis confirms these expectations. However, it has to be mentioned that the share of DVA overall is declining due to higher integration in GVCs. Even so, when focusing on individual countries, this is not always the case.

The rest of the paper is divided into four sections. The second section presents the methodological framework. The third section discusses the structure of EU countries' exports with focus on the shares of domestic contents. Fourth discusses about integration in GVC, and the last section concludes.

## 2. METHODOLOGY AND DATA

This paper follows the methodology of measuring value-added in exports developed by Koopman, Powers, Wang, & Wei (2010, p. 5-21). This methodology requires the use of inter-country input-output tables, which contain information on the source and destination country of all transaction flows by industry, separately for the use of intermediates, and the use of final products (Koopman et al., 2014, p. 485).

To address the issue whether differences of DVA in exports between NMS-10 and EU-15 countries diminish over time, I intend to perform the following regression analysis, separately for the manufacturing and services sectors:

$$DVA_{ijt} = \alpha + \beta_1 NMS + \beta_2 t + \beta_3 t^2 + \beta_4 NMS * t + \beta_5 NMS * t^2 + u_{ij} + \varepsilon_{ijt} \quad (1)$$

where  $t$  represents a trend variable ( $t=1, \dots, 17$ ),  $NMS=1$  for NMS-10 countries and  $NMS=0$  for EU-15,  $\mu_{ij}$  is a country-industry fixed effect and  $\varepsilon_{ijt}$  is a random error term. The variables in the model relate to country  $i$ , industry  $j$  and year  $t$ . I decided to use a quadratic trend in the model since the

difference in DVA between NMS-10 and EU-15 in the observed period shows a nonlinear trend (in particular in manufacturing sector).

Furthermore, I intend to explore the impact of participation in GVCs on DVA in exports separately for both groups of countries and changes in the relationship through the observed years. For that purpose I will estimate the following regression (separately for manufacturing and services sector):

$$DVA_{ijt} = \alpha + \beta_1 Part + \beta_2 Part * t + \beta_2 Part * NMS + \beta_3 Part * NMS * t + u_{ij} + \varepsilon_{ijt} \quad (2)$$

where  $Part^t$  represents an estimated measure for participation rate in GVCs,  $t$  represents a trend variable ( $t=1, \dots, 17$ ),  $NMS=1$  for NMS-10 countries,  $u_{ij}$  is a country-industry fixed effect, and  $\varepsilon_{ijt}$  is a random error term. The variables in the model relate to country  $i$ , industry  $j$  and year  $t$ .

The data used to analyse the value-added in exports were obtained from publicly available World Input-Output Tables (henceforth WIOT) from the World Input-Output Database (henceforth WIOD). For the purpose of calculating the value-added in exports, WIOT were used at the current basic prices.

My analysis focuses on the comparison between NMS-10 and EU-15 countries. The decision to analyse the differences is based on the fact that NMS-10 represent former transition economies with political and economic predispositions, which influenced the development of international trade in a different way as compared to EU-15.

I expect that DVA in exports will be, on average, smaller in NMS-10 than in EU-15 states since: (1) the majority of NMS-10 countries have relatively low own R&D intensity, and are heavily dependent on R&D embodied in imported inputs, and so mostly rely upon imported technology (Reinstaller & Unterlass, 2011); and since (2) NMS-10 have attracted relatively high amount of FDIs. These can be at the beginning, as Aminian, Fung and Iizaka (2007) claim, associated with higher volume of host country's imports from FDI source country, due to increased imports of intermediates and capital goods related with production offshoring. However, through time the effect of FDIs can change if foreign affiliates begin to source intermediates from local firms.

Additionally, offshoring to NMS-10 countries has gradually shifted from routine activities in the first years of transition (Gál, 2014) to high value-added and skill intensive activities (Marin, 2004, 2011; Lorentowicz, Marin, & Raubold, 2005; Sass & Fifeekova, 2011), especially due to skilled labour and strategic location, so I expect that the differences in DVA diminish over time.

### 3. THE STRUCTURE OF EU COUNTRIES' EXPORTS WITH FOCUS ON DOMESTIC VALUE ADDED

The starting point of the analysis is the identification of EU countries' position among other major groups of economies in terms of value-added in exports. As Figure 1 demonstrates, EU countries have the lowest DVA share in exports amongst the selected groups of countries, while East Asian countries saw the largest decline in the share<sup>2</sup>. Figure 1 clearly shows that DVA in exports has on average a declining path in all groups of countries with a rise in the year 2009, due to the beginning of the global financial crisis. The details of these features are further discussed in the following sections focusing on EU-15 and NMS-10 countries.

<sup>1</sup> Participation rate identifies the extent to which countries are involved in GVCs and is defined as a share of (1) foreign inputs in gross exports plus (2) domestically produced inputs used in third countries' exports (forward participation) in gross exports.

<sup>2</sup> Although East Asian countries registered (on average) a declining trend in DVA, this was not the case in China, where DVA was increasing from 2005 to 2009.

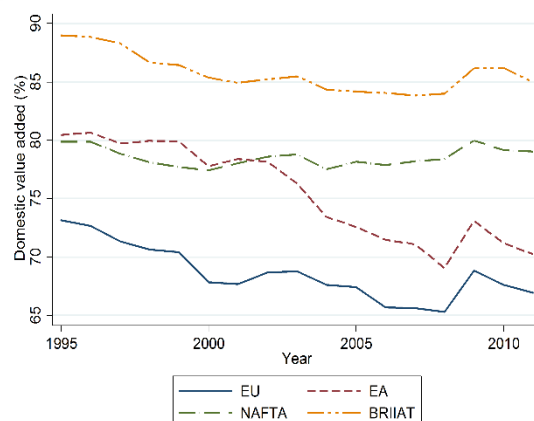


Figure 4: Domestic value added in exports by major group of world countries<sup>3</sup>, 1995-2011 (WIOD tables, own calculations).

### 3.1 Manufacturing sector exports

Since manufacturing exports account for three quarters of the total exports in EU, it is interesting to take a closer view at its structure. It can be seen from the WIOD data that knowledge-intensive exports dominate in manufacturing exports, both in EU-15 (account on average for 62 per cent) and in NMS-10 countries (52 per cent). Labour-intensive manufacturing exports have the smallest share, which is in all examined years still higher for NMS-10 (average share is 17 per cent) than for EU-15 countries.

However, throughout the sample, DVA in exports by manufacturing subgroups in EU-15 was higher than in NMS-10, with the highest shares in labour-intensive activities. On average, it amounts 72 per cent in EU-15 and 65 per cent in NMS-10 (Figure 2).

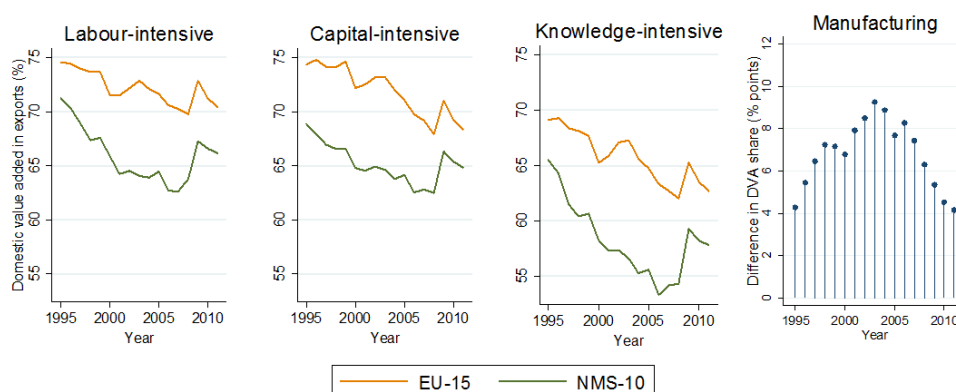


Figure 2: Share of DVA in exports for EU-15 and NMS-10, in period 1995-2011, by manufacturing subgroups, in percentage of total exports and the difference in manufacturing DVA between EU-15 and NMS-10, in percentage points (WIOD tables, own calculations).

Although the differences between NMS-10 and EU-15 in terms of DVA share have persistently increased since 1995, they started diminishing over the observed period (Figure 2). Estimation of the presented model (1), by using DVA data for manufacturing, provides significant regression results which show that the trend for EU-15's share of DVA is almost linear and decreasing, but starts at higher values of DVA as compared to NMS-10 (Table 1). On the other hand, a positive value of the quadratic trend term for NMS-10 indicates the curvature is upwards sloping, which shows that a difference in share of DVA between both groups of countries systematically closes over time.

<sup>3</sup> BRIIAT: Brasil, Russia, India, Indonesia, Australia, and Turkey; EA (East Asia): Japan, Korea, Taiwan, China; NAFTA: Canada, Mexico, USA.

The decrease in the DVA gap can be explained by the fact that after 2004 the share of imported intermediates in total intermediates used in NMS-10 starts to decline (-1.2 per cent per year from 2004 to 2011), while at the same time in EU-15 this share is slightly increasing (0.5 per cent per year). Nonetheless, it is important to note that the average share of imported intermediates in NMS-10 is still higher than in EU-15. Regarding the exports of intermediates, Behar and Freund (2011) found (using sophistication measure developed by Hausman, Hwang and Rodrik, 2007) that new EU member countries intermediates exports to the EU-15 have become 15 per cent more sophisticated, while imported intermediates of new member countries from EU-15 have become only 7 per cent more sophisticated. Moreover, new member countries have become a more important source of intermediates for EU-15.

*Table 1: Convergence of DVA in the manufacturing sector (WIOD tables, own calculations)*

Dependent variable: DVA in exports in manufacturing			
VARIABLES	POLS	FE (1)	FE (2)
NMS	-3.172*** (0.908)		
t	-0.473*** (0.156)	-0.445*** (0.0599)	-0.0551 (0.0620)
t <sup>2</sup>	0.0059 (0.0085)	0.0040 (0.00317)	-0.0172*** (0.0034)
NMS*t	-1.209*** (0.234)	-1.250*** (0.135)	-1.249*** (0.135)
NMS*t <sup>2</sup>	0.0690*** (0.0127)	0.0714*** (0.0068)	0.0714*** (0.0068)
Constant	73.73*** (0.610)	72.44*** (0.275)	71.64*** (0.257)
Observations	5,493	5,493	5,493
R-squared	0.129	0.310	0.364
# of country-industry		325	325
Country-industry FE		YES	YES
Year FE		NO	YES

Notes: Regression estimates of the model (7) for the manufacturing sector; robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; NMS = 1 if the observation belongs to NMS-10, NMS = 0 if the observation belongs to EU-15.

As claimed by Augustyniak et al. (2013) for the case of CE4, initial increase in FVA of these countries has eventually resulted in increased DVA based on improved technology capacity (provision of know-how to ensure quality) and increased demand for ancillary goods and services in home countries. However, the results differ between countries and between sectors within these sector groups. Although NMS-10 countries lead by exports in knowledge-intensive manufacturing, DVA in this sector is the lowest. Thus as argued by Labaye et al. (2013), generally Central and Eastern European economies should move up the value chain in knowledge-intensive manufacturing since the labour costs cannot represent the only source for comparative advantage due to increased competition from developing economies.

### 3.2 Services sector exports

Services lead in many economies in terms of their share in the national GDP and as Low (2013, p. 73) argues, they represent an increasingly important component of international trade. They have a vital role in value chains though this aspect is often subject to misunderstanding and underestimation due to their intangible nature.

In EU-15 countries the highest shares in services exports can be observed in knowledge-intensive or business services (almost 50 per cent in 2011), these are followed by capital intensive (26 per cent in 2011) and labour-intensive services (20 per cent in 2011) for which the share has declined over time (for almost 5 percentage points). On the other side, NMS-10 countries have the largest



share in services exports in labour-intensive services (40 per cent in 2011), followed by capital-intensive services (34 per cent in 2011).

The highest DVA shares in exports in EU-15 (on average) were registered in services-related with health, education, and public services (89.6 per cent) and knowledge-intensive services (86 per cent) (Figure 3). Similarly, in NMS-10 the knowledge-intensive services (86 per cent) and health, education, and public services also recorded the highest share (85 per cent).

The largest average decline of DVA share in EU-15 was recorded in the capital-intensive sector (0.6 per cent per year), while for NMS-10, it was only 0.1 per cent per year). In recent years of the observed period, the share of DVA in NMS-10 approached the share of EU-15 (76 per cent for both groups in 2011). In the case of knowledge-intensive services the share for NMS-10 was since 2007 higher than in EU-15, which observed the decreasing path of DVA in the reference period. While in EU-15, the share of DVA in exports decreases in all services groups, and in NMS-10 DVA has a relatively stable path.

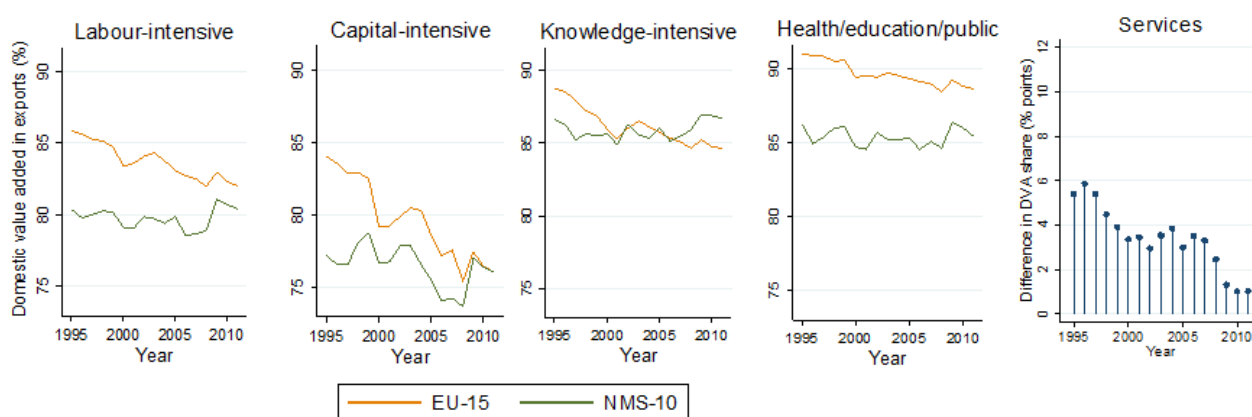


Figure 3: Share of DVA in exports for EU-15 and NMS-10, in the period 1995-2011, by services subgroups, in percentage of total exports and the difference in services DVA between EU-15 and NMS-10, in percentage points (WIOD tables, own calculations).

Labaye et al. (2013) argue that CEE countries have created highly competitive outsourcing and offshoring capacities in knowledge-intensive services exports and are positioned to move into new activities with high value-added. As Labaye et al. (2013) add, the competitive advantage of outsourcing and offshoring companies from CEE is usually based on skills, not on scale, and so offers higher value-added services compared to their competitors from other countries.

Similarly, as in the manufacturing sector the estimation of the presented model (1) provided significant regression results for the services sector (Table 2), which confirm that differences between NMS-10 and EU-15 in terms of DVA in exports have lowered over the observed period. During these years, DVA in exports in NMS-10 countries was approximately 0.2 percentage points higher each year compared to EU-15, which again shows that the difference between both groups of countries is systematically lower. One possible explanation of the decrease in the DVA gap can be found in the fact that the share of imported intermediates in total intermediates used in EU-15 increases (by 1.3 per cent per year), while in NMS-10 remains relatively stable (with slight 0.2 per cent increase per year). After 2009 the share of imported intermediates in total intermediates used is higher in EU-15 countries.



Table 2: Convergence of DVA in the services sector (WIOD tables, own calculations)

Dependent variable: DVA in exports in services			
VARIABLES	POLS	FE (1)	FE (2)
NMS	-5.618*** (0.750)		
t	-0.464*** (0.128)	-0.449*** (0.0448)	-0.228*** (0.0453)
t <sup>2</sup>	0.008 (0.0072)	0.0080*** (0.0023)	-0.0040* (0.0024)
NMS*t	0.224 (0.194)	0.180* (0.0948)	0.180* (0.0949)
NMS*t <sup>2</sup>	0.0019 (0.0105)	0.0043 (0.0045)	0.0043 (0.0046)
Constant	87.23*** (0.471)	85.00*** (0.221)	84.71*** (0.215)
Observations	7,554	7,554	7,554
R-squared	0.042	0.144	0.171
# of country-industry		450	450
Country-industry FE		YES	YES
Year FE		NO	YES

Notes: Regression estimates of the model (7) for the services sector; robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; NMS = 1 if the observation belongs to NMS-10, NMS = 0 if the observation belongs to EU-15.

As explained by Sass and Fifeekova (2011), who focused on business services offshoring, initially FDIs in CEE comprised less complicated activities, but eventually activities with higher value-added and skill intensity were also offshored to this region. Gereffi and Fernandez-Stark (2010) reported that some Eastern European countries represent emerging locations for offshore services, which have expanded the most among all industries in many of these countries. Offshore services can be associated with certain positive externalities (e.g. knowledge transfer, employment, access to new markets).

So far, it has been shown that DVA in exports has a declining path in almost all sectors. The participation in GVCs often indicates an entry into a more fragmented value chain, characterized by a greater use of inputs with foreign contents. When countries increase participation in GVCs, the share of DVA in exports is first reduced, although likely to increase the absolute value of the contribution of exports to GDP (UNCTAD, 2013). The extent of EU countries integration in GVCs is presented hereinafter.

#### 4. INTEGRATION IN GVCS AND DOMESTIC CONTENT IN EXPORT

The extent to which countries are involved in GVCs is measured by the participation index at the country-sector level which indicates the presence of the selected sector and country in GVCs. The participation index is calculated as a share of foreign inputs (backward participation) and domestically produced inputs used in third countries' exports (forward participation) in gross export.

In the manufacturing sector all countries increased their participation in GVC in the period from 1995 to 2011, except Estonia and Lithuania, which decreased their participation in GVC. But at the same time, almost all countries shifted downwards (their DVA decreased) which suggests they moved downstream in the value chains. In almost all sectors Hungary had the highest participation rate (60 per cent), followed by Czech Republic and Slovakia (both approximately 57 per cent) and Slovenia (53 per cent), while the smallest participation rate was recorded in Romania (44 per cent). In the services sector, a rise in participation share from 1995 to 2011 can be observed in almost all countries, although there are some exceptions where countries lowered their participation rate from 1995 to 2011 (Estonia and Lithuania). The highest participation rate was in 2011 in Hungary (50 per cent), followed by Czech Republic and Slovakia (both 38 per cent).

The estimation results of the model (2) indicate a negative relationship between participation in GVCs and DVA in exports in both sectors (Table 3). For the services sector this negative relationship increases slightly over time, while for the manufacturing sector this relationship is imprecisely estimated. However, results for NMS-10 countries show that negative relationship between participation in GVCs and DVA in exports is decreasing slightly over time in both the manufacturing and services sectors.

*Table 3: Dynamics of DVA in exports with respect to GVCs participation (WIOD tables, own calculations)*

Dependent variable: DVA in exports				
VARIABLES	POLS	FE	POLS	FE
	Manufacturing		Services	
Part	-0.615*** (0.0090)	-0.743*** (0.0383)	-0.674*** (0.0118)	-0.271*** (0.0442)
Part*t	-0.0018*** (0.0005)	-0.0009 (0.0005)	-0.001 (0.0007)	-0.0056*** (0.0007)
Part*NMS	-0.0712*** (0.0079)	-0.189*** (0.0472)	-0.100*** (0.0094)	-0.253*** (0.0642)
Part*NMS*t	0.0017** (0.0007)	0.0026*** (0.0007)	0.0063*** (0.0009)	0.0087*** (0.001)
Constant	98.20*** (0.275)	106.1*** (1.061)	107.1*** (0.278)	96.40*** (1.047)
Observations	5,493	5,493	7,554	7,554
R-squared	0.703	0.824	0.662	0.466
# of country-industry		325		450
Country-industry FE		YES		YES

Notes: Regression estimates of the model (8); robust standard errors in parentheses: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; NMS = 1 if the observation belongs to NMS-10, NMS = 0 if the observation belongs to EU-15.

This is in line with results provided by UNCTAD (2013, p. 170), showing that even countries with higher foreign value-added in exports can be in a better position in the long run if their GVC's participation rate is higher, since companies can expand into activities with higher value-added and upgrade their positions within GVCs. Companies create greater DVA from trade for the home country due to formation of domestic productive capacity which enables better outcome. Rahman and Zhao (2013, p. 11) found positively and statistically significant relationship between foreign value-added export growth lagged up to five years and DVA export growth (measured as a share of GDP).

## 5. CONCLUSION

The focus of the paper's analysis is the comparison of DVA in exports between NMS-10 and EU-15 countries, on the sectoral level with the use of WIOD database and methodology developed by Koopman et al. (2010). The results show that DVA in exports is higher in EU-15, while the decline in DVA share is primarily perceived in the manufacturing sector compared to some services sectors where DVA for NMS-10 remains stable through the observed period from 1995 to 2011 (knowledge-intensive and labour-intensive services).

Furthermore, the participation of countries in GVCs is investigated. For NMS-10 countries the degree of participation in GVCs is, on average (both in services and in manufacturing sector) slightly higher compared to EU-15 average. Regression results for NMS-10 countries show that negative relationship between participation in GVCs and DVA in exports decreases slightly over time in both the manufacturing and services sectors. This is in line with research (UNCTAD, 2013, p. 170; Rahman and Zhao, 2013, p. 11), suggesting that even countries with higher FVA in exports can be in a better position if their GVCs participation rate is higher, since in the long run, countries can upgrade their positions within GVCs and increase their DVA in exports even if they initially increase FVA in exports.

Despite the fact that NMS-10 countries became important suppliers of intermediate parts and components, semi-finished and finished goods, it is shown that NMS-10 still have a higher proportion of imports embodied in their exports than EU-15, even though for some sectors convergence is observed. Policy implication from this case refers to the promotion of business environment that not only attracts FDIs or increases country's participation in GVCs but also acquires more high value added activities. In terms of country's competitiveness and export performance measures it is important to take into account the difference between trade statistics in gross terms (traditional) and in value added terms.

However, certain limitations of the analysis based on the concept of value added have to be mentioned (incomplete databases which require the use of some simplified assumptions, trade data in services do not meet the quality level of trade data for merchandise goods) (Dietzenbacher et al., p. 86). Nevertheless, the paper offers an insight into the structure of EU countries' exports from the perspective of value added, suggesting the existence of differences between old and new EU countries from CEE, which require a further investigation.

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## TURKISH FACEBOOK USERS: EXPLORING DIFFERENCES AND DETERMINING USEFUL ASSOCIATION RULES

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### ABSTRACT

*It is possible to communicate, to share videos, photos, etc., to get daily news, to play a game, and to make many other activities by having an account on Facebook. Therefore; researchers, decision makers, marketers. try to find how they can use Facebook on behalf of organizations. In this respect, it is important to define Facebook users' activities and motivations. Within the scope of this study, we focused on motivations of Facebook usage and investigated the differences in motivation scores between gender, age, preferred devices and time spends. A survey of 804 participants revealed that the main reasons for Facebook use were “business-orientation”, “creation”, “information seeking”, “status seeking”, “entertainment”, “communication” and “socializing”. We also determined some association rules which are potentially useful for understanding the Facebook users' characteristics. Our findings showed that there are some relations between motives of Facebook use and gender, age, time spent and preferred devices.*

**Keywords:** Association rule mining, Facebook, User motivation, Uses and Gratification

### 1 INTRODUCTION

Social network sites usage continues to grow around the world. According to Statistic Brain, 74.1% of people used one of the social network sites in 2015. Facebook is currently the most popular social networking site with 1.65 billion monthly active users according to the announcement by Facebook (Facebook, 2016). Recently, Facebook also gains great popularity in Turkey like all over the world. According to the Digital in 2016 report which is prepared by WeAreSocial based on the data of Global Web Index, Turkish users are at the third rank in visiting/using services on Facebook all around the world, fourth in YouTube, second in Twitter and ninth in Google +. Facebook is the leader SNS in Turkey followed respectively by Twitter, Instagram and Google+ (WeAreSocial, 2016). SNSs usage also has great a growth rate in Turkey too. According to Statista report which named; Turkey: social network penetration Q4 2014, Facebook has 26%, Twitter has 17%, Google+ has 14%, Instagram has 12% penetration rates in the 4th quarter of 2014 (Statista, 2016). It is clear that Facebook usage and people's activities on Facebook are increasing day by day. When considered from this point of view, understanding users' main reasons behind Facebook usage are getting more important for both individuals and organizations. Why people use Facebook? Facebook is a great platform for socializing. It is also easy to find new friends on these sites. According to WeAreSocial, 2016 report, 90.75% of Turkish internet users use the internet to send a message by SNSs or to share photo or any contents by using a SNS. So it could be easily said that Facebook is also useful to communicate and create some contents. Facebook provide opportunities for both organizations and individuals to learn about issues happening in society. What factors do we have about people's motivations using Facebook? In this study, first, we present motivations behind the Facebook usage. Second, we try to determine whether there are differences in motivations of Facebook usage and third, we try to extract some useful rules from the data by using data mining technique. Data mining is the process of searching and analyzing data in order to find implicit, but potentially useful, information (Frawley et al., 1992, p.58). Tasks of data



mining models and technologies could be stated as description, estimation, prediction, classification, clustering, association (Larose, 2005, p.11). We use association rule mining to reveal rules which help decision makers who need to get better understanding of Facebook users' characteristics.

## **2 LITERATURE REVIEW/THEORETICAL BACKGROUND**

Social network sites could be defined as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. (Boyd and Ellison 2008, p.211). According to Zammar (2011), social network site is the product of the evolution of social liaisons, and the emergence of Social Network Sites online communities of people who are interested in exploring the concerns and activities of others.

As we mentioned before Facebook is the most popular social network site around the world. People use Facebook for many purposes such as; socializing with people, finding new friends, recovering old friends, finding new job opportunities, interacting with celebrities, communicating with the others, being informed of the things that they interested, etc. This phenomenon can be explained by various theories. Uses and Gratification Theory which asserts that different people can use the same media for different purposes refer to the motivations behind the individuals' media selection (Joinson, 2008, p.1028).

In recent years, many studies examined reasons and motivations that related with SNSs usage. Baek et al. (2011, p.2245) revealed six motivations for using Facebook, i.e. information sharing, convenience, and entertainment, passing the time, interpersonal utility, control and work promotions. Whiting and Williams (2013, p.366-367) identified ten uses and gratification themes for using social media. Social interaction found to be the extensive motivation for people to use social media. Information seeking, passing the time, entertainment, relaxation, expression of opinions, communicatory utility, convenience utility, information sharing and surveillance/knowledge about others are the other motivational factors respectively. Sheldon (2008, p.70-72) found that students primarily use Facebook to maintain a relationship, entertainment and passing time. Başak and Çalışır (2015, p.187) conducted a study to understand the continuance intention of Turkish users to use Facebook. In their study, it is found that entertainment and status seeking have indirect influences on continuance intention to use Facebook while self-expression and information seeking has to effect on continuance intention to use Facebook. Additionally, various motivations took place in the literature of Facebook and social networking sites use: communication with friends, entertainment and finding out about events (Pempek et al., 2009, p.231); pastime, affection, fashion, sharing problems, sociability and social information (Quan-Haase and Young, 2010, p.355); self-presentation include posting photos, wall content, etc. (Zhao, et al., 2008, p.1824); habitual pass time, escapism, professional advancement, companionship (Papacharissi and Mendelson, 2011, p.227), seeking for convenience (Basilisco and Jin, 2015, p.188).

There are also some studies which mentioned demographic and internet usage related differences among people about Facebook usage. Mazman and Usluel (2011, p.136) investigated that females use Facebook to maintain existing relations more than males while, males use Facebook to make new relations more than females. McAndrew and Jeong (2012, p.2363), found that age was negatively related to most types of Facebook activity such as; posting profile pictures, number of hours per week on Facebook, social comparison information, seeking personal information about others, interacting with groups, etc. while, positively associated with: family activity, interacting with individuals, and spending more time looking at one's own Facebook page.



### 3 METHOD

We use a cross-sectional survey to determine the motivations of using Facebook and whether there are differences in terms of gender, age, education, time spend on social media platforms and Facebook use by the device. Besides, we carried out association rule mining analysis to find some useful rules about Facebook usage.

In an effort to get data from people about motivations towards using Facebook and their demographic characteristics, a survey has been conducted. Survey used in this study has been compiled from different studies; seven of the items have been taken from Smith (2011), nine of the items from Lee and Ma (2012, p.336), and four of them from Chung et al (2016, p.294). And also some statements have been added by the authors to the questionnaire which are about social media usage that related in business to reveal individuals' aim to use social network sites. Finally, the survey has been composed with 24 items on five-point Likert-type scale, ranging from “never” (1) to “always” (5) that measure individuals' motivations for using Facebook. Also, the survey contains some descriptive questions such as; “gender”, “age”, “educational status”, “daily time spent on Facebook”, and “Facebook usage by devices”.

Questionnaire form has been created with these items and questions. The data were collected from the people who live in Izmir which is the third biggest city of Turkey with 1000 respondents. All respondents are active Facebook users who have a Facebook account and regularly use it. Among the 1000 surveys, 932 were returned for a return rate of 93.2%. 128 surveys were excluded because of many missing statements. Among remaining surveys, still some of them had some missing values; instead of these missing values their median score had been replaced. Finally, 804 usable questionnaires were formed for the analysis.

The sample consisted of 356 females and 448 males. The respondents' ages ranged from 18 to 67 years old and 77.1 % of them had at least college graduates. Facebook (83.3%) is the commonly used social media platform following by Instagram and Twitter respectively. On average, they spent approximately 117 minutes in social media platforms in a day.

### 4 RESULTS

#### 4.1 Exploratory factor analysis (EFA) and confirmatory factor analysis (CFA)

According to Fabrigar et al. (1999, p.277), if the sample size in a single study is large, the sample can be randomly split in a half and exploratory factor analysis can be conducted on one-half of the data and confirmatory factor analysis on the other. Because of our large sample size, we divided our sample into two random samples. 402 of 804 data were used when conducting EFA and other 402 data are used for CFA.

EFA was performed on 24 items to identify the motivations for using Facebook. KMO test statistic was 0,844 which is more than 0.5, so factor analysis would be useful for these variables and the Bartlett test statistic was significant ( $0.01 < 0.05$ ); this means that the variables were correlated enough to provide a fair factor analysis. 23 items clearly retained in one of seven factors with eigenvalues greater than 1. Our seven-factor structure explains 76.23% of the variance. The factor loadings, labels, participants' mean responses for scales, and Cronbach's alpha values of each factor are shown in Table 3. The first factor labeled “business-orientation”, accounted for 28.29% of the total variance. The second factor named “creation” and this factor accounted for 13.85% of the total variance. The third factor, which named “information seeking”, accounted for 9.18% of the total variance. The fourth factor labeled “status seeking”, accounted for 7.35% of the total variance. The fifth factor entitled as “entertainment” and the sixth factor named as “communication”. These factors accounted for 6.93% and 5.77% of the total variance, respectively. Finally, seventh factor named as “socializing” and this factor accounted for 4.85% of the total variance.

*Table 3 Exploratory factor analysis and confirmatory factor analysis results*

Factor	EFA components							CFA			
	1	2	3	4	5	6	7	Std. loading	t-value <sup>a</sup>	CR	AVE
<b>Business-Orientation</b> ( $\alpha=0.92$ ) ( $\bar{x}=1.93$ )											
To contact about business world	0.92							0.93	-	0.92	0.74
To share about business world	0.88							0.85	24.87		
To follow improvement in business life	0.90							0.88	26.57		
To find new job opportunities	0.85							0.79	21.59		
<b>Creation</b> ( $\alpha=0.83$ ) ( $\bar{x}=2.91$ )											
To share music		0.83						0.71	-	0.82	0.54
To share photo		0.75						0.82	10.89		
To share text		0.76						0.74	10.66		
To share video		0.74						0.66	10.32		
<b>Information Seeking</b> ( $\alpha=0.85$ ) ( $\bar{x}=3.27$ )											
To have new information			0.86					0.82	-	0.89	0.72
To find information that I need to learn			0.80					0.92	20.28		
To be aware of new events and news			0.87					0.81	18.35		
<b>Status Seeking</b> ( $\alpha=0.86$ ) ( $\bar{x}=2.12$ )											
I feel important when sharing something				0.80				0.81	-	0.89	0.74
I look good when sharing something				0.86				0.86	19.92		
I gain status by being on social media				0.78				0.90	20.84		
<b>Entertainment</b> ( $\alpha=0.82$ ) ( $\bar{x}=2.74$ )											
To pass time					0.79			0.85	-	0.88	0.72
It helps me to relax					0.82			0.84	17.03		
To combat boredom					0.85			0.86	18.51		
<b>Communication</b> ( $\alpha=0.76$ ) ( $\bar{x}=3.41$ )											
Staying in touch with current friends						0.80		0.75	-	0.80	0.57
Staying touch with family members						0.80		0.77	11.10		
To connect old friends that I've lost touch						0.78		0.75	11.04		
<b>Socializing</b> ( $\alpha=0.75$ ) ( $\bar{x}=2.31$ )											
To connect with the people to share common hobbies or interests							0.67	0.91	-	0.83	0.62
To make new friends							0.81	0.73	10.70		
To find potential romantic or dating partners							0.70	0.70	7.28		

**Notes:** Bold values represent the factor on which each item predominantly loads;  $\alpha$ :Cronbach's Alpha; CR: composite reliability; AVE: average variance extracted; CFA model fit:  $\chi^2=506.28$ ;  $df=205$ ;  $\chi^2/df=2.470$ ; GFI= 0.91, AGFI=0.88, IFI=0.95, NFI=0.91, CFI=0.95, RMSEA=0.048; <sup>a</sup> all estimates significant with  $p<0.01$

Based on the second half of the data, we conducted CFA to assess the construct validity of the seven-factor scale. Cronbach's  $\alpha$  coefficients and composite reliability (CR) values, item means, factor loadings, t-values average variance extracted (AVE) values are shown in Table 3. Table 3 shows that all Cronbach's Alpha values of each construct ranged from 0.75 to 0.92, greater than the recommended value 0.70. Similarly CR values above 0.80 which exceed 0.7, recommended by Fornell and Larcker (1981). The results show that all items were deemed reliable. For convergent validity, we check item loadings, composite reliability of each construct and the average variances extracted (AVE) for each construct suggested by Bagozzi and Yi (1988). All item loadings were found to be significant and higher than 0.5, all CR are above 0.7 and AVE values exceed 0.5, demonstrating convergent validity. Discriminant validity controlled by checking the square root of the AVE values for each construct with its cross-correlation with other constructs. All squared correlations between distinctive-paired constructs did not exceed the AVE for each of the paired construct, and thus discriminant validity was supported. The CFA also shows that all 23 items loaded on their respective factors and seven factor structure provide a good fit suggested by Bagozzi and Yi (1988, p.82) ( $\chi^2/df=2.47$ , GFI= 0.91, AGFI=0.88, IFI=0.95, NFI=0.91, CFI=0.95,

RMSEA=0.048). Therefore, the seven-factor structure proposed in this research indicates great reliability, convergent, and discriminant validities.

#### 4.2 Differences in Facebook Usage

First, we ran Shapiro-Wilk and Kolmogorov-Smirnov tests to check the normality of data and choose the appropriate statistical test. Results showed that all dimensions had non-normally distribution. Thus, we used Mann-Whitney U test which is a kind of non-parametric test to compare male's and female's motivations to use Facebook. Table 4 provides the results of Mann-Whitney U tests to determine whether differences in motivations to use Facebook existed between males and females. We found the significant difference in one of seven motivations to use Facebook. Mann-Whitney U test results showed that male users scored significantly higher on socializing than female users. There were not significant differences in other motivational factors between female and male Facebook users.

*Table 4 Comparison of motivation factors between female and male Facebook users*

Variables	p	U	Mean Rank	
			Female	Male
Business-orientation	0.282	71406.5	379.69	396.55
Creation	0.935	77927.5	399.24	397.91
Information seeking	0.858	76606.5	397.62	394.71
Status seeking	0.883	77548.5	396.68	399.05
Entertainment	0.592	74523.5	397.79	389.11
Communication	0.184	74059.0	411.11	389.42
Socializing	0.025*	70151.0	375.79	412.20

\*: Statistically significant differences in  $p < 0.05$  (Mann-Whitney Test)

The Kruskal-Wallis test was used in order to make comparison among four groups in the meaning of age, time spend on social media platforms and preferred devices when using Facebook. When the Kruskal-Wallis test was significant, we used the Mann-Whitney U test with a Bonferroni correction for pairwise group comparison. The results indicated that there were significant differences among age groups in five of seven motivation factors. Additionally, there were significant differences among groups who spend different hours on Facebook in six of seven factors and we found significant differences in three motivations among users who use different devices when accessing Facebook. Table 5 reports the results of Kruskal-Wallis test results and group comparisons.

*Table following on the next page*

*Table 5 Comparison of motivation factors of Facebook users*

Variables	Mean Ranks												
	Age					Time spend on Facebook (mins./day)				Common used device when using Facebook			
	$\chi^2$	<30	30-39	40-49	$\geq 50$	$\chi^2$	<60	60-119	$\geq 120$	$\chi^2$	MP	Tablet	PC
Business orientation	10.59*	415.5	399.0	354.4	405.1	17.26*	347.6	382.6	434.5	10.12*	387.7	281.7	367.9
Creation	19.46*	446.9	416.5	374.8	346.4	20.11*	347.9	394.9	447.6	7.25*	398.0	411.5	353.6
Information seeking	2.90	417.4	380.4	390.3	400.7	5.56	371.5	392.6	422.9	1.82	383.0	422.1	373.2
Status seeking	9.44*	414.1	386.0	374.4	442.2	36.34*	325.2	399.2	457.5	2.87	378.7	346.5	400.3
Entertainment	13.17*	396.1	357.3	390.8	449.3	59.44*	288.3	411.3	452.6	6.16*	367.3	364.0	409.2
Communication	9.39*	365.7	388.9	410.8	440.3	36.55*	325.3	400.4	459.9	2.14	376.2	388.4	401.5
Socializing	7.08	433.8	382.3	384.3	385.3	58.42*	305.4	395.9	475.0	3.26	384.1	322.3	387.8
Pairwise Comparisons													
Business orientation	1>3					3>1 / 3>2				1>2 / 3>2			
Creation	1>3 / 1>4 / 2>4					3>1 / 3>2				1>3			
Information seeking	-					-				-			
Status seeking	4>3					3>2>1				-			
Entertainment	4>2					2>1 / 3>1				3>1			
Communication	4>1					3>2>1				-			
Socializing	-					3>2>1				-			
MP: mobile phone; PC: personal computer; *: Statistically significant differences in p<0.05 (Kruskal-Wallis Test)													

We used Mann-Whitney tests to determine the differences among age groups. The alpha threshold for significance was determined to 0.0083 (using a Bonferroni correction of four generation groups) and 0.0166 (using a Bonferroni correction of three generation groups). We found that youngers use Facebook with the motivation of business orientation and creation while older use Facebook impress by status seeking, entertainment and communication seeking. We also revealed that Facebook usage under the influence of business orientation, creation, status seeking, entertainment, communication, and socializing increases when people spend more time on Facebook. When people use Facebook about business, they prefer mobile phones and personal computers rather than the tablets. Facebook usage on mobile phones is also significantly higher than the personal computers in creations factor which refer to share photos, videos, etc. On the other hand, when people use Facebook to entertain, their preferred device is personal computers.

### 4.3 Association Rule Mining

Association rule mining is one of the popular methods in data mining among researchers. Researchers could deal with the problem; which attributes are together in data by using this technique. Agrawal et al. (1993) introduced association rules for discovering regularities between products in large-scale transaction data recorded in supermarkets. After that, association rule mining takes place many research areas from marketing to cancer studies.

In a database, the association rule mining techniques finds all associations of the form (Zhang&Zhang, 2002):

IF {set of values} THEN {set of values}

First Agrawal, Imielinski, and Swami(1993) introduced the association rule mining concept such as; Let  $I = \{i_1, i_2, \dots, i_m\}$  be a set of  $n$  of literals, called items. Let  $D = \{t_1, t_2, \dots, t_n\}$  be a set of transactions, where each transaction  $T$  is a set of items such that  $T \subseteq I$ . Associated with each transaction is a unique identifier, called its TID.

A rule is defined as an implication of the form  $X \rightarrow Y$  where  $X, Y \subseteq I$  and  $X \cap Y = \emptyset$ . The sets of items  $X$  is called antecedent (left-hand side of the rule) and  $Y$  is called consequent (right-hand side of the rule).

There are many algorithms have been developed by researchers to extract association rules from data sets, such as; Apriori (Agrawal et al., 1993), FPGrowth (Han et al., 2000), Generalized Sequential Patterns (Srikant and Agrawal, 1996), Predictive Apriori (Scheffer, 2001), Tertius (Flach and Lachiche, 1999, Witten et al. 2011).

Once a rule mined from dataset to decide its usefulness or interestingness, there are many measurements have been developed. Most of the measurements based on support and confidence values. Support and confidence values are also quality measurements for the association rules on their own.

Support and confidence could be defined as (Zhang and Zhang, 2002, Agrawal et al., 1993);

An item set  $X$  in a transaction database  $D$  has a *support*, denoted as  $supp(X)$ . This is the ratio of transactions in  $D$  containing  $X$ .

$$supp(x) = |X(t)|/|D|$$

–the support of a rule  $X \rightarrow Y$  is the support of  $X \cup Y$ ; and

–the confidence of a rule  $X \rightarrow Y$  is  $conf(X \rightarrow Y)$  as the ratio  $|(X \cup Y)(t)|/|X(t)|$  or  $supp(X \cup Y)/supp(X)$

Lift value which is introduced by Brin et al. (1997) is one of the most used interesting measures can be defined as;

$$lift(X \rightarrow Y) = \frac{supp(X \cup Y)}{supp(X).supp(Y)}$$

If a rule has a lift value greater than 1, this means; that rule is interesting.

There are 13 attributes have been taken into account; gender, age, education, platform, time, business, creation, info\_seeking, status\_seeking, entertainment, communication, socializing. Scores of the dimensions have been grouped like low (1), middle (2) and high (3). Apriori algorithm is used to get association rules and lift value has been chosen to detect interestingness of the rules. The rules which have lift value greater than 1 and confidence value greater than 0.6 have been listed and also obvious rules have been deleted. After these pruning procedures some of the best rules that found are as follows;

- device=3 256 ==> age=4 184 conf:(0.72) < lift:(1.45)>
- device=3 256 ==> time=1 165 conf:(0.64) < lift:(1.16)>
- device=1 info\_seeking=3 241 ==> communication=3 166 conf:(0.69) < lift:(1.26)>
- device=1 time=1 248 ==> status\_seeking=1 170 conf:(0.69) < lift:(1.14)>
- age=4 time=1 251 ==> status\_seeking=1 171 conf:(0.68) < lift:(1.14)>
- age=4 time=1 251 ==> business=1 201 conf:(0.8) < lift:(1.14)>
- education=3 276 ==> device=1 210 conf:(0.76) < lift:(1.22)>

According to the association rules, Facebook users who prefer computers to use Facebook are mostly the older users and they spend less time than any others on Facebook. Besides, we found that users who prefer mobile phones when using Facebook and the highly motivated about information seeking have also higher level of communication seeking. Mobile phones users who spend less time on Facebook have a lower level of status seeking. Older users who are spending less time on Facebook were found to be less motivated with status seeking and business-related



Facebook usage. We also revealed that users who graduated from the university also use mobile phones to use Facebook.

## 5 DISCUSSION AND CONCLUSION

While there are many studies in the relevant literature that explain the motives of Facebook usage, this study will fill the gap in the literature. There are limited studies focuses on Facebook usage in Turkey. It is important because cultural differences may also play a role in Facebook usage. At the same time, we did not only try to determine the motives of Facebook usage but also revealed the association between the motives and gender, time-spend on Facebook and preferred devices. Studies about data mining on social network sites mostly related to opinion mining, social network analysis, etc. This study differs from the other studies in two aspects; first, there is no study which revealing Turkish Facebook users motivations and investigating demographical differences and second, association rule mining is not a common technique to understand users characteristics.

This study extends the investigating of recent studies which examine motivations of using Facebook. The primary result of this study which highlighted that people use Facebook for different purposes is consistent with Uses and Gratification Theory. The main motivators have been counted in this study have parallel with previous studies (e.g. Baek et al., 2011, p.2245; Whiting and Williams, 2013, p.266-267; Sheldon, 2008, p. 70-72). Baek et al. (2011) revealed that the main factors of Facebook usage are information sharing, entertainment, and promotion work respectively, while Sheldon (2008, p.70-72) suggested that communication, followed by information seeking and creating context are the primary motives. Our results did not support the findings of these studies. We found that communication is the primary motive of Turkish Facebook users followed by information seeking and creation respectively. The usage of Facebook for business purposes is found the less important factor for Turkish users. Whiting and Williams (2013, p.266) asserted that social interaction, information seeking and passing time are the extensive motives for users. This result is similar to our findings. It can be said that cultural differences may affect the motivations of people using Facebook. Mazman and Usluel (2011, p.136) have ascertained evidence of the relationship between gender and relationship related Facebook usage. We found males likely to use Facebook to socialize more than females. Our result that reflects the difference between female and male Facebook users in the meaning of socializing as a motive of Facebook usage provide partly support of the study of Mazman and Usluel (2011, p.136). According to our findings, age has a negative effect on Facebook usage to create and share contexts such as photos, videos, music, and texts. Using Facebook for business, status seeking, entertaining and communication are also found to be related to age. The result is consisted partly with the evidences of McAndrew and Jeong (2012, p.2263). Except information seeking, all motivational factors that affect Facebook usage have a positive association with time spent on Facebook. At last, a remarkable and surprising finding of our study is that business-oriented Facebook users mostly prefer mobile phones to use Facebook, while creation oriented users prefer tablets and entertainment oriented users prefer PCs.

With the aid of this study, decision-makers could understand better the motivations behind Facebook usage. For example, marketers use this knowledge to attract consumers to their social Facebook accounts and their web pages. Managers are advised to redesign Facebook strategies according to the user differences and association rules. Although some limitations this study could help to the business environment better understanding about Facebook usage.

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## THE EFFECTS OF FOREIGN PORTFOLIO INVESTMENTS ON TURKISH ECONOMIC GROWTH: A NONLINEAR APPROACH

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### ABSTRACT

*Foreign portfolio investments (FPI) are accepted as one of the major component of capital flows. By reason of financial liberalization and globalization process, foreign portfolio investment have become crucial especially for the countries which have the gap of national saving. Although there are numerous studies which investigate the relationship between foreign portfolio investment and economic growth, limited number of studies investigate this relationship by using nonlinear time series analysis. The objective of this study is to examine the impact of foreign portfolio investment on economic growth of Turkey. For this purpose, 1998-2016 period data were considered and nonlinear co-integration test was performed. According to the co-integration and error correction analysis findings, the variables are co-integrated and there is one-way positive relationship from portfolio investment to economic growth. This finding points out the importance of the foreign portfolio investments in economic growth of Turkey.*

**Keywords:** *Foreign Portfolio Investments, Economic Growth, Turkish Economy, Non-linear Co-integration*

### 1. INTRODUCTION

As from 1980s, financial liberalization, removing the obstacles of against capital movements and technological progress have caused the increasing of capital flow. This increasing capital flow has headed to developing countries besides developed countries. International capital flows contribute to economic developments especially for developing countries and meanwhile make fragile to endogenous and exogenous shocks to subjected economies. The reason for this, capital flows seeking to developing countries generally recognise as a portfolio investments. These investments as a named hot money are affected many factors like political uncertainty, the volatility of exchange rate and the changing of interest rates. This case leads to financial crises by the reason of resulting fragile country economies. But however, some countries take measures for removing negative effects of capital flows to preventing spurt of capital flows like Tobin Tax. On the other hand countries which have immediate liquid need, saving gap and largely payments of foreign borrowings, can not perform these delimiting measures. Thanks to mentioned negative effects of portfolio investments, national economies desire capital flows as a foreign direct investments (FDI).

Economy of Turkey also has started to attract international capital flows by means of financial liberalization activities as from 1980s. Mentioned capital flows generally enter into Turkey in the way of foreign portfolio investments like many other developing countries. The aim of this study is to analyze the effects of foreign portfolio investment on economic growth for Turkey with nonlinear cointegration testing. The second section of study includes the literature which analyzed FPI and GDP relationship. In the third section, econometric method and data set was discussed. In the fourth section, findings obtained as a result of analysis were given. Finally, the concluding remarks were made in the last section.

## 2. LITERATURE SUMMARY

There are numerous studies which investigate relationship between FDI and economic growth in the literature. On the other hand, the number of studies which investigate the relationship between FPI and economic growth is quite few. Moreover, almost there isn't any study which investigates this relationship by using nonlinear approach. According the result of the studies in literature there is no consensus on the relationship between FPI and economic growth. The results vary by some factors like country group (e.g. develop or developing), period and analyzing method. While some of the studies assert that there is a positive relationship between these two variables, some studies assert that there is a negative relationship between these mentioned variables. Besides, the results of some studies indicate that the relationship between these two variables is meaningless. The literature summary about relationship between FPI and GDP are given in Table 1.

**Table 1. Literature Summary about Relationship between FPI and GDP**

Author	Period	Country	Method	Applied Findings
Durham (2003)	1977-2000	88 Countries	Cross Section Regression	GDP→FPI (0)
Baek (2006)	1989-2002	9 Countries (5:Latin American 4: Asian)	Cross Section Regression	GDP→FPI (+); Latin American GDP→FPI (0); Asian
Duasa and Kassim (2009)	1991-2006 (quarterly data)	Malaysia	VAR Granger Causality Toda and Yamamoto Causality	GDP→FPI (+)
Duasa (2011)	1991-2006 (quarterly data)	Malaysia	Enders and Siklos (2001) Asymmetric Cointegration Test	Cointegrated;(M-TAR model) No Cointegration;(TAR model)
Ekinici (2011)	1996-2008	30 OECD Countries	Panel OLS	FPI→GDP (+)
Rachdi and Saidi (2011)	1990-2009	100 Countries (69:Developing 31: Developed)	Panel GMM	FPI→GDP (-); All Countries FDI→GDP (+);Developing FDI→GDP (+); Developed
Yıldız (2012)	1999-2009	Turkey	Factor Analysis OLS	(GDP and Inflation)→FPI (-)
Baghebo and Apere (2014)	1986-2011	Nigeria	Johansen Cointegration Test ECM	Cointegrated FPI→GDP (+)
Mucuk et al. (2014)	1986-2016	Turkey	Johansen Cointegration Test VAR	No Cointegration
Pala and Orgun(2015)	1998-2012	Turkey	Factor Analysis Johansen Cointegration Test OLS	Cointegrated GDP→FPI (+)
Tang (2015)	1987-2012	15 European Union Countries	Panel OLS	FPI→GDP (-)

**Note:** Table was formed by authors; (+) reflects positive, (-) negative, (0) meaningless effects in the table, symbols denotes the existence of one-way causality relationship between variables.

### 3. METHOD AND DATA

In the literature, all the studies for some exception are based on linear econometric methods. The foreign portfolio investment variable is expected to follow nonlinear process. For that reason, in this study the effects of foreign portfolio investment on economic growth will be investigated by performing nonlinear time series analysis. As an indicator of economic growth, real gross domestic product (GDP) and shares of foreign portfolio investment inflow (PRT) in GDP are included in model which was created with the quarterly data of the period 1998-2016. Both variables is obtained from the database of Central Bank of the Republic of Turkey.

The Kapetanios, Shin, and Snell (2003) unit root test were applied primarily for determining whether the variables tracking a nonlinear process. According to this test, while the null hypothesis asserts that the series has unit root, the alternative hypothesis points out a nonlinear ESTAR (exponential smooth transition autoregressive) process (Bahmani-Oskooee and Gelan, 2006: 1). The KSS (2003) unit root test can be formulated as follows (Kapetanios et al., 2003: 361-364):

$$\Delta y_t = \delta y_{t-1}^3 + \sum_{k=1}^n \rho_k \Delta y_{t-k} + \varepsilon_t \quad (1)$$

Here  $y_t$  is the variable, which is tested for unit root and  $n$  is the optimal lag length which hasn't autocorrelation problem. The null and alternative hypotheses of Eq. (1) are as follows:

$$H_0: \delta=0$$

$$H_1: \delta>0$$

The  $t$  statistic ( $t_{NL}$ ) which was obtained from  $\delta$  parameter, enables to test the null and alternative hypotheses. The  $t$  statistic is calculated as follows:

$$t_{NL} = \hat{\delta} / \text{s.e}(\hat{\delta}) \quad (2)$$

Here  $\hat{\delta}$  is ordinary least squares (OLS) estimation result of  $\delta$  parameter and s.e. denotes standard error. The calculated  $t_{NL}$  statistic is compared the critical table value. If the  $t_{NL}$  statistic isn't greater than the critical value, the null hypothesis cannot be rejected. Thus, it can be decided that the relevant series has unit root and a linear process. On the other hand if the  $t_{NL}$  statistic is greater than the critical value, the null hypothesis is rejected. So, the relevant series has no unit root and follows a nonlinear process.

After applying the nonlinear unit root test, the co-integration relationship between variables was investigated by using the nonlinear co-integration test. The test which was primarily applied by Dufrénot et al. (2006) is similar to the Engle-Granger (1987) co-integration test. The Engle-Granger (1987) co-integration test has two steps. In first step the model is estimated by using OLS method. The residuals obtained from OLS estimation are run the stationary test in next step. At his stage, if the residuals are run the nonlinear unit root test, the nonlinear from of Engle-Granger co-integration test will be carried out.

The LSTAR (logic STAR) co-integration model is used in this study is specified as follows: (Dufrénot et al., 2006: 210).

$$\Delta z_t = \phi_0^1 z_{t-1} + \phi_1^1 z_{t-1} x_{t-d} + \phi_3^1 z_{t-1} x_{t-d}^3 + \omega_t^1 \quad (3)$$



where  $z_t$  is the residuals obtained from the first step of co-integration test;  $\Delta$  denotes, the first difference;  $x_t$  is the independent variable;  $z_{t-1}x_{t-d}$  is interaction term and  $d$  is the optimal lag selected by using Akaike Information Criteria (AIC). The null hypothesis which is tested to detect validity of co-integration is expressed by this means:

$$H_0 : \phi_1^1 = \phi_3^1 = 0 \quad (\text{for LSTAR model})$$

For the estimation of the long and short run coefficients of the variables, The nonlinear ARDL approach was used in the study. The nonlinear ARDL approach is consisted from two main steps as linear ARDL analysis. The long run coefficients are obtained by estimating the long run model in first step. The causalities are determined by estimating the short run model in second step. The difference of nonlinear ARDL approach from linear analysis is the nonlinear approach includes nonlinear term in the ARDL model.

The ARDL model which is used in the study estimation can be formulated as follows:

$$LGDP_t = \beta_0 + \sum_{i=1}^p \beta_1 LGDP_{t-i} + \sum_{i=0}^q \beta_2 PRT_{t-i} + \sum_{i=0}^m \beta_3 PRT_{t-i}^3 + u_t \quad (4)$$

Here  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  represent the coefficients of the variables;  $PRT_{t-i}^3$  denotes the nonlinear term;  $p$ ,  $q$ , and  $m$  are the optimal lag length.

After estimating the long run coefficients, the study covered error correction model by using Eq. (4).

$$\Delta LGDP_t = \beta_0 + \beta_1 ECT_{t-1} + \beta_2 ECT_{t-1}^3 + \sum_{i=1}^k \phi_i LGDP_{t-i} + \sum_{i=0}^k \gamma_i PRT_{t-i} + \mu_t \quad (5)$$

where  $ECT$  is the residuals obtained from the ARDL model;  $ECT^3$  is the nonlinear form of  $ECT$ ;  $\Delta$  denotes the first difference and  $k$  is the optimal lag length selected by using AIC.

#### 4. Findings

The results of KSS (2003) unit root test are shown in Table 2.

**Table 2. The Results of KSS (2003) Unit Root Test**

Variables	$t_{NL}$	Probability		
		%1	%5	%10
LGDP	-2.186(1)	-3.48	-2.93	-2.66
PRT	-3.887(1)	-3.48	-2.93	-2.66

**Note:** Number in the parenthesis is the optimal lag order for Akaike Information Criteria (AIC). The asymptotic critical values of  $t_{NL}$  statistic are obtained from Table 1 in KSS (2003). L denotes logarithmic form of relevant variable.

The results indicate that LGDP is non-stationary [I(1)] which means that the series has a linear process. On the other hand, PRT is stationary [I(0)] and has a nonlinear process. For this reason, the co-integration relationship between variables was analyzed by using nonlinear time series approach.



**Table 3. The Result of Co-integration Test (for LSTAR process)**

Model	d	$\phi_0^1$ *	Decision
LGDP=f(PRT)	5	-0.934 <sup>a</sup>	H <sub>0</sub> Rejection (co-integrated)

**Note:** \* is the coefficient of  $z_{t-1}$  in Equation (1) and d denotes the optimal lag of the interaction term.  
 a; indicates significance at 1% level.

Table 3 shows that the results of co-integration test. The result suggests that there is an equilibrium of the long run relationship between the variables. The coefficient of  $z_{t-1}$  is meaningful for statistical at 1% level. At the same time, the null hypothesis is rejected. Hence, it can be easily stated that the two variables are co-integrated. After determining the co-integration between the variables, the study covers nonlinear ARDL model to estimate the long and short run coefficients. The results of ARDL model are given in Table 4.

**Table 4. The Estimation Results of Nonlinear ARDL (7, 1, 5) Model  
 (Dependent Variable: LGDP)**

Variables	Coefficient	t-stat.
Constant	0.216	0.516
LGDP(-1)	0.907 <sup>a</sup>	6.784
LGDP(-2)	-0.249	-1.387
LGDP(-3)	-0.015	-0.098
LGDP(-4)	0.702 <sup>a</sup>	5.672
LGDP(-5)	-0.612 <sup>a</sup>	-3.914
LGDP(-6)	0.019	0.113
LGDP(-7)	0.236 <sup>b</sup>	1.998
PRT	0.381	1.447
PRT(-1)	0.507 <sup>b</sup>	1.932
PRT <sup>3</sup>	-69.939	-0.956
PRT <sup>3</sup> (-1)	-62.085	-0.828
PRT <sup>3</sup> (-2)	22.216	0.479
PRT <sup>3</sup> (-3)	-28.914	-0.626
PRT <sup>3</sup> (-4)	61.898	1.395
PRT <sup>3</sup> (-5)	-6.300	-0.160
R <sup>2</sup> =0.98    F=258.78 <sup>a</sup> White: 19.624[0.186]    LM*=0.093[0.759]		

**Note:** a, and b indicate significance at 1% and 5% level, respectively. \* is the Breusch-Godfrey LM test statistic for first order autocorrelation.  $\Delta$  denotes the first difference.

The residuals obtained from the ARDL model was used to estimate the error correction model. The estimation results of error correction model are presented in Table 5.

**Table 5. The Estimation Results of Error Correction Model  
 (Dependent Variable: LGDP)**

Variables	Coefficient	t-stat.
Constant	0.010 <sup>c</sup>	1.689
ECT(-1)	<b>-0.666<sup>b</sup></b>	<b>-2.027</b>
ECT <sup>3</sup> (-1)	155.410	1.561
ΔLGDP(-1)	0.244	0.931
ΔLGDP(-2)	-0.419 <sup>a</sup>	-3.794
ΔLGDP(-3)	-0.192	-1.297
ΔLGDP(-4)	0.510 <sup>a</sup>	4.710
ΔLGDP(-5)	-0.410 <sup>a</sup>	-2.457
ΔPRT	0.205	1.344
ΔPRT(-1)	0.197	1.217
ΔPRT(-2)	-0.080	-0.451
ΔPRT(-3)	0.012	0.073
ΔPRT(-4)	0.222	1.383
ΔPRT(-5)	-0.328 <sup>b</sup>	-2.133
R <sup>2</sup> =0.94      F=61.659 <sup>a</sup> White=12.592[0.479]      LM*=0.685[0.407]		

**Note:** a, b and c indicate significance at 1%, 5% and 10% level, respectively. \* is the Breusch-Godfrey LM test statistic for first order autocorrelation. Δ denotes the first difference.

As it is seen in Table 5, the lag of error correction term [ECT(-1)] is negative and meaningful statistically as expected. This result supports the findings of the nonlinear co-integration test. Hence, the ECT(-1) shows that a deviation from current period equilibrium with the amount of 66% has been eliminated in a following period. More clearly, the ECT(-1) value (0,666) means that when the system is exposed to a shock, converging the long run equilibrium takes nearly one and a half periods. Besides, the sum of PRT coefficients have positive sign which means that the foreign portfolio investment has positive effect on economic growth.

## 5. CONCLUDING REMARKS

This study aims to determine the effects of foreign portfolio investment in economic growth of Turkey. In this sense, it was applied nonlinear co-integration test by using quarterly data which covers 1998:01-2016:01 period. According to co-integration test, the variables are co-integrated. Besides, the estimation results of error correction model indicate that there is a positive effect from FPI to GDP. In other words, an increase of the foreign portfolio investment inflow causes to grow Turkish economy. On the other hand, a decrease of the foreign portfolio investment deteriorates the economic growth performance. This finding points out to the importance of the foreign portfolio investments on Turkish economic growth.

On the other hand, the results obtained from this study reveal that foreign portfolio investment based on hot money is one of the main variables Turkish economic growth. This mentioned situation will bring with it economy could be fragile against endogenous and exogenous shocks.

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## ENVIRONMENT FOR SME SECTOR IN CROATIA WITH EMPHASIS ON INNOVATION

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### ABSTRACT

*This paper examines SME sector in Croatia as well as its impact on the national economy. Special emphasis is given to innovation which, according to many authors, is one of the main drivers of SMEs business success. Furthermore, this paper examines the environment in which SMEs operate. Scores and structure of most cited indices are compared between Croatia and EU average, in addition to providing an overview of the various government programs and activities that are directed towards improving the entrepreneurial and innovative environment in Croatia. The aim is to determine how important SMEs are for Croatian economy, how much is SME sector innovative and what the main disadvantages of entrepreneurial environment in Croatia are.*

**Keywords:** *Entrepreneurial environment, Entrepreneurship, Innovation, SME*

### 1. INTRODUCTION

Generally accepted opinion, both by foreign studies as well as enterprises in Croatia, is that the entrepreneurial climate in Croatia is not favorable. The goal of this paper is to outline SME sector in Croatia, with special emphasis on innovation, and identify what makes entrepreneurial climate in Croatia unfavorable. Paper is divided into three parts. Firstly, classification for small and medium enterprises (SMEs) in Croatia is compared with the one used by European Union (EU), which is important when comparing SME sector in Croatia with EU. Furthermore, importance of SME sector on Croatian national economy is assessed. Secondly, paper examines innovation of SME sector in Croatia since innovation has been identified as one of main drivers of business performance for SMEs by many authors. Thirdly, the results of well-known global researches are consolidated to assess the state of entrepreneurial environment in Croatia and identify its main disadvantages. In addition, use and familiarity of government programs and activities is examined.

### 2. SME SECTOR IN CROATIA

In this chapter the definition of small and medium enterprises in Croatia and EU will be reviewed, as well as an estimate of importance of SME sector will be given. The definition of an SME is important for access to finance and EU support programs targeted specifically at these enterprises.

*Table 4: Classification of companies by size (Small Business Development Promotion Act)*

Type of business entity	Number of employees	Annual revenue in million EUR	Total assets in million EUR
Micro	< 9	< 2	< 2
Small	10 - 49	2 - 10	2 - 10
Medium	50 - 249	10 - 50	10 - 43

SMEs in Croatia are divided into three size categories which are harmonized with the criteria applied by the European Union, enabling comparison between Croatia and EU (Small Business Development Promotion Act):

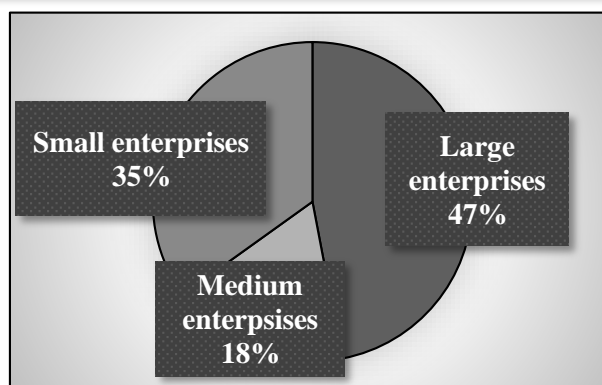
- Micro entities are physical and legal entities that annually on average employ less than 10 employees and achieve total annual revenue equivalent up to EUR 2.000.000,00, i.e. have value of long-term assets equivalent up to EUR 2.000.000,00.
- Small entities are physical and legal entities that: - Annually on average employ less than 50 employees - Achieve total annual revenue equivalent up to EUR 10.000.000,00 or have balance sum if they are profit tax payers, i.e., have long-term assets equivalent up to EUR 10.000.000,00 if they are income tax payers.
- Medium entities are physical and legal entities that: - Annually on average employ between 50 and 249 employees - Achieve total annual revenue equivalent from EUR 10.000.000,00 to EUR 50.000.000,00 or have balance sum if they are profit tax payers, i.e., have long-term assets equivalent from EUR 10.000.000,00 to EUR 43.000.000,00 if they are income tax payers.

Small and medium-sized enterprises (SMEs) represent 99% of all businesses in the EU (European Commission, 2020). In 2014 there were 8.333 small enterprises, 1.512 medium enterprises and 320 large enterprises operating in Croatia (Croatian Bureau of Statistics, 2016), meaning 99,7% of the total number of registered enterprises are SMEs. 68% employees in enterprises were employed in SME sector (51% in small and 17% in medium enterprises), which generates more than half of total enterprise income and achieves 49% of Croatian exports. Average number of employees in small enterprises in 2014 was 4,1 employees, which makes total income per employee in small enterprises equal to 511.103 HRK. In medium enterprises average number of employees was 118,9 employees, which equals to 773.309 HRK per employee. Given data supports that SME sector is large and important part of Croatian national economy.

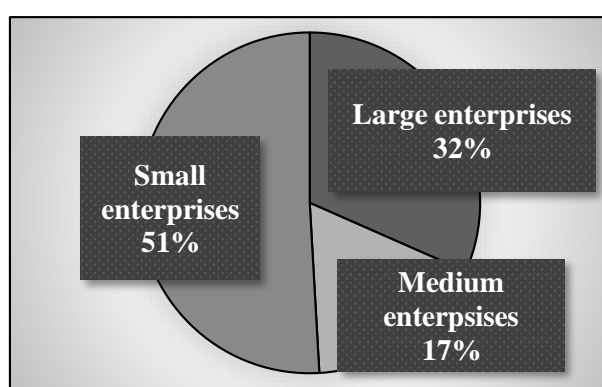
*Table 5: Reasons for cessation of business activity – comparison between European Union and Croatia, 2014 - % of cessation (Alpeza et al., 2015)*

Reasons for cessation of business activity	EU	Croatia
Opportunity for sale	3,3	0,8
The company is not profitable	33,2	33,6
Problems with acces to finance	11,5	23,6
Other job or business opportunity	11,6	12,6
The exit was planned	5,2	1,4
Retirement	6,1	2,5
Personal reasons	12,8	17,9
Incident situations	5,2	7,3

More than 33% cessations of business activity was caused by company not being profitable, in both EU and Croatia. Another popular reason for cessation were other job or business opportunities, 11,6% in EU and 12,6% in Croatia. Across all other reasons, EU had much better results that Croatia. Compared to EU, incident situations happen almost 50% more often, problems with access to finance causes cessation two times more often, there are 70% less planned exists, more than 50% less retirements and, lastly, opportunity for sale as a way of cessation of business activity is only 0,8% compared to 3,3% in EU. Given data indicates an unfavorable business climate in Croatia (which will be further examined throughout this paper).



**Figure 6: Total income by enterprise size in Croatia, 2014 (Croatian Bureau of Statistics, 2016)**



**Figure 5: Employment by enterprise size in Croatia, 2014 (Croatian Bureau of Statistics, 2016)**



### 3. INNOVATION OF SME SECTOR IN CROATIA

Existence of positive correlation between innovation level and business performances was established by many authors (Calantone et al. 2002, Hult et al. 2004, Hoq et al. 2009, Huhtala et al. 2010, Rosenbusch et al. 2012, Nybakk 2012, Moreira et al. 2013, Ionescu et al. 2014, Jaiyeoba et al. 2014). Accordingly, this chapter will review some of basic innovation trends amongst Croatian SMEs. 17% of Croatian SMEs do not agree that creativity and innovation is in positive correlation with market success, while 8% neither do nor do not agree with mentioned correlation. Taking into account the fact that SMEs are one of main drivers of Croatian economy and that innovation is one of main drivers for business success, given results indicate a negative trend amongst 25% of SMEs which should be addressed.

Figure 7: Creativity and innovation being in correlation with market success, responses of 36 SMEs in Croatia (Peša et al., 2015, p. 19)

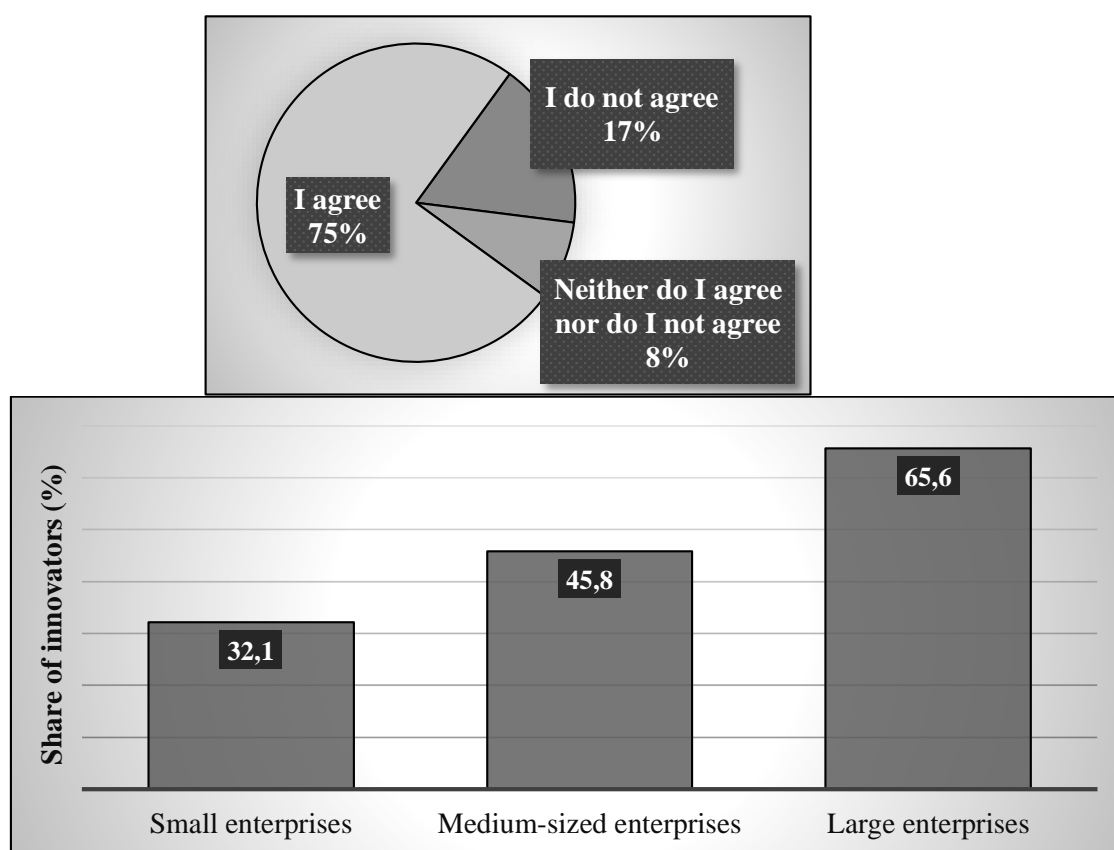


Figure 8: Share of innovators by enterprise size in Croatia, % total of size category (Croatian Bureau of Statistics, 2016)

Data reported in Figure 4 shows the outcome of the survey on innovation activities in enterprises in the period from 2012 to 2014 carried out on a sample of 4.498 enterprises conducted by Croatian Bureau of Statistics. According to the survey, innovative enterprises are defined as enterprises that introduced a product or a process innovation, organizational or marketing innovation in the reporting period. The results show that nearly two out of three large enterprises, a little less than half of medium-sized enterprises and a little less than one third of small enterprises are innovative. In other words, larger enterprises have bigger share of innovators.

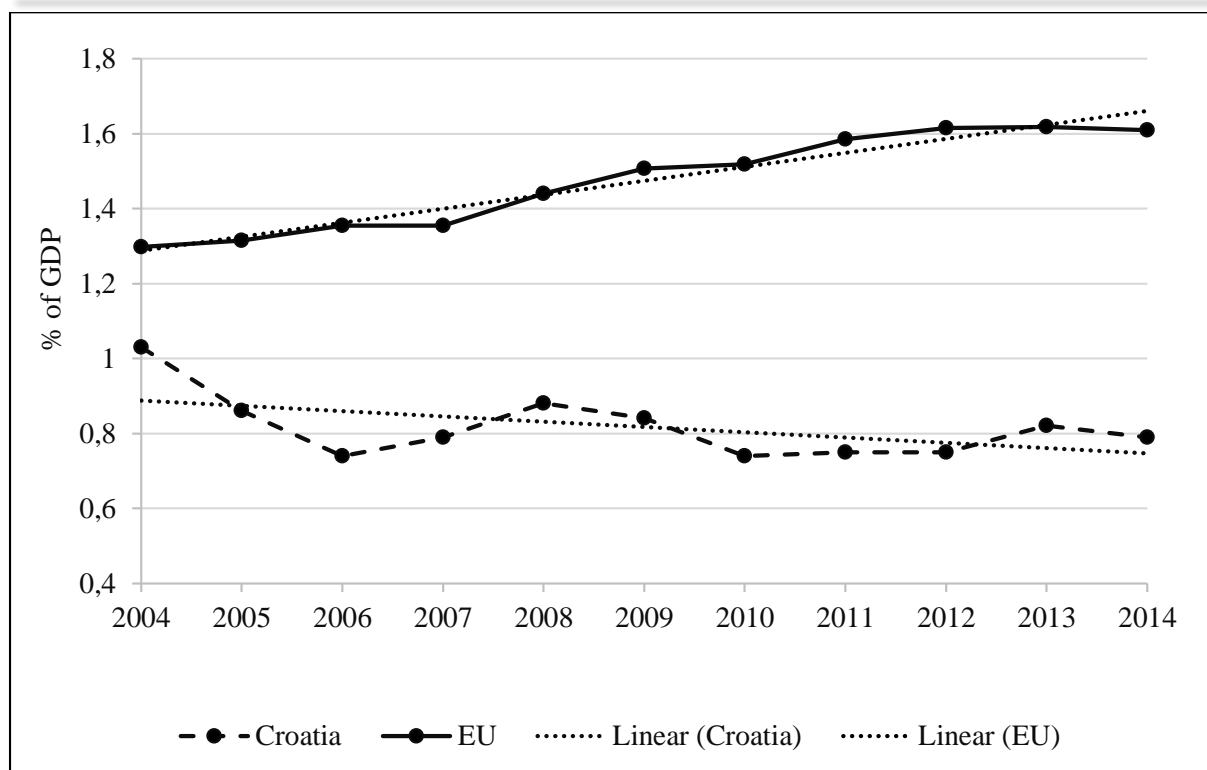


Figure 9: Gross domestic expenditure on R&D, 2004 – 2014, % of GDP (Eurostat, 2016)

GERD (Gross domestic expenditure on R&D) as a percentage of GDP had a linear growth in EU from 1,3% to 1,6% in 2014 where, on the other hand, it decreased from 1% to 0,8% in Croatia, having fluctuations in between. It's alarming to notice that during the economic crisis Croatian enterprises decided to invest less in R&D as a way of reducing while GERD growth in EU was constant even during economic crisis. The importance of GERD is addressed European Commission, making one of Europe 2020 Strategy targets: 3% of the EU's GDP should be invested in R&D. In Croatia, GERD have to drastically increase to meet the said target.

#### 4. ENTREPRENEURIAL ENVIRONMENT IN CROATIA

As mentioned earlier, accepted opinion by foreign studies as well as enterprises in Croatia is that the entrepreneurial environment in Croatia is not favorable. This chapter will examine some of well-known indices, comparing Croatia to EU average, and will consolidate identified disadvantages. Furthermore, government activities and programs directed towards improving entrepreneurial environment will be examined. Research conducted by Peša et al. (2015) shows that only 66% of SMEs thinks that environment encourages innovation, while 20% both do and do not think and 14% do not think that environment encourages innovation.

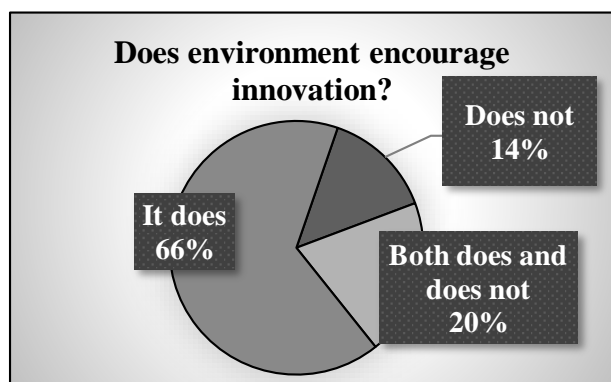


Figure 10: The role of environment in encouraging innovations, responses of 36 SMEs in Croatia (Peša et al., 2015, p. 21)

Table 6: Global indices – comparison between Croatia and EU

Index name	Scale	EU	Croatia
Global Competitiveness Index (GCI 2015-16)	1 - 7	4,7	4,1
Global Innovation Index (GII 2016)	0 - 100	50,0	41,7
Corruption Perceptions Index (CPI 2015)	0 - 100	66,6	51,0
Index of Economic Freedom (HF2016)	0 - 100	69,1	59,1
Doing business (DB 2016)	Rank (189 countries)	30,8	40,0

According to some of most cited indices, Croatia scored lower or was ranked below EU average across all indices. Some of the main problems in Croatia related to SMEs that the indices outline are corruption, starting a business, dealing with construction permits, getting credit, resolving insolvency, macroeconomic environment, goods and labor market efficiency, property rights, access to finance, responsive administration and government spending. On the other hand, Croatia has good scores in trade freedom (being a part of EU), investment freedom, innovative institutions and education. SBA Fact Sheet 2015 report for Croatia states further reduction of administrative burden, enhanced cooperation of public bodies regarding the issues affecting SMEs and improving institutional framework for export as priorities at the policy level. In all the areas (except in the area of environment) analyzed by the SBA Fact Sheet, Croatia performs below the EU average, namely areas of internationalization, access to finance and entrepreneurship is below the average, and in the area of responsive administration significantly below the average of other EU countries, while the result achieved in the area of skills and innovations is at the average of the member countries. Key development problems of the small and medium enterprise sector in Croatia point out insufficient level of new business venture startup activity, small share of growing enterprises, administrative obstacles to the implementation of entrepreneurial activity, insufficient development of the financial market, and lack of education focused on the development of entrepreneurial knowledge and skills (Alpeza et al., 2015).

Table 7: GEM assessment of government policy towards entrepreneurship (Singer et al., 2015, p. 57)

	Priorities and support		The speed and ease of regulatory funding		Government programs	
	Croatia	EU	Croatia	EU	Croatia	EU
2012	2,0	2,6	1,7	2,5	2,2	2,8
2013	2,2	2,6	1,8	2,4	2,5	2,8
2014	2,2	2,7	1,6	2,4	2,3	2,8
2015	1,8	2,5	1,4	2,4	2,0	2,7

Global Entrepreneurship Monitor (GEM) research shows that in the period 2012 – 2015 Croatia scored lower than EU in all three government policies towards entrepreneurship: priorities and support, the speed and ease of finding regulatory funding, government programs. Year 2015 had overall the lowest score, the speed and ease of regulatory funding having the lowest.

Table 8: The lowest rated claims about entrepreneurial environment in Croatia, 2012-2015 (Singer et al., 2015, p. 62) – Continues on the next page -

For new and growing businesses it is not too difficult to deal with bureaucracy, legal and regulatory requirements.
The amount of tax liability is not a burden for new and growing firms
Government measures and policies systematically give preference to new businesses.
New businesses can obtain all the necessary permits and certificates within one week.
Tax and other government regulations apply to new and growing businesses in a predictable and consistent manner.

Primary and secondary school education pays adequate attention to entrepreneurship and the creation of new businesses.
A wide range of government measures to help new and growing companies can be obtained by contacting only one agency.
Knowledge of new technologies, scientific achievements and other knowledge is effectively transferred from the university and research centers to new and growing firms.
National culture encourages entrepreneurial risk-taking.

Of the nine lowest-rated claims concerning components of entrepreneurial environment in the period 2012-2015 five of them are related to government policies (inability to obtain all necessary permits and certificates within one week, a new and growing companies struggle with bureaucracy, legal and regulatory requirements; state does nothing to change the unfavorable situation of the new enterprises when participating in public procurement; the tax burden for new and growing firms; inconsistency of tax policy). Score drop in 2015 further warns about critical state of government policies in entrepreneurial eco-system (Singer et al., 2015, p. 55).

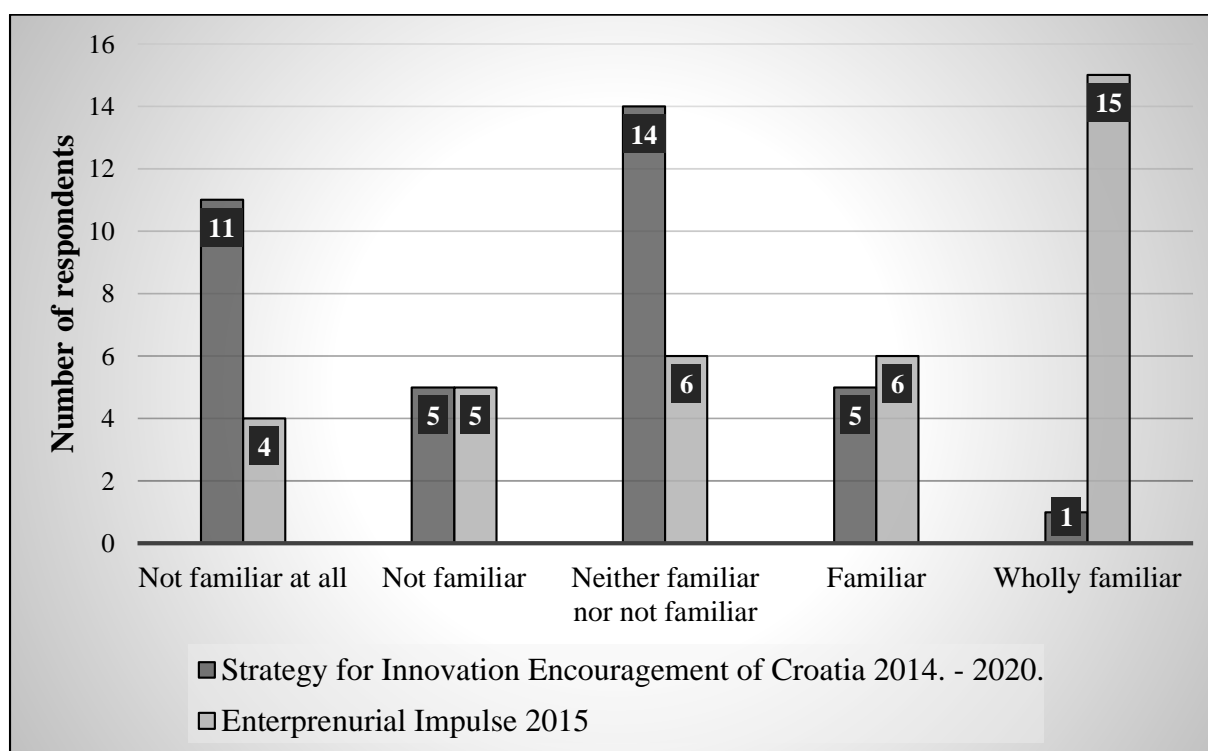


Figure 11: Number of innovative companies based on familiarity with the strategy and programs of the Government to encourage innovation, responses of 36 SMEs in Croatia (Peša et al., 2015, p. 22)

Research conducted by Peša et al. (2015) states that some of main causes for such entrepreneurial environment are inefficiency of state institutions and poor links between scientific and industrial sector, insufficient awareness of SMEs on available European, but also national programs for the promotion of innovative business, as well as their poor conception and the many obstacles that entrepreneurs face when applying for participation in them. In general, insufficiently encourage innovative business by the local and regional community are the reasons of failure of external support model.

*Table 9: Execution of the State Budget in relation to the initial plan of selected programs, activities and projects in 2015 (Ministry of Finance, 2015)*

Budget user	%
Lending (through the initial capital of HBOR) - promotion of export, infrastructure, economic activities and SMEs	0,0
National Croatian innovation strategy 2013-2020	-25,0
Entrepreneurial Impulse	-39,3
Strengthening the competitiveness of small and medium enterprises	-45,6
Interest subsidies for entrepreneurial loans	-11,5
The promotion of entrepreneurship and crafts	-9,4
Implementation of measures to boost the competitiveness of business and trade - the Entrepreneurial Impulse	-30,7
Strategy of Women Entrepreneurship Development in the Republic of Croatia 2014 – 2020	0,0
Implementation of measures to encourage investment of SMEs	-18,6
Croatian Agency for SMEs, Innovations and Investments – HAMAG-BICRO	-12,1
Enhancing the competitiveness of SMEs	-12,1
Young people in entrepreneurship and entrepreneurs - microcredits	-7,5
Ministry of Entrepreneurship and Crafts – Entrepreneurial Impulse 2014	-9,4
Innovation process supports	-2,3
Enterprise Europe Network	-43,4
<b>Total execution of the state budget in relation to the initial plan</b>	<b>-0,4</b>

Table 6 shows selected programs, activities and programs financed through the state budget related to innovation and SMEs. Furthermore the difference was calculated between the initial plan and the actual execution in 2015. 99,6% of the total initial budget plan executed in 2015, but almost all of the selected items (except lending through the initial capital of HBOR and strategy development of women Entrepreneurship in the Republic of Croatia from 2014 to 2017) have the execution amounted much less than it was initially planned. Most notable, strengthening the competitiveness of small and medium enterprises (45,6% less executed in relation to the initial plan), Enterprise Europe Network (43,4% less), the Ministry of Entrepreneurship and Crafts (39,6% less), Implementation of measures to boost the competitiveness of business and trade - the Entrepreneurial Impulse (30,7% less) and the Croatian innovation strategy 2013-2020 (25,0% less). Given data further supports findings that the awareness of SMEs on available programs and activities is lacking and that there are difficulties when applying to those programs/activities.

## 5. CONSLUSION

Categorization of enterprises into small, medium and large is defined equally in Croatia and EU, enabling comparison of SME sector between the two. Additionally, SMEs in Croatia have easier access to finance and EU support programs targeted specifically at these enterprises. Similarly to EU, over 99% of enterprises in Croatia are registered as SMEs, with employment level at 68% of total employment in enterprises and 53% of total enterprises' income, making SME sector a very important factor of Croatian national economy. Examination of reason for cessation of business activity already pointed out the unfavorable state of SME sector compared to EU – there are a lot less opportunities to sell a business, more problems with access to finance, more unplanned cessations and less retirements as a way of cessation.

One of the reasons for above unfavorable results is innovation level of SMEs in Croatia. Even though it was proven by various authors that innovation is linked with business performance, only 75% SMEs in Croatia believes that is the case. Only 32,1% of total small enterprises and 45,8% of total medium-sized enterprises are considered innovative, making innovation level in Croatia

below EU. Furthermore, even though one of Europe 2020 Strategy targets states that 3% of the EU's GDP should be invested in R&D, Croatia falls behind with only 0,8% in 2014 (while average EU GERD is 1.6% - two times higher). Even more disturbing is the GERD trend; while EU has a steady increase, Croatia has a decline in GERD since 2004 (from 1%).

Other than low innovation level, another reason for below average results of SME sector in Croatia compared to EU is entrepreneurial environment. Well-known indices (GCI, GII, CPI, HF and DB) and many researches all rate entrepreneurial environment in Croatia below average compared to EU. Some of the reasons for low ratings are: speed and ease of regulatory funding, access to finance, starting a business, responsive administration, tax burdens and government spending. Ratings for government programs were rated below average to, but, looking at the State budget for 2015, planned funds for innovation and entrepreneurial activities and programs were not spend, or in other words, institutions are inefficient in carrying out government programs and activities.

To conclude, SME sector in Croatia, even though it is one of main drivers of national economy, is in a poor state. Main reasons for such state seems to be insufficient awareness of SMEs on importance of innovation and availability European and national programs, leaving allocated funds unused.

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## PROFESSIONAL SATISFACTION OF PORTUGUESE SPECIALIZED REHABILITATION NURSES

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### ABSTRACT

*Over the last few decades, the healthcare labour market has required Rehabilitation Nurses to exhibit an ever increasing level of performance and productivity. This situation often generates serious physical wear and emotional distress and an increasing sensation of professional frustration.*

*Objectives- To identify the professional satisfaction of Specialized Rehabilitation Nurses (SRN) and to analyse the factors that are associated with this feeling of satisfaction. Methods: Quantitative, descriptive, cross-sectional and correlational study.*

*A non-probability convenience sample, composed of 124 Specialized Rehabilitation Nurses, with an average age of 38,76, who are currently working in 4 hospitals located in the Centre Region of Portugal. We used a questionnaire that included questions about the participants' socio-demographic, professional and psychological characterization (Self-Concept Clinical Inventory and Maslach Burnout Inventory – General Survey) and the Job Descriptive Index (JDI) to assess their satisfaction. Results: Most SRN (61,6%) are satisfied with their job; 12,6% of them choose a neutral position: they are neither satisfied, nor unsatisfied; however, 25.8% of the participants declare to be unsatisfied.*

*We were able to observe that the variables that may affect positively the participants' satisfaction were their age (older nurses exhibit a higher satisfaction), their careers' length and the amount of time they have been working in a specialized area and the fact that they are working in roulement. Nurses who have exhibited a higher efficiency and a better self-concept are those who showed a higher level of satisfaction. On the other hand, nurses who exhibited higher levels of fatigue and cynicism were those who showed higher levels of dissatisfaction. On the other hand, nurses' gender, marital status and academic qualifications, the fact that they were working in a single institution, the amount of weekly hours they have to work and their employment status don't seem to have any statistical significance. Conclusion: Although most of the SRN are satisfied with their job, we cannot forget that 25.8% of them are unsatisfied.*

*Therefore, intervention strategies have to be implemented if we want to improve job satisfaction, to promote rehabilitation nurses' health and wellbeing and consequently, improve the quality of the healthcare provided.*

**Keywords:** *Professional satisfaction; Specialized Rehabilitation Nurses; burnout; self-esteem*

## 1. INTRODUCTION

Nowadays, the physical wear and emotional distress caused by working conditions may be considered as an epidemic spreading among workers who come from a large number of professions. Concurrently, social, economical, legal, organizational and technical changes that have been affecting healthcare labour sectors have a deep influence over the Health-illness process and the quality of life witnessed in the different workplaces (Galindo et al, 2012).

The issue of dissatisfaction and burnout has been gaining more and more relevance in different organization contexts, mainly in those where prevention is seen as a key factor for professional success. Many studies have been conducted in order to identify the factors that may cause professional dissatisfaction or/and burnout at work and to provide organization strategies that will increase the workers' satisfaction, maintain their psychosocial balance and that will, consequently, improve their performance and productivity levels. As far as Specialized Rehabilitation Nurses are concerned, and according to their personal expectations and to their patients' expectations, we seek a remarkable improvement in the quality of the healthcare provided (Marques, 2012). We are aware that, in a personal perspective, a person's job is no longer a simple means of livelihood, but has become a means for personal achievement and social integration and a factor that will largely contribute to a person's professional satisfaction.

The kind of life that each person leads, the part he plays in society and the way he relates to his fellow citizens depend more and more on the kind of work he has and on the success that comes from his job performance. This way, and keeping in mind the amount of time we spend working, any person's job should be stimulating and should provide that person with a level of satisfaction that will contribute to the global wellbeing of every human being (Martins et al. 2015).

Nursing, and specially Rehabilitation Nursing, is a relationship profession in which nurses have to deal, on a daily basis, with patients with disabilities, with these patients' relatives who are constantly suffering from stress. All this may generate and increase conflict situations. The partnership process through which healthcare is provided may be strengthened when and if people are able to deal appropriately with such situations, but if, on the other hand, the attitudes and actions taken are less assertive and if we favour a less constructive style of conflict management, we will only increase the differences and disagreements between sides and increase work related stress which will undoubtedly have severe repercussions in those workers' satisfaction (Dias, Queirós & Carlotto, 2010).

This situation is often worsened because these professionals are not prepared to deal with these emotional demands, a situation that will increase the risk of experiencing cases of professional breakdown. The need to develop skills and competences required to perform a team job that includes workers, patients and families, in which we have to deal with the cultural, social and economical diversity of all the people involved is a challenge that Specialist Nurses have to face every day. Indeed, we often hear complains about increasing levels of dissatisfaction coming from these healthcare workers, complains that have to do with the kind of care they provide, with the material and human resources that are available, with the kind of relationship they have with the organization, the patients and with the remaining members of the multidisciplinary team they are part of (Ordem dos Enfermeiros, 2012)

A study conducted by Zangaro & Soeken (2007) identified a set of factors that contribute to job satisfaction, among which we find: stress, commitment, the kind of communication held with their hierarchical superior, autonomy, recognition, the routine of the tasks they have to carry out, the kind of communication held with their peers, justice, locus of control, age and job experience, training and professionalism. Conducting a study on the job satisfaction of rehabilitation nurses

and on the characteristics of the work they perform and on its contexts allow us to understand, not only the reality nurses have to face in their workplaces, but also to identify the independent variables that may have a greater effect on their satisfaction.

In the literature review we have carried out, we witnessed that studies directed to that specific professional group and issue are scarce, both nationally and internationally. Keeping this in mind, our main objective was to contribute to the clarification of the issue upon which our study was based. Therefore, we will seek to understand which aspects are crucial to rehabilitation nurses' job satisfaction and we will explore the significant relationships in order to find ways to help increase scientific knowledge.

Keeping these assumptions in mind, we asked the following research questions: “*What kind of professional satisfaction do working rehabilitation nurses feel? To what extent are socio-demographic, professional and psychological factors associated with satisfaction?*”

We tried to find the answers to these questions as we conducted and developed the current study.

## 2. METHODS

This is a non-experimental, cross-sectional, descriptive/correlational and quantitative study whose main objective was to identify the job satisfaction experienced by Specialized Rehabilitation Nurses (SRN) and to check the extent to which socio-demographic, clinical and psychosocial variables could be associated with this satisfaction.

A non-probability convenience sample was selected. This sample was composed of 124 SRN who were working in 4 hospitals located in the centre region of Portugal. Data collection took place between January and April 2015 with a 79,5% participation rate. The data collection instrument (DCI) we used included four different sections: the first section was meant to gather information about the participants' socio-demographic aspects; the second about their professional profile; the third about their psychological characterization, assessed through Maslach Burnout Inventory – General Survey (MBI-GS) which was validated for the Portuguese population by Benevides-Pereira (2001) and through Vaz Serra's Self-Concept Clinical Inventory (1986). The fourth section, dealing with the respondents' job satisfaction, was assessed through the Job Descriptive Index (JDI), adapted to the Portuguese population by McIntyre & McIntyre, (2010). All procedures were conducted in accordance with a strict ethical conduct (with the prior consent of the Management Boards of the Institutions and of their Ethical Committees and the anonymity and confidentiality of the data collected were guaranteed).

Statistical treatment was processed using the 22.0 version for Windows of the SPSS (Statistical Package for the Social Sciences) programme and Microsoft Word and it was processed using descriptive statistics and inferential statistics.

## 3. RESULTS

The sample is composed of 124 SRN. Most of the participants were female (67.8%) and with an average age of 38,76 (SD=7,671) and showing a moderate dispersion when compared to the average rates (CV=19,79). Women are slightly older than men (W=31,61 vs M=31,28), however, statistical differences are not significant (U=415.5; Z=-0.068; p=0.946). Most of the respondents were “*married*” or living as “*unmarried couples*” (79.4%; 25.8%); 87,1% of them have a college degree and a specialized postgraduate course and 12,9% have a masters degree.

On average, they have been working for 17 years (69,9%) and have been working as specialist nurses for 7,4 years and most of them have been working in a single institution (72.6%). As far as their employment status is concerned, 88.7% of the specialist nurses have a civil service employment contract of indefinite duration and 11,3% have an employment contract of indefinite term. They work 35/40 hours a week, in a fixed working schedule situation (77.4%). 51,6% of them consider that the amount of work they are given is sometimes excessive while 35,5% of the respondents think that the amount of work they have to take care of is frequently excessive. In the last 12 months, 22,5% of the SRN have thought about *requesting transfer to another hospital or to*



another service, 6% have already considered *requesting an unpaid leave*, 6.8% have already considered *requesting early retirement* and 5.8% have already thought about *a job change*.

However, we have to stress out that most of the respondents (53.2%) wouldn't change anything about their current job conditions. The National Healthcare System (NHS) is the first option for 46.9% of the SRN when it comes to choose an employer; 14.5% would choose the private sector and 8.1% will go for independent work. 90.4% of the nurses choose this specialty (rehabilitation) because they think of it as a specialized reference area.

When it comes to nurses' psychological profile, we found out that 19.4% of the participants were suffering from physical wear and emotional distress, 12.9% of them were exhibiting signs of cynicism and 3.2% of them were in a situation of professional inefficiency (burnout). Men exhibit higher signs of emotional and physical fatigue (20.0% vs 19.0%), of cynicism (25.0% vs 7.1%) and professional efficiency (100.0% vs 95.2%) than women. However, significant statistical differences were found only in the cynicism dimension ( $p=0.002$ ).

The Self-Concept Clinical Inventory (SCI) assesses the perception the individual has of himself. The sample's values ranged from 39 to 94 points, with an average value of 70.08 (SD=14.027). Men exhibited a higher self-concept than women ( $M=36.13$  vs  $W=29.30$ ). When we analysed the respondents' Job Satisfaction (JS) (table 1), we could find out that, on the whole, women are more satisfied than men ( $W=32.10$  vs  $M=30.25$ ), however statistical differences are not significant ( $p=0.705$ ). The study conducted on the different dimensions shows that women experience a higher sense of satisfaction in every dimension, except in the *Satisfaction with the Operation staff members*, a dimension in which men show higher mean values ( $M=43.35$  vs  $W=25.86$ ). Statistical differences are highly significant ( $p=0.000$ ).

Table 1: Rehabilitation nurses' job satisfaction and global appreciation, according to gender

JDI DIMENSIONS	Male	Female	Mann Whitney U test		
	Mean ordination value	Mean ordination value	U	Z	P
Satisfaction with the Organization	27,60	33,36	342,0	-1,209	0,227
Satisfaction with their wage	27,28	33,51	335,5	-1,331	0,183
Satisfaction with Direct Superior	29,38	32,51	377,5	-0,658	0,511
Satisfaction with colleagues	29,80	35,45	334,0	-1,326	0,185
Satisfaction with the Promotion	28,28	33,04	355,5	-0,998	0,319
Satisfaction with work	26,65	33,81	323,0	-1,505	0,132
Satisfaction with the technical and operational staff members	43,35	25,86	<b>183,0</b>	<b>-3,653</b>	<b>0,000***</b>
<b>GLOBAL SATISFACTION</b>	<b>30,25</b>	<b>32,10</b>	<b>395,0</b>	<b>-0,379</b>	<b>0,705</b>

JDI values may be interpreted in group terms: the sample will then have to be split using the median into different smaller groups or according to the percentile below 25 ( $\leq 22$  points) or above 75 ( $\geq 32$  points). This way, we consider that: people are unsatisfied ( $\leq 22$  points); people feel neither satisfied nor unsatisfied (between 23 and 31 points); people are satisfied ( $\geq 32$  points). According to these assumptions, we found out that 61.6% of the SRN are satisfied with the work they carry out, 25.8% are unsatisfied and 12.6% choose a neutral position: they feel neither satisfied, nor unsatisfied. The results that have to do with the relationships between variables show that older SRN are more satisfied professionally. Age is responsible for 6.7% of the job satisfaction variation ( $t=2.074$ ;  $p=0.042$ ).

Similarly, the career length ( $p=0.027$ ), the amount of time working as a specialist nurse ( $p=0.013$ ) and the *roulement* work system ( $p=0.019$ ) are positively associated with JS and with significant statistical differences. We also found statistically significant correlations ( $p<0.05$ ) between the psychological variables and JS: we could observe that workers who exhibited higher levels of exhaustion and cynicism were those who were feeling more unsatisfied, while SRN who

experienced a higher efficiency and a better self-concept were those who felt a higher job satisfaction.

Inversely, gender ( $p=0.705$ ), marital status ( $p=0.891$ ), academic qualifications ( $p=0.271$ ), the fact that nurses were working in a single institution ( $p=0.745$ ), the weekly working period ( $p=0.324$ ) and their kind of labour contract ( $p=0.665$ ) don't seem to have any statistical relevance in their relationship with job satisfaction.

#### 4. CONSLUSION

Job satisfaction has been an issue increasingly discussed and studied these last few years, not only because of its importance at an individual level, but also because of its group and social significance. The relevance of the studies on job satisfaction and on the factors that affect this construct is by no means definitive and will allow us to understand (as shown in this study) that the variables involved are innumerable.

We found out that 61,6% of SRN are satisfied with the kind of work they carry out; that 12,6% adopt a neutral position: they feel neither satisfied, nor unsatisfied and that 25.8% feel unsatisfied. Those are conclusions that reinforce the paradigm that states that job satisfaction is a relative and relational attribute which depends on a myriad of individual and contextual variables in which the social, demographic, economical and cultural profile of each human being combined with a certain historical, political and economical moment will create highly different satisfaction expectations. The reasons that will influence nurses to choose this specialty are the fact that rehabilitation nursing is seen as a specialized reference area (90.4%), an intrinsic and extrinsic kind of motivation that will lead to the desire of achieving rewarding tasks and, consequently, to job satisfaction.

We concluded that SRN work on average 35 to 40 hours per week, in a fixed working schedule situation (77.4%) and some of them consider that the amount of work they are given is sometimes exaggerated (51.6%) and excessive (35,5%).

As we all know, healthcare systems all around the world have to face an ever growing range of healthcare needs (especially in specialized areas) and financial restrictions that limit the service potential to empower workforces. This situation will generate a conflict between the nurses' professional responsibility and the providing of healthcare that have to be appropriate to the patients (Martins, 2013). That is why we are currently witnessing the advent of politics that want to deal with personnel management in nursing areas and especially in rehabilitation nursing.

As a matter of fact, the objectives of many of the investments carried out in the physical structures of healthcare institutions are to influence clients' positive evaluations of the services and accommodations they provide. However, health workers need, above all, better working conditions and a better work organization, better benefits and policies that take their wellbeing into account. Those aspects are not valued in this context, since, these last 12 months only, 22,5% of the Rehabilitation Nurses have thought about requesting transfer to another hospital or service, 6,5% of them have already considered requesting an unpaid leave, 6,8% had the intention of requesting an early retirement and 5,8% thought about a job change.

In parallel we found out that 19,4% of the participants were suffering from physical wear and emotional distress, 12,9% from cynicism and 3,2% were facing professional inefficiency or a burnout. Those data are in agreement with other studies who demonstrate that burnout is an effective presence in nursing, in different parts of the world and in different working contexts. This condition will develop nurses' negative feelings that will lead to frustration, coldness and indifference to their patients' suffering and needs (Borges 2012). Those are feelings that are in complete contrast with the path chosen by committed workers and that may even cause some sort of conflict within those workers who have embraced a holistic philosophy of healthcare providing that have shaped their expectations and that is part of our current and challenging working environments (Baumann, 2007).



Self-concept is another of the variables that affect human behavior at work and that are relevant to the analysis of job satisfaction: the mean values found in our SRN are moderate and higher in male participants than in female (M=36.13 vs W=29.30). This is a construct that shows whether the individual is satisfied or unsatisfied with himself. This satisfaction or dissatisfaction he feels about himself will affect all the relationships he will establish with the people with whom he interacts within the organization in which he works. In fact, the stronger the self-concept, the more capable the individual will be to deal with stressful situations and the better equipped he will be to deal with every day difficulties and adversities.

The results of the relationships between variables show that older rehabilitation nurses, nurses with a longer career and who are working longer in this specialized area, who are in a *roulement* situation, who show a better efficiency, a higher self-concept, less exhaustion and cynicism are those who are more satisfied professionally. On the other hand, nurses' gender, their marital status, their academic qualifications, the fact that they are working in a single institution, the number of weekly working hours and their kind of labour contract don't seem to have any statistically significance in their relationship with job satisfaction. These data are partially in agreement with other studies that had already been conducted in this subject area. There are, however, other aspects that are in contradiction.

Everyone agrees that each human being is a unique being, with quality of life and wellbeing expectancies that are quite different according to his age, literacy, socioeconomic condition, personality, family and cultural environment, to the social, economic and political moment, among others. It is therefore natural that, while facing the same working context, some of them may feel professionally satisfied when they are financially rewarded; others when their competence is recognized and others will feel satisfied when they are asked to take part in the decision processes or when they are asked to perform valuable tasks. Consequently, organizations should take this individual diversity into account and try to maximize their workers' performance offering them the opportunities that best meet their individual aspirations. This way, they will create the appropriate geometries that will favour human beings' integration and thus provide them with a higher satisfaction and globally increase the quality of the service they will provide (Ribeiro, 2014). In summary, the main conclusions of this study point out to the importance of achieving the reorganization of rehabilitation nurses' work so that it might include safe physical environments that are consistent with the kind of work they have to perform; an appropriate working time; a clear and transparent definition of possible objectives and goals, allowing any worker to achieve those goals and, this way, allowing them to get the chance to grow professionally and to achieve professional recognition.

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## MULTICULTURAL ISSUES IN THE WORKPLACE

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### **ABSTRACT**

*The demographic, environmental, political, economic and cultural changes represent everyday situation of all companies in the world. In the business environment, companies have to accept different multicultural dimensions in order to position themselves with respect to the employees. Each employee has his or her own values, symbols, statements, rules and other. Education system, political governance, family, friends, all of them take their part in the development of the individual. A workplace is nowadays open ground for multicultural issues between the individual, as they come from different cultural backgrounds, and the beliefs. The main aim of this paper is to present an overview of multicultural issues with special focus on culture, language and value and their impact on the company's success. Among other factors of success, such as dealing with the competition, costs, employee satisfaction etc., we could include some prevalent situation, if we consider working in a multicultural environment. We could nourish different cultural values of employers in company, which could affect also their personal lives. Knowledge about other cultures and customs is also the experience that could brought wider perspective to the employees. Nevertheless, the experience to move to the internationally thinking, in an age of globalism, is a necessary thing. To function effectively as a company an employer needs to deal with issues such as culture, change and communication. Research questions as a central part of the paper will focus on the wider context of the culture issues, meaning of the values in the workplace and other symbols of multicultural environment.*

**Keywords:** culture, globalism, multicultural management, values

### **1. INTRODUCTION**

The diversity of today's environment is largely conditioned with the changes that we are witnessing in our everyday experience. As individuals, we become a part of extensive, global environment. However, the differences of symbols, languages and values are the fundamentals of the culture we exist. Variety of entities, made by humans throughout culture, exert influence upon us with the symbolic elements, language diversity and value orientation of the individual and society.

Manmade concepts of a culture are the basis of representations of the society we would like to live in. However, any deviation from the presupposed proper social behaviour, which is conditioned with the environment we were born in, can raise certain anxiety. The anxiety is often stimulated further with the impulses from personal relationships (friends, family members and schoolfellows) as well as with the media, classical (television, cinema and radio) and new ones (information technology and internet with its social networks, forums, infotainment etc.).

We should conceptualise the society as a relationship of different cultural dimensions. That is why we have to be aware, that a social environment is flourishing, if it has based its foundations on cultural differences, instead of denying or neutralising them. If we can learn lessons from history, we can say, that the respect and above all the understanding of the intercultural, as well as cross-cultural differences have a benefit for the development of a society.

Our reflection in the contribution is oriented towards everyday actuality, where the experiences of personal life of an individual are incorporated in to organization environments. Immunity on the processes of the global environment is characteristic for organisations, which are not oriented towards a long-term efficiency and successfulness. Because of the global competitiveness, migrations, new technologies, changes in purchase practices etc., it is vital for companies to be prosperous to take in to account the influence of a culture. Namely, a company is foremost an organization of the employed, who actualise its goals and mission. Increasing globalization, workforce mobility, and international assignments are creating demand for culturally adapt employees (Eisenberg et al., 2013; Joy & Poonamallee, 2013).

The company is successful in heterogeneous cultural environments, when it is aware of the local responsibility to a population and when it is flexible, adaptable and able to transmit the knowledge in to its environment. A company is building its ties with the employee throughout meeting their needs and desires while it is still pursuing its aims. Because of increasing variety of cultural differentiated backgrounds of employees, it is coming more and more to the forefront this question: what is the relation of cultural differences of employees and organization's standpoint towards these differences?

Employees as such are the index of a success of the company. However, we also have to take in to consideration above-mentioned facts. Namely, we have to point out, that working process in cultural diversified environments likewise working process of cultural differentiated working force is still a big challenge as well as responsibility for the management of each organization.

With this contribution, we will present the main definitions of a conception of the culture and the significance of values. On this basis, we will pinpoint the most important intercultural challenges that are confronting companies in a global environment. The aim of a paper is to contribute to the clarification of cultural elements, which appear in the intercultural differences of employees and are important for the success of a company. We will conclude our contribution with factors of the development of the intercultural competency of the employees and management within each organisation. In this respect, we have to be aware that the competencies beside knowledge, abilities and skills include also the skilfulness to overcome the intercultural differences on a working place.

## **2. THE CULTURE AND VALUES: A GENERAL OVERVIEW**

The culture is artificial world of society. A culture can be understand in a different ways, as a universe of the manmade rules, as a way of life of an individual or a social group or as a field of art. We will not follow all this determinations, but we will lean on one specific conception of a culture. Hofstede, Hofstede and Minkov (2010) defined the culture as a collective mental programme ("collective programming of mind"), which distinguish one human group from another. Every culture includes conscious and unconscious values, ideas, symbols and views that are forming a human behaviour and are passing from one generation to another. Beside that, culture is also defined as the material and immaterial world, which is build and nourished by humans. If we want to understand the nature of a culture, we have to investigate variety of different entities, such as language, faith, (desired) behaviour, habits, material products, esthetical criterions, education, social institutions etc.

The main characteristics of a culture are (Milićević, 2009):

- A culture is learned and it is gained with experience in a society, it is not biological founded.
- People as a part of the organisation, group or society have the same culture; therefore, culture is not a specific characteristic of each individual.
- A culture is transmitted from one generation to another and each generation adds something new.
- A culture is symbolical.

- The structuration and interconnection of a culture means that changes in one segment lead to changes in other segments of a culture.
- - Adaptation of a culture means, that it is based on the ability of people to change and adapt.

The understanding of a culture in personal life is one aspect of it. The organizational culture in working environment is the main factor that should regulate the field of intercultural differences in a working process. As a culture in a private life of individual connects members of the same culture so the organizational culture connects a certain company's employees, their beliefs, values and collective goals. One of the most important definitions of an organizational culture can be found at Schein (see Torrington, Hall, and Taylor, 2004, p. 94). For Schein the organizational culture is a certain spirit and a conviction of organization, but it is visible at most throughout norms and values. This norms and values of an organization are referring to the behaviour of people, to the nature of working relations and to the standpoints of employees. Such norms and values are often difficult to recognise, because they are deep, blind presuppositions that are not always expressible and although we know them, we do not understand them completely.

We define the internal environment of organization with the insight of the participation of a national culture in working processes of each organization and with the knowledge of the national organizational culture (which is more or less specific for each nation). Accelerating process of the globalisation, with its migrations and mobility of the working force, is shaping different multicultural environments of organizations. The awareness of intercultural differences of employees is becoming important and these differences can be traced with investigation of personal interaction and communication of the cultural differentiated employees. We can affect upon internal environment of a whole company, if we are able to incorporate tendencies of an emerging society, with its new values and habits, and we can do that by an employee development process and education.

To be able to understand a different culture, it is important to know its values. Values are the notions and convictions that are always positive and are common for a certain social group, which takes them as "ours". Values are goals we strive for, because we highly appreciate them, and they are hierarchically classified, from more desired to less desired (Babšek, 2009).

The organizational culture is defined with the particular values that represent the field of order, reciprocal synergy and reconciliation of employees. If the employees have common values, a company is more able to mutual connect their relations with ease and excellence. Each particular organizational culture separates one organization from another. The comprehension of common values of employees in a particular organization is necessity if we want to understand company's operations overall. At the same time, an adaptation to the changes is urgent, if a company wants to strategically coordinate its vision and mission. Changes that we are witnessing today have influence on the values of employees in each company and these changes are raising the questions of intercultural and multicultural environments.

### **3. CROSS-CULTURAL DIFFERENCES IN THE WORKPLACE**

Cross-cultural management is defined as the study of the behavior of people in organizations located in cultures and nations around the world (Adler, 1983). It examines the varying forms of organizational behaviors in different nations and cultures and, most importantly, as Adler (1983) argues, the relations between people of different countries working in the same organization, strategic alliance, or venture. To understand the importance of managing cultural diversity, it seems important to grasp the concept of culture (Sultana, Rashid, Mohiuddin, & Mazumder, 2013).

Living in a global society, it supports the need and growth of cross-cultural management. One obvious cause of growth is actual globalization. The relationship between global companies is becoming more complex and dynamic (Scott, 2016).



Matveev and Nelson (2004) present the cross-cultural model. The model includes four dimensions that play a major role in culture and language. The cross-cultural model includes four dimensions: interpersonal skills, team effectiveness, cultural uncertainty, and cultural empathy.

- **Interpersonal Skills Dimension**

Interpersonal skill includes such skills as knowing how to cope with and resolve conflict and understanding, persuading and getting along with others, ability to listen, and empathy (Rentz et al. 2002, p. 15). A team member acknowledges differences in the communicative and interactional styles of people from different cultures, demonstrates flexibility in resolving misunderstandings, and feels comfortable when communicating with foreign nationals (Matveev & Nelson, 2004).

The interpersonal relations are an important factor of building the social capital of companies. The social skills are vital for comprehending intercultural differences on a working place. Problems of intercultural differences are decreasing when we are able to solve the interpersonal conflicts successful.

- **Team Effectiveness**

This dimension includes such critical skills as the ability of a team member to understand and clearly communicate team goals, roles, and notes to other members of a multicultural team (Matveev & Nelson, 2004). Within teams performing complex mutually interdependent tasks, a fundamental process by which team members gain access to and capitalize on one another's expertise is deference yielding to one another's opinions, beliefs, and decisions in the course of teamwork (Anderson, Willer, Kilduff, & Brown, 2012).

The teams, which include combination of employees of different cultural background, can be efficient, if employees have the same goal. The leader of a team directs actions toward goals, but he has to take in to consideration also the cultural particularity of employees. The connection of these cultural particularities can be successful, if they are in harmony with the organizational culture in whole.

- **Cultural Uncertainty Dimension**

In addition to a general uncertainty about the host country, performance standards, and work values, expatriates likely experience uncertainty in their interactions with host country nationals (Bhaskar-Shrinivas, Harrison, Shaffer and Luk 2005). What is important to show is the ability of a team member to display patience in intercultural situations, to be tolerant of ambiguity and uncertainty due to cultural differences, and to work in a flexible manner with others on a multicultural team (Matveev & Nelson, 2004).

When the uncertainty turns out? People are confronted with the uncertain situations in a moment when they are coping with something new, unknown. In working environment is the responsibility of a management to reduce uncertainties, produced by an intercultural differentiation. A management has to educate employees how they can cope with cultural diversity, because a company can operate only with such reconciliation.

- **Cultural Empathy**

A culturally empathetic team member has the capacity to behave as though he or she understands the world as team members from other cultures do, has a spirit of inquiry about other cultures and the communication patterns in these cultures, an appreciation of a variety of working styles, and an ability to view the ways things are done in other cultures not as bad, but as simply different (Matveev & Nelson, 2004). The concept of cultural empathy was first explored in counselling psychology, and grew out of a recognised need for therapists to perceive and communicate an understanding of the client's experience, from the unique cultural perspective of the client (Fernandez et al., 2002).



The empathy connects employees and forms a stable social group. The interconnection of employees on a working place represents the competitive advantage of a company. At the end of the day, the consumers of company appreciate this advantage indirect also.

If we talk about cultural differences, we cannot overlook the process of the communication and language. We establish the communication mostly with the language, which is the first factor of the differentiation of cultures. Besides that, we have to be aware, that the communication fundamentally defines each individual.

- Cross-cultural communication

Cross-cultural communication focuses on how people from different cultures can communicate and understand each other well (Dutta, 2008). This cross-cultural diversity affects how business communication is conceived, planned, sent, received and interpreted in the workplace. It becomes very important because social and nonverbal behaviors also form a significant component of cross-cultural communication (Viyaja and Tiyyari, 2010). Willingness to confront, challenge or contradict; speed of interaction and patterns of conversation, time, sense of space and body language, hierarchy, age and conspicuous respect; names and conventions of using names; modesty norms and dress codes are some aspects of differences in communication driven by culture (Geneiveve, 2007).

Cross-cultural communication is becoming increasingly relevant in today's borderless world. People are moving freely from one country to another on business assignments, and for leisure and entertainment. Therefore, there is a necessity of understanding other cultures. Primarily, cross-cultural communication focuses on how people from different cultures can communicate and understand each other well (Dutta, 2008).

#### **4. DEVELOPMENT OF THE MULTICULTURAL COMPETENCE**

Competencies are the knowledge, skills and abilities that are expected from employees. The competencies are a precondition of the successfulness of employees. The need and necessity of our time is intercultural competency. Intercultural competencies can reduce the differences and conflicts in multicultural environment, as we already mentioned.

Mai-Dalton (1993) describes the skills needed for leadership in multicultural organizations as an openness to cultural differences, a knowledge of what these differences in specific situations consist of, and the acceptance and use of differences in improving organizational performance. One of the most circulated definitions of multicultural competence refers to the “ability to understand, communicate with and effectively interact with people across cultures” or with different social and economic backgrounds (Martin & Vaughn, 2007, p. 31). Multicultural competence has also been defined as “the ability in personal and professional contexts to interact respectfully and effectively with diverse individuals and groups in a manner that recognizes, affirms, and values the worth, and protects the rights and dignity of all” (Vernooy, Harris, 2010, p. 2).

Traditionally, multicultural skills have been taught in the workplace through diversity training programs that focus on increasing participant awareness of group differences and stereotypes (Cox, 1994). McKee and Schor (1999) suggest that changes in demographics make it increasingly important for leaders to value differences and work effectively with people of various cultures, backgrounds, races, etc. Some scholars have argued that effective leadership in today's global workplace requires strong emotional skills or high levels of emotional intelligence (Antonakis, Ashkanasy, & Dasborough, 2009; Riggio & Reichard, 2008).

We have to be aware of intercultural differences and we have to recognise them. This awareness means comprehension of the diversity of cultures of other employees, which mostly or essentially differ from our own culture. Such awareness is a precondition for suppression of the ability of an

appearance of the chauvinistic ethnocentrism, because the conviction of superiority of one culture reduces the quality of results of employees.

Awareness refers to an individual's position within a certain community and how it affects the individual's values, beliefs, assumptions and behaviour towards the others. It also implies understanding how an individual's point of view may result in a type of behaviour that affects the others. Awareness can be simply defined as the ability of understanding difference.

We also have to expose the responsibility of educational institutions, which realise their mission also with breeding the conscious about the importance of own culture. Besides being familiar with the own culture there is a need for pupils to get to know the characteristics of other cultures as well. Such educational process can have the effect on working environment through multicultural knowledge of future employees.

The knowledge component refers to learning specific information about different cultures, about the self and the individuals who are different from the self. However, acquiring knowledge about (in) equality, rights or exclusion and inclusion is not sufficient and may prove to be inconsistent with both individual and collective behaviours.

The perception of intercultural differences is connected, as we already said, with a process of the communication. Both verbal and non-verbal communication is fundamental when interacting with people from cultures different from our own. It is essential to identify and discuss differences, although communication skills vary from culture to culture.

Finally, the attitude component underlines the difference between acquiring knowledge, increasing awareness and training for communicating with the cultural other, in order to reconsider and redefine the individual's own values and behaviours about difference (Caraivan, 2012).

## 5. CONCLUSION

The competitiveness of an organisation and successful work of employees are very good foundations for company to survive on the market. The market means customers and employees too. The former and the later perceive changes in an environment.

In contribution we wished to expose a meaning of intercultural mutual understanding from the perspective of employees. The understanding of interculturality enables internal environment of company to adopt to the changes. Because of the transformations of cultural systems, the organizational culture should transform also. An organizational culture is one of the starting points, which enable us to understand and accept different systems of values, especially when we talk about the work in multicultural differentiated organizations.

A comprehension of different habits, customs, rituals, symbols etc. can give a vital support to the reduction of potential conflicts between employees. Conflicts arise when we do not or we do not want to understand something. Therefore, the management is the first that has to recognise a meaning of the differences of employees. The management can expect to carry out successful operations only, if it will accept the fact, that intercultural differences are nowadays a usual fact.

The toleration and acceptance of cultural differences can be a great advantage and an opportunity for company's success. At the end, we would like to stress the importance of the development of intercultural competencies of employees. With these competencies, through the knowledge, convictions and skills, the employees could cope with the other or with the different. And finally, they will successful overcome the obstacles that result from cultural differences and different value backgrounds.

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## EXCESSIVE OPTIMISM IN COMPANY'S VALUATIONS

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### ABSTRACT

*The main aim of the article is an attempt to show the phenomenon of excessive optimism on capital market on the example of recommendations provided by the Brokerage Houses in Poland. The structure of recommendations indicates that there is more positive recommendations than negative and neutral ones. It would be reasonable statistically in constant market growth conditions, meanwhile, stock market is characterized by bull, bear and horizontal trend periods. The question is, why then, in the changing conjuncture there outweigh of the positive recommendation over the negative and neutral ones is observed. To achieve the research aim, the companies from Warsaw Stock Exchange were selected and recommendation describing them were compared. Research results indicate that positive recommendations are dominant. The next stage was to compare the stock quotation at recommendation issue date with the price achieved by the company a year after. Research results indicate that despite positive recommendations of Brokerage Houses, significant number of recommendations have overestimated the price in relation to real value achieved by the particular company on the Warsaw Stock Exchange. In addition, I compared to selected companies financial projections with real reports. This analysis also showed the existence of an excessive optimism among analysts.*

**Keywords:** *company valuation, excessive optimism, recommendations*

### 1. INTRODUCTION

Excessive optimism often accompanies decision-making process. It results from the fact that an individual is anchored in their convictions, perception of the world or the knowledge they use or possess. It is worth considering whether we deal with the phenomenon of excessive optimism on the capital market. And in case it does – to what extent then? The aim of the article is to show the phenomenon of excessive optimism on the capital market in Poland. Stock recommendations issued by Brokerage Houses, their direction and estimates are supposed to be the possible area of excessive optimism. In the research part of the article I verify hypotheses associated with the goal.

Previous studies on excessive optimism focused on describing the phenomenon and attempt to explain its causes, so it looks like the following overview of the most important achievements in this regard.

### 2. EXCESSIVE OPTIMISM IN THE LITERATURE

In the literature on studies of human psychology, the concept of optimism is explained as a static and independent rule of the current situation of an individual personality trait. Optimist believes that during lifetime more positive than negative situations will occur. In the broader sense of optimism it is often associated with an unrealistic approach to life in which a person exhibits unfounded belief about his happy fate. This way of perceiving optimism leads to an incorrect assessment of the possibility of occurrence of certain events (Czerw, 2009, s.15). After recognition of the psychological explanation of optimism, the concept of assumption of excessive optimism in finances can be introduced.

Excessive optimism reflects in the belief that a negative event will happen to someone else rather than myself. An investor who exhibits excessive optimism has a tendency to make risky decisions,



because he believes that he is less susceptible to adverse consequences of such decision. As an example can serve the behavior of stock market investors, who make a speculative purchase of financial instruments with high volatility returns. Szyszka describes excessive optimism, as an "unrealistic wishful thinking." Author draws attention to the impact of excessive optimism to errors, regarding the interpretation of public information. If new messages coming from the market are contrary to previous participants expectations then the overall reaction of the market becomes weaker.

The confirmation of this rule can be found in a study held by Womack, in which it calculated the ratio of the recommendations of purchase and sale was 7: 1 (Womack, 1996, p. 137-1670).

M.Czerwinka and B.Gorlewski (2012, pp. 100-101), pay attention to the fact that the person characterized by excessive optimism is exposed in the capital market to a reevaluation of their knowledge and skills, erroneous assessment of risk and illusory ability to anticipate events, and what is worse-profits.

Kahneman and Tversky (1971; 1974) came up with the reasons of making significant mistakes in decision-making process. In their breakthrough papers there are answers to some key questions concerning decision-maker's rationality that fails. The most crucial under uncertainty is using heuristics, that is simplified ways of reasoning. They are connected with intuitive processing information and enable people to make judgments not regarding all data. It is caused by the mechanism called problem complexity reduction. Among heuristics there can be mentioned: anchoring and adjustment, availability and representativeness (Nęcka, Orzechowski, Szymura, 2008).

Another cause of making wrong judgments is evaluator's excessive self-confidence. Here Zielonka (2014) mentions several aspects: extraordinariness effect, calibration effect, illusion of control and unjustifiable optimism. Excessive confidence indicates overestimation of one's own competence and occurs when certainty of the judgments formed surpasses their pertinence. The effect intensifies when someone is an expert at the given field. This occurrence was verified in many interesting experiments. Tyszka and Zielonka (2002) compared financial analysts and meteorologists' self-confidence and forecast pertinence. But Plous (1993) conducted similar analyses among doctors and meteorologists. In both research studies meteorologists were better. Their judgments were more adequate than doctors' and financial analysts'. Despite this fact the above-mentioned judgments were formed under less certainty. Zaleśkiewicz (2015) recalls interesting studies, which were conducted by Torngren and Montgomery (2004) in Sweden. The researchers compared financial analysts and stock market amateurs' confidence and forecast pertinence. The outcomes were surprising and were published in the Journal of Behavioral Finance: „Worse than Chance?”. Financial analysts' forecast pertinence reached 39%, in case of amateurs – it was over 50%, thus being similar to the accidental value. Analysts' confidence exceeded 65% and was higher than amateurs' confidence by 6%. Zaleśkiewicz (2015) upholds that the above study was carried out under bull market, which might have enhanced analysts' excessive self-confidence. And how would it look under bear market? The results of other investigations indicate (Zaleśkiewicz, 2015) that analysts' excessive self-assurance and assertiveness also occur when the market remains unstable. Additionally, specialists and experts are overwhelmed by their extraordinariness, their greater knowledge and better competence, hence they generate more pertinent and adequate judgments (Montier, 2007).



Some cognitive errors are influenced by surrealistic optimism and wishful thinking. It is a sort of conviction that there is greater chance to achieve success in many fields, in the area of forecasts and analyses as well. Olsen (1997) shows that financial analysts, like other people, demonstrate excessive self-assurance and unjustifiable optimism. Financial experts and stock market amateurs are absolutely convinced they are right (calibration error), investors think they will receive a higher return. Surrealistic optimism manifests itself in systematic overvaluing of favourable events and undervaluing of detrimental ones (e.g. inflation or unemployment rate) (Szyszka, 2009).

When taking decisions people are frequently determined to support their opinions and make so-called confirmation error. It means the tendency to look for the information that can confirm the assumed thesis or judgment, and at the same time, skip or downgrade the data that could undermine their say. Such a cognitive inclination makes self-confidence be maintained for an indefinite period of time, as even having confronted contradictory information (starting judgment, initial estimations), the wrong position is not verified (Szyszka, 2009). The confirmation effect is also connected with selective memory. It is the ability to remember better and recall the events or statements that can confirm the given position.

The confirmation effect might make investors and analysts overestimate the advantages of the given investment, through neglecting signals that they might incur some losses (Zweig, 2009). Analysts tending to generate positive recommendations, will be unconsciously seeking various data confirming their position. In case of unclear information, they will interpret it in favour of the company they work for. It can manifest in paying attention to the factors, growth, development or company's expansion and ignoring weaknesses and dangers. Greater pertinence of gains and forecasts is achieved by those who avoid the confirmation effect in a well-planned and conscious way. In order to cope with it, investors may try to take an opposite point of view for the purpose of weighing „pros and cons” and generating the most adequate judgment (Pompian, 2006). Zweig (2009) suggests the mental technique lying in creating an imaginary investment failure and finding out why it happened.

### **3. METHODOLOGY AND DATA**

Thirty three companies quoted on WSE, for which stockbroker's recommendations were published, were chosen. The period encompasses the years 2000-2013. The selected partnership had to have at least 20 recommendations in order to conduct analysis. Medium and large production enterprises from non-financial sector took part in the study. In most cases the impact of foreign speculative capital on the company's value was avoided. Another important criterion was rejection of all entities which in the analyzed period declared their readiness to experience merger, takeover or rebranding. The researchers think that such moves may change the company's structure and value so much that estimation of the company's future cash flows and market value quite precisely would be impossible. Considering such cases by a relatively small sample, could vastly distort the results obtained. The companies which implemented one of the indicated business operations were excluded from the study as well.

The set of data according to the template, as in the table below, on the basis of Astarta S.A. company, was thoroughly analyzed.

*Table 1 Data related to Astarta's share prices, in polish zlotys*

Date	Target price	Price t	Price t+250	Rt+250	Difference between the price T+250 and target price
2011-07-29	139,2	91,5	61	-40,55%	-78,2
2008-03-13	53,3	44	9,7	-151,21%	-43,6
2010-11-03	100	77	64,5	-17,71%	-35,5
2013-07-18	73,4	64,94	39,5	-49,72%	-33,9
2011-04-14	96	77,55	64,95	-17,73%	-31,05
2012-03-14	80,2	63,5	59,8	-6,00%	-20,4
2013-02-20	74,8	62,8	56,5	-10,57%	-18,3
2013-05-06	56,3	49,05	38,47	-24,30%	-17,83
2012-08-28	81,6	66,85	67,57	1,07%	-14,03
2010-03-30	79,2	56,25	81,7	37,32%	2,5
2012-08-09	74	64	76,5	17,84%	2,5
2011-07-29	139,2	91,5	61	-40,55%	-78,2
2008-03-13	53,3	44	9,7	-151,21%	-43,6
2010-11-03	100	77	64,5	-17,71%	-35,5

Source: Own work.

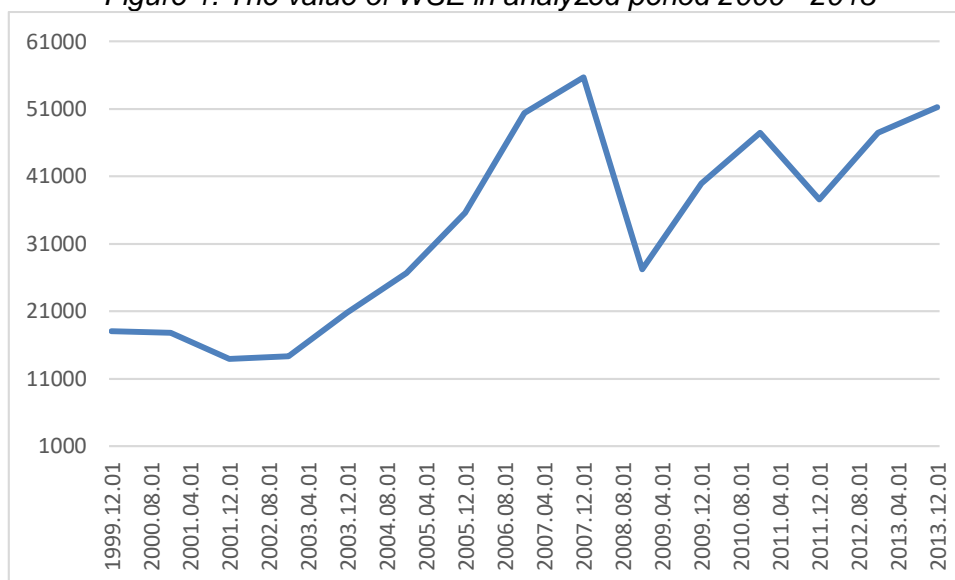
The table presents the source information concerning stock market recommendations prepared for Astarta S.A company in the period analyzed. In each record reflecting the next recommendation the following data can be found:

- Date – the date of publication of the given stock recommendation
- Target price – the price offered in the stock recommendation in the horizon defined in this report. The horizon is not clearly defined and is described as „medium-term horizon”, which has to be interpreted by the recipient of the report
- Price t – the opening price of the given share at the trading session when the analytical report was published
- Price + 250 – the closing price of the given share after one year from publication of recommendation. 1 year is understood as 250 trading sessions according to the further description
- Rt + 250 – return rate for the given value calculated as the difference between Price + 250 and Price t
- Difference between Price t+250 and Price t – nominal change to the price observed within one year after publication

After selection of companies taking part in the research study, the analysis of stock recommendations' structure for particular enterprises was carried out. This scrutiny aimed at initial defining the nature of recommendations and stating if any analytical reports have the bargaining

power over the rest. According to the researchers’ thesis on analysts’ excessive optimism, it can be expected that positive reports are predominant. It is worth highlighting that the analyzed period 2000-2013 is so long that it encompasses the growth, fall and stagnation periods. Changeability of WSE is depicted on the chart below.

Figure 1. The value of WSE in analyzed period 2000 - 2013



Source: [www.stooq.pl](http://www.stooq.pl)

Given the diversity of cyclical surveyed, one would expect that at various times, published reports should be based on different assumptions and analyzes resulting in different recommendations, not only in terms of price targets, but also in the anticipated direction of change in the projection horizon. It is worth noting that among the analyzed recommendation outweigh those that predict the value of a company in the horizon of one to two (this is not equivalent to the number of years in the DCF forecasts made by analysts).

The authors decided to evaluate the correctness of analytical reports within one year from publishing the given recommendation. It means that the change to the share price of each company was considered in the horizon of 250 trading sessions dating from the publication. The number of sessions assumed in the study is a result of examining the average number of trading sessions every single year in the 2000-2013 period.

After the initial structural analysis the correctness of target price anticipation for respective shares was estimated. A simple linear model was used – the classical method of least squares. The models for each company were constructed according to the following formula:

$$C250_i = \beta_i * Cr_i + e_i$$

Where:

C250 – share price of the company – 250 trading sessions after publication

Cr – target price offered in the recommendation

In the model an absolute term was deliberately ignored. The act of predicting the target price should be accumulated in the estimated coefficient  $\beta$ . In authors’ opinion it allows to better compare the coefficients between the particular models prepared for different companies, and thus for changeable sets.

After construction of model estimations, the obtained values of coefficients  $\beta$  were averaged. Next, their structure was smoothed, and some extreme observations were removed. As the analyzed sample is quite small, concluding is moderate and can be subjected to further research studies. For this reason the authors used the principle of defining extreme observations according to the two-sigma rule, and not the three-sigma rule.

The obtained results were analyzed and tested to check the significance of the mean gained:

$$t = \frac{\bar{X} - \mu_0}{S} \sqrt{n - 1}$$

Where:

$\bar{X}$  – sample mean;

$\mu$  – test average value;

$S$  – standard deviation;

$n$  – sample size.

On the basis of the results, the conclusions concerning stock market analysts' excessive optimism were formed. The authors claim that analysts avoid negative recommendations torn away from economic reality and tend to overestimate the prices in their forecasts. The authors believe that analysts' optimism bias can be attributed to both of these aspects.

#### 4. FINDINGS

First, the structure of the recommendations of individual companies was analyzed. It has to be noted that the nomenclature used in various brokerage houses on the final recommendation is slightly different in the different institutions, so the authors have to make unification of the various types of analytical reports, allowing to make a comparative analysis between brokerage houses. Finally, recommendations were brought to the 5 basic groups: buy, accumulate, neutral, reduce and sell.

The positive reports, that is „buy” and „accumulate” groups, dominate over the negative ones. On average, the contribution of positive reports in the overall number of recommendations exceeds 76%. It means that 3 out of 4 price forecasts indicate growth in a relatively short-term horizon. The most equal share implying changeability of analysts' moods toward the given partnership can be noticed on the example of Astarta company, in case of which 59% of reports show positive forecasts and just 30% of them are negative. However, it is quite untypical in the tested group because in most enterprises analysts unequivocally pointed out upward trends. In the structure positive reports repeatedly reached over 85% in the overall number of recommendations prepared for the period of 13 years. Pegas was the company which was given 21 positive recommendations, 3 neutral and no negative ones.

A big number of positive recommendations indicates that analysts come up with positive forecasts, but it should be investigated if their optimism is succored by real premises or assumptions and if it will be compliant with the factual stock market values in the future. The table below presents the juxtaposition of differences between market prices and analysts' forecasts.

*Table following on the next page*

*Table 2 Price deviations between recommendations and real prices*

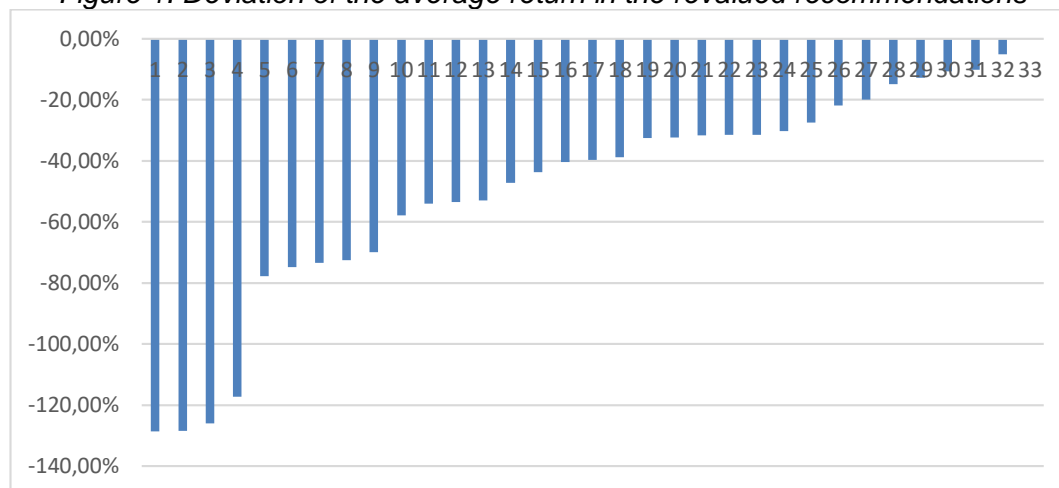
Company	average R z +	Company	average R z +
Bioton	-73,39%	Synthons	-128,62%
Mercor	-57,93%	Barlinek	-128,37%
Apator	-55,81%	Apator	-125,96%
Barlinek	-55,46%	Grajewo	-117,26%
Duda	-39,80%	Duda	-77,68%
Grajewo	-29,66%	Rovese	-74,76%
Paged	-25,13%	Bioton	-73,39%
Astarta	-23,78%	Paged	-72,45%
PC Wrocław	-17,44%	Mercor	-69,92%
Rovese	-17,01%	CIECH	-57,91%
Ceramika Nowa Gala	-16,37%	Police	-54,04%
Kopex	-11,60%	Rafaco	-53,45%
Decora	-10,53%	Amica	-53,01%
Police	-7,21%	Decora	-47,16%
CIECH	-6,85%	Puławy	-43,76%
Amica	-5,02%	Wawel	-40,33%
Kernel	-3,95%	Astarta	-39,72%
Ambra	-3,14%	PC Wrocław	-38,79%
Pegas	0,23%	Colian	-32,55%
Colian	5,96%	Kernel	-32,29%
Puławy	6,54%	Ambra	-31,57%
Opoczno	9,30%	Ceramika Nowa Gala	-31,41%
Wilbo	11,48%	Pegas	-31,39%
Synthons	16,35%	Mondi	-30,31%
Mieszko	16,64%	Forte	-27,39%
Rafaco	16,73%	Wilbo	-21,82%
Famur	17,58%	Kopex	-19,91%
Jelfa	23,17%	Sokołów	-14,94%
Mondi	28,87%	Famur	-12,69%
Forte	33,27%	Jelfa	-10,60%
Sokołów	43,31%	Opoczno	-10,21%
Wawel	45,60%	Azoty	-5,01%
Azoty	50,64%	Mieszko	13,52%

Source: own work

The table shows that recommendations averagely implied the price changes that were higher than factually. We can conclude that the prices anticipated by analysts are also optimistic. Let's pay attention that the variances calculated for the studied entities mean overestimation in positive reports from a dozen or so up to several dozen per cent. These values are significant and directionally unambiguous.

Graphically analyze data presented in Figure 2 and 3.

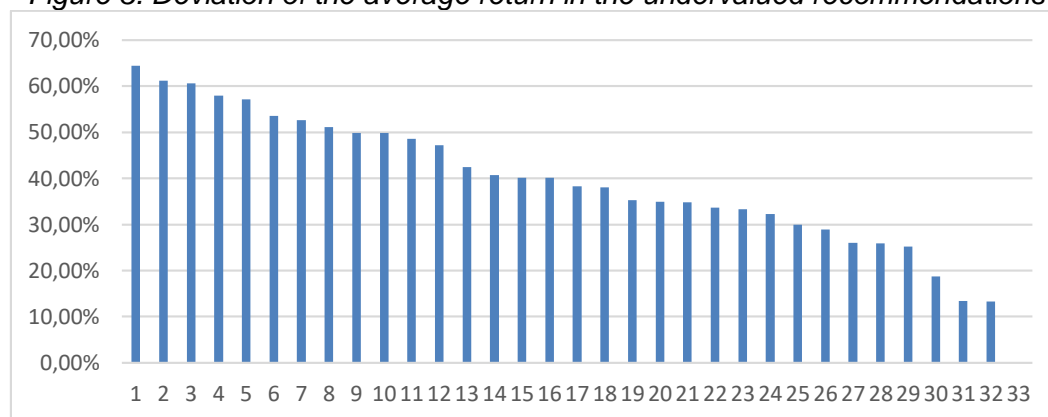
*Figure 1. Deviation of the average return in the revalued recommendations*



Source: own work

The average deviation of percentage rates of return in the recommendations of overestimated and underestimated seem to be different. What is clearly indicated in Figure 2 and 3.

*Figure 3. Deviation of the average return in the undervalued recommendations*



Source: Own work.

However, in order to ensure that both communities should be additional verification test of the two schools. What is the next step of the study. Test score indicates that both sets of averages are different from each other but are different from the average deviation. So it can be concluded that the phenomena shaping deviation from the rates of return in the recommendations resulting overestimation and underestimation valuations are different from each other.

## 5. CONCLUSION

In the overall number of recommendations there are more positive than negative or neutral ones. Statistically it would be justifiable in constant market growth conditions. However, stock market is characterized by bull, bear and horizontal trend periods. The question is, then, why in the continually changing economic situation do positive recommendations always prevail? In order to achieve the assumed goal, the companies from Warsaw Stock Exchange were selected and



recommendations describing them were compared. The research results indicate that positive recommendations are dominant. The next stage was to compare the stock quotation on the day of recommendation release with the price achieved by the company a year after. The results reveal that despite positive recommendations of Brokerage Houses, a significant number of recommendations has overestimated the price in relation to real value reached by the particular company on the Warsaw Stock Exchange.

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## ASSESSING THE COMPETITIVENESS OF KAZAKH ECONOMY: DOES INDUSTRIAL-INNOVATIVE STRATEGY IMPROVE THE COMPETITIVENESS?

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### ABSTRACT

*This article assesses the competitiveness of the national economy of the Republic of Kazakhstan (by region) for the period of implementation of the industrial-innovative development strategy. Assessment method uses the index method to construct an aggregate index of competitiveness of the region by the aggregation of a number of different social and economic indicators. Calculations were carried out similarly to the methodology of the ratings of countries. The main feature of this method is to bring the different indicators (percent, absolute value, etc.) to one dimension in the range [0; 1]. Research results show that the level of the competitiveness in the Republic of Kazakhstan in general remains very low except in the capital city Astana and the former capital Almaty where competitiveness relatively higher but still it is in the middle of the range [0; 1]. Findings show that although Astana and Almaty are not industrial areas, but these areas have a relatively higher level of innovation and research. As a result, the combination of the existing infrastructure and industrial resources with innovation increases productivity in the region, which finally improves the quality of the life in the region. This means that the industrial-innovation factors are the basis for improving competitiveness. But, compared to the industrial and infrastructural indicators, innovation factors are more related to competitiveness. Overall, the industrial-innovative development affects the competitiveness of the region, which later forms the country's competitiveness.*

**Keywords:** *competitiveness of the economy, increasing the competitiveness of Kazakhstan, index method, regional ratings.*

### 1. INTRODUCTION

In the context of the need to reduce the dependence of the Kazakh economy from the demand to raw materials and world prices for them as well as the need to diversify the economy, industrial and innovative development was defined as a main direction of the economic policy of Kazakhstan. In this connection, Kazakhstan adopted a special strategy of industrial-innovative development for 2003-2015, which has later replaced with the State program of industrial-innovative development since 2010's (Decree of the President of the Republic of Kazakhstan, 2010).

Another area of Kazakh economic policy which is implemented in the interlinkages with the industrialization policy is competitiveness policy. Strategically important issue is the realization of

the final produced products in the global markets that require a quality corresponding to the world level of competitiveness of the goods. In this area, appropriate program documents were adopted. To date, Kazakhstan aims to get into thirty developed countries by 2050 (Address by the President of the Republic of Kazakhstan, 2014).

In this context, it is important timely evaluation of implemented industrialization and competitiveness policies. This paper specifically examines the industrialization effect on competitiveness of Kazakhstan. Thus, the purpose of the study is to assess the competitiveness of the national economy in terms of industrial and innovation development.

## 2. RESEARCH METHOD

The research method aims at determining the characteristics, factors and indicators of competitive development of Kazakhstan in terms of industrialization.

The object of the research is the economy of the Republic of Kazakhstan by regions. The subject of the study is economic relations arising in the process of formation of a competitive economy in the conditions of industrial-innovative development.

The study applies generally accepted methods of scientific research (analysis and synthesis, induction and deduction, grouping, ranking, comparison, statistical analysis).

In accordance with the objectives of the study in order to assess the impact of industrial-innovative development program on competitiveness in the context of regions of Kazakhstan, a methodology should be based on the following three factors:

- effective functioning of the economic mechanism of the region (the competitiveness of the market competitiveness of products or competitiveness provided by the production);
- investment attractiveness of the region (the presence of innovation and infrastructure and industrial building);
- in addition to these economic factors, it is important to assess as a separate level of quality of life of the population factor, because this factor is the final result of all the activities along the chain from industrialization to competitiveness.

In the international practice, a lot of other socio-economic factors are used together with these three factors, which eventually accounts for the construction of indexes and ratings. Among them, widely known ratings are rating of the World Economic Forum (Schwab, 2016) and the Institute for Management Development (IMD) that includes more than 300 metrics, (Institute for management development, 2016), Atlas method of the World Bank (World Bank, 2016), methods of OECD (Durand, M., 1987) and the United Nations. According to the WEF rating in recent years, Kazakhstan has shown good results, having entered to the top 50 most competitive countries. Rating of WEF includes more than 140 countries, compared with about 60 countries in the IMD rankings, therefore, relatively more preferable rating for Kazakhstan. Moreover, in addition to the quantitative advantages, there are and qualitative benefits since WEF ranking indicators consist 2/3 of the expert survey data (IMD - 1/3).

However, in spite of the existing set of procedures, there is no unified methodology of assessing the competitiveness of producers, industries and regions recognized by all institutions.

Due to the fact that the international ratings take into account a wide range of socio-economic nature, and some of them such as a spread of HIV, malaria, etc. are not included in the scope of this study. According to this research objectives the focus will be on the factors of industrial-innovative development and the quality of life.

Method of estimation of competitiveness on the basis of trade data (Balassa index and the coefficient of net exports), as well as the assessment of the competitiveness of exports are commonly used along with the ratings in the international practice:

Balassa index -  $RCA_j = \frac{X_{ij}}{X_{wj}} \div \frac{\sum_j X_{ij}}{\sum_j X_{wj}}$ , where  $X_{ij}$  – export of a good  $j$  of a country  $i$ ,  $X_{wj}$  – world export of a good  $j$ ; if  $j$  ( $X_{ij}/X_{wj}) > (\sum X_{ij}/\sum X_{wj})$ ,  $RCA_j > 1$  – then a good has a relative competitiveness

Net exports coefficient -  $RCA_j = \frac{X_{ij} - M_{ij}}{X_{ij} + M_{ij}}$ , where  $X_{ij}$  – export of a good  $j$  of a country  $i$ ;  $M_{ij}$  – import of a good  $j$  of a country  $i$ ; if  $RCA < 0$ , this shows that a country produces this good with high costs,  $RCA > 0$  means a comparative advantage.

However, these techniques are aimed at assessing the industry (particular commodity market), which limits their use in this study. This study aims to assess the competitiveness of the national economy.

At the same time, within the framework of the existing financial possibilities and the high cost of conducting surveys, research restricted with the use of statistical information.

However in accordance with the international methodology index method has been selected as a base method which can compile an aggregate index of competitiveness. The index is calculated by the aggregation of a number of different indicators. Assessment method uses the index method to construct an aggregate index of competitiveness of the region by the aggregation of a number of different social and economic indicators. Calculations were carried out similarly to the methodology of the ratings of countries. The main feature of this method is to bring the different indicators (percent, absolute value, etc.) to one dimension in the range [0; 1].

The calculation is performed using the following formulas (1)-(3):

$$I_j^i = \frac{X_i^j - X_{\min i}}{X_{\max i} - X_{\min i}} \quad (1)$$

$$I_j^i = 1 - \frac{X_i^j - X_{\min i}}{X_{\max i} - X_{\min i}} \quad (2)$$

$$I_{\text{aggregate}} = \frac{\sum I_j^i}{n} \quad (3)$$

where  $X_i^j$  - indicator  $i$  of region  $j$ ;

$X_{\min i}$  – the minimum value of the index  $i$  among all regions  $j$ ;

$X_{\max i}$  – the maximum value of the index  $i$  among all regions  $j$ .

$I_{\text{aggregate}}$  value is in the range [0; 1]. If the  $j$ -th region by all the individual indicators is the best,  $I_{\text{aggregate}}$  will be equal to 1.

This method allows to assess the regions in terms of competitiveness taking into account the factors which are of research interest. It is possible to rank the competitiveness of regions according to the following grouping:

Group 1 - high level of competitiveness:  $0,66 < I < 1,0$ ;

Group 2 - medium level of competitiveness:  $0,33 < I < 0,65$ ;

Group 3 - low level of competitiveness:  $0,00 < I < 0,32$  [Nurmuhanova, 2007, p.78].

Presented method of analysis of the competitiveness of a state and its regions allows to see the formation of a competitiveness of the national economy and the impact of factors of competitiveness at the micro and macro level. Earlier this method was considered by several

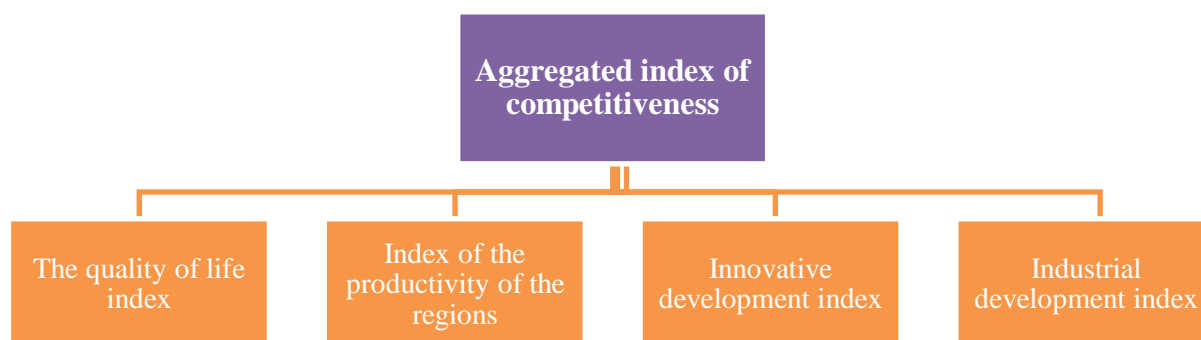
researchers in the evaluation of regional competitiveness. In Russia, the CIS countries, including Kazakhstan (Nurmuhanova, Institute for Marketing and Analytical Research) methodology underwent an approbation. Model in this paper is variation of the basic model presented in 2007 in the article of G. Nurmuhanova published in the Bulletin of the National Academy of Sciences.

To date, the method of the region is based on three main aspects of competitiveness: the need to achieve a high level of quality of life of the population, improving the functioning of economic mechanisms in the region (to ensure the competitiveness of the commodity market or the competitiveness of industry), the investment attractiveness of the region (the potential of regional innovation and infrastructure). Thus, the main indicators of improving the competitiveness of the country's regions are as follows:

- an indicator of the standard of living (index);
- an index of the productivity of the regions;
- innovative development index;
- an indicator of the level of infrastructure development in the region (Industrial development index).

Each of these indices is composed of independent sub-indices (Figure 1).

Ranking is determined by the competitiveness of the region's 4 aggregate indices:



*Figure 1: Components of aggregated competitiveness index  
(compiled by the author on the basis of Nurmuhanova, p.85)*

1. The quality of life index. Consists of subindex of gross regional product (GRP) per capita, purchasing power of the population, level of unemployment, poverty (percentage of the population with incomes below the subsistence level), maintenance with housing, public health care.

2. Index of the productivity of the regions. Consists of subindex of labor productivity, investment activity in the region, distribution of agricultural and industrial enterprises (business density), human capital (human resources).

3. Innovative development index. Consists of subindex of expenditure on research and development (% share in the total cost), the cost of technological innovation, the cost of information technology (% share in the total cost), the number of high-level IT professionals (% share in total employment), cost of business entities to research and development, the volume of imports of technology and equipment, the volume of industrial production of improved products, the share of high-tech products in the export.

It is worth noting that there is no statistical information on many indicators of the basic model (Nurmuhanova, 2007, p.83) based on 2005 data on innovative development index components. As a result, innovative subindices may lose efficiency in the original model. Thus, it is recommended to replace the sub-indices of innovative development index with actual and available indicators from the Statistics Committee of the Ministry of the national economy of the Republic of Kazakhstan (Table 1).

*Table 1: Components of the innovative development index in basic and advanced models  
 (compiled and improved by the author on the basis of Nurmuhanova, p.79)*

<b>i</b>	
Research and development costs (% share in total costs)	E
	O
C i	Personnel engaged in research and development
The number of IT professionals (% share in total employment)	L
C	I
	Cost of product and process innovations
o	V
The share of high-tech products in the total export	V s
	Number of companies introduced new or significantly improved goods and services
	Number of created/used new technologies and techniques
	Number of businesses that created/used new technology and equipment

4. Industrial development index. Consists of the main assets of the enterprises of the region; investment in construction, the volume of construction works; road density, the density of the railways.

It should be noted that this index is called infrastructure index in the basic model. Infrastructure index was expanded with the indicators in accordance with the target parameters of the State program of forced industrial-innovative development of Kazakhstan (industrial output, its growth, the share of the regions in the national volume of industrial production, share in GRP structure, production of manufacturing industry, its growth and share in GRP structure, labor productivity in the manufacturing sector (table 2).

Replacing innovative development index with actual indicators of innovative activities and extending infrastructure index to industrial development index could be seen as a research novelty of this study.

*Table following on the next page*

*Table 2: Components of the industrial development index in the basic and advanced models.  
 (compiled and improved by the author on the basis of Nurmuhanova, p.79)*

<b>Infrastructure index</b>	<b>Industrial index</b>
-----------------------------	-------------------------



(Basic model)	(advanced model)
Fixed assets of enterprises in the region	Fixed assets of enterprises in the region
Investment in construction	Investment in construction
The volume of construction and installation works	The volume of construction and installation works
The density of roads	The density of roads
Density of railways	Density of railways
-	The volume of industrial products (goods and services)
-	Share of regions in the republican volume of industrial production
-	The index of physical volume of industrial production
-	Share of regions of the republican volume of industrial processing
-	The share of manufacturing in GRP
-	The volume of production in the manufacturing industry
-	The index of physical volume of manufacturing industry
-	Labour productivity in the manufacturing industry
Note – compiled on the basis of the literature [1], improved by the author.	

Competitiveness of regions of Kazakhstan are assessed as of end of 2014 as in this period first five-year plan of industrialization – the State Program of Forced Industrial-Innovative Development of the Republic Kazakhstan – was finished. Moreover, values of indicators were accumulated through 5 years of the first industrialization program.

### 3. RESULTS

Low level of quality of life of population is observed in Zhambyl and Almaty regions. This is due to high population density and the mismatch of infrastructure. In Zhambyl there is the lowest level of GRP, high levels of poverty and poor housing. The leading place in living standard is occupied by the city of Almaty, which is the epicenter of the small and medium-sized businesses. Accordingly, it has a well-developed industrial sector. The standard of living in Almaty is at the highest level (higher than 0.80 points) and shows the highest rate of all the constituent elements of the index. After Almaty high standard of living is observed in Astana (around 0.60 points), which gives way in the level of purchasing power and unemployment.

The productivity of the regions in the country shows that the average level of the index is in the middle level. Nevertheless, the first places are occupied by South Kazakhstan and North-Kazakhstan regions. The individual components that make up the region's productivity, in particular, investment activity, human capital and labor productivity play an important role in the North-Kazakhstan region. In South Kazakhstan availability of agricultural and industrial enterprises has a primary influence on the level of productivity.

*Table following on the next page*

*Table 3: Aggregate competitiveness index and its components (authors' own calculations using data from the Statistical Yearbook, 2015)*

Regions	The quality of life index	Index of the productivity of the regions	Innovative development index	Industrial development index	Aggregated index of competitiveness
Akmola region	0.33	0.46	0.20	0.33	<b>0.33</b>
Aktobe region	0.33	0.33	0.15	0.25	<b>0.26</b>
Almaty region	0.2	0.54	0.18	0.34	<b>0.31</b>
Atyrau region	0.4	0.15	0.16	0.51	<b>0.31</b>
West Kazakhstan	0.35	0.26	0.09	0.21	<b>0.23</b>
Zhambyl region	0.16	0.59	0.22	0.28	<b>0.31</b>
Karaganda region	0.42	0.44	0.24	0.50	<b>0.40</b>
Kostanay region	0.32	0.48	0.35	0.28	<b>0.36</b>
Kyzylorda region	0.29	0.39	0.09	0.16	<b>0.23</b>
Mangystau region	0.30	0.28	0.08	0.36	<b>0.25</b>
South Kazakhstan	0.37	0.60	0.31	0.35	<b>0.41</b>
Pavlodar region	0.34	0.19	0.37	0.33	<b>0.31</b>
North Kazakhstan	0.38	0.72	0.17	0.22	<b>0.37</b>
East Kazakhstan	0.29	0.35	0.45	0.44	<b>0.38</b>
Astana city	0.60	0.35	0.74	0.32	<b>0.50</b>
Almaty city	0.74	0.28	0.55	0.4	<b>0.49</b>

Labor productivity is relatively high in Karaganda, Mangistau region and North Kazakhstan. Investment activity is higher in Akmola, Zhambyl regions, North and South Kazakhstan.

Investment activity is characterized by investments in construction and fixed assets, it is the dominant factor determining the competitiveness of the regions. Coefficients of renewal of fixed assets, including equipment modernization, expansion of the manufacturing process affect the volume of introduced new facilities.

According to the statistical data used to calculate the index of innovation, we can conclude that the city of Almaty in the lead in the field of research, Astana and East Kazakhstan lead in the area of innovation. It should be noted that these regions have introduced new or significantly improved goods and services.

According to the index of innovative development Astana and Almaty have the highest rate (0.74 and 0.55 correspondingly). The innovative development of the country, excluding the cities of Astana and Almaty, on average, at a low level (0.20).

The low level of scientific and technological innovation and development in some regions is due to the lack of funding or the suspension of research.

In turn, the lack of funds for innovative development leads to the fact that young scientists are leaving the area of science. In addition there is a moral and physical aging of the material and technical base.

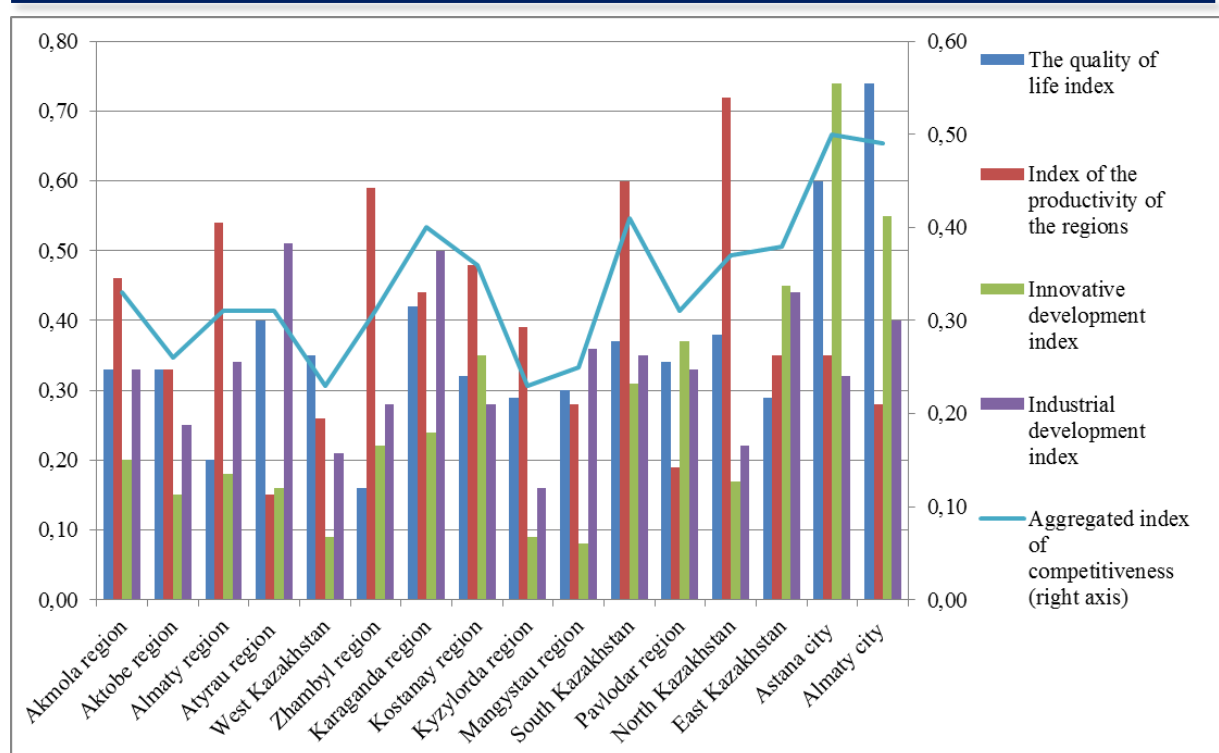


Figure 2: Aggregate index of competitiveness and its components (authors' own calculations using data from the Statistical Yearbook, 2015)

The highest overall index of competitiveness was estimated for Astana and Almaty (around 0.50), while the republican level of competitiveness remains low (within 0.30). The lowest level of competitiveness is in the Western Kazakhstan and Kyzylorda.

Low level of innovative development in regions of Kazakhstan indicates a lack of attention to the development of scientific and technical potential. The development of science in Kazakhstan, compared with the industrialized countries has the principal features of the development of science. In developed countries, there is a tendency of growth of financing of fundamental and applied research, the development of innovation through the integration of science and the private sector. In developed countries, the creation and support of the formation of the world's scientific and technical potential is aimed at solving economic and social problems. For example, the EU offers to all countries of the Union to increase investments in science up to 2.5% of GDP. Over the past 5 years in Kazakhstan, this indicator of science financing was 0.2%, which is insufficient.

The highest industrial development indicators was observed in Atyrau, Karaganda and East Kazakhstan regions. Nevertheless, it should be noted that in general, the average level of industrial development in the republic remains below 0.50. The leading positions of the above regions are associated with the presence of the fixed assets and large oil and coal companies.

Grouping regions by competitiveness gave the following conclusions:

- In most regions competitiveness is in the medium level;
- The performance of the regions as a whole remains at a low level throughout the republic (around 0.30 points);
- The level of innovative development is relatively high in Astana, Almaty, Kostanay, South Kazakhstan, Pavlodar and East Kazakhstan regions, in other regions this figure is less than 0.3 (out of a maximum of 1.0).
- Relatively high level of industrial development is in the Atyrau region, Karaganda, East Kazakhstan regions.

Competitiveness of the Republic Kazakhstan depends on the competitiveness of each region. Each region contributes to the development of the national competitiveness.

The research findings showed the low level of competitiveness of regions (the highest figure is closer to 1, and a low to 0). It should be noted that the average level of the scale interval 0,33-0,66. In the cities of Almaty and Astana aggregate competitiveness index is relatively high and is about 0.50, which generally corresponds to the average level of competitiveness. Astana and Almaty cities are not industrial areas, but these areas have a high level of innovation and research. Nevertheless, this level is not high enough in general. As a result, the combination of the existing infrastructure, industrial resources with innovation, increases productivity in the region, which in the end improves the quality of life in the region.

The lowest level of competitiveness is in the West Kazakhstan and Kyzylorda region, which was caused by a low level of innovation. Also, these regions do not use the full potential of its infrastructure. In general this led to the low productivity and hence poor quality of life.

The evaluation showed that the industrial-innovation factors are the basis for improving competitiveness. But, compared to the industrial and infrastructural indicators, innovation factors are more related to competitiveness. Thus, the industrial-innovative development affects the competitiveness of the region, which later forms the country's competitiveness.

#### 4. CONSLUSION

This study assessed the competitiveness of the national economy of Kazakhstan (by region) for the period of implementation of the State program of industrial-innovative development of Kazakhstan. Assessment method used the index method to construct an aggregate index of competitiveness of the region by the aggregation of a number of different social and economic indicators (index of quality of life, index of productivity of region, innovative development index, industrial development index). Innovative development index was constructed in a new way taking into account actual indicators of innavtive activity, and infrastructural index was extended to industrial development index, which represents a research novelty of this study. Calculations were carried out similarly to the methodology of the ratings of countries. The main feature of this method is to bring the indicators of different measures such as percentage, absolute value to one dimension in the range [0; 1]. Research results showed that the level of the competitiveness in the Republic of Kazakhstan in general remains very low except in the capital city Astana and the former capital Almaty where competitiveness relatively higher but still it is in the middle of the range [0; 1]. Findings show that although Astana and Almaty are not industrial areas, but these areas have a relatively higher level of innovation and research. As a result, the combination of the existing infrastructure and industrial resources with innovation increases productivity in the region, which finally improves the quality of the life in the region. This means that the industrial-innovation factors are the basis for improving competitiveness. But, compared to the industrial and infrastructural indicators, innovation factors are more related to competitiveness. Overall, the industrial-innovative development affects the competitiveness of the region, which later forms the country's competitiveness.

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## MICROFINANCE, FINANCIAL INCLUSION AND ICT: IMPLICATIONS FOR POVERTY AND INEQUALITY

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### ABSTRACT

*This study examines the role of Information and Communication Technologies (ICT) in poverty reduction by fostering financial inclusion, using panel dataset of sixty-one countries between 2001 and 2012. We disentangle the impact of two distinct dimensions of financial inclusion i.e., inclusion by commercial banks and by microfinance institutions (MFIs). In the first step of data analysis we find poverty reducing effects of financial inclusion measured either way. Furthermore, results of the study indicate a positive association of ICT diffusion with financial inclusion and a negative relationship with poverty and inequality. It was observed that the ICT dimensions when used as instruments for financial inclusion accelerate economic growth and reduce poverty and inequality. Therefore, policies to promote information and communication infrastructure could stimulate financial inclusion by promoting digital finance. Moreover, better collaboration between ICT and financial sector will likely to improve digital finance that could help to bridge the financial infrastructure gap.*

**Keywords:** *Digital Finance, Financial Inclusion, ICT, Microfinance*

### 1. INTRODUCTION

The intellectual debate over the role of financial development and economic growth continued extensively; particularly for economists and policymakers' investigating this underlying relationship endures preeminent for many years but still indecisive with antagonistic opinions. Well-functioned financial sector of an economy has various benefits and contributions towards overall growth of an economy. Financial intermediation plays its role by transferring and allocation of scarce resources. (Schumpeter, 1934) revealed that the banker and entrepreneur can swiftly augment the economic growth and industrial development. Moreover, developed financial system is believed as the most important component of market in transition economies because of its role in allocation of scarce resources. Adversaries have the opinion that the financial institutions are neither sufficient nor necessary for economic growth. Whereas, at the other extreme financial development is considered sufficient and necessary. A couple of studies outlined the scenario which lies between these two polar extremes. In addition to finance-growth and poverty nexus, this study considers the role of information and communication technologies (ICT) penetration to promote financial inclusion and poverty reduction. It is generally believed that (ICT) penetration through rollout of mobile telephones has greater benefits. Mobile rollout is considered the most important factor in ICT diffusion, it improves access to financial services and boost financial inclusion and encourages immediate financial transactions. This increased ICT penetration helps promote the overall economic growth, as well as by enhancing financial inclusion which stimulates financial sector development. Moreover, ICT penetration facilitates information flows and the analysis of credit worthiness in efficient way by maintaining the comprehensive database of clients.



As a result, economies witness the escalation in private investment and eventually rise in economic growth. (Comin & Hobijn, 2009) consider that technology diffusion as a key channel through which productivity growth is achieved.

In addition, ICT have a positive significant impact on rural development; enable better connectivity to stay in touch with dear ones and reduce the psychological disorders; provide rapid market information to farmers that improve their bargaining power and eliminate the middleman. Furthermore, increased ICT penetration promotes the various non-agricultural economic activities in rural areas like ecolodges and micro enterprises especially women owned. The increased information and knowledge enable micro entrepreneurs to apprehend and manage business in improved fashion. Micro and small enterprises will get faster and cheaper market information than print media. Additionally, service delivery and mobile banking would be efficient as a result of less cost, improved infrastructure and information. (Donner & Escobari, 2010) noted that mobile telephony enhances the productivity of micro and small enterprises by flaring sales and marketing and procurement processes. (Kpodar & Andrianavo, 2011) conclude that the greater and rapid diffusion of information and communication technologies affect economic growth from supply and demand sides. ICT increase the Government revenues through investment in telecommunication related infrastructure and new taxes on IT companies boost domestic output and provide employment opportunities, and changes in balance of payments due to increased foreign direct investment inflows. All these channels are described as supply side effects. The effects of ICT use, which is termed as the indirect effects are also noteworthy as it boost capital accumulation, foster firms' productivity, enable large markets, improve financial inclusion and encourage rural development. (Datta & Agarwal, 2004) described the direct impact of ICT through escalation in employment opportunities and demand, while they explain indirect economic benefits through social returns. ICT diffusion plays a positive role in the advancement of community through numerous channels. It contributes to education sector by increasing Internet access, facilitates virtual education through electronic and print media. The association between ICT and health is also very important; it aids dissemination of rapid medical information and permits online operation facility in rural areas.

Similarly, some researchers conceive that economic growth leads ICT penetration which eventually increases the access to financial services particularly for under-served groups of the society. In turn, this increased access to financial services for the lower end of society would narrow the financial infrastructure gap in developing countries. On the other hand, studies indeed described the finance led technology development, see for instance (Comin & Nanda, 2014), they anticipated that the financial markets play a crucial role in technological advancement. As the financial sector development contributes and facilitates the essential process of experimentation for the initial commercialization of technologies. Many financial market operations are managed from computer and Internet related technologies; trading of securities in capital markets and future forward contracts are also possible through Internet. Banking transactions have become more efficient and secure; e-banking has changed the entire banking system. When it comes to the adoption of new technologies, MFIs also not fall short. These institutions typically deal with less educated, poor and unbanked individuals, and their ICT based solutions are largely customer oriented. (Berger & Nakata, 2013) revealed that the MFIs are switching from labor-intensive and costly social networks to ICT-bases solutions. Microfinance sector has tremendous contribution in the success of Millennium Development Goals (MDGs). Recently, policy makers turn their attention towards the role of ICTs in sustainable development goals and in meeting urban goals. Research on ICT and financial services is promising which thereby provides incentive to explore into more rigorous analysis.

The other side of the story sheds light on negative effects of improved ICT penetration on poor household. They might spend greater portion of their earnings on mobiles, sim cards and recharge of pre-paid connections. Eventually the limited budget of household gets disturbed and the economic situation of poor would worsen. Empirical studies point out that the household spending on mobile phone related technologies is rising more than proportionally in developing countries than in developed economies. The share of income devoted to mobile services could have been used for food, health, education or on other productive purposes or needs. (Pigato, 2001) indicated negative impacts of opportunity costs from the utilization of financial resources in ICTs rather than in health and education. (Grace, Kenny, & Qiang, 2004) refer that if ICT threshold effects are at play some developing economies might witness a poverty trap. As the required threshold level is achieved ICT development would no longer generate favorable outcomes for low income countries. (Thomée, Härenstam, & Hagberg, 2011) suggested that the increasing use of mobile phone and related technologies leads towards anxiety, depression and sleep disorders. The use of social media at workplace is also a hot topic, as it reduces the productivity. In addition, less educated Internet users are exposed to online scams, frauds, malwares and viruses. Sometimes they trapped themselves in a serious situation unintentionally. Moreover, rapid diffusion of ICTs in an economy increases employment opportunities. However, it also becomes the reason of labor downsizing because of the introduction of less labor intensive technologies. (Mark, 1987) argued that the advent of new technology can create unemployment for the operative, laborer and lower skilled workers but it would increase high professional and technical jobs. Although research is laden with the positive impact of financial development in developed economies nevertheless recorded with lower tendency. Though, in developing world the impact of financial development is paradoxical where the estimated tendency is higher as well. Therefore, it is indispensable to delve into analyze this relationship for developing economies to accomplish this conundrum aggressively. This study is an attempt to spell out the possible effects of ICT diffusion to enhance financial inclusion and poverty alleviation. In particular, we examine the impact of financial inclusion by MFIs on poverty and inequality, and explore the role of Information and Communication Technologies (ICTs) in Financial Inclusion.

## 2. LITERATURE REVIEW

We begin the discussion with traditional finance-growth nexus, where a sufficient number of studies documented the relationship between financial development and economic growth but the drawn conclusions are still moot and open to debate as some researchers provided causal relationship while the others strode up with negation see for instance (Friedman & Schwartz, 1975; Kuznets, 1955). (Joseph A Schumpeter, 1986) was the pioneer, who explored this relationship and concluded that availability of entrepreneurship and financial institutions are sufficient and necessary conditions for economic growth. Later on, (Patrick, 1966) introduced the concept of demand-following and supply-leading hypothesis which argued that financial institutions play either passive role in economic development by responding to the demands for financial services (demand-following) or pro-active in assessing the demand and to deliver (supply-leading). (Revell & Goldsmith, 1970) asserted a strong positive relationship between financial development and real economic activity for 35 (developed and developing) countries. (Cole & Shaw, 1974; McKinnon, 2010) claimed that the financial system stimulates the savings and investment activities in an economy and eventually contributes to aggregate growth. (Crichton & De Silva, 1989) also found positive relationship between financial development and economic growth of Trinidad and Tobago for the period of 1973 to 1987. Besides these auxiliary empirical results, (Gurley & Shaw, 1967) presented contradictory evidence which stated that financial development is not necessary condition for development of real economic activity whereas tax collection infrastructure, inflation levels and central planning are crucial.

A large body of literature demonstrates that financial development contributes to poverty reduction and lowering inequality, see for example, (Beck, Demirgüç-Kunt, & Levine, 2007; Inoue & Hamori, 2012; Jeanneney & Kpodar, 2011). (Beck et al., 2007) show that financial development disproportionately boosts the income of poorest quintile and reduces income inequality. Moreover developed financial sector is also associated with drop in the fraction of population living on less than dollar 1 a day. (Beck & Brown, 2011) find that the access to finance reduces poverty, they illustrate that the households holding bank account or bank card characterize by higher income, wealth, and education. (Bruhn & Love, 2014) analyze the possible impact of access to finance to alleviate poverty using labor market channel. This study argues that access to finance has the potential to reduce poverty, increase employment and income levels in low income regions. (Huang, 2010) and (Andrianova, Demetriades, & Xu, 2011) reveal that the level of financial development depends on the quality of governance and institutional improvement particularly for lower income countries. In the same vein (Anwar & Cooray, 2012) explained that the institutional quality, political rights and civil liberties are important for financial development. The argument that access to finance reduces poverty becomes stronger with the support of this seminal evidence. In a series of research papers about Financial Inclusion, the World Bank has focused on several key aspects and schemes aimed at improving financial inclusion. (Anson, Berthaud, Klapper, & Singer, 2013) suggest that the post offices can help increase financial inclusion by offering account opening services to the financially excluded groups. (Demirguc-Kunt, Klapper, & Randall, 2013) on the other hand examined the role of Islamic banking in advancing financial inclusion among Muslim adults. Their analysis indicates that the Muslim adults are more circumspect than non-Muslims to own a formal account or saving at formal financial institution. In a recent IMF working paper (Alter & Yontcheva, 2015) examine the association between financial inclusion and development and present that socio-economic growth can be achieved by enhancing financial inclusion. Likewise, in developing world Microfinance sector is considered as the Banker to the Poor, it is based on the idea of banking the unbankables.

Microfinance has now gained the reputation to pull households out of poverty by reaching the unbanked end of the community. Microfinance Institutions (MFIs) frequently conduct impact assessment surveys of their credit schemes. These reports are often loaded with positive impact of small amounts of loans on poor. While, research aimed at the impact of MFIs on aggregate poverty and inequality is also scarce due to lack of time series data of latter indicators. One of the fundamental studies by (Imai, Gaiha, Thapa, & Annim, 2012) measured impact on poverty at aggregate level using cross-country and panel data. They relied on two periods cross sectional data (2003 and 2007). They present negative and statistically significant impact of Microfinance activities on poverty. More specifically, a country *ceteris paribus* having larger microfinance network likely to experience lower poverty. The impact of MFIs on income inequality was studied by (Kai & Hamori, 2009) where they indicate the equalizing effects of MFIs for inequality. (Inoue & Hamori, 2013) also examine the effect of financial development on standard of living for low income people focusing on the term *financial permeation* to illustrate how financial channels work to spread money among the poor. The study of (Ahlin & Jiang, 2008) examine the long run effects of microfinance on economic development, they develop an occupational choice model following (Banerjee & Newman, 1993) and argued that micro-credit typically reduces long-run inequality and poverty however it might influence long-run GDP. (Snow & Buss, 2001) believe that microcredit could be used as a mechanism to extend the reach of formal economy.

Over the last 20 years, a growing literature about ICT and growth indicates the significance of the role of ICT in economic and social development. Moreover, substantial evidence supports that the better access to finance can reduce poverty. In developing countries, most of the people are unbanked without any bank account. Initiatives are being taken to increase the outreach of financial sector to far remote areas and build microfinance infrastructure particularly for the poor. Developed

ICT sector can help in reaching the poor in a number of ways, by mobile-banking and mobile ATMs; it also helps access to timely and cheap information and better connectivity with micro loan officers. (Sarma & Pais, 2011) measure the relationship between financial inclusion and economic growth; they report strong positive correlation between level of human development and financial inclusion. Furthermore, they also exhibit the positive role of Information and Communication Technologies and related infrastructure to boost financial inclusion. Similar findings put forth by (Kpodar & Andrianaivo, 2011) for a sample of African countries, they confirm positive contribution of ICT to economic growth through financial inclusion channel. (Houben & Kakes, 2002) propose that ICT contribute predominantly to productivity and economic growth in market oriented financial systems. (Mishra & Singh Bisht, 2013) observe that mobile technology is an excellent tool to accelerate financial inclusion particularly in far remote areas. (Warren, 2007) concludes that the underprivileged and rural population is the foremost beneficiary of technological development. (Bhavnani, Chiu, Janakiram, Silarszky, & Bhatia, 2008) examined the role mobile phone penetration in poverty reduction among the rural poor. They suggest higher social and economic benefits of mobile telephony in rural areas and project poverty reducing effects of mobile phone. (Cecchini & Scott, 2003) reveal that ICT could play a positive role to improve access to information, education, health, government and financial services particularly for poor. (Farkhanda Shamim, 2007) finds positive association between ICT penetration and financial development. She describes that the increased number of mobile phone subscribers and number of Internet users potentially enhances the financial depth which eventually boost overall economic growth. Similarly, (Sassi & Goaied, 2013) examine the interactions between financial development, ICT and economic growth. Their findings uncover the positive impact of ICT along with financial development on economic growth of MENA region countries. Based on the evidence from Asian countries (Pradhan, Arvin, & Norman, 2015) also support the long run causal linkages between ICT infrastructure and financial development. (Comin & Nanda, 2014) point out that greater banking originated financial depth enhances faster technology diffusion particularly for higher capital intensive technologies. Moreover, they present that developed financial markets facilitate and foster technology diffusion. Much research on the impact of ICT on poor is limited to African countries; there is a dire need to explore that important link in other regions of the world.

### 3. DATA AND METHODS

The objective of this study is to examine the impact of ICT development on poor through financial markets. In addition to that we investigate the equalizing and poverty reducing effects of microfinance at macro level. The role of microfinance alongside economic growth in economic inequality is examined in context to Kuznets' inverted-U hypothesis. It states that at initial level of economic development inequality increases but after a certain level of economic growth inequality tends to decline. Yearly observations from 2001-2012 are used in this study. Due to lack of time series data on Poverty and inequality we have taken three year averages from 2001-2012. We divided data set into four non-overlapping cross sections 2001-2003, 2004-2006, 2007-2009, 2010-2012 in line with (Alter & Yontcheva, 2015; Imai et al., 2012; Kpodar & Andrianaivo, 2011; Levine, 2004). This method renders robust results, avoids potential endogeneity and ensures sufficient number of observations to run panel data analysis. In addition, this approach smooths out any short-term fluctuations, it is also worth noting here that our panel largely consists of developing and emerging economies and these economies usually exhibit shorter business cycles, see for example (Rand & Tarp, 2002). We only retain those countries having at least two observations of poverty during the period under study. Thus, we are left with 62 countries for our analysis. Data are collected through various sources. The first set of variables consists of Microfinance indicators (MFIs) which is collected from Mix (Microfinance Information Exchange), whereas the second set of variables contains macroeconomic and poverty indicators collected from the World Bank world development indicators (WDI), third set involves variables of information and communication



technologies (ICT) which is downloaded from the International telecommunication union database 2015, and finally indicators of financial inclusion are taken from the financial access survey and the Global financial development database. We use the most recent indicator of poverty which measures poverty headcount ratio at \$ 2 a day as main response variable. This variable is broadly used as a proxy of aggregate poverty in an economy, which refers to the percentage of the population living less than \$ 2 a day. The other outcome variables of poverty in this study are Gini coefficient, which measures the income inequality, poverty gap and its squared that reflects the depth of poverty and its incidence. We measure financial inclusion by Microfinance as the ratio of Gross loan portfolio to GDP, and number of borrowers divided by total population in a country. Higher loan portfolio and the number of borrower represent greater expansion of MFIs activities and improved financial inclusion. These indicators expected to have negative impact on both poverty headcount and Inequality. Rise in the scale of MFIs activities may ease the credit constraints on the poor left out of formal banking sector and eventually decrease poverty, see for instance (Imai et al., 2012; Inoue & Hamori, 2013).

To measure formal financial inclusion, we collected data from the World Bank, Global Findex (Global Financial Inclusion Database). It is challenging to measure financial inclusion because of a few number of financial inclusion variables. We held two measures of financial inclusion, the first is the number of deposits by commercial banks, cooperatives, specialized state financial institutions, and microfinance institutions divided by total adult population (deposits per head), and second access to financial institutions is taken from the newly developed index by (Katsiaryna, 2016), we also use more specific indicators of financial inclusion i.e., number of loans per head and the ratio domestic credit to private sector to GDP<sup>1</sup>. We added population density in financial inclusion regression and expect positive association between greater population density and access to financial services; bank's overhead cost and the number of bank branches per km<sup>2</sup> were also added to account for efficiency of financial intermediaries and geographical coverage of bank branches respectively. Information and communication technologies (ICT) diffusion is measured through, Mobile cellular subscriptions, Internet users, fixed telephone subscribers (all per head), price of 3-minute local mobile call and ICT imports. Better ICT infrastructure supposed to favor financial markets, economic growth and hence poverty reduction (Alter & Yontcheva, 2015; Kpodar & Andrianaivo, 2011). ICT favor financial inclusion and increased access to finance helps poverty reduction. The number of potential control variables is huge but we stick to these indicators following literature on finance-growth nexus, trade openness as one of the control variables which is measured as (Imports + Exports/GDP). Consistent with the neoclassical theory we expect negative association of openness with poverty and inequality and positive with economic growth. This study has taken real gross domestic product per capita as a measure of economic growth and the ratio of domestic private sector credit to GDP as a proxy for financial development. These two indicators play positive role in poverty reduction and household welfare. We expect higher level of per capita income is related to lower poverty headcount ratio and higher financial development (Beck et al., 2007; Levine, 2004). In addition, we use the final government consumption as percentage of GDP to account for size of the government, a negative coefficient on poverty and inequality is expected as it captures the benefits of public spending. Share of arable land is also used as control variable, measured as the share of available land that can be used for agricultural activities, negative sign of the coefficient is expected, because a large share of arable land is supposed to be favorable in fight against poverty and inequality. To capture the quality of legal environment we included political rights and civil liberties from freedom in the world database and Cost of contract enforcement from doing business. The freedom house variables move between 1

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<sup>1</sup> It is worth noting that the indicators of financial inclusion have higher correlation with the level of financial development. Hence we include the most commonly used indicator of financial deepening as a broader measure of financial inclusion.

and 7, with 1 representing most free and 7 least free<sup>2</sup>. While low cost of contract enforcement refers to the good quality institutions in a country and vice versa. As the higher enforcement cost dampens economic activities and supposed to have a negative impact on financial inclusion and positive link with poverty. In order to examine the impact of ICT alongside financial development on poverty and inequality, we followed the standard model of (Beck et al., 2007; Imai et al., 2012) (Beck et al., 2007). We introduced ICT penetration and build on the standard model to measure the effects of financial inclusion by MFIs and mainstream financial institutions on poor, following baseline regression is estimated for panel data.

$$Pov_{it} = \gamma_0 + \gamma_1 mfi_{it} + \gamma_2 fd_{it} + \gamma_3 ict_{it} + \gamma_4 macr_{it} + \gamma_5 inst_{it} + \varepsilon_{it} \quad (1)$$

where (“*mfi*”) denotes financial inclusion by Microfinance institutions, (“*fd*”) represents financial inclusion by the formal financial institutions of economy whereas, (“*ict*”) is the level of Information and communication technologies, in addition to that controls are (“*macr*”) macroeconomic indicators such as Gross domestic product per capita and (“*inst*”) denotes institutional and freedom indicators. In the first step of data analysis we performed pooled OLS with cluster-robust standard errors<sup>3</sup>. Next we used fixed and random effects model to quantify the impact of financial inclusion and ICT on poverty and inequality. Whereas, instrument regression is applied to control for endogeneity, instrument variable regression (IV) is the best choice to obtain the coefficients when one or more explanatory variables are endogenous. We used instrument variables for the indicators of financial inclusion/development determined by the finance growth literature see for instance (Beck et al., 2007). To select an instrument for microfinance we use 3-year lag of average Gross Loan Portfolio weighted by number of MFIs and the cost of contract enforcement in line with (Imai et al., 2012). Lag (first and second to avoid from autocorrelation) values of the endogenous variables and indicators of fractionalization (religion, language and ethnic) are also used as instruments, following (Beck et al., 2007; Ben Naceur & Zhang, 2016). Following baseline specification is used to estimate the fixed and random effects models.

$$Pov_{it} = \beta_0 + \beta_1 mfi_{it} + \beta_2 fd_{it} + \beta_3 ict_{it} + \Gamma_4 X_{it} + \delta_i + \varepsilon_{it} \quad (2)$$

All variables are same as in equation 1, while  $X_{it}$  is a set of other macroeconomic and institutional control variables discussed above,  $\delta_i$  accounts for country specific effects and  $\varepsilon_{it}$  is the disturbance term. Since our dataset is panel we need to assume the instruments  $z_{i,t}$  that are correlated with the endogenous regressors  $X_{i,t}$  and uncorrelated with  $\varepsilon_{i,t}$ . Now we are taking the next step in model specification and formulated the IV regression estimation. IV regression follows two-stage approach and derives the reduced form equation. If we place the instrument of micro finance depth instead of the actual indicator, the reduced form equation is as follows which determines the suitability and presence of endogeneity in selected instruments.

$$MFI_{it} = \pi_0 + \pi_1 enf_{it} + \pi_2 lagglp_{it} + \pi_3 X_{it} + v_{it} \quad (3)$$

where  $enf_{it}$  is the cost of contract enforcement,  $lagglp_{it}$  is the lag value of gross loan portfolio weighted by the number of MFIs in a country,  $X_{it}$  is the set of other explanatory variables used in equation (2), while  $v_{it}$  an i.i.d error term. Validity and suitability of instruments are crucial in the model, several post estimation techniques are used to assess the validity of instrument regressor, and the primary posttest is used to determine whether endogenous regressor in the model is in fact exogenous. It tests the null that variables are exogenous, if we fail to reject its null we can't proceed

<sup>2</sup> We reversed these variables to make it more descriptive, after reversal 1 becomes least free and 7 most free.

<sup>3</sup> For a given individual country the error term is likely to be correlated over time, with the application of cluster-robust standard errors we get unbiased and consistent coefficients. Whereas the default standard errors assume that the regression residuals are independent and identically distributed (i.i.d). These standard errors are adjusted for individual clusters and are slightly larger than the simple OLS regression.



further. The next step is to test the first stage regression which shows the correlation between the additional instruments (x) and an endogenous regressor (y). Various criteria are used to do that task, such as  $R^2$  and adjusted  $R^2$ , F-statistics and Minimum eigenvalue statistic for 2sls bias and finally test of over identifying restrictions. Test of over identification restriction is the most concerned and widely used diagnostic test for instrument variable regressions, it tests two different things at the same time, firstly there is no correlation between instruments and error term, second is about misspecification of equation and that the one or more excluded exogenous variables should be included in structural form equation. To ensure the validity of results obtained from the above-mentioned econometrics techniques we then analyze the data with robust and quintile regression. In addition to that we performed winsorization at 1% and 99% to reduce the potential effects of outliers.

#### 4. RESULTS

This study aims to measure the impact of ICT diffusion alongside financial inclusion on poverty. We begin by examining the descriptive statistics of selected variables. Table 1 lists the number of observations, mean, median, standard deviation, minimum and maximum values for each of the selected variable. Table 2 and 3 present the results of five different models i.e., pooled least square, fixed and random effects, quintile/median and instrument variable regression. We tested poverty headcount and Gini coefficient keeping the same set of regressors in equations. Results of these tables confirm the poverty and inequality reduction impact of financial inclusion (MFIs and formal)<sup>4</sup>, the results remain significant even if we control for other indicators such as economic growth, arable land, government consumption and trade openness.

*Table 1: Summary statistics (own calculation)*

Variable	Obs.	Mean	SD	Median	Min	Max
Poverty headcount ratio	197	2.724	2.724	3.034	-2.163	4.533
Poverty gap	196	1.597	1.597	1.915	-4.200	4.070
Gini coefficient	196	3.699	3.699	3.695	3.187	4.175
Microfinance loans/GDP	248	1.547	1.547	0.488	0	14.34
Borrowers/total population	248	1.849	1.849	0.774	0	12.36
Number of deposits per head	131	0.762	0.762	0.614	0.006	3.906
Number of loans per head	101	0.227	0.227	0.176	0.001	0.803
Access to Finance	244	0.204	0.204	0.128	0.006	0.949
Domestic Credit	243	3.203	3.203	3.251	0.908	4.988
Mobile per head	247	3.231	3.231	3.659	-1.796	5.017
Internet per head	248	1.702	1.702	1.914	-1.934	3.981
Fixed lines per head	248	1.585	1.585	2.142	-1.483	3.497
Personal computers	132	4.162	4.162	2.275	0.122	22.52
Price of 3-min local mobile call	53	0.697	0.697	0.685	0.141	1.351
Price of 3-min local fixed call	71	0.163	0.163	0.134	0	0.621
GDP per head	248	7.247	7.247	7.360	5.302	9.108
Government consumption	247	2.513	2.513	2.493	1.674	3.113
Openness index	248	4.247	4.247	4.254	3.276	5.058
Arable lands	248	2.550	2.550	2.572	0.361	4.150
Inflation rate	230	7.553	7.553	6.145	1.268	33.03
Bank overhead cost	245	5.144	5.144	4.546	0.918	19.46
Population density	248	4.228	4.228	4.282	1.764	7.001
Cost of contract enforcement	188	3.544	3.544	3.461	2.407	5.007
Index of civil liberties	248	4.251	4.251	4	2	7

<sup>4</sup> For compactness we only report the results of one dimension of financial inclusion for Microfinance and Mainstream financial inclusion, however the results of the other dimensions are not different from the table provided here, these can be obtained from the author.

Table 2 reports the effects of the ratio of microfinance gross loan portfolio to GDP on poverty and inequality. As can be observed the coefficient of loan portfolio remain negative and significant in most of the specifications, hausman test indicates towards fixed effects model when poverty headcount ratio is dependent variable and random effects in case of Gini coefficient. We have four observations per country, given the limited time dimension of the data (Kpodar & Andrianaivo, 2011) suggest that random effects estimation technique is preferred in this scenario. In addition, large N (the number of observations) and small T (number of time periods) increases the possibility of bias in fixed effects estimation.

To test the quality and validity of instruments, we performed test for weak identification, endogeneity and over identification. All diagnostic tests substantiate the selection of instrument variables, as we can reject the null of exogeneity and unable to reject the null that the instruments are uncorrelated with error term in both IV regressions, meaning that our instruments are appropriate and models are correctly specified. Median regression also supports the findings of OLS and IV however the coefficient for inequality is negative but insignificant. All other control variables show expected signs, for example arable land, trade openness, government consumption have negative and significant coefficients in OLS and IV regression.

Table 3 presents the findings on the impact of overall financial inclusion on poverty and inequality. In contrast to the impact of financial inclusion measured through microfinance intensity, the coefficient of the broader indicator of financial inclusion is negative and highly significant in all models. As can be observed in Columns 1-10, deposits per head remains negative and significant throughout the table, which implies that greater financial inclusion corresponds to lower poverty and inequality. Additional tests for the instruments also validate the findings of the selected IV models. Access to finance in low income countries remains a stubborn challenge, whereas economists suggest that timely and accessible finance can reduce the poverty and income inequality. Consistent with the findings of (Ben Naceur & Zhang, 2016; Burgess, Pande, & Wong, 2005; Honohan, 2008; Park & Mercado Jr, 2015) our results indicate the favorable benefits of financial inclusion for poverty and inequality.

Now we turn our attention to measure the impact of ICTs on poverty and inequality and test whether ICTs reduce poverty by fostering financial inclusion, results are presented in Table 4. Our main indicators of ICTs such as mobile cellular subscriptions, fixed lines subscribers and Internet users, show negative significant impact on poverty even after controlling for economic growth, inflation, government consumption and trade openness. This result implies that ICT related technologies or better ICT diffusion significantly reduces poverty and inequality. Coefficient of personal computer is negative but insignificant and the effect of price of 3-minute mobile local call is positive insignificant for poverty however it becomes significant for inequality. (Kpodar & Andrianaivo, 2011) find positive insignificant coefficient of personal computer and negative significant for price of 3-minute mobile local call on economic growth.

We take the mobile penetration as an indicator of ICT diffusion in further analysis, where it can be seen in IV regression it shows the negative significant coefficient of mobile penetration on poverty and inequality. Meaning that after controlling for endogeneity and using instruments of mobile penetration results hold as they were reported in pooled OLS. This confirms the favorable role of ICTs diffusion in fight against poverty. As discussed earlier, only a few studies elaborated the ICTs and poverty relationship, however there is considerable evidence on the link between ICTs and economic growth, see for instance (May & Diga, 2015). (Bhavnani et al., 2008; Tiwari, 2008) provide similar results. To further refine our analysis and to strengthen the estimation that ICT transmit beneficial effects to poor and foster economic growth through promoting financial inclusion; we use ICT indicators as instrumental variables for financial inclusion.

The idea behind using ICT indicators as instruments is to determine how cross-country variations in the exogenous component of financial inclusion explain cross-country variations in the rate of poverty and economic growth. By so doing we seek to examine the channel through which the impact of ICT passes on to poor. We use GMM estimation, and select a vector of instrumental variables, assuming the zero mean of error term. Table 5 presents the results of GMM analysis in which we attempt to predict financial inclusion through its exogenous components. Four measures of financial inclusions have been used in this analysis, all indicators are negative and significant at 5 and 10% level of significance; suggesting the poverty reducing impact of ICT through financial inclusion; this confirms the prediction of financial inclusion through its cross country exogenous components. Furthermore, this result also supports that the ICT affects poverty through promotion of financial inclusion; as it is correlated with both indicators i.e. endogenous and dependent in this equation. In addition, we proceed by taking a broad measure of financial inclusion in column (6-9), which presents the negative and significant impact on inequality, poverty gap and squared poverty gap and positive significant on economic growth. In all cases j-statistics confirms that the data do not reject the condition of orthogonality and the models are properly specified. The signs of all control variables used here are as per expectations and consistent with theoretical predictions.

*Table 2: Impact of Microfinance Intensity/ Inclusion on Poverty and Inequality  
(own calculation)*

*Table following on the next page*

VARIABLES	Poverty Headcount Ratio					Gini coefficient				
	OLS (1)	FE (2)	RE (3)	QR (4)	IV (5)	OLS (6)	FE (7)	RE (8)	QR (9)	IV (10)
Log GDP per capita	-1.040*** (0.099)	-2.349*** (0.282)	-1.193*** (0.113)	-0.920*** (0.067)	-1.191*** (0.118)	0.034 (0.022)	-0.009 (0.040)	0.018 (0.021)	0.045** (0.020)	-0.003 (0.025)
Loan Portfolio /GDP	-0.057** (0.027)	-0.002 (0.024)	-0.054*** (0.020)	-0.041* (0.024)	-0.183*** (0.070)	-0.004 (0.007)	-0.008** (0.003)	-0.008*** (0.003)	-0.011 (0.007)	-0.042*** (0.015)
Arable lands	-0.381*** (0.143)	0.990* (0.530)	-0.308** (0.132)	-0.193*** (0.070)	-0.306*** (0.114)	-0.100*** (0.025)	0.016 (0.073)	-0.075*** (0.026)	-0.108*** (0.021)	-0.118*** (0.025)
Trade openness	-0.801*** (0.249)	-0.333 (0.290)	-0.550** (0.219)	-0.558*** (0.155)	-0.918*** (0.272)	-0.102* (0.059)	-0.023 (0.040)	-0.045 (0.034)	-0.093** (0.047)	-0.063 (0.059)
Government Consumption	-0.987*** (0.351)	-0.441 (0.384)	0.618** (0.275)	-0.710*** (0.190)	-0.934*** (0.326)	0.019 (0.069)	0.016 (0.053)	0.021 (0.044)	-0.029 (0.057)	-0.000 (0.070)
Constant	17.337*** (1.877)	20.157*** (2.718)	16.361*** (1.359)	14.408*** (0.886)	19.433*** (1.517)	4.100*** (0.311)	3.794*** (0.380)	3.908*** (0.232)	4.141*** (0.266)	4.374*** (0.328)
R-squared	0.619	0.461	0.603		0.539	0.251	0.065	0.239		
Hausman			26.11 (0.000)					3.95 (0.556)		
Theta			0.70					0.80		
Pseudo R <sup>2</sup>				0.447					0.180	
Weak Identification					13.65					13.747
Endogeneity					7.86					15.04
Durbin (score)					0.005					0.000
X <sup>2</sup> (1)					0.74					0.073
Hansen stat (OIR)					123					123
Observations	196	196	198	196	123	195	195	195	195	123

Notes: Table reports the results of following baseline equation;  $y_{i,t} = \gamma_0 + \gamma_1 \ln gdp_{i,t} + \gamma_2 \ln loan_{i,t} + \gamma_3 \ln arable_{i,t} + \gamma_4 \ln op_{i,t} + \gamma_5 \ln govt_{i,t} + \varepsilon_{i,t}$ . OLS estimation with robust standard errors in parentheses. The dependent variables are i) poverty headcount ratio and ii) Gini coefficient. Loan Portfolio /GDP measured as the ratio of gross loan portfolio to GDP, it shows the financial inclusion (MFIs) in each economy. OLS, FE, RE, QR and IV represent Pooled OLS, Fixed and Random Effects, Quintile and Instrumental Variable regression respectively. Robust standard errors are reported in parenthesis. \*\*\*, \*\* and \* represent significance at 1%, 5% and 10%, respectively. The lower part of the table provides diagnostics and stability tests for applied models.

Table 3: Impact of Financial Inclusion on Poverty and Inequality (own calculation)

VARIA 13IES	Poverty Headcount Ratio					Gini coefficient				
	OLS (1)	FE (2)	RE (3)	QR (4)	IV (5)	OLS (6)	FE (7)	RE (8)	QR (9)	IV (10)
Log GDP per capita	-0.534*** (0.182)	-1.094*** (0.379)	-0.764*** (0.144)	-0.551*** (0.108)	-0.201 (0.269)	0.089*** (0.032)	-0.091 (0.070)	0.048* (0.029)	0.101*** (0.027)	0.141** (0.060)
Deposits per head	-0.832*** (0.286)	-0.582*** (0.170)	-0.634*** (0.131)	0.800*** (0.132)	-1.195*** (0.270)	-0.087*** (0.037)	-0.053* (0.030)	0.077*** (0.024)	0.099*** (0.033)	-0.134*** (0.061)
Arable lands	-0.070 (0.143)	-0.467 (0.636)	-0.204 (0.138)	0.002 (0.088)	0.222 (0.190)	0.055* (0.031)	-0.071 (0.108)	-0.067*** (0.028)	-0.086*** (0.022)	-0.032 (0.044)
Trade openness	-0.812*** (0.272)	0.533 (0.332)	-0.155 (0.234)	-0.486*** (0.183)	0.808* (0.420)	-0.062 (0.064)	0.069 (0.058)	0.031 (0.044)	-0.016 (0.046)	-0.039 (0.094)
Government Consumption	-0.665 (0.464)	-0.508 (0.384)	-0.646** (0.287)	-0.326 (0.251)	-0.658 (0.493)	0.081 (0.079)	-0.005 (0.068)	0.018 (0.055)	0.074 (0.062)	0.157 (0.107)
Constant	12.745*** (2.901)	11.567*** (3.588)	11.772*** (1.707)	10.447*** (1.327)	9.973*** (3.227)	3.338*** (0.479)	4.353*** (0.630)	3.429*** (0.334)	3.164*** (0.332)	2.602*** (0.726)
R-squared	0.700	0.541	0.486		0.761	0.331	0.204	0.119		0.434
Hausman			18.67 (0.000)					10.13 (0.0716)		
Theta			0.779					0.814		
Pseudo R <sup>2</sup>				0.532	21.66				0.269	22.28
Weak Identification										
Endogeneity										
Durbin (score)										
X <sup>2</sup> (1)										
Hansen stat (OIR)										
Observations	107	107	107	107	29	107	107	107	107	29

Notes: Table reports the results of following baseline equation;  $y_{i,t} = \gamma_0 + \gamma_1 \ln gdp_{i,t} + \gamma_2 dep_{i,t} + \gamma_3 arable_{i,t} + \gamma_4 op_{i,t} + \gamma_5 govt_{i,t} + \varepsilon_{i,t}$ . OLS estimation with robust standard errors in parentheses. The dependent variables are i) poverty headcount ratio and ii) Gini coefficient. Deposits per head measured as the total number of deposits divided by total population, it shows the financial inclusion (formal) in each economy. OLS, FE, RE, QR and IV represent Pooled OLS, Fixed and Random Effects, Quintile and Instrumental Variable regression respectively. Robust standard errors are reported in parenthesis. \*\*\*, \*\* and \* represent significance at 1%, 5% and 10%, respectively. The lower part of the table provides diagnostics and stability tests for applied models.

Table 4: Effects of ICTs on Poverty and Income Inequality (own calculation)

VARIABLES	Poverty Headcount Ratio					Gini coefficient						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Log GDP per capita	-0.915*** (0.114)	-0.730*** (0.197)	-0.686*** (0.186)	-0.833*** (0.132)	-0.781*** (0.138)	-0.497*** (0.146)	0.053 (0.028)	0.118*** (0.036)	0.117*** (0.035)	0.056 (0.035)	0.059 (0.037)	0.041 (0.063)
Trade openness	-0.827*** (0.257)	-0.733*** (0.256)	-0.716*** (0.252)	-0.810*** (0.262)	-0.704*** (0.293)	0.112 (0.406)	-0.100 (0.064)	-0.068 (0.064)	-0.070 (0.062)	-0.102 (0.065)	-0.115 (0.071)	-0.062 (0.166)
Government Consumption	-0.780*** (0.363)	-0.680*** (0.358)	-0.685*** (0.355)	-0.737*** (0.378)	-0.617*** (0.336)	0.122 (0.235)	0.072 (0.080)	0.104 (0.081)	0.100 (0.079)	0.075 (0.082)	0.091 (0.089)	0.147 (0.107)
Inflation	-0.138 (0.149)	-0.140 (0.149)	-0.114 (0.141)	-0.149 (0.155)	-0.077 (0.142)	0.280*** (0.130)	-0.018 (0.029)	-0.015 (0.028)	-0.011 (0.027)	-0.020 (0.029)	-0.002 (0.035)	0.122* (0.058)
Mobile	-0.116** (0.055)						-0.021** (0.010)					
Fixed Telephone		-0.265* (0.135)						-0.078*** (0.023)				
Total (Telephone+ Mobile)			-0.175** (0.074)						-0.044*** (0.011)			
Internet				-0.176*** (0.062)						-0.019 (0.017)		
Personal computers					-0.039 (0.032)						-0.006 (0.008)	
Price of 3-minute local call						0.698 (0.466)						0.342* (0.176)
Constant	15.655*** (1.860)	13.733*** (2.212)	13.726*** (2.015)	14.833*** (2.062)	13.501*** (1.979)	5.471*** (1.577)	3.655*** (0.390)	3.022*** (0.448)	3.133*** (0.419)	3.605*** (0.455)	3.575*** (0.466)	2.906*** (0.605)
Observations	190	190	190	190	190	27	189	189	189	189	102	26
R-squared	0.565	0.580	0.582	0.571	0.545	0.666	0.099	0.174	0.157	0.096	0.100	0.390

Notes: Table reports the results of following baseline equation;  $y_{it} = \gamma_0 + \gamma_1 \ln gdp_{it} + \gamma_2 op_{it} + \gamma_3 govt_{it} + \gamma_4 inf_{it} + \gamma_5 ICT_{it} + \varepsilon_{it}$ . OLS estimation with robust standard errors in parentheses. The dependent variables are i) poverty headcount ratio and ii) Gini coefficient. Log of GDP per capita, ratio of trade openness, government consumption and inflation are control variables in this regression; whereas, five indicators of ICTs are used in separate specifications. Mobile per head, Fixed lines per head Internet users, Personal computers per head and Price of 3-minute mobile local call. OLS, FE, RE, QR and IV represent Pooled OLS, Fixed and Random Effects, Quintile and Instrumental Variable regression respectively. Robust standard errors are reported in parenthesis. \*\*\*, \*\* and \* represent significance at 1%, 5% and 10%, respectively. The lower part of the table provides diagnostics and stability tests for applied models.



Table 5: Impact of ICT on Poverty and Inequality (own calculation)

VARIABLES	Instrumental Variables: GMM Estimation								
	HCR (1)	HCR (2)	HCR (3)	HCR (4)	HCR (5)	GINI (6)	PGAP (7)	PGAP2 (8)	GDPG (9)
Log GDP per capita	-0.914*** (0.141)	-1.089*** (0.093)	-1.071*** (0.094)	-0.107 (0.468)	-0.767*** (0.202)	0.079** (0.039)	-1.003*** (0.212)	-2.006*** (0.425)	
Arable lands	-0.316** (0.129)	-0.362*** (0.124)	-0.369*** (0.126)	0.249 (0.314)	-0.277*** (0.133)	-0.090*** (0.026)	-0.424*** (0.147)	-0.848*** (0.295)	-0.239 (0.147)
Trade openness	-0.744*** (0.278)	-0.767*** (0.253)	-0.798*** (0.244)	-0.439 (0.377)	-0.980*** (0.289)	-0.065 (0.068)	-0.845** (0.379)	-1.689** (0.758)	-0.011 (0.315)
Government Consumption	-0.912*** (0.347)	-1.057*** (0.312)	-1.189*** (0.312)	-0.078 (0.687)	-0.395 (0.424)	0.023 (0.077)	-0.917** (0.409)	-1.834** (0.818)	0.028 (0.411)
Financial Inclusion-1	-0.349* (0.198)					-0.118** (0.056)	-0.603* (0.313)	-1.206* (0.626)	1.620*** (0.231)
Financial Inclusion-2		-0.071* (0.041)							
Financial Inclusion-3			0.075* (0.046)						
Financial Inclusion-4				-1.699** (0.826)					
Access to Finance					-2.100* (1.203)				
Constant	16.915*** (2.055)	17.727*** (1.758)	18.102*** (1.718)	6.452 (6.198)	15.255*** (2.674)	3.946*** (0.364)	17.985*** (2.383)	35.970*** (4.765)	2.656* (1.488)
Observations	193	196	196	107	194	192	192	192	241
R-squared	0.580	0.617	0.615	0.577	0.618	0.007	0.544	0.544	
Hansen's J-stat	0.92	1.969	2.233	4.439	2.255	0.889	0.866	0.866	0.001
P-value	0.631	0.373	0.327	0.108	0.323	0.345	0.351	0.351	0.966

Notes: The dependent variables are i) poverty headcount ratio and ii) Gini coefficient, iii) Poverty Gap iv) squared poverty gap and Per capita Gross domestic product. Financial Inclusion-1 is measured through the log of the ratio of domestic credit to private sector, (FI-2) is the ratio of gross loan portfolio of MFIs to GDP, (FI-3) is measured as microfinance borrower per capita, (FI-4) is measured as the number of deposits per head and access to finance is the access to financial institutions in a given economy. Instruments are ICT indicators (Mobile subscriptions per head, Internet users and fixed telephone lines per head) in addition to the included regressors except Financial Inclusion. Weighting matrix: white covariance; clustered at country level; Robust standard errors are reported in parenthesis. \*\*\*, \*\* and \* represent significance at the 1%, 5% and 10%, respectively.

We used interaction of the different forms of ICTs and income level of the countries<sup>5</sup>. It also quantifies the effects of ICT with consideration to the income levels of each country (low middle and upper income). The coefficient of interaction term (*Mobile × Fixed Telephone*) is negative and significant, which implies that the mobile phones are substitutes for fixed telephones in developing economies. (Kpodar & Andrianaivo, 2011; Waverman, Meschi, & Fuss, 2005) both suggest that the mobile phones are substitutes for fixed telephones in Africa. While holding all other variable fixed the marginal (partial) effect of mobile phone penetration on poverty can be computed as follows:

$$\frac{\partial \text{Poverty headcount ratio}}{\partial \text{Mobile per head}} = 0.018 - 0.208 \times \text{Fixed Telephone}$$

A negative value of the interaction term (*Mobile × Fixed Telephone*) also suggests that the marginal impact of mobile penetration is smaller for countries with higher fixed telephones outreach and the other way around marginal impact is stronger for a country with less developed fixed telephone infrastructure. This confirms the notion that the mobile penetration is higher in developing economies because of poor fixed lines outreach and the impact of mobile penetration on poverty reduction is also significant in these countries. As (Waverman et al., 2005) indicate that the poor infrastructure of fixed telephones lines in developing countries leads towards rapid mobile phone penetration. Next we can turn our attention to investigate whether mobile penetration affects financial inclusion. Table 6 suggests strong evidence of the positive significant impact of mobile penetration on financial inclusion measured either at aggregate level or through microfinance. Columns (1-2) depict the positive impact of mobile penetration at 10-15% level of significance even after controlling for overhead cost, quality of legal environment and number of commercial bank branches per km<sup>2</sup>; however, coefficient is highly significant when a broad measure of financial inclusion is used as dependent variable i.e. ratio of the domestic credit to private sector. Column (5) and (6) also confirm the positive correlation of mobile penetration with access to finance, this measure of access to finance is taken from (Katsiaryna, 2016), he constructs a broad financial development index by including a range of financial access and depth indicators. Finally, Columns (7) and (8) report the impact of mobile phone diffusion on microfinance inclusion. It can be observed the coefficient of mobile phone is very high in both columns at (1%) significance level. This finding concludes that the higher value of the mobile penetration improves financial inclusion through formal and informal financial institutions. Income per capita and population density also increase financial inclusion as both show positive and significant coefficient for overall financial inclusion, whereas they behave differently of financial access and micro finance intensity. Banks overhead cost shows expected sign however remain insignificant in some equations, similarly quality of legal environment depict positive coefficient in all models but only significant in column (2). Bank branches take positive significant coefficient on financial access, however continue to be insignificant but maintained the expected sign in most of the equations. Consistent with (Beck & Brown, 2011; Kendall, Ponce, & Mylenko, 2010; Kpodar & Andrianaivo, 2011), the main variable of interest mobile penetration does show significant positive coefficient.

<sup>5</sup> This table reports the results of following baseline equation;  $y_{i,t} = \gamma_0 + \gamma_1 \ln gdp_{i,t} + \gamma_2 op_{i,t} + \gamma_3 govt_{i,t} + \gamma_4 inf_{i,t} + \gamma_5 Mobile_{i,t} + \gamma_6 Telephone_{i,t} + \gamma_7 (Mobile_{i,t} \times Telephone_{i,t}) + \varepsilon_{i,t}$ . This table provides the results of interaction terms of different set of ICT indicators such as mobile and telephone, mobile and GDP or Internet and GDP. Column 5 and 6 present the results of the interaction of the ICT indicator with a dummy variable of low middle and upper income countries. This equation can be specified as;  $y_{i,t} = \gamma_0 + \gamma_1 \ln gdp_{i,t} + \gamma_2 op_{i,t} + \gamma_3 govt_{i,t} + \gamma_4 inf_{i,t} + \gamma_5 Mobile_{i,t} + D_{low} + \gamma_6 (Mobile_{i,t} \times D_{low}) + D_{mid} + \gamma_7 (Mobile_{i,t} \times D_{mid}) + \varepsilon_{i,t}$ , where  $D_{low}$  and  $D_{mid}$  represent lower and middle income group countries respectively. The complete table is not reported here due to space constraint, however can be obtained from author.

Table 6: Mobile Phone Penetration and Financial Inclusion (own calculation)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mobile Phone per head	0.168 <sup>‡</sup> (0.105)	0.183 <sup>‡</sup> (0.127)	0.145*** (0.039)	0.221*** (0.077)	0.021*** (0.007)	0.025** (0.012)	0.962*** (0.218)	0.665*** (0.146)
Log GDP per capita	0.365*** (0.084)	0.224* (0.115)	0.322*** (0.080)	0.172 (0.110)	0.125*** (0.016)	0.100*** (0.015)	-1.198** (0.382)	-0.659* (0.309)
Population density	0.174*** (0.057)	0.203* (0.118)	0.216** (0.084)	0.074 (0.088)	-0.000 (0.015)	-0.048** (0.022)	-0.455 (0.356)	0.205 (0.482)
Overhead cost		-0.022 (0.020)		-0.064** (0.027)		0.004 (0.006)	-0.051 (0.055)	-0.041 (0.056)
Institutions		0.234** (0.099)		0.143 (0.088)		0.011 (0.013)	0.053 (0.188)	0.096 (0.184)
Bank branches		-0.002 (0.012)		0.002 (0.007)		0.007*** (0.002)		
Constant	-3.299*** (0.553)	-3.348*** (0.822)	-0.511 (0.685)	0.575 (0.748)	-0.772*** (0.098)	-0.523*** (0.158)	9.095** (3.457)	3.25 (2.714)
Observations	131	126	242	171	243	172	244	244
R-squared	0.397	0.488	0.361	0.456	0.563	0.698	0.201	0.100

Note: This table reports the results of following baseline equation;  $FI_{i,t} = \beta_0 + \beta_1 mob_{i,t} + \beta_2 y_{i,t} + \beta_3 pden_{i,t} + \sum_{j=1}^n X_{i,t}^j + \varepsilon_{i,t}$ . This table provides the results of the effects of ICT indicator measured as mobile subscribers per head on financial inclusion. Robust standard errors are reported in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 and <sup>‡</sup> p<0.15. The dependent variable *FI* is financial inclusion, measured as the number of deposits divided by adult population of the respective country in column (1) and (2); Domestic credit to private sector is taken as the broad measure of financial inclusion in column (3) and (4); Access to financial institutions index is taken from (Katsiaryna, 2016), it measures the extent to which financial institutions are accessible in a given country, column (5) and (6) present the impact of mobile penetration on access to finance. Furthermore, we assess financial inclusion as the number of borrower and the gross loan portfolio of microfinance institutions divided by total population and GDP respectively, the purpose of this measure is to particularly examine the impact of mobile penetration on financial inclusion through microfinance; model (7) and (8) give the results for these specifications. whereas *mob* is measured by the number of mobile phone subscribers per head; *y* and *Aden*, GDP per capita and population density are the main control variable respectively in this regression; *X* is a set of other control variables such as macroeconomic, financial and legal environment, specifically we include the bank overhead cost and legal environment to account for banks' efficiency and the quality of legal environment; while the number of commercial bank branches per 1000 km<sup>2</sup> is used to capture the geographic coverage and outreach of the banks. Finally,  $\varepsilon_{i,t}$  represents the disturbance term.

#### 4.1 ICT and Digital Finance

By digital finance we mean delivering financial services through latest information and communication technologies such as mobile money, these services include access to credit, saving facility, insurance and financial education. (Rizzo, 2014) summarized the speeches of professionals in the area of digital finance where they suggest that it's not only about financing, it can be a powerful tool and an engine of job creation, access to money transfer, rural development, micro credit and insurance for un-banked. Digital finance also permits people to live more secure and empowered; its benefits can be extended to improve other sectors such as agriculture, transportation, water, health, education, and clean energy. Currently, a growing number of poor are using mobile money to make transactions and are contributing to many multipliers effects of the value that can be used to finance the businesses. Moreover, digital money also plays an important role in small business development by improving access to finance, fast and secure electronic transactions and their financial history. Better collaboration between ICT and financial sector will likely to improve digital finance that can help to bridge the financial infrastructure gap. (Beck, Pamuk, Ramrattan, & Uras, 2015) showed positive association between mobile money use and

access to trade credit, they further suggested the beneficial effects of mobile money technology for entrepreneurs and economic growth.

In this section, we explain the linkages between ICT diffusion and digital finance. We further the analysis following the idea of (Christiansen, 2001; Claessens, Glaessner, & Klingebiel, 2002) who argue that better ICT diffusion bolsters digital finance and that the developed ICT infrastructure is positively associated with e-financial services. (Farkhanda Shamim, 2007) also examined the linkages between level of connectivity and e-finance and argues that better connectivity boosts e-financial services in an economy. The digital finance indicators are the use of credit and debit cards (% age 15+) and the use of electronic means of payments (% age 15+). In addition, we attempt to explore the association between ICT and the use of mobile phone to pay, receive or send money. These indicators represent the utilization of mobile phones in money transfers. Data for digital finance are available for only 2011; hence we applied correlation for the period of 2011 to available observations. Figure 1 presents the results of correlation among ICT-digital finance and overall level of financial inclusion. It shows that the indicators of digital finance are highly correlated with the all three indicators of ICT. This suggests the significance of ICT development for electronic banking. Whereas, the relationship between ICT and the usage of mobile phone is insignificant, this implies that there is a need to optimize the use of mobile phone in money transactions. The number of observations for mobile money transactions is very limited; this could be one of the reasons for its insignificant correlation with mobile penetration. However, the other ICT indicators such as Internet and fixed telephone are correlated at 10% level of significance with the use of mobile phone for money transfers.

Furthermore, this figure demonstrates the association between financial inclusion and digital finance. It can be perceived that the indicators of financial inclusion except the number of loan accounts per head have higher association with all three digital finance variables. We measured financial inclusion as the number of deposits and loan accounts per head and the ratio of domestic credit to private sector. This result indicates that the level of financial development is crucial for the growth of electronic finance. On the other hand, it can be concluded that the growth of electronic finance enhances financial inclusion. These findings are consistent with other published studies such as (Christiansen, 2001; Claessens et al., 2002; Farkhanda Shamim, 2007) which reported the positive relationship between ICT diffusion and e-financial services. In addition, figure 2 exhibits the relationship and conditional effects between mobile penetration-digital finance and poverty, digital finance is measured through the log of electronic payments aged 15 and plus. While data limitation of poverty headcount ratio leads us to take average for the years of 2011-2013. Interaction of mobile and Internet on digital finance when plotted depicted the complementarity of mobile phones and Internet use. The estimated coefficient for mobile increases as the number of Internet users increases along the x-axis. The second plot of interaction depicts the estimated coefficient of financial inclusion on poverty by mobile penetration, where we observe that the coefficient of financial inclusion becomes more negative with increasing mobile phone subscriptions. This implies the significance of mobile penetration for financial inclusion and poverty reduction. Furthermore, figure 2 shows that the higher levels of electronic finance correspond to lower poverty; similarly, mobile penetration helps growth in digital finance. Figure 3 exhibits the geographical visualization of mobile penetration and poverty headcount ratio. Mobile cellular subscriptions (per 100 people) are for the period of 2014, whereas we took the latest value of the poverty headcount ratio at \$1.90 a day. This clearly indicates the diminishing trends of poverty around the world, however central Africa still struggling in poverty reduction. On the other hand, mobile penetration is rising rapidly but most of the African nations are lacking behind as compared to rest of the world. It can also be observed that the deeper intensity of mobile phones in first image corresponds to the lower poverty value in second image of the poverty headcount ratio.

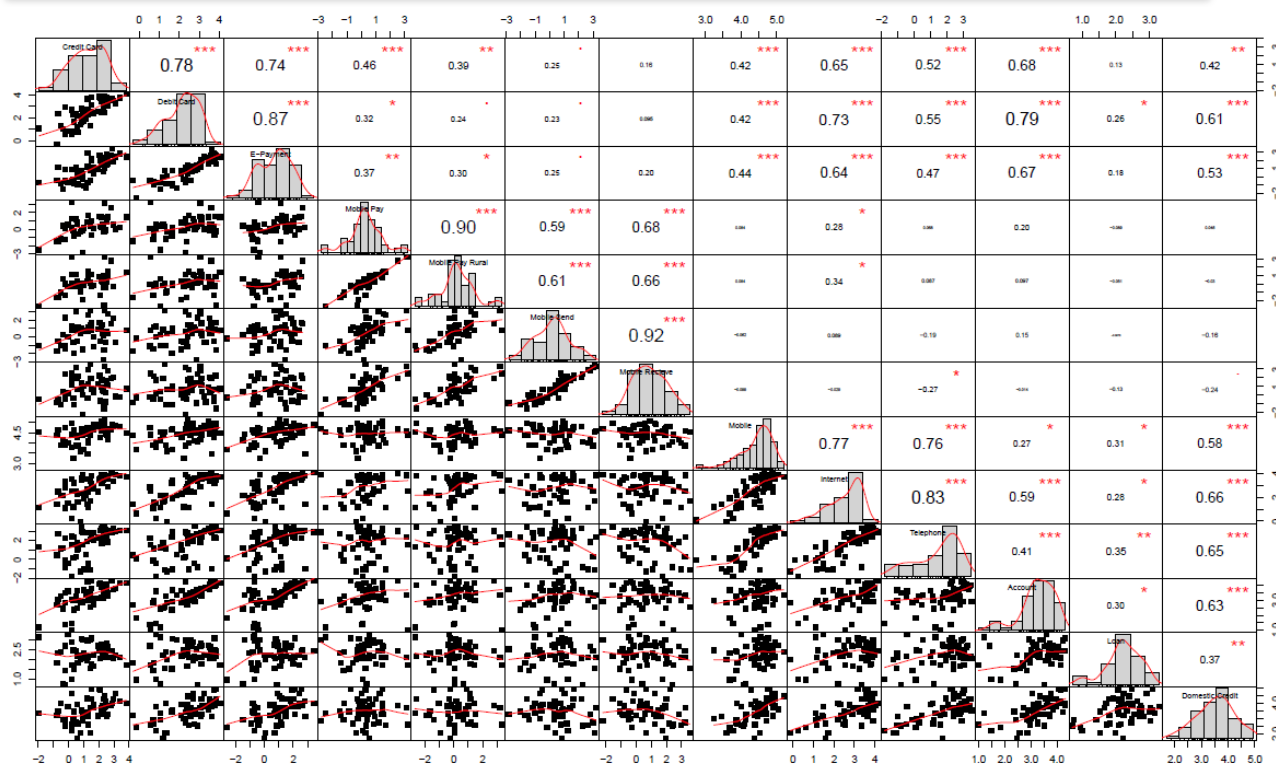


Figure 1: ICT, Digital Finance and Financial Development (World Bank/Own calculation)

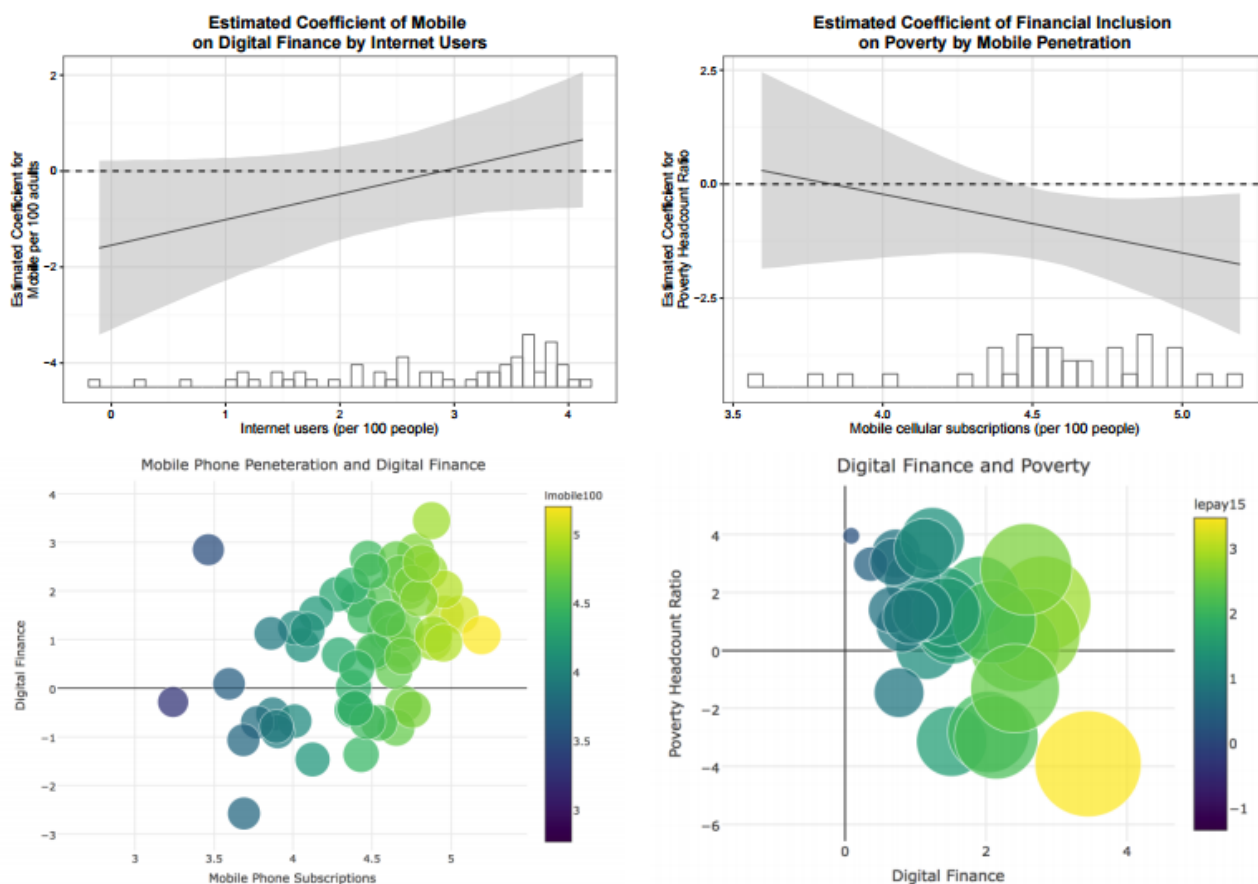
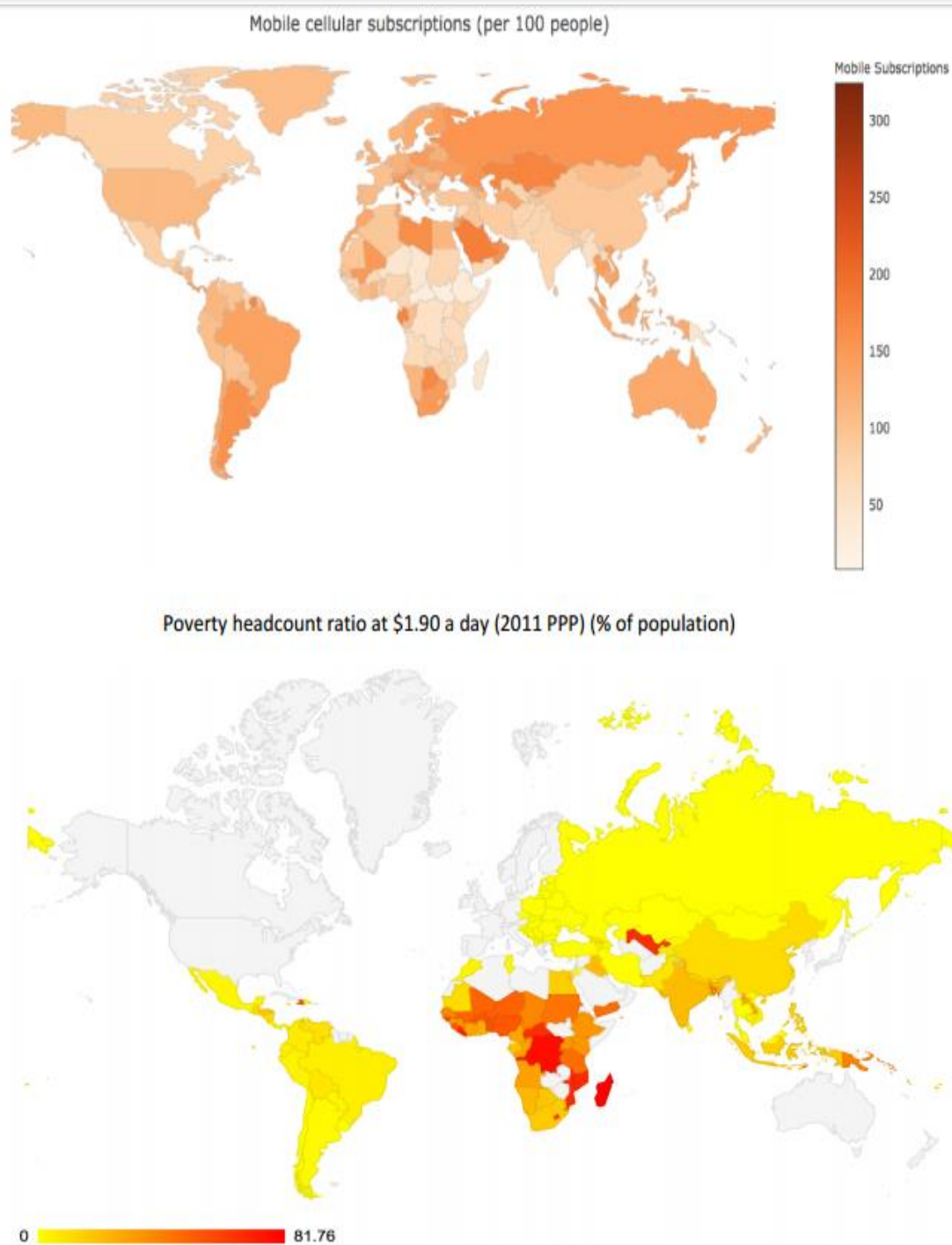


Figure 2: Conditional Effects and Correlations (World Bank/Own calculation)





*Figure 3: Geographical Visualization of Poverty and Mobile Penetration (World Bank/Own calculation)*



## 5. CONCLUSION

This study examined the impact of ICT diffusion on financial inclusion and poverty reduction. Many studies investigated the impact of microfinance on household welfare and economic situation; however, its impact on poverty at aggregate level is relatively a new subject. As the direct link of ICT and poverty is somewhat hard to determine however, we focus on the effects of ICT on poverty through boosting financial inclusion. This could be the potential channel through which ICT affect poverty and inequality. Many researchers concluded the negative relationship between financial development and poverty. Nevertheless, the effect of financial inclusion is undetected in existing literature, while the role of ICT diffusion in promotion of financial inclusion and access to finance also remains an interesting subject in digital age. The findings of this study highlight the significance of financial inclusion and ICT development; particularly mobile phone penetration can promote financial inclusion in lower and middle income countries. Using the panel dataset of sixty-two countries over the period 2001-2012, we first examine the impact of two different forms of financial inclusion i.e., (i) broad or formal and (ii) through microfinance. We observe poverty and inequality reducing effects of financial inclusion measured either way. Most noticeably, our results suggest the negative association between microfinance intensity and poverty headcount ratio; results remain unchanged when poverty headcount is replaced by Gini coefficient. These findings indicate that microfinance intensity not only reduces poverty but also its depth and severity measured as poverty gap and squared poverty gap. Our study depicted a negative relationship between ICT diffusion and poverty; the results also suggest that most ICT indicators can help reduce poverty and income inequality through fostering financial inclusion. More importantly, mobile phone diffusion exhibits positive association with financial inclusion measured either from microfinance intensity or from formal financial sector. ICT dimensions when used as instruments for financial inclusion accelerate economic growth and reduce poverty and inequality. Therefore, policies to promote information and communication infrastructure could stimulate financial inclusion by promoting e-finance. Moreover, better collaboration between ICT and financial sector will likely to improve mobile banking/e-finance.

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## **BARRIERS FOR COOPERATION BETWEEN SMALL ENTERPRISES AND THEIR ENVIRONMENT. THE CONTEXT OF INNOVATIVENESS POLISH SMALL ENTERPRISES**

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### **ABSTRACT**

*Increasing the innovativeness of economies and enterprises is an essential condition for strengthening their competitive positions. This concerns in particular small enterprises, which constitute 99% of all of the entities operating in the European Union. Polish small entrepreneurs are quite familiar with this issue, trying to “catch up” with foreign entities in terms of innovativeness. The need to improve the competitive strength and innovativeness of businesses forces both entrepreneurs and researchers to analyse in greater detail the conditions that favour pro-innovativeness. The desire to introduce innovations and the limited resources of small entities encourage the forming of groups of entities bound by common interest. However, this process is not easy, as it is accompanied by mutual mistrust of Polish entrepreneurs. The main aim of this paper is to identify the barriers for cooperation between small entities and to indicate changes in this regard in the period analysed. The conclusions have been drawn from the results of two studies on the innovativeness and competitive strength of small enterprises, performed by the author. Several indices have been determined for this group of enterprises, such as the degree and scope of cooperation with the environment and the innovativeness. Determination of the causes for the very limited scope of cooperation between small entities will allow to more precisely adjust the support and offer to businesses of this scale.here.*

**Keywords:** *cooperation, innovation, small enterprises*

### **1. INTRODUCTION**

Today's market is characterized by the saturation and intense pace of technological progress. This situation is the reason why enterprises seek various ways to increase their innovativeness that is the key factor of gaining a competitive advantage (Sipa, 2016). When facing the very poor capability of Polish economy to generate innovativeness, and increased competition, boosting and maintaining innovation processes at a sufficiently high level is necessary. The quality of local support, education, financing systems, the proximity of other entities, and opportunities for cooperation with them, and, primarily, an appropriate (favorable) policy of local authorities, are essential elements from the point of view of the innovative development of enterprises. The innovativeness of enterprises depends not only on their innovation potential, but also on their micro- and macroenvironment. External factors have greater significance in the case of small enterprises.

Companies of that scale, despite many features that contribute to the increase in innovativeness (e.g. high flexibility of activities, reduced bureaucracy), are characterized by limited own



resources. Their limited potential often contributes to the lack of opportunities for transforming their ideas into specific production independently. Their will to implement innovations forces entrepreneurs to go beyond their companies (Stawasz, Głodek, Matusiak, 2006).

The solution for these issues may be to build a network that enables cooperation with different entities, at different levels, and in different areas. Greater significance of cooperation between independent entities is considered one of the most essential developmental trends of today's economies (Latusek-Jurczak, 2011). However, this process is not easy (Oksanen, Rila 2009). Limited knowledge about this type of initiatives or mutual distrust of small and medium-sized enterprises are a significant barrier for undertaking cooperation. Drucker P. (1995) emphasizes that one of the greatest changes that must be faced by managers of the 21st century is the constantly increasing number of business relations based on partnership.

Changes in the economic environment caused by the recession in 2008 had a specific impact on the functioning of the small Polish enterprises. In the opinion of the author, this could have had an impact on changing their approach to cooperation. Hence, the aim of this paper is to identify the barriers for cooperation between small entities and to indicate changes in this regard in the period analysed.

## **2. THE SIGNIFICANCE OF THE COOPERATION OF SMALL ENTERPRISES**

The sector of small enterprises is a very large and diverse group of companies. In 2015 year small enterprises accounted for 99.2% of all business entities operating in the Polish economy (GUS). Their heterogeneity is reflected in, among others, the level of their innovativeness and the character of cooperation they establish. The heterogeneity of this sector stems, among other things, from the innovative behaviour of individual companies that make up this sector. What can be observed are isolated instances of innovative activities, or a group of business entities collaborating in the field of innovating. To undertake its own research and design works and implement new production, small businesses are required to possess the appropriate technical and managerial competencies, as well as the ability to learn (Dankbaar, 1996, Navickas, Kontautiene, 2013). Only some of small businesses can take advantage of their innovative capabilities and maintain them over a longer period at a sufficiently high competitive level (Piasecki, 1999, pp.303-305; Gorzeń-Mitka, 2015).

Limited internal resources of small enterprises are not a sufficient support for the development of their individual innovative operations. As pointed out by Stawasz E. (2005), the innovation process is rarely confined to a single company, especially a small one. Small enterprises, in order to create and innovate, are forced to undertake various forms of cooperation with other entities in their surroundings, also with actual or potential competitors. Olesiński Z. (2010) emphasizes the importance of economic cooperation to enhance the competitiveness of enterprises, claiming that "the development of inter-organizational relations supports integration processes in a given territory, generates the growth of entrepreneurship in that territory which increases the competitiveness of businesses, mainly through an increase in innovation, and accelerates the processes of improving competitiveness in a given territory".

The proximity of other business entities, which are in strong spatial and technological relationships, is an important source of growth of innovation and strengthens the competitive position of these entities in the market (Kuraś, 2012, p.57). By undertaking innovative activities, small businesses can also establish cooperation with a network of specialized partners - offering the services necessary when creating or implementing innovations (Janasz, Koziół, 2007, p.27; Lemańska-Majdzik, Okręglicka, 2015). The functioning of enterprises in networks allows for the use of network assets, such as, e.g.: access to an already existing base (e.g. customer base), relationships with third parties (suppliers, distribution channels, universities), community of the network members (benefits stemming from staying in contact with each other in order to

exchange information, experiences) and a stream of ideas. (Slywotzky, Wise, Weber, 2006, pp.73-74)

These connections can be formal, informal, occasional or long-term. The geographical scope of such cooperation as well as the number of participants and the direction of relationships can also differ. Shaw and Conway (2000) divide networks into informal and formal ones. The informal ones include family members, friends, business contacts. The formal ones may take the form of joint venture type relationships, licensing agreements and other relations with government agencies and local authorities, etc. The specificity of small enterprises indicates that most often they form networks of personal connections of social or communicative character. They are informal in nature. They are created by people who are related or who have common problems and rely on "mental" support. Wasilczuk (2005) also mentions personal networks although he also distinguished production and exchange networks. He points out that both production and exchanges networks can pertain to companies of different sizes but personal networks are the domain of small companies.

In the case of Polish companies the level of interest in establishing cooperation between companies and their business environment is low. This is mainly due to the lack of tradition of cooperation and mutual distrust. Cooperation usually develops between enterprises and their suppliers and customers. Establishing contacts with market rivals is sporadic and usually limited to the exchange of information and subcontracting. Few entities exhibit the willingness to undertake joint actions in the field of financing R&D works or the creation of joint teams developing new solutions. (Haffer, 2004; Markiewicz, 2007; Tomski, 2016) Reluctance of entrepreneurs to establish cooperation is also confirmed by other studies related to the SME sector according to which the main barrier to cooperation with other companies is the lack of trust between partners, the lack of suitable partners or the absence of tangible benefits of cooperation (Żołnierski, 2005; Stawasz, Głodek, Matusiak, 2006).

### **3. BARRIERS FOR COOPERATION OF POLISH SMALL ENTERPRISES RELATING TO INNOVATIVENESS - OWN STUDY RESULTS**

#### **3.1. Method**

The results presented below are only part of a more comprehensive research on innovation and competitiveness of Polish small-sized firms. The conclusions are based on the results of two own studies, which were conducted at the turn of 2006 and 2007 in Silesian small-sized enterprises<sup>1</sup> (Study 1) and in the first quarter of 2013 in small companies in Małopolska (Study 2). The Provinces of Małopolska and Silesia form the Southern Region, one of the six regions in Poland. In the opinion of the author, changes in the economic environment caused by the recession in 2008, could have had an impact on changing small firms approach to cooperation. Hence, the aim of the research is to identify changes within the scope of their cooperation in the context of two research procedures (research 1 - 2006/2007 - before recession, and research 2 - 2013).

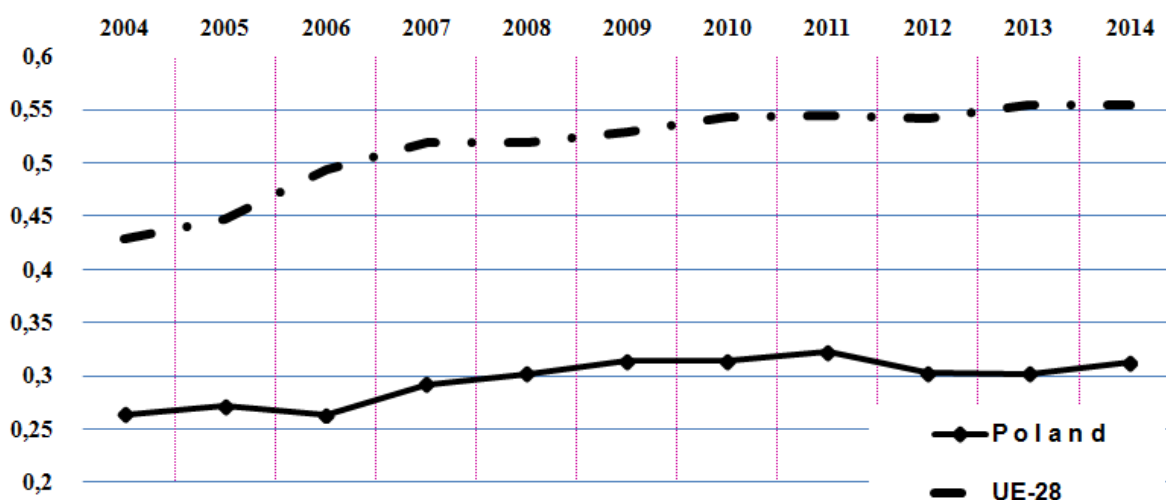
In order to diagnose the changes in portraying this issue, similar survey questionnaires were used in both research procedures, consisting of open questions, semi-open questions or closed dichotomous questions, as well as the cafeteria-style checklist. 216 complete and properly filled out questionnaires were adopted for the analysis in the case of research 1. and 105 surveys in the case of research 2. The details of research and its results are presented in the further part of this article.

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<sup>1</sup> The criterion to be identified as a small-sized enterprise was based on the categorization adopted in the European Union – the number of employees.

### 3.2. Results

The poor capability of Polish economy to generate innovativeness is caused by, inter alia, low R&D spending by industry, declining GDP share of R&D spending, imports of high-tech goods, and the fact that the export of Polish products based on technological thinking has been developing less dynamically than in countries, such as, for example, the Czech Republic and Hungary. Poland has a very low level of innovativeness in relation to other states of the European Union. In 2004, the Summary Innovation Index (SII) was 0.44 for the UE-15, and for Poland it was 0.14, which put us in the last position among other member states. In 2014, there was a minor change. SII for Poland was 0.31, and for the UE-28 it was 0.56. (Chart 1) Poland is next to last among the “moderate innovators”.



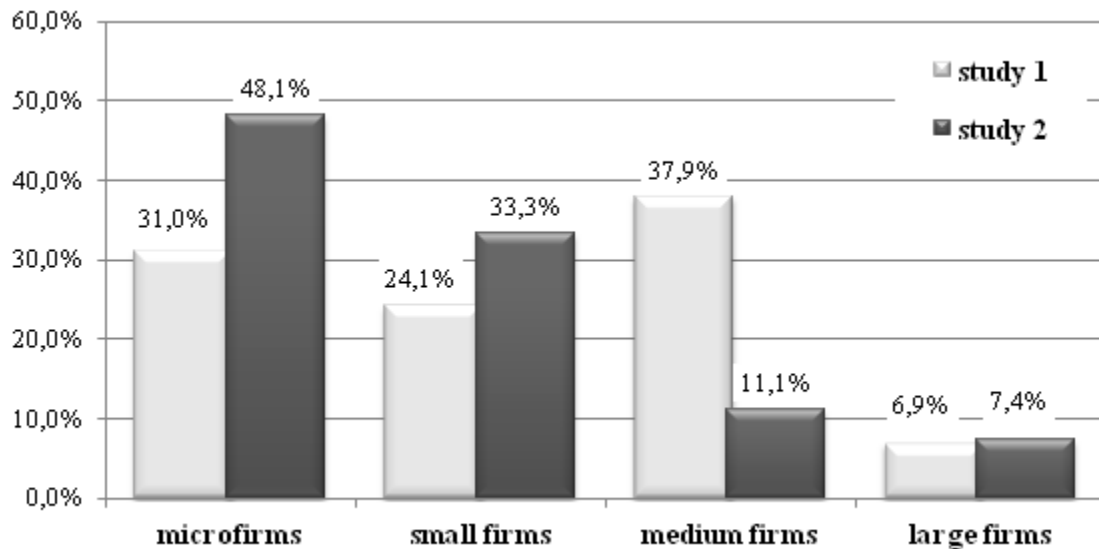
\* The data for the years 2008-2012 are not comparable with earlier data due to certain methodological changes (changes in the construction of the SII). Years 2002-2006 – the average for EU-25; 2007-2012 – the average for EU-27.

Chart 1: European Innovation Scoreboard \*2004-2014 – SII time series (European Commission, 2009-2015)

Based on the analysis of data relating to the research conducted between 2006 and 2007, more than a half of the surveyed small enterprises (65.74%) was included in the group of innovative companies, whereas in the case of 2013, this percentage increased to 92.38%. This is a positive tendency, considering the time of conducting research 2, where the effects of the international recession were still experienced in the background. Positive changes are also visible in relation to the approach to innovations and the will to implement them in the future. The percentage of companies planning to implement innovation in the future increased from 56.9% to 59.0% in the second research (more Sipa, Skibiński, 2015, pp. 342-352)

As studies have shown, small enterprises unwillingly cooperate with other entities from their environment, in the area of developing or implementing innovations. Data analysis has shown that the situation on the market over the studied years has marginally improved. The percentage of entities that started cooperation with other enterprises has increased twice in the studied area, from 13.4% to 25.7%. The structure of entities which enterprises have cooperated with also has changed. The share of microentities has increased significantly (by 17.1%), as well as small businesses - by 9.2%. It can be concluded that the studied entities have been cooperated mainly with companies of the same scale or smaller. A slight increase (0.5%) in the share of large

enterprises among the entities which small enterprises have cooperated with is evident. (chart 2) It is a small percentage, given that partnership with other entities is an essential source of ideas for innovations. Cooperation with large enterprises enables, for example, drawing on their resources.



*Chart 2: The structure of companies cooperating the area of developing or implementing innovations (own work)*

A low percentage of small enterprises that undertake cooperation with other companies to increase their innovativeness is, unfortunately, not optimistic. The lack of adequate partners or limited confidence in potential business partners are among the reasons for such reduced cooperation, according to Polish entrepreneurs. The fact that among two most frequent indications in study 2 more than 18% of answers were related to the lack of need for undertaking such cooperation may be worrying. This understanding of the issue may be indicative of poor knowledge of Polish small enterprises about great opportunities resulting from cooperation in the area of developing and implementing new and improved products or technologies.

In the case of small and medium-sized enterprises, and particularly small businesses, adequate support for macro environment is of a great significance for their effective functioning. As the analysis has shown, the lack of places and opportunities for undertaking cooperation are no longer such a great obstacle as study 1 has indicated. This barrier was the rarest indication in study 2 (9.6%). The details of changes in particular categories have been presented in chart 3.

*Chart following on the next page*

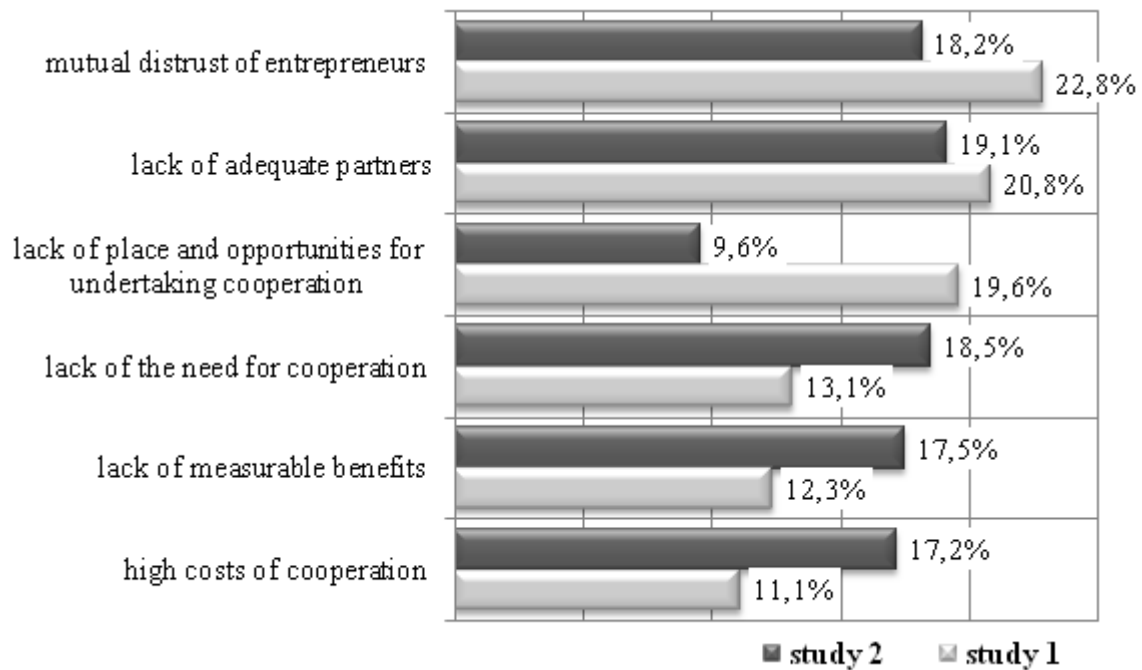


Chart 3: Barriers that reduce undertaking cooperation by small enterprises in the area of developing and implementing innovations (own work)

When indicating the barriers for cooperation with other companies, the entrepreneurs have also determined their significance (1-the least significant; 2-significant; 3-the most significant). (chart 4)

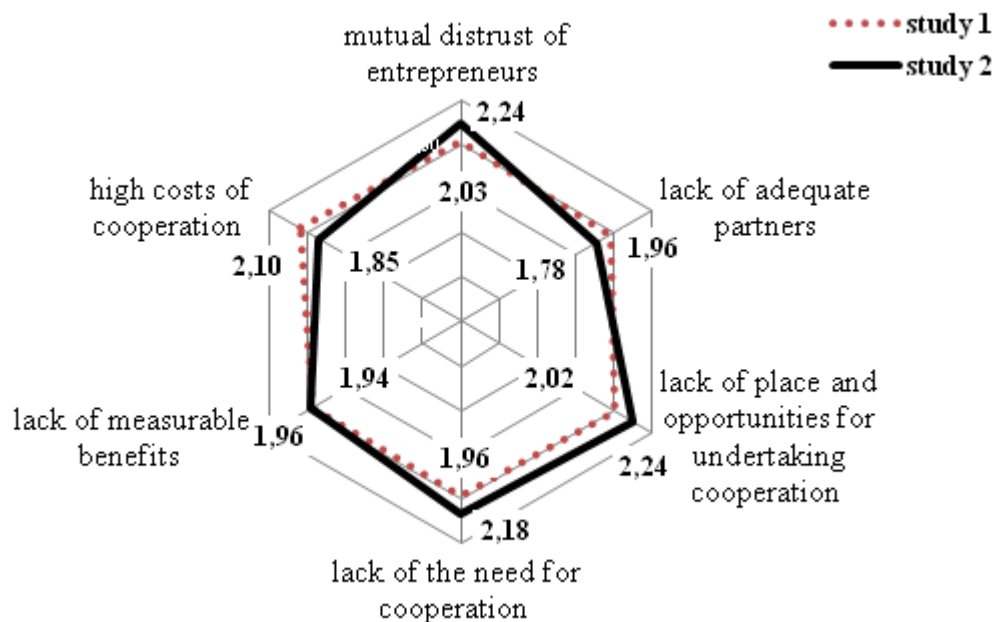


Chart 4: Changes in the evaluation of barriers that reduce undertaking cooperation (own work)

Having calculated the weighted average for particular determinants, it can be observed that small enterprises (despite fewer indications generally) have attributed greater significance to such categories as: mutual distrust, and the lack of place and opportunities for undertaking

cooperation. Greater significance has also been attributed to the lack of need for cooperation, and failure to recognize measurable benefits of such cooperation. These barriers have also been indicated more often than in study 1. Small enterprises, because of their limited financial resources, are afraid of high costs of such cooperation. As the study results have shown, over the analyzed years, the percentage of entities indicating this very barrier has increased. However, taking into account the significance degree attributed to this barrier, a drop in the weighted average is evident - from 2.10 to 1.85. Therefore, it is still a barrier recognized by small enterprises, but less significant in their opinion.

### 3.3. Limitations research

The author of this article is aware of the fact that a small extent of the research sample will not allow to form far-reaching generalizations, but the compared results show the direction of changes in the operations of small Polish enterprises and may be the basis for further analyses. Furthermore, the frequency of research showed the direction of changing the focus within the scope of their cooperation with the environment.

## 4. CONSLUSION

The pace of changes in the entrepreneurial environment, market pressure, and the complexity of developed innovations have contributed to entrepreneurs' focus on seeking new opportunities for increasing the innovativeness level of their organizations. Joining forces and undertaking cooperation with other entities enable generating and implementing innovations that confer a competitive advantage on the market. However, it is not an easy process, especially for small entities that because of their nature are reluctant to undertake cooperation. As the conducted studies have shown, despite the years that passed, Polish small entrepreneurs still indicate the lack of adequate partners and mutual distrust. It may also be worrying that among three most indicated barriers, the lack of need for such cooperation has been mentioned. The results have also indicated a minor range of cooperation of small enterprises with the large ones, that have much more innovation potential. Moreover, the reduction of cooperation with medium-sized enterprises for the benefit of microentities is also evident.

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## COMPREHENSION OF INNOVATIVE SOLUTIONS IN HOSPITALITY INDUSTRY

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### ABSTRACT

*Hotel facilities are not anymore considered only as lodging structure that provides accommodation and meals. Nowadays, the needs of modern consumers, tourist demand are respected; activities for innovations in architecture and design are continuously on going, together with developers, engineers, managers. Joined activities are focused in creation of hotel product that is correspondent to the needs of modern travelers and tourists and which creates new demand driven by special experience. Stakeholders in hotel industry permanently analyse new trends, define better criteria, present modern standards in order to improve quality of hospitality services and innovations in accommodation structures.*

*The aim of this paper is to analyse aspects of innovative solutions in hospitality industry through the model that is set by author. This model takes in consideration different aspects of innovations implementation and poses them into perspective of new competitiveness in challenging turbulent markets. The purpose of paper is originated by need for better understanding and oriented towards business, art and design excellence through innovative solutions. Explanation and analysis of model is done by setting and exploring the examples of innovative hotel organisation considering services, design, architecture and technology. Data acquisition methods, creative thinking methods and other qualitative scientific and research methods are used with the aim of model explanation and gaining new knowledge. The study raises new questions, but it also provides qualitative solutions for transforming the traditional hospitality offer according to the demands of the contemporary international tourism market which identifies innovations and sustainability as trends of future global development and new competitiveness.*

**Keywords:** *innovations, hotel specialisation, modern technologies, competitiveness*

### 1. INNOVATION DRIVEN SOCIETY, ECONOMY AND TOURISM – THEORY AND LITERATURE REVIEW

The issue of innovation was introduced into economic sciences in 1911 by Joseph Schumpeter (1960). His theory, later called *supply side*, indicated the activity of entrepreneurs and was based on the following five cases:

- placing a new product or products with new properties on the market,
- introducing new production methods and new technological processes,
- opening new markets,
- gaining new sources of organization for certain industries,
- introducing new organizations in an industry.

The scope of innovation proposed by J. Schumpeter is indeed very wide, but he considers it as an exogenous factor of economic growth. It is fundamental from the point of view of economic

theory, because it implies that innovation provides resources with new opportunities to create wealth (Białoń, 2010).

The aforementioned supply side theory by J. Schumpeter found numerous opponents in literature. For example, 1960s were marked by a theory by Jacob Schmookler (1966). It pointed to the relationship between appearing innovations and market demand. Karlhainz Oppenländer (2000) combined both theories - of supply and of demand in the late 1980s.

According to his theory, innovations introduced by entrepreneurs can constitute a turning point, but remain in minority.

Importance for continuously improve processes and create new products and services, in orders to ensure stable income for market participants. Therefore, all sorts of competitiveness enhancing innovations have also been gaining importance (Kalinowski, 2010). Romer (1986) discuss that innovations are drivers of economic growth.

Public support of innovation is research area that is investigated by many authors (Harper, J.C., 2013, Constantino, L, 2016:96 ) where from one side are investigated aspects of public support and from the other side support of international – global institutions. EU 2020 Strategy devises seven Flagship Initiatives to ensure coordination between European strategies and national interventions and maximise impact of programmes. The Flagship Initiatives represent the policy and programmatic tools to operationalise the EU 2020 strategy and are directly linked to objectives where innovations are recognised as important pillar of future development.

There are important effects of the innovations systems analyse Chaydiak et al. (2016) distinguishes simple effects and complex effects created from the simple ones. Hauschildt & Salomo (2011) recommend carrying out the measurement of the value of the innovation on the basis of three criteria: technical, economic, and others. Hierarchically organized system of innovations in the evaluation of their efficiency presumes conformity of goals themselves and market economy (on the way to maximise the volume of sales or profit or minimization of costs per unit). It creates the scheme of the effects on hierarchic scheme with impact on highlighting the position and calculation of the economic indicators.

Development of innovation depends on different segments of adopters of a new service based on customer motivation and types of benefits they seek in an innovation. Nejad et al. (2014) discuss that some individuals may adopt a new service when it is quite novel to satisfy their need for uniqueness. However, once the majority of consumers start using it, they may terminate using it and move to the next big trend. That characterize elasticity in innovation, there is a need of their resilience in society as it changes fast. On the other side, the high costs of innovation development and implementation influence dynamic of development and consequently competitiveness at the market.

### **1.1. Innovation in hospitality industry**

As a propulsive economic activity, tourism occupies a dominant position in the world economy developmental trends. In order to achieve new competitiveness in the international market environment, small and medium sized companies in tourism implement innovative technologies in their marketing systems, from the formation of the hotel product itself, price defining, promotional placement to distribution channels which change positions and reshape the hotel visibility in the global market (Shegg et al., 2013). Hospitality innovations and identified three performance dimensions: market performance, financial performance, employee and customer relationship enhancement, analyses Ottenbacher (2007:431-454). Importance of social networks for promotion and affirmation of distribution channels is crucial for reaching new target groups, especially younger users. Millennials. Through viral effects, social network effects can be used strategically for mouth-to-mouth marketing and as an innovative tool that impact awareness of targeted hotel offer.

The importance of entrepreneurship in hotel industry and the possibilities of innovative organisation, market positioning and placement as a trend of modern tourism is analysed by many authors at an international level. Jones and Haven (2005) researched Tourism SMEs, Service Quality, and Destination Competitiveness and Lee-Ross and Lashley (2009) explored family businesses, hospitality and commercial homes within entrepreneurship concepts.

On the other side, large hotels organised within hotel industry brands or marketing alliances meet other types of challenges in innovation implementation. Large costs of new technology solutions could jeopardise budgeted revenue originated from innovative solutions so hotel brands cautiously implement new solutions as quality service flagship. When successfully implemented, innovations are recognised as key for future success and have power to influence international brands portfolio segmentation. They impact specialisation in segments and business areas by differentiation from competition, creating unique experiences personalised for customers and implementing digital and mobile technologies within sustainability concept as global trend of future tourism development.

Authenticity of innovation makes the difference when comprehending the market success and revenue on investment. If hoteliers want to gain the most value from innovation, they should try to find the way to integrate the value into all levels of the organisation as an authentic asset that drives attitudes and actions. Grants (2016) recognise five essential guidelines how hotel companies could develop more authentic innovation in the organisation:

- Identifying innovations that are linked to the deeper core values of hotels values
- Developing authentic innovative thinking through targeted training and development programs
- Establishing authentic innovation processes by introducing and establishing workable models for innovation;
- Encouraging authentic innovative practices and outcomes through special innovation workshop sessions; and
- Ensuring that authentic innovative ideas are supported and nurtured appropriately from ideation right through to implementation

Continuously, the innovation would be a core value to solve issues and deal with challenges through promoting open thinking and mutual growth.

Innovative technology solves problems and ways hotels faces in many different aspects. Hotels are addressing industry challenges with innovative solutions in customer relationship management (CRM), a tool that provides a profile of each guest, as well as insights to guests' behaviour and preferences, which could help to follow up with surveys and marketing campaigns post stay. Chang et al (2011) diversify two essential types of innovations relating HRM (human resource management) and customer relations; incremental innovations that include changes in administrative issues and change in customer service, and radical innovations that include change in customer service policies and change in technology.

Many companies now have innovation departments, senior innovation leadership positions, and specially purposed 'innovation hubs'. But there is still confusion about what innovation is, and whether it lives up to expectations. Many companies try to add innovation into their mission statement but actual effort in innovation business processes and services is inadequate. Also, Grants (2016) reflect on whether, if in the race to come up with 'the next big thing,' hoteliers may be losing the purpose of innovation behind the process.

As the characteristics of services include intangibility, there are different profiles of innovations; tangible aspects include physical and tangible elements such as rooms, furniture, and environment. The intangible, nonmaterial components of innovation include balanced mixture of sensations and experiences related with sight, smell, sound, touch and taste. On the other side there are technological solutions that enable fast and convenient communication and interaction among all stakeholders for providing innovated and modern service in competitive

environment. The aspects of service innovation were analyzed whether they should be differentiated from product innovation or should they be considered through synthesis perspective (Carlborg *et al.*, 2014). The synthesis perspective emphasizes the necessity of an integrated approach to innovation that considers both technological and non-technological aspects.

## **2. HOSPITALITY INNOVATIONS – A CONCEPTUAL MODEL AND BEST PRACTICES**

Considering innovation aspects and their implementation in hotel company organisation and business, five basic groups of innovative areas are identified, developed by hotels. Starting from hotel services which are characterised by, apart from the material component, also by inseparability, volatility, mutability and intangibility, innovativeness is reflected in the creation of a new product, imbued with conceptual changes. This also refers to the hardware physical changes and intangible alterations of the service provision process and organisation. Due to globalisation, a need is evidenced for the development of sharing in the hotel industry, both of accommodation facilities and work place offices, which facilitate office business activities outside the domicile. This also includes an innovated market communication, supported by innovative technologies, ranging from social networks to the creation of new distribution channels. This concerns development of online tour operators, specialised in internet portals for voucher, group purchase, private flash sales portals, wholesaler portals, booking engine and hoteliers' and tour operators' websites. In formation of innovative hotel products, the importance of tour operators is evidenced at several levels, i.e. through creation of common marketing brands, vertical mergers, the effects they have on the creation of new destination products that are compatible with the development of hospitality business in the destination and a common promotional mix.

A revision of innovative technologies shows that they are implemented both at the level of distribution, i.e. placement, but also from the aspect of organisation of a hotel product and its functioning. The technology is implemented through hotel business operational systems, information management systems, artificial intelligence and virtual reality. This assists attraction of new market structures and has a far-reaching effect on young consumers, in which it creates a long-term loyalty to a hotel brand. Technology enables efficient transformation of hotels into entertaining, interactive structures and social networks play the crucial role here. Communication and sharing of experiences and real time photo and video recordings facilitate guest affirmation and bonding, providing hotels with a direct promotion to potential new clients. By realisation of promotional potentials, by means of social networks, newsletters, blogs and virtual television, hotels reach emissive markets faster and more efficiently. Management of potential future customer data bases, towards whom marketing activities are further developed, is achieved by means of implementation of the CRM communication system with guests. Online reviews affect development of the reputation management, directly pointing quality control in the hospitality business towards the required improvements in the quality of service performance and structure.

Technology contributes to the development of new tools, such as benchmarking, by which hoteliers valorise their market positions and develop products in order to achieve competitiveness, followed by revenue management, by means of which income is efficiently managed and business profits maximised.

The aspects of innovation of hotel physical structures themselves are crucial for the development of the new hotel product competitiveness, regardless of whether it involves adaptations and refurbishments or construction of new facilities. Hotel theming and specialisation contribute to the personal development in the sense of affirmation of tourist needs, which is reflected through culture, gastronomy, adventurism, well-being and



extravagance. Hotels segment special market niches and, using innovative organisation and marketing, develop special products and communicate with target groups. Namely, turbulent tourist demand seeks new tourist experiences, new sensory experiences and services. Accordingly, hoteliers develop accommodation structures through different urban and architectural innovations and interior and exterior design, using facilities of various primary purposes for tourism, from castles, churches, caves, to the modern concept of glamping (glamorous camping).

The model of innovative solutions in the hospitality industry follows, to which key groups of innovations are associated and their relationship is determined in respect of the market and macroeconomic aspects, competition, financing and investment, legislative framework and education.

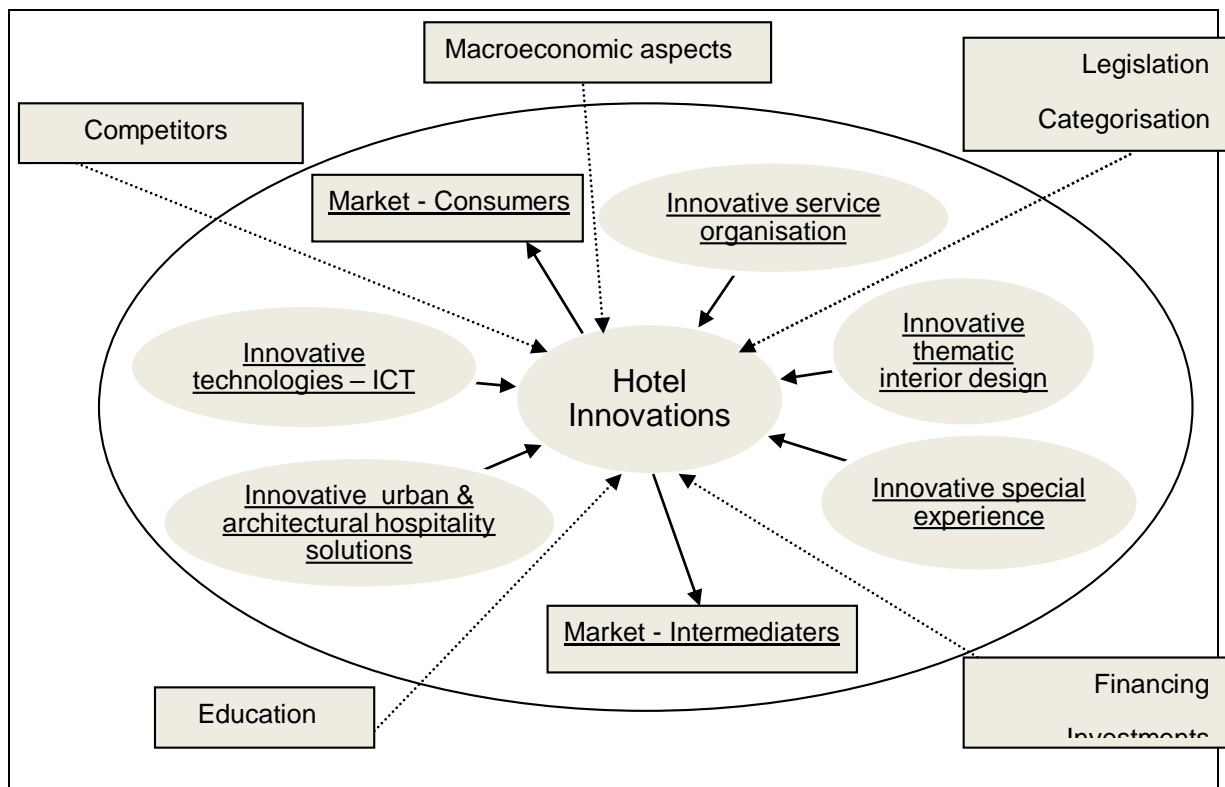


Chart 1: Model of innovative solutions in hospitality industry, (Author's contribution, 2016)

By consideration of the presented model, five basic groups of innovations are identified in the hospitality industry. Their examples at the international level are presented further in the text, as a result of the research conducted on modern global trends in the hospitality industry development. The research includes 74 hotels which promote implementation of innovations and the quoted facilities and innovative concepts are the result of scientific consideration of the effects innovations have on organisation, marketing and activity in the destination as a part of the local community.

According to the aforesaid, innovative solutions are developed in line with market trends, as a response to the market demand. Placements are realised by means of direct placements or through tourist mediation, which primarily includes fast-growing online placement channels. External variables, which affect the innovation development, include macroeconomic positions of the social economy, which, together with the legislative stakeholders, manage the administration and legal framework of the formation of innovative hotel structures and organisations. Given the high investment levels, the aspect of financing of new projects is



essential, in which different levels of innovative solutions are implemented and which also include certain risks in respect of market competitiveness and the global political situation. General society education, as well as education of individuals on one hand, as a potential consumer and, on the other, as a provider of innovative services, is important as it affects the creation of a civil society, seeking progress and new knowledge. In the competitive environment, educated society and consumers will know how to select a hotel product suited to their needs and they will valorise the competitive advantages of a hotel in comparison with unified market products.

*Table1: Innovations in hospitality industry – best practices (Author’s contribution)*  
 - Continues on the next two pages -

<u>Innovative service organisation</u>
<p><b>Technology test hotel - M Beta at the Charlotte Marriott City Centre</b>                      The first hotel innovation incubator where guests and visitors share their approval for a particular innovation by pushing a Beta Button. Real-time Beta Boards on digital screens throughout the hotel show the aggregated engagement scores, votes, and feedback on hotel innovations. M-Beta at Charlotte Marriott City Centre is currently testing a number of innovations, including hosted arrival, different hotel services, digital conference experience and many others. Featured hotel concepts rotate periodically as hotel ICT innovations are changing fast.</p>
<p><b>Shared workspace hotel – West Elm innovation</b>                      New concept developed by West Elm company, combines hotel and work space facilities and offer it at market for business travellers and clients who combine needs for business with leisure accommodation offer. The shared workspace hotel capitalizes on three prevailing economic and demographic aspects: remote workforce trends, millennial demographic trends and shared workplace trends. Concept enables to businessmen and self-employing travelers to rent a desk as a workspace by the hour with all other business facilities that are required to ensure quality business activities.</p>
<p><b>Multi-branded properties – W hotel and Element hotel, Philadelphia, US</b>                      Innovative concept organizes two or more hotel brands occupying the same property. Sometimes they are built side by side, or in the same development; other times, they share the same building shell (and more, as noted below). Typically, two roughly equal brands will be paired so that a transit occupancy brand will be co-located with an extended stay brand. Innovative concept brings advantages considering land and construction costs, operational savings and enables premium pricing to the owners and prevail challenges that concept could produce. They include limitation in choosing right brands that are complement to each other, duplication of services and facilities, property maintenance and separation of services that are offered to the guests.</p>
<p><b>Storytelling hotel - Ritz Carlton brand</b>                      Organisation of storytelling hotels is based upon experiential marketing methodology and concept that "hospitality (Emotion a story) that you feel too easily and forget to hard". Today more and more hotels reconfigure their hospitality strategies towards the adoption of an experiential orientation through stories. They script namely unique, extraordinary narratives and stage escapist events, individually customized and personally meaningful for each guest persona. Ritz Carlton is a pioneer hotel chain that adopted this experiential marketing storytelling principle early on is Ritz-Carlton hotels. Ritz-Carlton's website section <i>Stories That Stay With You</i>, which comes with the elucidative subtitle <i>Memorable moments</i></p>

*from the Ladies & Gentlemen of The Ritz-Carlton*, is a storytelling inventory and library of the extraordinary experiences that the brand's personnel weaved for its guests.

#### Innovative thematic interior design

Heritage history hotel - Locanda Don Serafino, Sicilia, Italy

Historic boutique hotel situated in Baroque, Ragusa's historic centre which is under UNESCO protection as heritage site. The hotel is situated in stone building with special architecture and historic interior design, disposed with 10 rooms and suites and Michelin starred restaurant.

Art and cultural hotel - art 'otel by Park Plaza

art'otel is a collection of contemporary hotels that blend unique architectural style with art-inspired interiors. Each hotel is a true homage to a contemporary artist and boasts contemporary architectural styling, tasteful interior design and state-of-the-art facilities.

Specialised themed hotels - Etruscan Chocohotel

First hotel dedicated to chocolate is situated in Perugia, the Italian capital of chocolate. The hotel disposes with 94 accommodation units, themed according to different types of chocolate and chocolate delicacies, a restaurant, tasting rooms and a shop and within the hotel there are also conference and wellness centres.

#### Innovative special experience

Autograph collection by Marriott

Hotel brand creates one-of-a-kind guest experiences through "Independent Film Initiative" in its global portfolio of more than 100 hotels, which are found in the world's most desirable destinations. Program highlights include film premieres, live performances, director talks, screenwriter residencies, a signature cocktail as well as Autograph Collection Hotels' very own indie film channel for guests.

Dedlic hotels, Paris, France

The first hotel dedicated to photography technique -The Spark Hotel is the first hotel in France dedicated to the techniques of photography. It is considered as the precursor of a new generation of interactive themed hotels. The techniques of photography there are sublimated in a subtle play of images, lights and materials. An elaborate home automation allows guests to enjoy the time of a stay, a new staging punctuated immediate experience because here the pictures instantly projected into the room, floor or walls.

Hotel Gio Wine & Jazz Area, Perugia, Italy – Themed modern hotel, specialised in wine and music sensation, hotel rooms are divided into two thematic areas: Jazz and Wine. Wine and Jazz Area are linked by a musical arcade with secluded listening In the Jazz Area there are a grand piano, ancient pianos, listening points, vinyl collections and author pictures; In the Wine Area there is exhibition of bottles, an original place, with oeno-furnishing.

#### Innovative urban architectural hospitality solutions

Capsule hotel - Yotel – London, UK, Amsterdam, The Netherlands

Hotel that that features a large number of extremely small "rooms" (capsules) intended to provide cheap, basic overnight accommodation for guests who do not require the services offered by more conventional hotels. Driven by innovations, capsule hotels supported by digital technology offers opportunities to socialize with others in shared leisure facilities and experience of accommodation in design boutique hotel.

The Cloud Keyes -Switzerland

Hotel innovates business concept: Converting your “Zero Stars” into a 5-star experience where lodging facilities enables guests to sleep in a Swiss mountainside at 6,463 feet above sea level, without walls around you and without ceiling. The room concept includes equipment of bed with two bedside tables, a reading lamp and magnificent views to the Graubünden mountains. "Zero Stars" name describes this venture and redefined the minimal hospitality experience into those of five stars and the mantra of their very special lodge is "the only star is you". Personalized monogram sewed onto a bathrobe, a goodnight “kiss” experience basket, a tailored message with selected information of guest’s interest are designed as five stars service.

Joe & Joe by Accor - a new brand for a new form of hospitality

Joe & Joe is a brand that was co-constructed with its future guests and disrupts traditional codes with plans of a total of 50 venues set to open by 2020 in destinations popular with Millennials. Hotel brand blends the best of private-rental, hostel and hotel formats and offer a totally reinvented and disruptive experience in terms of design approach, catering, service and customer journey. Brand aims to challenge conventions and imagine of the future of hospitality, catering and social interaction.

Innovative technologies – ICT and traditional technological innovations

Inspiring lighting innovations - Hotel Budapest Kempinski -

Redesign of hotel lobby by cutting edge lighting technology that covers walls and ceiling and immerses the whole space in fascinating atmosphere of light with focus on architectural details. That is part of a completely new lighting philosophy which reflects four tenets of Kempinski values of beauty, gourmet, culture and lifestyle aiming to ensure lasting experience.

Digital Technology Solutions - Hilton hotel brand

Digital key for hotel rooms opening and digital non personal check in enables access to hotel rooms and other hotel amenities. Digital mobile key technology supported with mobile phone applications enhances guest's experience and cost effectiveness. Followed by digital butler, concierge and room service application hotels ensure guests satisfaction and special high tech experience.

Augmented and virtual reality in hotel - The St. Regis New York

Augmented Reality is “a technology that superimposes a computer-generated image on a user's view of the real world, thus providing a composite view”. The new Pokémon Go Game, a smartphone game in which players traverse the real world to hunt and capture Pokémon — pocket monsters, is a prime example. Implementation of augmented reality, Pokémon landmark map in vicinity of hotel creates new competitiveness targeted to the generation X and the millennial generation consumers who prefer leisure accommodation that provide excitement and entertainment for both segments of market. Hotels are called “Pokétels” and have access to the most Pokéstops and Pokégyms within and near the hotel property.

Source: Author’s research

Researched and described innovative solutions present best practices that could influence the future development of hospitality industry and set new trends in tourist demand that is changing continuously. Accordingly, hotels should follow path of inventiveness and implementation of innovative way of thinking, organising services as intangible software and built structures as tangible hospitality hardware.

### 3. CONCLUSION

Tending to achieve business excellence, hotel companies acknowledge how important is to keep up with tourist demand, to implement qualitative new changes in order to provide best, remarkable service to guests. Innovative inspiring solutions overcome grey like ideas that fade away with the masses. Continuously, hoteliers should focus on interior design but comprehend the crucial importance of good service for their guests who expect personalized, friendly and sociable approach.

Hotel industry as one of the important drivers of economy development should continuously improve the quality of its products, services, business process, human resources by transforming them to the quality driven companies and organisations. Importance of implementation of radical changes that would eliminate redundancies and obsolescence that don't produce added values which impact tourist satisfaction is the key of future development. Nowadays hotel companies develop differentiation and achieve competitive advantage by focusing on their comparative advantages and creative skills.

Development of innovative organisational structures, new trends in urbanism, architecture and design together with creative thematic interior design awakes new tourist demands that seeks special experiences although their stay in hotel and tourist destination.

In conditions when knowledge, speed and agility are competitive advantages, companies that implement the innovations of modern technologies and organisation penetrate the market more deeply and achieve better results. Reengineering of business process by innovations propose radical redesign in order to achieve better results and greater performance, lower costs, quality and productivity increase, higher prices, services and speed.

To achieve a shift in service, new knowledge and technology should become part of the business process as modern technologies, design solutions and organisation are changing the hospitality industry.

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## BURDEN SHARING PRINCIPLE IN RESCUE AND RESTRUCTURING – NO PAIN, NO GAIN -

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*Following the adoption of the new Commission's Guidelines on rescue and restructuring, the authors look closer into the principle of burden sharing to contextualize the impact of implementation of the Guidelines in practice, given the case law at hand. The stringent rules of rescue and restructuring of firms in difficulties provide the opportunity and chance to give them economic, production and employment rise where assessed viable and necessary. Yet, although welcoming the introduction of the burden sharing as a largely positive principle, the authors feel there is a space to (re)consider the proportionality of burden sharing principle, its limits as well as the effect. The rightful expectation of the State is to “cash in” the original investments by taking over debt-to-equity principle, thus being represented through ownership and accumulating all the owner's rights as per national company's law and other bidding legislation, dependant on the Member state in question. The authors question the extent at which the State, firstly, enters the firms by assuming equity and, secondly, exercises its owner's right with(out) the political context.*

**Keywords:** *Burden sharing, firm in difficulty, restructuring aid, state aid*

### 1. INTRODUCTION

The Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulties was introduced in July 2014<sup>1</sup> (hereinafter: the R&R Guidelines) as part of the overall State aid modernization process<sup>2</sup>. State aid represents a public expenditure; thus the R&R Guidelines aim at ensuring that its spending is effective and presents an investment for future, based on a *return on investment* principle. The novelties introduced embrace better targeting of aid, the burden sharing principle, temporary restructuring aid for SMEs as well as further elaborated principles of own contribution, all leading to tax payers having a fair share of the rescue and restructuring process. Since its adoption in 2014, the R&R Guidelines received limited attention by legal scholars.

Some authors focused on R&R economic aspects and balancing test,<sup>3</sup> whilst others explored its economic significance through the lens of the discretionary character of rescue and restructuring.<sup>4</sup>

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<sup>1</sup> Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty, Official Journal C 249, 31.07.2014, p.1

<sup>2</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on EU State aid modernisation (SAM), COM(2012) 209 final.

<sup>3</sup> Frank Maier-Rigaud, Christopher Milde, 'The Rescue and Restructuring Aid Guidelines of the European Commission: An Economic Point of View' (2015) 38 World Competition, Issue 2, pp. 189–213

M. A. Bolsa Ferruz, P. Nicolaides, An Economic Assessment of State Aid for Restructuring Firms in Difficulty: Theoretical Considerations, Empirical Analysis and Proposals for Reform, World Competition 37, no. 2 (2014)

<sup>4</sup> Ramona Ianus and Massimo Francesco Orzan, Aid subject to a discretionary assessment under Article 107(3) TFEU in Hoffman, Micheau, State Aid Law of the European Union, Oxford University Press, 2016



Yet there is an important issue that has not caught sufficient attention- the principle of burden sharing. In essence, the burden sharing represents a contribution to restructuring costs by firm's denouncement of its future profit in favour of the State. The principle of burden sharing has been introduced in 2014 R&R Guidelines following its successful application across the financial sector.<sup>5</sup> Amongst the instruments used<sup>6</sup>, the Commission applied a burden sharing principle in order “*to curtail as much as possible moral hazard in the future.*”<sup>7</sup> The Commission highlighted that the restructuring process has been overall effective when looking at all of the measures implemented during the application of the temporary State aid to financial sector.<sup>8</sup> The Commission did not single out the burden sharing principle as the main factor of restructurings' effectiveness, which is understandable considering that an overall effect of a restructuring process is dependent upon all individual factors combined. However, the fact remains that following this success, the 2014 R&R Guidelines introduced, *inter alia*, the principle of burden sharing as a benchmark criterion for awarding R&R aid to firms in difficulty across sectors.

The authors explore this policy choice by evaluating the probability of achieving equal success in other sectors. One may argue that due to the fact that burden-sharing principle entails additional commitments to already heavily committed firms in difficulty, its application should not be the norm. In other words, that it is justifiable only in times of crisis as a one-off measure suited to particular characteristics of the financial sector, its importance to the overall economy and the states' vulnerability as aid grantor. The authors contend that this newly introduced principle actually ensures the right balance between legitimate interests of the state and interests of state aid beneficiaries and is likely to bring about crucial benefits to the restructuring process outside the financial / banking sector as well. Applied burden sharing principle may in fact keep the recipient firms in more discipline implementing the “wish lists” under their restructuring plans, having the State waiting for its rightful “cut” in the gain at the end of the process. In addition, the authors advance the opinion that the attainment of the *return on investment* principle rests primarily on the burden sharing principle. Its application is likely to incite an evolution of the traditional understanding of state aid concept: it may transform the role of the

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<sup>5</sup> In response to the financial crisis that hit in the mid-2008, Member States allocated state aid to rescue banking sector at 10% GDP overall. To restore the financial market and ease the overall effects of the crisis, the Commission adopted several temporary instruments enabling Competition policy to become a legitimate tool at the disposal of national governments, central banks and European Central Bank in their fight against the crisis.

<sup>6</sup> 10.07.2013 - Communication from the Commission on the application, from 1 August 2013, of State aid rules to support measures in favour of banks in the context of the financial crisis (“Banking Communication”)

(This Communication replaces the 2008 Banking Communication and supplements the remaining crisis rules.)

01.12.2011: Communication from the Commission on the application, from 1 January 2012, of State aid rules to support measures in favour of banks in the context of the financial crisis, Official Journal C 356, 6.12.2011, p. 7

01.06.2011 - DG Competition Staff Working Document - The application of State aid rules to government guarantee schemes covering bank debt to be issued after 30 June 2011

01.12.2010: Communication from the Commission on the application, after 1 January 2011, of State aid rules to support measures in favour of banks in the context of the financial crisis Official Journal C329, 7.12.2010, p.7

18.05.2010 – DG Competition staff working document – The application of State aid rules to government guarantee schemes covering bank debt to be issued after 30 June 2010 (30 April 2010)

23.07.2009 Communication from the Commission “The return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the State aid rules” Official Journal C195, 19.8.2009, p. 9

25.02.2009 Communication from the Commission on the Treatment of Impaired Assets in the Community Banking sector, Official Journal C 72, 26.03.2009, pages 1-22

05.12.2008 - Commission Communication Recapitalisation of financial institutions in the current financial crisis: limitation of the aid to the minimum necessary and safeguards against undue distortions of competition. Adopted on 5 December 2008, Official Journal C 10, 15.1.2009, p. 2-10

<sup>7</sup> 05.10.2011: DG Competition staff working document – The effects of temporary State aid rules adopted in the context of the financial and economic crisis, SEC(2011) 1126 final

<sup>8</sup> *ibid*

state from a benefactor trying to “attain particular economic and social objectives”<sup>9</sup> to an investor likely to have direct returns of its investment and thus its introduction should be welcomed. Yet, the role of the State may have its negative side; the authors thus question the qualitative exercise of investor’s rights enabling the State to go beyond the reasonable owner’s/equity/shareholder’s right but also set forth the question of the State’s withdrawal from the firm.

In order to present their arguments in a clear and coherent manner, the authors first analyse the notion of burden sharing as applied to the financial sector and identify its content in the 2014 R&R Guidelines (Section 2). The application of the burden sharing principle following the 2014 R&R Guidelines is analysed and evaluated through a case study of Polzela d.d. Given the fact that the restructuring plans following the 2014 R&R Guidelines have not been fully implemented yet, the authors will limit themselves to identifying open questions and potential perils that may emerge in its ex post implementation. (Section 3). Concluding remarks are offered last (Section 5).

## **2. 2014 GUIDELINES ON RESCUE AND RESTRUCTURING – THE BURDEN SHARING PRINCIPLE – *back to business***

### **2.1. Burden sharing principle in the banking sector**

The quick reaction by the Commission in response to the financial crises came in the form of a Banking communication<sup>10</sup> outlining the principles by which the State aid should be awarded. The Commission also sought to ensure that the aid awarded by the State was clear and limited in its scope, i.e. restricted only to what was needed to overcome the acute financial crises without providing a misused and unjustifiable benefit for bank shareholders/owners. The Restructuring Communication of 22 July 2009<sup>11</sup> provided a framework for the use of State aid in course of bank restructuring process in time of crisis. These rules, together with the three previous Communications on banking, recapitalisation and impaired assets<sup>12</sup>, offered guidelines how to assess different support measures to banks during the financial crisis. The Restructuring Communication outlined conditions to be fulfilled in order for assistance to be compatible with State aid rules so as to ensure the return to viability without further State aid.<sup>13</sup> Participation in own restructuring process by beneficiaries of State aid was necessary to restore the balance between the crisis, short-term financial difficulties and the principles of Internal market financial services.<sup>14</sup> Thus, the burden sharing principle required from banks to contribute to the

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<sup>9</sup> Bellamy&Child, European Union Law of Competition, 7th ed., Rose V, Bailey D.(eds.), Oxford University Press, 2015, p. 1275, para 17.010.

<sup>10</sup> Communication from the Commission on The application of State aid rules to measures taken in relation to financial institutions in the context of the current global financial crisis (OJ C 270, 25.10.2008, p. 8)

<sup>11</sup> Commission communication on the return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the State aid rules, Official Journal C 195, 19.8.2009, pp. 9-20

<sup>12</sup> Communication from the Commission — *ibid* 7

Communication from the Commission — The recapitalisation of financial institutions in the current financial crisis: limitation of the aid to the minimum necessary and safeguards against undue distortions of competition, Official Journal C 10, 15.1.2009, pp. 2-10.

Communication from the Commission on the treatment of impaired assets in the Community banking sector, Official Journal C 72, 26.3.2009, pp. 1-22.

<sup>13</sup> *Ibid*. The overall goal of the Restructuring Communication was to ensure the return to viability of banks, limit the restructuring aid to needed minimum and ensure that banks participate in cost of restructuring through their own resources and limit the distortion of market competition by imposing on state aid beneficiaries’ measures of divestments, behavioural measures and / or temporary restrictions of acquisitions via publicly allocated resources.

<sup>14</sup> Former Vice President of the Commission and Commissioner for Competition Joaquín Almunia addressing State aid law and banks, addressed his opinion on the subject to have believed „...that... institutional shareholders

restructuring costs. The goal was to ensure that a restructured bank pays for the aid received once it returned to viability. The sharing of the burden or, better said, paying back what they received in the time of crisis, consisted of restrictions of payment of dividends, coupons on hybrid capital by loss-making banks or, where not immediately possible, claw-back clauses foreseen in the restructuring plan(s). Where banks were not providing restructuring plans, they needed to present their viability plans that did not contain the burden sharing principles.<sup>15</sup> As explained by Bomhoff, Jarosz-Friis and Pesaresi, proper burden sharing is meant to solve the problem of moral hazard, by “requiring the firm, its shareholders and hybrid capital holders...to pay as much as possible for the State intervention. This can take the form of a high price for recapitalisations, the level of first loss and remuneration paid for impaired assets reliefs or, more lasting, bans or limitations on coupon payments on hybrid capital.”<sup>16</sup>

To illustrate the necessity of burden sharing principle, let us look at the Commission’s decision on *Italian Banca Tercas*<sup>17</sup> where the Commission concluded that the aid provided to Banca Tercas by mandatory depositary scheme was not compatible with state aid rules. The Commission concluded that no restructuring plan was provided and that the burden sharing was not respected along with the limitations to distortion of market competition.<sup>18</sup> The Commission found that the burden to be shared on the part of the Bank and its capital holders have not sufficiently contributed to the perspective restructuring plan of the Bank for aid received to be accountable for. Contrary to this example, amongst many decisions taken during the financial crisis<sup>19</sup>, the Commission e.g. took the decision not to raise objections to *Belgian KBC*<sup>20</sup> amendments to restructuring plan that included the introduction of an incentive structure to asset relief measure (the State Protection Measure) to encourage KBC, subject to strict conditions, to reduce the exposure of the Belgian State to the assets covered by the portfolio. On burden sharing principle, the Commission established that “...despite the possible fee reduction, KBC still pays remuneration for the SPM (i.e. the Cash Range) that substantially exceeds the minimum required by the Commission for an asset relief, by around EUR [...]”

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should be held responsible for their mistakes or their reckless risk taking. “Speech/11/62, “Landesbanken and the EU competition rules”, 9th Handelsblatt annual conference Strategies for Savings Banks and Landesbanken, Berlin, 2 February 2011, pp. 5 et seq.

<sup>15</sup> Where banks received a limited amount of aid whereas they were in fact basically sound, they were not required to provide other than the information on their viability and have their business plan reviewed/evaluated to demonstrate their capital adequacy and risk profile.

<sup>16</sup> Andrea Bomhoff, Anna Jarosz-Friis, Nicola Pesaresi, Restructuring banks in crisis — overview of applicable State aid rules, Competition Policy Newsletter – found at: [http://ec.europa.eu/competition/publications/cpn/2009\\_3\\_1.pdf](http://ec.europa.eu/competition/publications/cpn/2009_3_1.pdf)

<sup>17</sup> Commission Decision (EU) 2016/1208 of 23 December 2015 on State aid granted by Italy to the bank Tercas (Case SA.39451 (2015/C) (ex 2015/NN)) (notified under document C(2015) 9526), Official Journal L 203, 28.7.2016, p. 1–34

<sup>18</sup> Ibid – point 188, p. 27. Amongst all the findings, the Commission concluded the following: “*The only form of aid similar to a grant in the 2013 Banking Communication is aid for recapitalisation. However, recapitalisation requires a number of compatibility criteria to be fulfilled: there must be: (i) a capital raising plan, outlining all possibilities available for the bank in question to raise capital from private sources, (ii) a restructuring plan that will lead to the restoration of the viability of the financial institution, (iii) a sufficient contribution on the part of the beneficiary itself, with holders of capital and subordinated debt instruments contributing as much as possible (burden-sharing), and (iv) measures sufficient to limit the distortion of competition. While a capital raising plan may have been implemented by Tercas’s[...], the Commission has not been provided with evidence that the compatibility requirements described here have been met.*”

<sup>19</sup> Overview of decisions and on-going in-depth investigations of Financial Institutions in Difficulty, Memo by the European Commission, Brussels 01.01.2016. – found at [http://ec.europa.eu/competition/recovery/banking\\_case\\_list\\_public.pdf](http://ec.europa.eu/competition/recovery/banking_case_list_public.pdf)

<sup>20</sup> Decisions in the context of the monitoring of the implementation of decisions regarding restructuring and liquidation aid for financial institutions Text with EEA relevance OJ C 135, 9.5.2012, p. 5–5

*billion. The own contribution by KBC in that regard remains considerable.*”<sup>21</sup> Based on all the findings as well as the limited period of extension of the measures, the Commission has established that KBC would be able to complete the divestment of the businesses by determined date and that the divestments of Kredyt Bank and KBC Banka are compatible with the Internal market.<sup>22</sup>

In 2013, the Commission has adapted its temporary state aid rules<sup>23</sup> for assessing public support to financial institutions during the crisis. The Commission's experience with the rescue and restructuring of financial institutions during the financial and economic crisis has shown that specific rules applicable to the financial sector can be beneficial in view of the specific characteristics of financial institutions and financial markets.<sup>24</sup> If the requirement imposed on banks to return to their viability withholding a part of the profit on account of being saved by public money worked for the financial sector, why not apply the same for the non-financial? Until 2014, public money was allocated to restructure firms in difficulty for the sake of regional significance, social hardship and redundancies as well as sectoral significance without expecting gain in return. The only “punishment” for receiving good money for bad decisions was to contribute by having the firm close down a part of its production line, limit its market or close some of its subsidiaries. Why would not a State go further and have its good money put in a firm and possibly gain profit from future viability?

## **2.2. Firms in difficulty – sharing the burden of the past to benefit in future**

Firms that find themselves in difficulty have different options at hand; they can either explore “market” options to overcome their difficulties by negotiating with their creditors, downsizing their operations or go through a bankruptcy proceeding. They could as well turn to State for resources in form of rescue and restructuring aid. By resorting to these types of aid, the firms in difficulties are essentially given another »go« at trying to sustain their difficulties, overcome them and continue operating at the level playing field – with a price to pay. They have to abide to stringent rules of 2014 R&R to mitigate the risk of competition being distorted by giving them unlawful market advantage over their competitors.<sup>25</sup>

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<sup>21</sup> Letter to the Member State, State aid no. SA.29833 (MC11/2009) – Belgium KBC – Accelerated phasing-out of the State Protection Measure and amendments to the KBC's restructuring plan, Brussels, 20.12.2012 C(2012) 9888 final

<sup>22</sup> Between October 2008 and end 2010, the Commission adopted 26 decision on financial institutions restructuring thus approving the restructuring plans and making them binding upon the beneficiaries. Four banks ended up in a formal liquidation process, the remaining continued with the restructuring process and another 25 banks submitted their restructuring plans during 2011. Commission's data show that its decisions covered 60 institutions; by September 2013, the Commission adopted decisions approving a restructuring plan for 44 banks, 23 approving winding down plans and one negative decision requiring the recovery of the aid granted. (15.10.2013 European Commission Memo, State aid: Commission adapts crisis rules for banks - frequently asked questions)

<sup>23</sup> 10.07.2013 - Communication from the Commission on the application, from 1 August 2013, of State aid rules to support measures in favour of banks in the context of the financial crisis. The novelties strengthened the burden sharing principle by requiring the banks to develop a sound plan for their restructuring or orderly winding down before they can receive recapitalisations or asset protection measures. In addition, when and if they were facing capital shortfalls, bank owners and junior creditors were required to contribute before additional state aid was awarded as a form of public funding.

<sup>24</sup> Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty, Official Journal C 249, 31.07.2014, point 17

<sup>25</sup> Just by looking at the latest State Aid Scoreboard 2015, the Member states provided information on expenditure allocated via state aid instruments by end 2014. The total expenditure amounts to 101.2 billion EUR i.e. 0.72% of GDP on state aid. This figure includes aid provided for the financial sector, railways and services of general economic interest. Looking at state aid allocated under rescue and restructuring, on the level of the EU 28, the R&R expenditure is €651.1 mil. Thus, the financial effect plays a significant role in setting of the rescue and restructuring correctly.



As in previous version(s) of the Guidelines<sup>26</sup>, the 2014 R&R Guidelines foresee rescue aid and restructuring aid<sup>27</sup> with the difference of a temporary restructuring support (for SME and smaller State-owned enterprises) introduced in 2014. When it comes to restructuring aid, it needs to be limited to the necessary and argued minimum to secure the implementation of the restructuring plan and its overall desired effect. If the State is awarding aid in form of debt write off, capital or grants to the firm in difficulty, such a move may bring it into a more favourable position in the market and distort the position of its competitors. Thus, the restructuring plan must include a number of measures to mitigate that risk and make the firm adopt painful decisions in order to proceed further.<sup>28</sup> Therefore, all the restructuring plans must, amongst others, contain own contribution to restructuring and as of 2014 R&R Guidelines, the burden sharing principle.

Own contribution may take different forms but what represents a common denominator is that is normally as high as 50% of the total restructuring cost and its source is either own (re)sources free of State aid. It is expected that the beneficiary of restructuring aid participates in the overall costs by its own finances, debt-to equity conversion or e.g. raising fresh equity. What is necessary is that the own contribution results nor from future profits neither from State aid to be received but to be the result of present activities, significant and real.

On the other hand, burden sharing assumes that the beneficiary has accounted for all the losses and is ready to, once the restructuring plan has been implemented fully and the firm has regained its viability, pay back the State aid from the future profit. This way a balance is established between the State giving aid and the firm receiving it; both are in the process together and both have a vested interest to see the process succeed. One may identify the State as the investor, the aid as an investment and burden sharing as return on the investment. The State acts as an investor by awarding aid into a “promising” beneficiary, expecting some of the investment made to be returned in form of gain for the State.<sup>29</sup> From the point of view of the investor, the State has an interest to oversee the restructuring process via the corporate bodies under the company law to make sure its investment is protected by sound management decision thus, its return on investment secured.

Let us look at a concrete recent example of how a listed company that found itself in difficulty responded to challenge by applying the R&R Guidelines. Slovenia notified restructuring aid to

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<sup>26</sup> Community guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 368, 23.12.1994, p. 12).

Community guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 283, 19.9.1997, p. 2).  
Community guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 288, 9.10.1999, p. 2).  
Community guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 244, 1.10.2004, p. 2).  
Commission Communication concerning the prolongation of the Community Guidelines on State aid for rescuing and Restructuring Firms in Difficulty (OJ C 156, 9.7.2009, p. 3).(6)

Commission communication concerning the prolongation of the application of the Community guidelines on State aid for rescuing and restructuring firms in difficulty of 1 October 2004 (OJ C 296, 2.10.2012, p. 3).

<sup>27</sup> Rescue aid is an urgent and temporary measure that helps the firm keep up whilst the liquidation or the restructuring plan is being prepared. It is limited in its duration to financially and temporarily assist the firm to look at its difficulties, their source and come about them appropriately. Restructuring aid has a different character; it assists the firm in difficulty through an elaborated, time-limited but longer plan to overcome its difficulties and return to viability. Temporary restructuring support is liquidity assistance, providing financial support to the (SME) firm in difficulty whilst working out on conditions to bring it back to viability.

<sup>28</sup> For details on content of a restructuring plans, see Annex II of the Guidelines

<sup>29</sup> “...any State aid that enhances the beneficiary's equity position should be granted on terms that afford the State a reasonable share of future gains in value of the beneficiary, in view of the amount of State equity injected in comparison with the remaining equity of the company after losses have been accounted for.”Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty, Official Journal C 249, 31.07.2014, point 67

Polzela d.d.<sup>30</sup> whereas the notification was made preceded by the granting of a rescue aid which the Commission has previously approved on 23 June 2014<sup>31</sup>. In 2014, the Court imposed a compulsory settlements procedure whereby a Financial restructuring plan<sup>32</sup> was a key element as it had set out the agreed terms of restructuring. The compulsory settlement resulted in Slovenian state holding 30.42% of Polzela d.d. The Restructuring plan encompassed several measures: 1) Conversion of claims into share capital, 2) Rescheduling of financial claims of banks and claims by the State for taxes and contributions, 3) The write-off of 50% of operating liabilities, 4) Disposal of non-operating assets, 5) A state loan of €800.000,00 by Ministry of Economic Development and Technology per 7 years and 6) A state guarantee of € 500.00,00 by Ministry of Finance. The Commission examined all measures against the content and requirements of the R&R Guidelines; it has also examined the Restructuring plan against the eligibility, objectives of common interest, social hardship or market failure, return to the long-term viability of Polzela d.d., the need for State intervention, the incentive effects, proportionality of the aid, own contribution to the restructuring from Polzela d.d.’s own resources, the application of the principle of burden sharing and negative effects of the aid and the overall balance. Polzela d.d. had to share the burden of its restructuring; as a result of the conversion, reprogramming and partial write-off of their claims under the compulsory settlement, the existing creditors have incurred losses on their financial exposure towards Polzela as they will not recover a substantial part of their original receivables. Following the conversion, the Republic of Slovenia acquired 30.42 % of the Company and thus would have a share in any future gains in value of Polzela. The Commission considered that the restructuring aid ensured an adequate level of burden sharing by the shareholders and creditors of Polzela, is in compliance with the R&R Guidelines. To make sure the competition was not distorted, Polzela d.d. had to ensure that appropriate measures have also been undertaken whilst the restructuring aid is used. Hence, Polzela d.d. agreed to undertake certain behavioural as well as structural measures.<sup>33</sup> Having examined the facts provided by Slovenia, the Commission has decided not to raise objections to the restructuring aid to Polzela d.d. on the grounds that it was compatible with the Internal market pursuant to Article 107(3) of the TFEU. The result of the restructuring plan and the overall success yet remains to be seen: the restructuring process and the implementation of the restructuring plan lasts until end 2017. By then, Polzela d.d. is obliged to provide semi-annual reports on the progress made in terms of realising the amounts designated as own contribution and annual reports on the overall implementation.

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<sup>30</sup> Commission Decision of 12 May 2016 on the State aid SA. SA.40419 – Restructuring aid for Polzela d.d., OJ C 258, 15.07.2016. Polzela, operating in textile sector, manufacturing and distributing socks and stockings, in years prior to the Commission’s decision, experienced severe financial difficulties whereby the losses reported amounted to €1.7 million in 2014, €3.0 million in 2013, €1.7 million in 2012 and €4.6 million in 2011. The problems mainly resulted from liquidity issues and overall indebtedness.

<sup>31</sup> Commission Decision of 23 June 2014 on the State aid SA.38631 – Rescue aid for Polzela d.d., OJ C 280, 28.06.2014.

<sup>32</sup> The Plan was examined by an independent reviewer and it was concluded that Polzela d.d. was insolvent yet that there is more than 50% probability that the implementation of the Plan would enable the restructuring to take place bringing Polzela d.d. again to the liquidity and solvency in the determined period of time.

<sup>33</sup> Polzela d.d. agreed to withdraw selected products as well as sale by from the (relevant) market (lowpriced pantyhose and knee socks segment thus leading Polzela d.d. to a weakened competitive position and decreased market presence. Commission considered this measure against the manufacturing market of panty hose and stockings on which Polzela d.d. remained present and active and concluded that the measure in question would sufficiently prevent Polzela d.d. from gaining unfair competitive advantage by restructuring aid. In view of the point 98. of the 2014 R&R, the Commission looked at the applicability less stringent rules as regards the measures if the firm in difficulty was operating in an assisted area which was the case of Polzela d.d. under Article 107(3)(a). In terms of behavioural measures, Polzela d.d. made commitment not to publicise State support as a competitive advantage whilst marketing its products neither to acquire shares in any other undertaking during the period of restructuring



Introducing burden sharing in the restructuring process insofar appears to be a positive move by the Commission; it no longer supports giving away public money for free, without the firm itself being penalized for past decision. The firm now receives the necessary aid but needs to financially limit the expectations of its shareholders in terms of profit which is reasonable: to be injected with public money to keep the business afloat on one hand and, on the other, to experience the boost and collect the dividend is far from a rewarding position. Additionally, the potentially positive prospect of the firm to which the State has contributed must give way for the State to rightfully participate in the “success” by participating in the profit share on account of providing aid.

#### **4. THE OPEN ISSUES: TWO CARDS FOR THE FIRM BUT... NO LIMIT HOLD’EM FOR THE STATE?**

Couple of issues emerge instantly for future closer analysis; the circumstance of the “whens and ifs” of the State’s entry to the firm are rather clear. Nonetheless, the circumstances of its “how much” are not clear enough. Notably, when comparing burden sharing to own contribution, the formula of own contribution is laid down in the R&R where, simplified, own contribution should amount to 50% of the restructuring costs. However, when looking at how the burden sharing is formulated (in the attempt to calculate it), we are met with the requirement, *inter alia*, that the State should have a “reasonable share of future gains”.<sup>34</sup> What represents a reasonable share from the viewpoint of the State remains unanswered. We could easily foresee a situation where, for this or that reason, the State may actually wish to gain more than what it is actually financially entitled to. For that reason firms may be (un)intentionally driven to give away more equity / shares on account of the State standing by ready to provide aid. In those terms the 2014 R&R Guidelines, fail to provide any instrument ensuring the proportionality of burden sharing. On top of that, there is a question of the State (eventually) getting out of the firm, i.e. there is no limitation of the State’s life span of presence in such firms. We could compare the restructuring aid to firms in difficulty with the venture capital funds (VCF) that finance collapsed firms by injecting cash to improve their liquidity and in return acquire proportionate equity. VCFs business model, without elaborating further, is to invest, acquire equity and, with the lapse of agreed time, sell their share at the market price to another investor. VCF do not look out for firms for a long-time equity hold and long term investment. Neither should the State. However, the State does have asset management strategy when restructuring aid is concerned and its equity acquired on the ground of burden sharing is of unlimited duration. There is a limited body of case law to date to be checked against these issues. Hence, before 2020, when the Commission plans to revisit the R&R, the practice should be examined and these issues taken into consideration in the new framework to be adopted.

Another issue that needs the attention is of a different character, less numeric and far more political in its essence. Once the restructuring process has been completed and the restructuring and business plan fully and, hopefully successfully, implemented what remains to be seen and with a critical mind – is the question of the investor principle of State. The rightful expectation of the State is to “cash in” the original investments by taking over debt-to-equity principle, thus being represented through ownership and accumulating all the owner’s rights as per national company’s law and other binding legislation, dependant on the Member state in question.

What should at no case be an issue is for the State to execute its owner’s rights by resorting to a political or better say, politicised decision making when either a personnel or substantive business decisions are to be made. In case of later, the State may actually decide not to interfere

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<sup>34</sup> point 67., 2014 R&R Guidelines

with what is rightfully a Management Board competence. Nonetheless, coming to the first point – what if the State decides to interfere with the Management Board?

The State had already interfered with the firm but also with the market, awarding R&R aid; as the Commission defined in para 6 of the R&R Guidelines, “rescue and restructuring aid may significantly slow economic growth in the sectors concerned.” Thus, on top of the “interference” that had already occurred, what the firm should not need additionally is for the State to interfere on the personal / decision making level to “overprotect” its ownership rights. In its Notice on the notion of State aid<sup>35</sup>, the Commission explains the discretionary powers in applying the (aid) measure; the Commission here does not target the issue of what and to what extent the State executes its owner’s right in restructured firms – it is, however, useful mentioning that the Commission takes note of discretionary powers to exercise “a right” whereby the criteria are vague, general and/or imprecise. The worry of discretion applied whilst granting the aid is justifiable; should we not worry whether the potential discretion of influence of State in future management operations and daily business activities cross the boundaries? Influence of the State in managing assets where the State is already a major(ity) equity or shareholder in post-communist / post-socialist block of countries is already perceived as a political pray that comes natural after every election cycle. It is likely not to be perceived as such amongst the “older” Member States rather than the new. This is not an issue that seeks its legal codification within the Guidelines nor the authors suggest to do so. This is rather a simpler case of political culture (not) to reach after more than what is already rightfully at hand in exercising the State’s ownership rights.

## 5. CONCLUSION

In the case of success of the overall restructuring process or the failure of it; burden sharing is one of the elements that jointly either lead to a successful completion of the restructuring process or it is ended in failure. The motivating factor behind both the management of the firm as well as the State to closely look at how the process is developing, is the burden that two parties shared. Burden sharing shall not contribute to the success/failure of the process as an isolated contributor but it shall definitely be a guarding point of the State to make sure its “investment” is protected. Applied in the decision-making process of restructuring the firms in difficulty, burden sharing may indeed serve as a “punishment” for past decisions taken by the management but also as a disciplinary measure for future; the firms shall take an even better caution in what is their daily but also strategic management decisions. Using the opportunity to have another “go” at the market under strict conditions, by using State resources cannot go without paying dues but also allowing the State to have its return on the investment. The proportional burden sharing against the State’s financial contribution needs to be secured. Yet, burden sharing is to be looked beyond the mathematical/investment formulas of digits but is to be also observed from a point of temptation that is lurking in the shadows of State’s equity. Exercising its owner’s right may be tempting for the State not just by expectations of gain but by the chance of exercising its right wider than expected. Disciplining the firm follows stringent rules yet disciplining the State may prove to be a challenge to look after in future.

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<sup>35</sup> Commission Notice on the notion of State aid referred to in Article 107(1) of the TFEU, Official Journal C 262/01 2016, 19.07.2016, p. 28

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## CLUSTER IDENTIFICATION IN SPATIAL NETWORKS OF INNOVATORS

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### ABSTRACT

*It was widely observed in empirical studies that frequent interactions between economic actors within a relatively short space are potentially leading to localized knowledge spillovers. Strengthening of collaboration ties in knowledge networks and agglomeration forces continually reinforce each other leading to formation of technological clusters. Despite a growing popularity of a ‘cluster’ notion, there is still a lack of consensus on its precise definition and a need for consistent bottom-up approach to cluster identification not relying on predefined administrative borders or geographical concentration of related activities. This paper’s contribution to the literature is a novel approach to cluster identification which simultaneously exploits both important sources of information: relative allocation of economic actors across space and patterns of interconnections among them. Using sets of identified clusters, we show how combination of both proximity and interconnectedness of inventors within clusters is related to the quality of resulting innovations.*

**Keywords:** *Clusters, Co-patenting, Geographical proximity, Knowledge networks*

### 1. INTRODUCTION

Iconic examples of regions, such as Silicon Valley in California and Route 128 in Boston, being remarkably successful in producing innovations have induced a search for systematic sources of firms’ innovativeness. In Geography of Innovation literature, spatial proximity was claimed to play a key role in determining technological advancement of such regions via facilitating transfer of knowledge and sharing of ideas among co-located individuals, thus boosting an innovation process.

Patterns of a knowledge transfer among individuals and firms consequently became a matter of interest in network analysis. Explicit structures of collaboration ties reflecting various kinds of interpersonal and inter-firm relations, which tend to convey nontrivial portions of information from one economic actor to another and are potentially reinforced by their spatial proximity, have become known as ‘knowledge networks’ or ‘collaboration networks’.

Network analysis tools have been widely applied to study how particular structural properties of relations among innovating actors might affect their present and future innovative performance in case of co-patenting (Cassi & Plunket, 2012; Ter Wal, 2013), co-publishing (Ponds et al., 2007, 2010; Scherngell & Hu, 2011) or collaborating on research and development (R&D) projects (Scherngell & Barber, 2009; Balland, 2012). These studies have shown a consistent contribution of collaboration networks to innovation outputs of firms and territories, as well as proven a systematic relationship between knowledge exchange and co-location.

One, but not a unique, direction in which a causal effect might occur is that, other things equal, more proximate actors are more likely to collaborate with each other and are doing so more effectively because of lower costs and enhanced coordination of joint innovative activities. Geographical proximity though is not proven to be a necessary nor a sufficient condition for effective knowledge transfer among innovators (Balland, 2014).

Notwithstanding studies of larger-scale networks and a compelling evidence of fruitful collaborations occurring across large distances, it is worth noting that recent empirical studies



rather tend to focus on regional networks, bounded areas of densely located actors and ‘clusters’ in particular (Giuliani & Bell, 2005; Giuliani, 2007).

Profound interest to clusters among economic geographers emerged yet before a concept of ‘knowledge network’ has been developed in Economics of Innovation literature. Since early nineties local external economies of scale and endogenous innovation evolving at regional level have been at the core of studies on Economic Geography (Krugman, 1991; Fujita et al., 2000). At the same time, enhanced competitive advantages and higher productivity of ‘geographically concentrated’ firms gained a keen interest in business and policy-making after Porter’s seminal study (1990) where he termed a spatial form of local business concentration as a ‘cluster’.

Since its first mentioning original concept of a ‘cluster’ has been multiply reinterpreted in different contexts as applied to various theoretical and empirical setups across many social and economic fields. Abundant studies, however, did not reach a consensus on a clear-cut definition of multidimensional notion of ‘cluster’ (Martin & Sunley, 2003). One specific case studied in this paper is related to the so-called ‘technological clusters’ or clusters of innovation activities and an akin relationship between knowledge transfer and geographical proximity.

## **2. RELATED LITERATURE: CLUSTER IDENTIFICATION**

One of the key challenges in attempting to capture patterns of knowledge flows emerging from spatial clustering of innovation activities is to find a consistent approach to identifying the geographical boundaries of clusters (Wolfe & Gertler, 2004).

One possible way is appealing to conventional cases where innovation activities are assumed to be concentrated within reciprocal industrial clusters which might be also closely correspondent and limited by administrative units, as for example Cambridge IT Cluster studied in Huber (2012), or might have been historically evolving within relatively established boundaries, as for example Sophia-Antipolis IT sector studied in Ter Wal (2013), or might be predetermined by natural conditions, as for example wine clusters in Italy and Chile studied in Giulini (2007). These studies are, thus, concerned with capturing knowledge flows within already established static clusters.

At the same time, it has become evident that innovation activities are exposed to agglomeration forces and clustering across space to a larger extent as compared with manufacturing activities (Audretsch & Feldman, 1996). The latter evidence has triggered promotion of an opposite approach to identifying borders of innovation clusters as significant departures from spatial randomness determined by the distribution of manufacturing employment (Carlino, Carr, Hunt, & Smith, 2012).

Other studies abandoned a possibility of identifying technological clusters under predetermined administrative borders referring to the following argument that “one administrative unit may encompass multiple clusters, while one technological cluster may expand across several administrative lines” (Alcacer & Zhao, 2012) which is also known as the Modifiable Areal Unit Problem since Openshaw's study in 1983. Instead, recent studies on Geography of Innovation are based on organically identified clusters, that is contours of such units of study are outlined using diverse continuous-distance approaches, as for example network analytical approach in Catini, Karamshuk, Penner, and Riccaboni (2015), density-based approach in Alcacer and Zhao (2015) or method of overlapping regions of interaction in Kerr and Kominers (2015).

These approaches are dealing with geographical proximity and knowledge transfer in different manner and address the relationship between them to different extent either by identifying boundaries of clusters based on distances among locations and then studying the knowledge flows within and outside of these clusters (Alcacer & Zhao, 2012) or by estimating the threshold distance which delimits areas of frequent knowledge transfers (maximal radius of interaction in Kerr and Kominers (2015)). Certain group of studies though confine themselves to pure



distance-based cluster identification without considering the structure of interactions among economic actors (Catini et al., 2015).

This paper is aimed at contributing to the literature discussed above by proposing a novel approach to cluster identification which simultaneously utilizes both dimensions: geographical distance and structure of interactions among innovators. Using sets of identified clusters, we show how combination of both proximity and interconnectedness of inventors within clusters is related to the quality of resulting innovations.

### 3. METHODOLOGY AND DATA

#### 3.1. Definition of cluster

Lack of consensus on a precise definition of ‘cluster’, as well as considerable diversity of methods for cluster identification leads to methodological ‘deadlock’. On the one hand, it’s not possible to determine the geographical boundaries of clusters without formulating a definition of ‘cluster’ and explicitly stating its key features distinguishing a cluster from any randomly delimited area. On the other hand, it is not possible to describe a notion of ‘cluster’ including the spatial scale at which clustering is supposed to operate before obtaining a set of genuine clusters characterized by their key features.

We are addressing these methodological tasks sequentially by first stating the critical components of a ‘cluster’ notion without limiting a geographical range of implied clustering process, and eventually perform multiple rounds of cluster identification procedure to determine a relevant spatial scale at which delimited parts of geographical space can be referred to as clusters.

As a departing point in our cluster analysis, we refer to Porter’s original definition of a cluster: “A cluster is a form of network that occurs within a geographic location, in which the proximity of firms and institutions ensures certain forms of commonality and increases the frequency and impact of interactions.” (Porter, 1998, p. 226)

Even though in this study we primarily concern technological as opposed to industrial clusters, and focus on individual inventors, not firms or institutions, as atomic elements of the clusters, it is still crucial to emphasize two core elements of Porter’s definition. First, economic actors within a cluster should be interconnected and their interactions form a localized (collaboration) network. Second, cluster is characterized by geographical proximity of its members which fosters frequent interactions and establishment of collaborations among them.

We augment these two fundamental components of a ‘cluster’ with an assumption commonly shared in Economics of Innovation literature that collaborations within a cluster might potentially lead to positive externalities and encourage creation of new knowledge and innovations.

We focus on a collaboration network, in which nodes represent individual inventors and ties between them correspond to instances of joint innovations. More formally,

**Definition 1.** *Collaboration network is an undirected network  $G$  represented by an ordered pair  $(V, E)$  comprising a set  $V$  of vertices (individual inventors) together with a set  $E$  of edges (collaboration ties), which are 2-element subsets of  $V$  (co-authors of invention).*

We, therefore, consider technological clusters to comprise particular parts of the whole collaboration network which are at the same time localized at a certain spatial scale, that is characterized by geographical proximity of the nodes. Consider,

**Definition 2.** *Undirected network  $D=(V, Y)$  comprising the same set of vertices  $V$  from a network  $G$  together with a set  $U$  of edges. A pair of elements  $(v_i, v_j) \in Y$  if a geographical distance between them is less than a threshold of  $x$  km.*

Finally, we can state a formal definition of a technological cluster, using the defined notions.

**Definition 3.** *Technological (innovation) cluster is a connected induced subnetwork of entire network  $G(V,E)$ , denoted by  $G[S]$ , whose vertex set  $S \subset V$ , such that any two elements of  $S$ ,  $(s_i, s_j) \subset (E \cup Y)$  and there is a path between them, i.e. they are not disconnected; and whose edge set consists of all of the edges in  $E$  that have both endpoint in  $S$ .*

One can think of the suggested definition from an opposite perspective: technological clusters comprise groups of closely located inventors which are interconnected with each other by at least one path – sequence of collaborations. The latter condition can be also interpreted as presence of a common knowledge sharing environment among inventors within a cluster, if one assumes that joint development of patentable invention involves a bilateral transfer of knowledge between authors and that knowledge can be effectively transmitted in the *short run* from one person to another by several intermediate linkages. We emphasize the short-term nature of the linkages, since the knowledge networks constructed in our study comprise only those collaborations which occurred in the time period.

Hereabove definition of cluster with implicated geographical distance threshold  $x$  coupled with a restriction of nodes not being disconnected inside a cluster resembles a theoretical model of ‘Marshallian cluster’ formation developed in Kerr and Kominers (2015). Authors parametrize a maximal radius of interaction (Marshallian spillovers) which effectively corresponds to  $x$  threshold in Definition 2. It is noteworthy that implied clusters might ultimately span over distances larger than the underlying threshold and occupy relatively large territories (Kerr & Kominers, 2015).

### 3.2. Cluster identification algorithm

A fundamental goal of the cluster identification procedure is to mark out the groups of economic agents (individuals, firms, institutions), such that the similarity among agents inside groups is higher than outside of them. According to the proposed definition, nodes within a cluster are assumed to share two basic properties – each node has at least one geographical neighbor which is also located within a cluster; each node has at least one direct connection and is connected by at least one path with all other nodes via the knowledge network within a cluster.

Consider the following definition:

**Definition 4.** *Connected component (or just a component) is a maximal subnetwork such that every pair of nodes in the subnetwork is connected by a path (Jackson, 2008).*

Based on the aforementioned Definitions (1-4), here we propose a simple algorithm of cluster identification which takes as an input a network  $G^0$  of collaboration ties constructed according to Definition 1 including the geographical location as an attribute of each node:

1. In a network  $D^0$  constructed according to the Definition 2 find its components. Consider each component as a purely geographical counterpart of a cluster, hereinafter referred to as a geographical component. Each node inside a geo-component has at least one neighbor within a radius of  $x$  km, but it is not restricted to have any collaboration ties with other nodes, which in fact means that economic actors do not necessarily partake a common knowledge-sharing environment.
2. For each geo-component create an induced subnetwork  $G_i^1$  of the input network  $G^0$  constituting all members of a geo-component and find its components connected by collaboration ties.
3. If there is more than one connected component per geo-component, for each connected component construct a network  $D_i^1$  according to the Definition 2 and find its geo-components, otherwise consider a candidate from step 2 as a cluster identified at first iteration.
4. Iterate steps 2 and 3 until all geo-components of network  $D_i^k$  perfectly coincide with connected components of subnetwork  $G_i^k$  and are treated as clusters at  $k$ -th iteration.

One might also impose a restriction on a minimum size of the cluster in terms of a number of its members. We perform a sensitivity analysis in the Section 3 to see how strong and statistically significant is the difference in quality of innovations made within and outside of clusters varying both distance and size thresholds.

### 3.3. Quality of innovations

For the purpose of sensitivity analysis made in the Section 3, we calculate three measures of inventor's innovative performance proxied by average quality of her patents in line with Acemoglu and Akcigit (2014):

1. average number of citations received per patent during a two-year window since a granting date;
  2. average generality index measuring average dispersion of forward citations received by patents (during a two-year window) in terms of the technological classes of their citing patents, defined for patent portfolio with positive citations as:  $\frac{1}{N} \sum_{j=1}^N (1 - \sum_{i \in I} s_{ij}^2)$ , where  $i \in I$  denote a technological class and  $s_{ij} \in [0,1]$  denote the share of citations that patent  $j$  receives from patents in technological class  $I$ ;
- share of ‘tail patents’, defined as a ratio of the number of patents that received during a two-year window a number of citations which is above 95th percentile in the distribution of all patents granted in the same period over the number of patents that received above-median number of citations.

### 3.4. Quality of innovations

Proposed algorithm of cluster identification can be easily implemented with any kind of geocoded data containing information about interconnections. In our analysis, we focus on collaboration ties among individual inventors and for this purpose the U.S. Patent Inventor Database was retrieved from Harvard Dataverse. This database contains records on more than 4 million patents granted by the United States Patent and Trademark Office between 1975 and 2010. Each record comprises disambiguated names of inventors and their geographical locations (latitude and longitude)<sup>1</sup> coupled with granting and application dates of patents, as well as their technological classes. We combine it with Examiner Citation Data containing examiner and other backward citations made by U.S. patents granted between 2001 and 2010, which was retrieved from Harvard Dataverse to obtain citations-based patent quality measures. First, we subset from the Patent Inventor Database only domestic patents, namely those which were produced by inventors located in the U.S. reducing the number of patents in the dataset to 2,3 million. Second, after merging Patent Inventor data with Examiner Citation data and leaving only those patents which are listed in both datasets at the same time, we reduce the number of patents to 1,5 million.

Finally, the range of possible granting years in the dataset for which we can allow a two-years time window of forward citations is between 2001 and 2008. On top of that we have to consider the gap between application and granting dates, since we are willing to capture knowledge sharing between co-authors of a patent which presumably occurs in a year when technological idea is developed (year of filling patent application) on the one hand, but on the other hand we are able to measure quality of patents in terms of their forward citations only after they are granted. We restrict the allowed difference between granting and application years to be no less than 1 and no more than 5 years (about 90% of all applications with granting dates between 2001 and 2008). To keep the distribution of patent applications at a given year unchanged, we exclude all patent applications filled in a given period, once for some of them it is not possible to obtain quality characteristics because of excessive application-to-granting gap. Thus, we are

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<sup>1</sup> See Lai, D'Amour, Yu, Sun, and Fleming (2011) for description of disambiguation procedure.

restricted to 418607 patent applications filled by 373264 inventors between 2000 and 2003, resulting in 542939 unique inventor-year pairs. For each year we construct a network of co-patenting ties among inventors, considering two inventors connected if they are both listed in a single patent application.

## 4. RESULTS

### 4.1. Sensitivity analysis

Sensitivity analysis starts by comparing the number of identified clusters for different values of the above-mentioned thresholds. Maximum distance at which inventor might be located from geo-component (initial candidate for a cluster at first iteration of the algorithm) to be treated as a part of it is set to 5, 10 and 25 km. Minimum size of the cluster is set to 10, 50 and 100 nodes (inventors). Table 1 presents the results. Each cell in the table contains the number of identified clusters at each year from 2000 to 2003. Though variation across time is not found to be large, noteworthy the number of distinct clusters increases sharply as a distance restriction is being relaxed and so spatial density of inventors within a cluster decreases allowing for broader span of its geographical boundaries.

This part of analysis reflects an interplay between two fundamental components of ‘cluster’ definition: geographical proximity and interconnectedness of inventors. Additionally, we refer to the assumption made earlier in Section 2 stating that positive externalities arising both from colocation and knowledge exchange are treated as a characteristic feature of technological cluster. Capturing these externalities, thus, is an important part of cluster identification as suggested by Michael Porter:

“the strength of “spillovers”, and their importance to productivity and innovation determine the ultimate [cluster] boundaries” (Porter 1998, p. 202)

In order to narrow down a tentative range of thresholds and match an imposed characteristic feature of cluster, we focus on comparison of innovations made within and outside of clusters for each combination of distance and size thresholds to see how large is innovation quality gain, if any. For a subset of inventors who have stayed both inside and outside of identified clusters during the period from 2000 to 2003. Hereinafter we refer to these group of inventors as “movers”, though this distinction might not necessarily imply an occurrence of spatial movement, as the cluster borders are re-identified in each period and might change over time. Patent portfolios of “movers” corresponding to 33780 unique inventor-year pairs were evaluated according to each of three innovation quality measures discussed in Section 2. Then we calculate a percentage difference between average quality of innovations made by “movers” when they stayed inside (further referred to as group of observations  $C^i$ ) and outside (group of observations  $C^o$ ) of clusters. This computation is repeated for each combination of distance and size thresholds and percentage differences are reported in Table 2. Results suggest that innovation quality gain in terms of all three measures is consistent over all distances for clusters with at least 10 nodes and over all size lower bounds while maximum distance is equal to 10 km. In subsequent sections we focus on a set of identified clusters provided these particular thresholds (minimum 10 nodes; maximum 10 km) as a benchmark.

### 4.2. Significance test

In previous sections we proposed an algorithm to identify innovation clusters based on spatial proximity and interconnectedness of inventors. It was also shown that inventors might benefit from being members of respective clusters in terms of higher quality of their innovative output, specifically having on average by 10% more citations per patent, by 16% higher generality of patents and by 30% larger share of ‘tail patents’.

We placed an emphasis on the role of interactions among economic actors which has not been taken into account by some previous studies on cluster identification. In this section we use the

estimates of innovation quality gain to contrast benchmark clusters with counterfactual ones – cluster candidates considered at first stage of the algorithm, or simply geo-components, and to test a significance of comparable estimates.

Following the same logic as in previous section, for inventors who have changed their location at least once during the period from 2000 to 2003 (geographical movers) we have found that years when inventor stayed in counterfactual geo-components (further referred to as group of observations  $G^i$ ) were on average by 6% more successful in terms of citations per patent, had by 21% higher generality of patents and by 4% lower share of ‘tail patents’ as compared to years when she stayed outside of geo-component (further referred to as group of observations  $G^o$ ). The latter estimates, in contrast to earlier presented ones, suggest a mixed evidence on association between geographical proximity and innovation quality.

For the sake of making a comparison of benchmark and counterfactual more evident we contrast each set of estimates (in case of purely geographic counterfactuals and in case of clusters identified by our algorithm) to differences in innovation quality which would be observed if observations were picked out of sample at random.

Thereupon we run a series of 1000 rounds to randomly pick the groups of observations of the same sizes as  $C^i$  and  $C^o$  and calculate the differences between average performance of two groups to obtain an empirical distribution of implied quality gains under the null hypothesis of observing ‘a random coincidence’ rather than a systematic pattern. Then repeat the same procedure for randomly picked groups of the same sizes as  $G^i$  and  $G^o$ .

Finally, we can do a “placebo”-like test by contrasting estimates to confidence intervals of the corresponding simulated distributions. Figures 2-4 clearly suggest that estimated innovation quality gains of staying inside identified clusters are more statistically significant and are more likely to be treated as a systematic pattern, as compared to analogous estimated gains of staying inside geographically concentrated areas.

#### 4.3. Description of clusters

For a set of identified clusters in arbitrary period – 2000, provided benchmark thresholds (minimum 10 nodes; maximum 10 km), we show how geography-, network- and innovation-related characteristics of clusters are associated.

Figure 1a depicts the relationship between maximal geographical distance and diameter or largest distance (largest number of degrees of separation) between any two nodes in a collaboration network within a cluster. It is clearly observed that clusters which span over larger distances in space are also less densely interconnected which suggests that collaborations are more likely to occur between inventors if they are closely located.

Figure 1b shows how diameter of network is associated with a degree of technological diversification in a cluster. The latter is measured by Herfindahl-Hirschman Index for technological classes of patents and it ranges between 0 – perfect diversification and 1 – perfect specialization. There is apparently a negative relationship – denser (in both geographic and network sense) clusters tend to be less diversified.

Figure 5 provides an example of visualized output of our proposed algorithm – map of a region (in this case – Silicon Valley with the surroundings) with identified clusters on it. Each color corresponds to a separate cluster; each circle has a radius of 10 km (distance threshold) and represents a unique location of innovators. In some cases, clusters might spatially overlap, if there are innovators geographically close to each other, but not interconnected, thus identified as separate clusters.

#### 5. CONCLUSION

A firm relationship between geographical proximity and effectiveness of knowledge exchange has been established by scholars in Geography of Innovation literature. It was widely observed



in empirical studies that frequent interactions between innovating firms, organizations or individual innovators which are more likely to occur within a relatively short space are also potentially leading to positive externalities – localized knowledge spillovers. Moreover, development of knowledge networks over time is reciprocally associated with strengthening of agglomeration forces and clustering of innovation activities.

The latter tendency has recently triggered an abundant study and intense interest in clusters both among economic researchers and policy makers. Because of its high popularity a notion of ‘cluster’ has been discussed and reinterpreted many times, though there is still a lack of consistent bottom-up approaches to identifying technological clusters without relaying on predefined administrative borders or geographical concentration of related activities.

This paper builds on the previous work done in this field and extends existing methods of cluster identification which solely rely on proximity assumption and do not consider the structure of interactions among economic actors constituting technological clusters. We suggest that ‘cluster’ notion is immanently related to both a concept of spatial concentration and interconnectedness in a network of collaborations and knowledge sharing.

The main contribution of this paper is a novel algorithm which takes as an input any kind of geocoded data containing information about bilateral relations, thus simultaneously exploiting both important sources of information: relative allocation of economic actors across space and patterns of interconnections among them. As an output one can obtain a set of nodes partitioned into distinct groups – clusters which can be visually presented on geographical maps or used for an in-depth analysis of spillover effects within and across cluster borders.

In this paper we use a publicly available dataset which contains robust and detailed geocoding of individual inventors with disambiguated names and implement proposed algorithm in a free software which makes the results of our study perfectly replicable and the algorithm compatible with different sources of data.

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## APPENDIX

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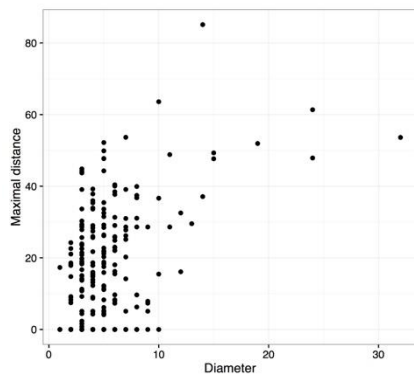
**Table 1: Sensitivity analysis: number of identified clusters (Author's calculations)**

	Maximum distance, km		
	5	10	25
Minimum size			
10	143; 132; 132; 133*	265; 236; 244; 249	693; 689; 698; 648
50	7; 9; 5; 10	23; 21; 23; 30	52; 64; 59; 61
100	1; 2; 2; 4	12; 13; 15; 16	18; 24; 25; 25

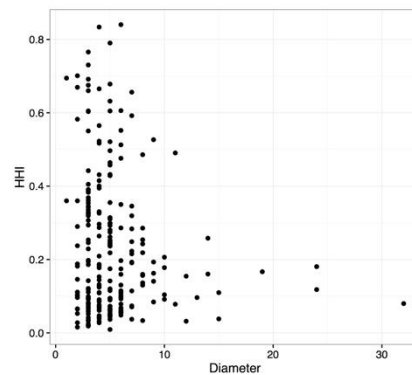
\*Number of identified clusters in: 2000; 2001; 2002; 2003

**Table 2: Sensitivity analysis: innovation quality gains (Author's calculations)**

	Maximum distance, km								
	5			10			25		
	Avg cite %Δ	Avg gen %Δ	Tail pat %Δ	Avg cite %Δ	Avg gen %Δ	Tail pat %Δ	Avg cite %Δ	Avg gen %Δ	Tail pat %Δ
Min size									
10	11.02	9.58	45.58	9.85	15.72	29.63	10.15	16.21	21.16
50	2.73	-7.33	18.74	4.10	2.17	29.87	7.31	5.74	10.12
100	-17.49	-28.75	-6.23	2.45	3.68	29.78	-2.95	-3.10	-2.30

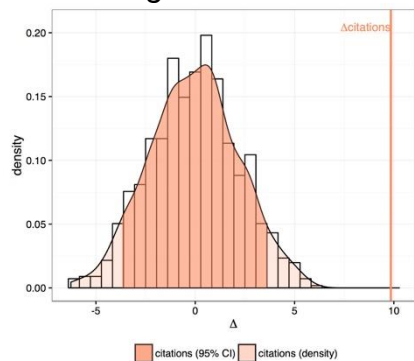


(a) Maximal distance vs. diameter

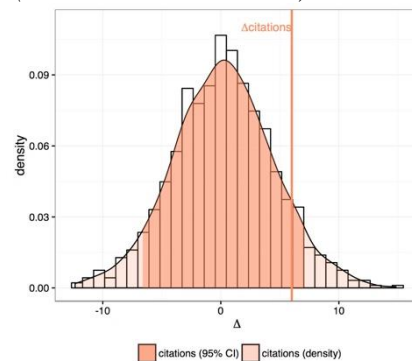


(b) Specialization vs. Diameter

**Figure 1: Cluster characteristics (Author's calculations)**

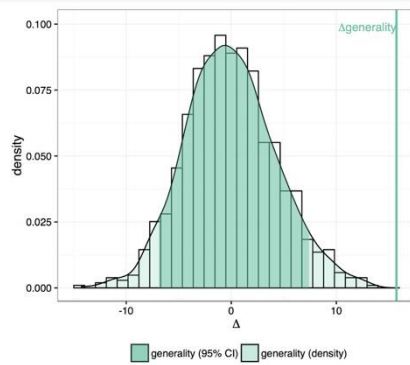


(a) Clusters

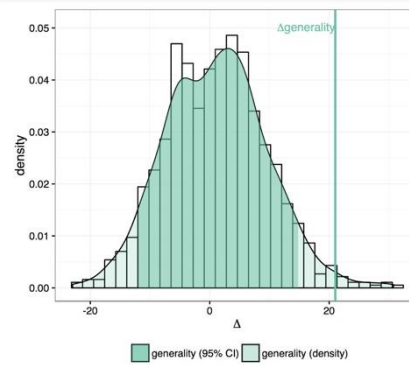


(b) Geo-components

**Figure 2: Innovation quality gain: citations per patent (Author's calculations)**

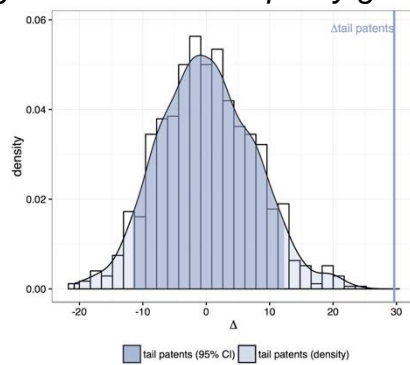


(a) Clusters

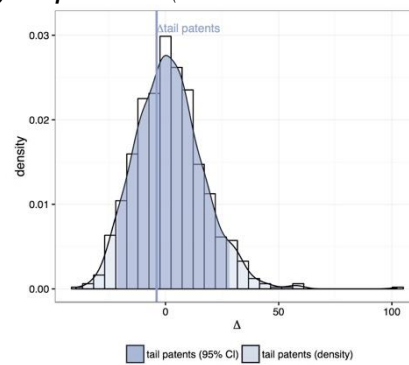


(b) Geo-components

Figure 3: Innovation quality gain: generality of patents (Author's calculations)



(a) Clusters



(b) Geo-components

Figure 4: Innovation quality gain: share of 'tail patents' (Author's calculations)

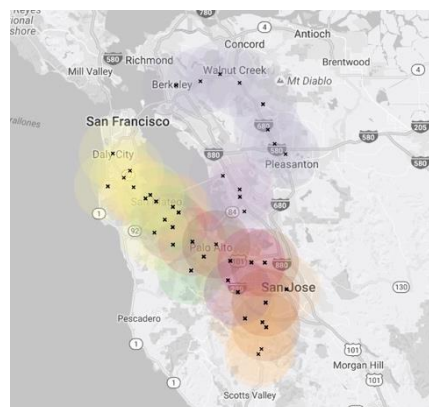


Figure 5: Sample map of identified clusters (Author's calculations, Google Maps)

## ACCOUNTING INFORMATION FOR IMPROVEMENT OF THE PROCESS OF SUPPLY COST PLANNING IN LIFE INSURANCE

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### ABSTRACT

*Accounting information facilitates a review of accurate data from preceding periods and it also provides a basis for estimation of planned categories in the coming periods. Cost estimation and prediction in the national markets provide an information base for consideration of the national market trends and business planning of insurance companies which operate in that market, with the aim of realisation of the planned financial performance.*

*Prognostic models, therefore, are becoming a necessity in modern insurance companies' business. By the research, with the application of accounting information and regulations and using statistical and mathematical methods, a model was obtained which facilitates the estimation of the annual supply costs in the national market. By differentiation between supply costs and commission costs and other supply costs, detailed information is provided about the structure of the life insurance supply costs. By the research and formation of the model, planning accounting information about the anticipated annual costs in the national market is obtained and its application to an insurance company is illustrated. The model thus encircles the positions of gross premium, supply costs, commission costs and the number of life insurance policies. The goal of the conducted research is the formation of a model which generates planning accounting information for the needs of decision making in the process of cost planning in insurance companies. By applying the newly-created model and implementing the obtained planning dimensions, the process of cost planning in insurance companies is improved, providing an additional information basis for making of higher quality decisions.*

**Keywords:** *accounting information, insurance companies, life insurance, supply costs, cost management*

### 1. INTRODUCTION

Expense management represents an important factor for insurance company business performance. Business expenses include the costs of supply of insurance policies and costs of administration. The supply costs include all direct costs emanating from the conclusion of insurance contracts, such as agents' fees, costs of sales staff salaries, commission and the costs of promotion. The commission costs are approved as they occur, in accordance with the principles of the accounting period. The costs of administration contain any cost related to portfolio management services, expenses for staff, as well as any material and non-material costs.

The total business expenses which occur in the national insurance market represent the overall level of costs which are realised by the insurance companies. Accounting information about realised dimensions enable insurance companies to compare the share of their own expenses in the total expenses in the insurance market.

The ratios of average supply costs are obtained by the ratios of the realised supply costs in the national market, gross life insurance premiums and the number of insurance policies at the annual level. The information about the annual supply costs facilitates the recognition of annual trends in the national life insurance market. By application of scientific methods and using historical data, it is possible to plan the observed dimensions in future annual periods. Prediction

of the trends of life insurance supply costs provide an additional information base for the planning of costs in insurance companies.

The application of such planning accounting information facilitates the planning of the amount of supply costs, with a planned increase in the gross premium and the number of policies. By the research, a process of application is formed of historical data of supply cost accounting information, which, using statistical and mathematical methods, are modelled for the formation of planning accounting information about cost trends in the national market, for the needs of improvement of cost planning and analysis of future trends in the national life insurance market. The process of modelling, applicability and implementation are illustrated for the Republic of Croatia's national life insurance market.

## **2. THEORETICAL HYPOTHESES**

The insurance market affects a country's economic results and development of a country's economy (Houa & Cheng; 2012, 126). Insurance has become the main component in the developed countries' economies (Cristea et al.; 2014, 227). Planning and decision making require estimation and prediction of market parameters of costs by insurance company management. For optimal decision making, an adequate combination of input and output information is required in business systems (Jarraya & Bourib; 2014, 70). In the business decision making processes, accounting and financial models are considered to be the key elements (Salisteanu & Oros; 2015, 273). For that purpose, a series of statistical and mathematical methods is used in business analysis. By analysing two or more phenomena, interrelation is determined or, on the basis of the interrelationship, future values are planned and predicted (Dumičić, K. et al.; 2011, 322). Regression analysis is one of the statistical methods which is used for determination of the interrelationship between the observed phenomena, as well as for planning of future value trends.

In regression analysis, relationships are analysed between two or more phenomena, where the phenomena are presented as dependent and independent variables. The independent variable affects variation of the dependent variable; the dependent variable values change due to the change in the values of the independent variable (Aczel & Sounderpandian; 2009, 408). By application of regression analysis, a regression model is formed, which, among other things, facilitates prediction of the dependent variable due to the change in the independent variable. In order to form a model for planning and decision making, a connection is made in this research between the categories of annual supply costs, time, number of agreed insurance policies and gross premiums in the national market.

The prediction of future supply cost trends in the life insurance market was carried out by application of the statistical analysis of trend modelling. A trend can be defined as statistical trend principle of the analysed phenomenon (Žužul, J. et al.; 2008, 139). The trend of supply cost value in the Republic of Croatia's insurance market is predicted using the trend which shows dynamic mean value, expressed by the mathematical function for illustration of a time-dependent phenomenon tendency.

Starting from the fact that, after the year 2008, the growth rate of all markets has been considerably different, including also the life insurance market, the life insurance market trends in the years between 2009 and 2015 were included in the formation of the model. By applying the mentioned period for the prognosis of future supply cost values, previous growth rates, which marked the period prior to the emergence of the economic crisis, are excluded.

## **3. RESEARCH METHODOLOGY IN MODEL DEVELOPMENT**

Insurance companies plan the amounts of annual expenses according to the types and number of insurance policies. Management requires information for determination of company performance and for decision making on future activities (Rus; 2014, 675). Planning

dimensions must correspond to the situation in the market and the insurance company capacity. The plan must be prepared in line with objective future values, which are evaluated on the basis of accounting information about realised effects. The process of planning begins with the analysis of the current position so far and the trend in the insurance market, as well as with the analysis of the insurance company performance.

The prediction of average annual supply costs in the national market is estimated in this model by application of the trend prediction model and by mathematical procedures. By application of trend prediction models, a planned average supply cost is estimated per unit of gross premium. The prediction trend is formed by using the data on annual supply cost trends, gross premium and the number of insurance policies within the observed periods. The costs of life insurance supply are divided into commission costs and other supply costs.

In order for data to be reduced to a comparable unit for all insurance companies which operate in the national market, it is necessary to calculate the average commission cost and the average of other supply costs per unit of premium. These relationships are obtained by putting into scale the realised annual value of commission costs and of other supply costs and the realised life insurance gross premium. In the planning of the annual gross premium and supply costs, which will be incurred by agreement of planned dimensions, it is necessary to predict average premium per life insurance policy. The average annual premium per life insurance policy is obtained as a ratio between the number of annual policies and annual gross premium. Trends over the period of seven years are observed by including the post economic crisis periods in the research.

The values which are realised in the observed seven-year period are starting points for the annual prediction of average commission costs, average other supply costs and total supply costs per unit of gross premium. By trend prediction models, obtained values and observed annual periods are linked and trend prediction models are formed for acquisition of planning accounting information about expected supply costs.

In the next step, the selection of trend models is carried out, with the aim to obtain the predicted supply cost values for the coming annual periods. By testing of trend prediction models for prognosis of the amount of commission costs, a model which, in the most representative way, links the observed values of annual commission costs and time in the national life insurance market is chosen. The double log trend model was applied. The used double log regression model has the standard form equation:

$$y_t = ax^b \quad (1)$$

$$b = \frac{\sum_{i=1}^n \log x \log Y - \frac{1}{n} (\sum_{i=1}^n \log x) (\sum_{i=1}^n \log Y)}{\sum_{i=1}^n \log^2 x - \frac{1}{n} (\sum_{i=1}^n \log x)^2} \quad (2)$$

$$\log a = \frac{1}{n} \sum_{i=1}^n \log Y - b \left( \frac{1}{n} \sum_{i=1}^n \log x \right) \quad (3)$$

$y_t$  – dependent variable of commission costs

$x$  – independent variable of years

$a$  – constant member

$b$  – regression coefficient

In application of the double log regression model, time by years is taken as an independent variable. Predicted trends of average commission costs at the national level are obtained by using accounting information about the position of average annual commission costs and linking with preceding time periods, with the application of double log regression model.



By testing of trend models for linking of average and other supply costs, the number of policies and average premium per life insurance policy, the polynomial trend showed the biggest representativeness. The Kth degree polynomial trend has the following expression (Šošić; 2008, 604):

$$y_t = a + \sum_{i=1}^k b_i x_t^i + e_t \quad (4)$$

$$b = \frac{\sum_{i=1}^n x_i y_i - n \bar{x} \bar{y}}{\sum_{i=1}^n x_i^2 - n \bar{x}^2}, \quad a = \bar{y} - b \bar{x} \quad (5)$$

By testing the polynomial trend model, the second degree polynomial trend for calculation of other supply costs, the number of policies and the expected average premium per life insurance policy showed the biggest representativeness. The expression of the second degree polynomial trend is as follows:

$$y_t = a + b_1 x_t + b_2 x_t^2 \quad (6)$$

$y_t$  – dependent variable  
 $x$  – independent variable of years  
 $a$  – constant member  
 $b$  – regression coefficient

The representativeness of regression is determined using determination coefficient. The determination coefficient is the proportion of the sum of squares, interpreted by the model, in the total sum of squares and is expressed as (Šošić; 2008, 391):

$$R^2 = \frac{\sum_{i=1}^n (\bar{y}_i - \bar{y})^2}{\sum_{i=1}^n (y_i - \bar{y})^2} = \frac{a \sum_{i=1}^n y_i + b \sum_{i=1}^n x_i y_i - n \bar{y}^2}{\sum_{i=1}^n y_i^2 - n \bar{y}^2}, \quad 0 \leq R^2 \leq 1. \quad (7)$$

The total annual predicted value of the supply costs, as well as of other supply costs per unit of gross premium is obtained by application of the presented trend models. Insurance companies obtain information about the total cost per planned gross premium by implementation of the planned annual gross premium. Mathematical expression of this reads as follows:

$$Tpr = Tp + Otp$$

$$Tpr = (ax^b) + (a + b_1 x_t + b_2 x_t^2)$$

$$UTp = (ax^b) * Z$$

$$UOtp = (a + b_1 x_t + b_2 x_t^2) * Z$$

$$UTpr = [(ax^b) + (a + b_1 x_t + b_2 x_t^2)] * Z$$

$Tpr$  – supply costs per unit of premium  
 $Tp$  – commission costs per unit of premium  
 $Otp$  – other supply costs per unit of premium  
 $Z$  – planned annual gross premium

UTp– total of commission costs  
 UOtp- total other supply costs  
 UOtr- total supply costs

By applying the obtained model, predictions can be made of the value of life insurance supply costs, which consist of commission costs and other supply costs, per unit of premium annually, in the national market. Besides this, by multiplication with the planned gross premium, which insurance companies intend to realise in the coming year, the expected supply cost is obtained, per planned gross premium. The average supply cost is obtained by multiplication of commission costs and other supply costs per unit of gross premium, with average value of gross premium per policy. Planning accounting information obtained using this model represents a comparable information base for improvement of supply cost management in insurance companies.

#### 4. APPLICATION OF THE MODEL FOR ACQUISITION OF PLANNING ACCOUNTING INFORMATION FOR PLANNING OF SUPPLY COSTS

The starting data for the formation of the model is accounting information about the realised annual commission costs and other supply costs, the amount of the annual gross premium, as well as the number of life insurance policies in the national life insurance market. The data for the Republic of Croatia market in the period between the years 2009. and 2015. was used for illustration of the model.

*Table 1. Illustration of supply costs, gross premium and number of life insurance policies in the Republic of Croatia market in the period between the years 2009. and 2015.*

(in kunas)

Year	Supply costs		Supply costs	Gross premium	No. of insurance policies
	Commission costs	Other supply costs			
2009	223.130.459	159.372.566	382.503.024	2.143.134.358	749.166
2010	188.825.884	140.914.663	329.740.547	2.111.939.127	754.208
2011	177.048.599	131.408.055	308.456.654	2.092.895.081	753.529
2012	169.146.744	134.336.756	303.483.500	2.134.691.019	775.641
2013	182.217.636	158.703.328	340.920.964	2.231.681.837	778.904
2014	175.433.776	160.088.137	335.521.912	2.322.979.743	784.514
2015	179.834.754	187.664.882	367.499.636	2.477.515.330	798.445

Source: HANFA <http://www.hanfa.hr/HR/nav/106/statistika.html> (02.11.2016)

By applying the illustrated accounting information, the values of commission costs, other supply costs and total supply costs per unit of gross premium are mathematically calculated. Using this procedure, the values of supply costs are reduced to the unit value per unit of premium, which enables the comparison of supply costs, realised in insurance companies with realised values in the national life insurance market.

Table 2. Illustration of average commission costs, other supply costs, total supply costs and average gross premium per policy for the Republic of Croatia life insurance market in the period between the years 2009 and 2015

(in kunas)

Year	xt	Supply costs		Supply costs	Average gross premium per policy
		Commission costs	Other supply costs		
2009	1	0,104114078	0,074364244	0,178478322	2.860,69
2010	2	0,089408772	0,066722881	0,156131653	2.800,21
2011	3	0,084595067	0,062787693	0,14738276	2.777,46
2012	4	0,079237109	0,062930304	0,142167413	2.752,16
2013	5	0,081650365	0,071113778	0,152764143	2.865,16
2014	6	0,07552101	0,068914995	0,144436004	2.961,04
2015	7	0,072586737	0,075747213	0,14833395	3.102,93

Source: Author's calculations according to data from table 1.

By statistical trend modelling, the commission costs per unit of gross premium in the national Republic of Croatia market are linked with the years, where the commission costs are the dependent variable and the years, the independent variable. The said variables are linked by the double log trend model. The other supply costs as the dependent variable and the time as the independent variable are linked by the second degree polynomial trend and the polynomial trend is also used in the modelling of the trend model for prediction of the average gross premium per policy.

Table 3. Statistical models for prediction of average commission costs, other supply costs and average premium per policy for the Republic of Croatia life insurance market

Description	Regression model	Determination coefficient
Double-log model for prediction of commission costs	$y_{Tp} = 0,10274x_t^{-0,7178}$	R=0,96036
Polynomial trend for prediction of other supply costs	$y_{Otp} = 0,00116x_t^2 - 0,00865x_t + 0,08041$	R=0,76845
Polynomial trend for prediction of premium per insurance policy	$y_{pp} = 22,39997x_t^2 - 138,62599x_t + 2.980,74006$	R = 0,98213

Source: Author's calculations

Provided that the trend of the observed life insurance dimensions in the Republic of Croatia market will continue to move towards the obtained regression models, values for the period of the years 2016 and 2017 have been predicted. The calculated values are shown in the following table below.

*Table 4. Predicted values of average commission, other supply costs, total supply costs per unit of gross premium and average premium per policy in the Republic of Croatia in the years 2016 and 2017*

<i>Year</i>	<i>Supply costs</i>		<i>Supply costs</i>	<i>Average gross premium per policy</i>
	<i>Commission costs</i>	<i>Other supply costs</i>		
2016	0,071876795	0,08545	0,178478322	3.305,33
2017	0,070436975	0,09652	0,156131653	3.547,50

*Source: Author's calculations*

The expected commission cost in the life insurance market per unit of life insurance premium for the year 2016 equals 0,071876795 kn, other supply costs equal 0,08545 kn, which gives the value of the supply costs per unit of gross premium of 0,178478322 kn. The predicted average premium per life insurance policy in 2016 equals 3.305,33 kn. By application of these values, the amounts of commission costs are obtained, as well as of other supply costs and total supply costs, except per unit of gross premium and per average premium value per life insurance policy. Subsequently, it can be expected that the average commission cost will be 237,58 kn, other supply costs – 282,44 kn, i.e. total supply costs will be 520,02 kn. per average premium per life insurance policy in the Republic of Croatia. Using the same methodology, the values have been calculated for the year 2017 and they stand at 249,87 kn for commission costs, 342,40 kn for other supply costs, i.e. total supply costs in the amount of 592,27 kn.

Based on the realised supply costs per unit of gross premium in the market, insurance companies compare their own supply costs in this type of insurance. Insurance companies have annual plans about the amount of gross premium and the number of life insurance policies, which they create on the basis of the planned market demand in the national insurance market. Planning accounting information, which is provided by this model, facilitates an insight into the planned supply costs per unit of gross premium, the predicted amount of average premium per policy and development of supply costs in the national market.

Taking as an example that, in 2016, insurance companies plan to realise an increase in gross premiums of 10 million kunas, the expected supply costs for the planned increase in premiums and the average required number of policies are obtained by application of the model, which represents a comparable information base in the process of cost management in insurance companies. For the quoted planned increase in gross premiums of 10 million kunas, applying information obtained by the model, the planned commission costs in the national market in 2016 will equal 718.767,95 kn, other supply costs – 854.500,00 kn, total supply costs – 1.573.267,95 kn and, for realisation of the planned gross premium, taking into consideration the average gross premium per policy, it will be necessary to agree 3.025 new life insurance policies. The obtained information is compared to the plans for supply costs and plans for the number of insurance company policies and they enable comparison between the planned costs and the expected costs in the national life insurance market.

## 5. CONCLUSION

In insurance companies, cost management plays an important role. Maintenance of acceptable business cost levels facilitates good business performance and a competitive position in the market. This is particularly important in the period after the economic crisis, when insurance markets do not record rates of growth from the previous, pre-crisis period. Periods after recessions require different approaches and changes in insurance company business strategies. Predictions for periods following disturbances in the market, caused by economic crisis, are,

therefore, very important. Market participants must be prepared to apply innovative strategies in order to realise planned business goals, as new circumstances require new approaches. Companies which are not flexible, prepared to change, or able to adapt their businesses to newly-created circumstances, are subject to the risk of endangering their own business survival. In such circumstances, cost management becomes crucial for the survival of insurance companies and their sustainability in the market. Monitoring of financial dimensions and realised costs in insurance markets facilitates a comparable point in business management and planning.

Information from the life insurance market represents summary data about realised business dimensions of all participants in the market. Using this accounting information, insurance companies compare realised amounts of gross premium, supply costs and administration costs, realised number of policies, the amount of damage, etc. In such circumstances, cost prediction in the market is exceptionally important, as information is obtained about market trends. Models which predict information about the value of costs are of a particular importance, as they show trends which insurance companies should monitor in management of their own costs.

The model which has been developed by this research was created due to the above stated needs in insurance company business management and, in particular, in cost keeping and management. The information generated from the model facilitates a review of trends of important business components in life insurance with the accent on supply costs. Provision of information about planned supply costs per unit of premium in the national market facilitates a comparable dimension for all insurance companies, regardless of their size and market power. The expected amount of average annual gross premium per life insurance policy provides information to insurance company sales channels about financial possibilities and the wishes of new life insurance customers. The absolute and relative ratio of planned commission costs and other supply costs per unit of premium is obtained by the analysis of supply costs per unit of gross premium.

Based on this, the commission cost segment is improved, as well as the stimulation system for sales channels. Further elaboration of other supply costs enables identification of areas where there is room for further improvement. Application of the aforesaid will facilitate completion of the cost management process and provision of planned accounting information to all interested customers for the segment of life insurance management.

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## FORMAL AND INFORMAL MONETARY INSTITUTIONS IN TRANSITION – THE CASE OF GEORGIA

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### ABSTRACT

*To analyze Post-communist transition process, one of the main important determinant is time to achieve macroeconomic stabilization, which is primarily related to the stable and low rate of inflation. The reduction of hyperinflation improves the achievement of positive economic growth. This empirical evidence shows us that positive economic output growth is not possible without price stability. All post-soviet Countries firstly solve inflationary problems and then thought about future economic growth.*

*Post-communist transition became irreversible after the Soviet collapse. Because Russia had the monetary policy tools, Soviet Ruble remained until 1998, when the Ruble reform was implemented during the Russian financial crisis. Other countries, in some cases had the coupons instead of national currency at the first stages of transition.*

*What is the role of the independent monetary policy and national currency and stable inflation in the currency hyperinflation? How formal and informal monetary intuitions are changing over the time?*

**Keywords:** *transition, monetary institutions, inflation, post-soviet countries, national currency*

### 1. INTRODUCTION

Georgia has an interesting prehistory of monetary relations. First ancient Georgian coins were found outside the territory of Georgia and dates 6<sup>th</sup> century BC. For the economic history most interesting period is started after 19<sup>th</sup> century, when Georgia was a part of the Russian Empire. In these times, barter exchanges were replaced by monetary relations in every major field of economics (Gugushvili, 1965). Georgia has three year of independence (1918-1921) before the soviet occupation. The first central bank was established in Georgia in 1919-1921 called “Georgian state Development Bank”. The State Development Bank was resigned from the Russian Imperial Bank. It’s very important that Bank Board were independent from the government, which was different from Russian banking practice. Despite only two years of existence, it has carried out money reform, created some foreign currency reserves, removed from circulation Transcaucasian Commissariat Bons (which was restricting Georgian state monetary freedom). Since 1919 Bons of the Georgian Democratic Republic were in the circulation. There was a plan to introduce a national currency “Marchili” which sketches was already created. Currency should have been on the parity at the German mark. (The National Bank of Georgia, 2008) After soviet occupation in 1921, as the introduction of the national currency, as well as all independent trials were stopped. The State Development Bank was replaced with a branch of Central Bank of the Soviet Union. But, even a years of the existence Georgian central bank got a lot of experience for the future practice.

The most interesting part of this history are relations between formal and informal institutions as trust with monetary system. First President of the State Bank Jason Lordkipanidze wrote:” Neither the gold fund cannot strength emission, if there are questions about bank’s organization, or on its management. Also, he wrote: “Every time, the main goal for the bank is how long it

will take to get trust of domestic and foreign clients” (Lortkipanidze, 1919). The main instrument of the central bank for the effective implementation of monetary policy and financial sector confidence was trust. In comparison, the public trust was one of the main problem in 90s with non-effective management, as the financial system and the entire economy of the country. The central bank (Georgian National Bank) of 90s was under the influence from the government in the first years. This gave negative impact on the effectiveness of the monetary policy.

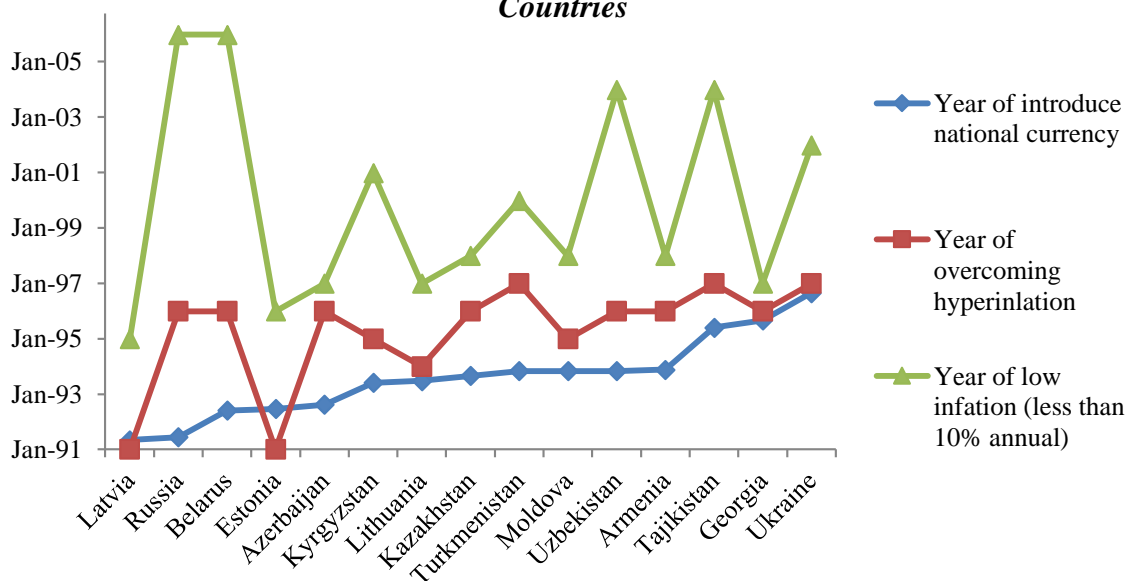
## 2. MONETARY INSTITUTIONS AND REAL ECONOMY

The history of the independent central banks in 1920-1940 helped Baltic republics in 90s. First ex-soviet currency was introduced in July 1991, month before the declaration of independence. It was the Latvian ruble, only from the short-run transition period. It went into the circulation on the parity at the Russian ruble. In 1993 the Latvian ruble replaced by Lat (parity of 1/100). All Baltic republics have easier jobs because the names of their currency of 90s verbally repeating their Pre-Soviet republic's currency name and deserved trust of society. Like Latvia, Estonia without any coupons, replaced the Soviet ruble with the national currency in June 1992. By 1993, some countries have introduced national currencies, including the Azerbaijan. For the rest of countries, 1995-1996 years can be considered too late. Unfortunately, one of that country was Georgia, where the national currency Lari introduced only in September of 1995. 1991-1995 are the years of economic recession in Georgia, hyperinflation, civil war and Russian occupation of two of Georgian regions. Country was been carrying out radical economic programs to rely out from central planning to market economy. (Papava, 1996) In transition most of Georgian financial recourses flooded to financial sector, where people expected very high profits. But soviet born entrepreneurs and institutions have no skills and education to manage financial firms. Results were bankruptcy of banks, losing savings and negative expectations about financial services.

Chart 1 shows the former Soviet republics with correlation of introduce new currency and inflation rates. In this example, hyperinflation means monthly inflation that exceeds 50% and stable inflation is single-digit inflation. Both figures the average annual inflation rate. As the chart shows, hyperinflations were overcome after 2-4 years of new currency introduction. But achievement of a single digit inflation rate were more expensive, depending on the greater economic and institutional factors. The new currency is a positive shock to the money market, the introduction of a new currency is most hyperinflation ends. Low and stable inflation in the long-run is one of facilitator of stable economic growth, but not enough. Socio-economic infrastructure, trust in public authorities, rational behavior of consumers and many other factors have influence to stable inflation and then/also to sustainable economic development (Ahrens J. 2006).

*Chart following on the next page*

**Chart 1: National Currency and Stable Inflation in Post-Soviet Countries**



1

In February 1994, the central bank increased the minimum capital requirement for banks from 200 million to 500 million coupons, which was only 2500 us dollars and one year later only 385 us dollars. In 2000, minimum capital requirement was increased to three million GEL, which is about 1.5 million US dollars. Since 1995, the National Bank launched stricter monetary policy law (Papava, 1995). New regulations were introduced with cooperation of international monetary fund. Most important regulations were (IMF country report No: 95/112):

- Commercial banks assets/own capital ratio should be 5% instead of 8%
- Households deposits/bank's ratio capital should not be more than 100%;
- A person should not have been lending to the bank's capital more than 10%, instead of the previous 50%;
- Commercial bank loans related to one person should not be more than 5% of banks capital.
- Liquid assets/demand deposits ratio should not be less than 30%.

To show more clearness dependence between the role of national currency and stable inflation, we can take regression analyze. So our variables should be time to overcoming from hyperinflation and time to introduce new, stable national currency. In the model we should enter all post-soviet republics, as they have same start time of transition and more/less quality of monetary institutions. Depend variable (INFY) is year of overcoming hyperinflation (when monthly inflation is less than 50%) and independent variable (CURM) is month of introduction national currency (after transition starts).

<sup>1</sup> source: IMF World Economic Outlook (WEO), April 2016

Table 1:

Country	Month/Year of introduce National currency	Year of overcoming hyperinflation	INFY	CURM
Latvia	May-91	1995	5	5
Estonia	Jun-92	1996	6	18
Georgia	Sep-95	1997	7	55
Azerbaijan	Aug-92	1997	7	21
Lithuania	Jun-93	1997	7	28
Armenia	Nov-93	1998	8	35
Moldova	Nov-93	1998	8	35
Kazakhstan	Sep-93	1998	8	33
Turkmenistan	Nov-93	2000	10	35
Kyrgyzstan	Jun-93	2001	11	30
Ukraine	Sep-96	2002	12	69
Uzbekistan	Nov-93	2004	14	35
Tajikistan	Jun-95	2004	14	54
Russia	Jan-91	2006	16	0
Belarus	Jun-92	2006	16	18

Regression model:

$$INFY = \alpha + \beta CURM$$

Results of regression model are in table 2.

Table 2:

			Coefficients	Standard Error	t Stat	P- value	Lower 95%	Upper 95%
Multiple R	0,5466							
R Square	0,2987	$\alpha$	3,4801	0,8716	3,9929	0,0015	1,5972	5,3629
Adjusted R Square	0,2448	$\beta$	0,0569	0,0242	2,3532	0,0350	0,0047	0,1091
Standard Error	1,6576							
Observations	15							

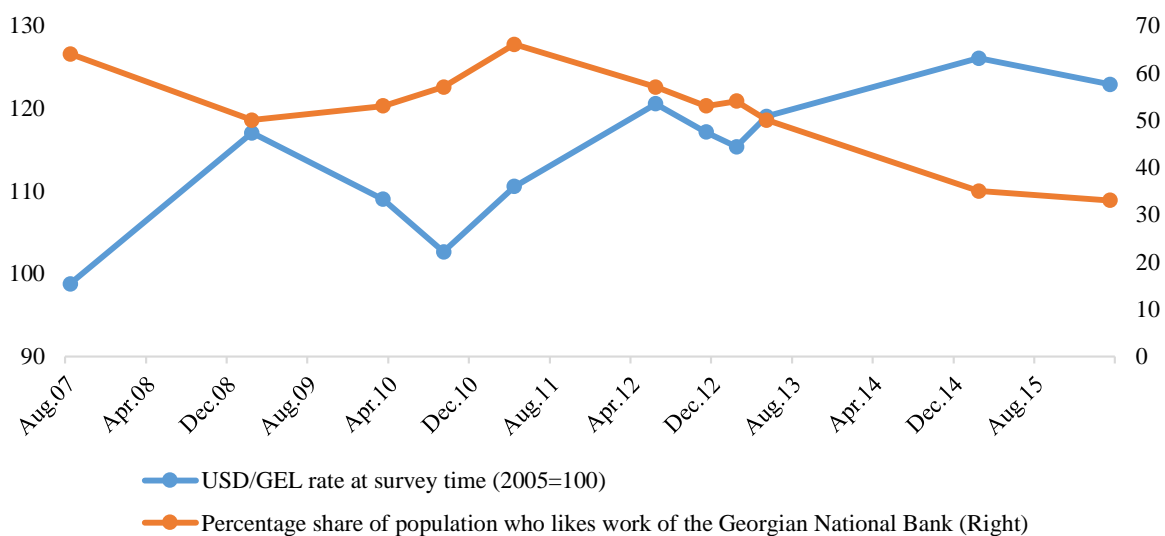
Both coefficients are statistical significant (table 2). Results shows, that countries need 3.5 year to overcoming inflation processed without consideration quality of monetary governance. Every year without national currency delaying time of hyperinflation with 0.68 year. If we make same regression with independent variable “low inflation” (annual inflation lees than 10%), coefficients would not be significant. To overcome the high inflation process, one of the most important (but not only) is to have stable currency. Role of the informal institutions are also too high, people must believe in monetary policy. As noted above, to get low and stable inflation is more difficult process and need changes as formal as informal institutions.

### 3. INFORMAL INSTITUTIONS IN TRANSITION

Relations between formal and informal institutions are important from transition still today. Formal monetary financial institutions in Georgia are the same level as developed world institutions, but informal institutions expressed long time-lag in transition. Good example for this idea is depreciation Georgian national currency in 2013-2015. Problems about exchange rate market started in 2013, when Georgian national currency Lari (GEL) lost 6% of its value against US dollar. In Georgia, 60% of deposits and credits are in foreign currency, mostly in US Dollars. Also transactions in real estate and auto market are processed in dollars. So Mostly Georgian wide society is interested in USD/GEL rate, but not the real or nominal effective exchange rate. In 2014, there were many verbal speculations about currency devaluation. On one hand, Us Dollar has improved its position to all the main currencies. Also recent economic indicators have a negative impact. In 2014, Balance of foreign Trade was 16.6% worse than in the last year<sup>2</sup> as the political tension in the region (Russian-Ukrainian conflict, as they are main trade partners for Georgia, Azerbaijan and Armenia). Total Remittance shrink during the year was 2.3% and only in the last quarter 16.1%<sup>3</sup>. Foreign remittances have important role for Georgian economy. In this case, decrease were from Russia and Greece, which had a political and economic crisis through year.

It seems that, total increase of negative expectations was a result of structural changes in peoples' minds; short-run increasing share or rational expectations with source of the irrational ones. Some part of the Georgian society thought, that Lari would replay history of 90s coupons with hyperinflation and extremely depreciation. Negative expectations of old times was still alive. Short-run fluctuations of exchange rate was too high. In 2016, exchange rates are stable, but trust in financial institutions is lost. Chart 2 shows dependence of trust in central bank and USD/GEL rate. As rate was decreasing, less people were confident about working of central bank despite that were reliable reasons of devaluing. This is good example that informal institutions have long time lag to change its structure.

**Chart 2: USD/GEL rate and Public Opinion about Central Bank**



<sup>2</sup> source: National Statistics Office of Georgia

<sup>3</sup> source: National Bank of Georgia

<sup>4</sup> source: The National Bank of Georgia & IRI - International Republican Institute.

#### 4. CONCLUSION

Empirical data shows that that inflation make itself stronger until the strict policy from government and central bank. Effective formal institutions are necessary for macroeconomic stabilization. But in the long-term informal institutions are the main points for the financial stability. Relations between formal and informal institutors are not constant and changes over time slowly. Effectiveness of monetary policy is depend in that relations. Introduction a new currency was great reform in Georgia, but for today different problems are in the financial markets. Maybe there are different ways to solve problems, different models and different monetary policies proceeding for different mainstream economic schools. But anyway, all roads to financial stability go through formal and informal intuitions, mainly through public trust.

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## FINDING PRO-GROWTH INCOME INEQUALITY: MISSION IMPOSSIBLE?

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### **ABSTRACT**

*Due to inconclusive evidence about the income inequality–economic growth relation, this paper suggests that one precise optimal numerical value (i.a. of Gini coefficient) cannot be indicated. The problem concerns not only groups of countries (concurrent with the rule “One size does not fit all”) but individual cases as well. The aim of the article is to discuss this issue on the basis of a three-step approach: inequality pattern identification, providing for economic development, and then – attention to cultural matters. All of them matter when it comes to the crux of finding an optimal level of inequality, but the last point is particular by virtue of its nature.*

**Keywords:** *context model, economic growth, income inequality*

### **1. INTRODUCTION**

Building a resilient society and economy must be based on strong bonds between individuals and on a solid foundation of economy as well. The ultimate goal of economics is to improve the living conditions of people in their everyday lives, thus it should be helpful in creating such an environment for countries. Economics is also presented as a science of the growth and distribution of national income, which implies that these phenomena as well as their mutual relation should be crucial objects of research. Generally, most economists search for an optimal level of a phenomenon directly under their examination. Combining the latter two issues, the aim of this article is to discuss the problem of an optimal (understood as pro-growth) level of income inequality. According to the hypothesis, one precise optimal numerical value (i.a. of Gini coefficient) cannot be indicated. What is significant, it applies not only to groups of countries (concurrent with the well-known rule “One size does not fit all”) but to an individual country as well. What precludes finding an optimal level of inequality is mainly culture and informal institutions which have an impact on people’s behaviour that cannot be measured.

The article is organised as follows. After the introduction, the first section presents theoretical premises concerning the relation between income inequality and economic growth. The research findings, however, remain somewhat mixed. They are an inspiration to explore the topic of context models, which is an object of analysis in the second section. The approach described herein is presented in three-steps and allows researchers to consider additional factors which play a role in inequality analysis. Certain explanations are based on the study of OECD countries. The subsequent part involves the topic of methodological weaknesses of the context models. The last section offers some concluding remarks. The research was based on critical analysis of the literature.

### **2. INCOME INEQUALITY AND ECONOMIC GROWTH – LITERATURE REVIEW**

The linkage between income inequality and economic growth remains unsolved. The seminal and well-known Kuznets (1955) hypothesis<sup>1</sup> spawned a vast body of theoretical and empirical

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<sup>1</sup> It posits an inverted-U relationship between inequality and per-capita income: inequality widens during the early phase of economic development, then stabilises and eventually declines at a high stage of development. The explanation concerns the secular shift from the agricultural to the industrial sector, the latter being characterised by higher average income and higher inequality than the former (Kuznets, 1955).

literature on the broader issue of the link between the phenomena which, results indicate, have adverse effects on income inequality and the rate of economic growth (Table 1). Widening income inequality is often perceived as the challenge of our times. The economic and social fallout from the global financial crisis and the resultant headwinds to global growth and employment have heightened the attention to rising income inequality – on a global and national scale. The people who pushed this issue to the forefront of contemporary public debate are i.a. T. Piketty (2013, 2015), K. Pickett and R. Wilkinson (2009), A.B. Atkinson (2013a, 2013b), and Nobel prizewinner A. Deaton (2013). Admittedly, not all of them stay focused on the inequality-growth relation in a macro perspective, but the current popularity of the problem seems to outshine views about the positive impact of income disparities on the economy. In the spirit of objectivity, some exemplary arguments from two opposing viewpoints are tabulated below. The number of rows within a particular set of arguments does not play a role (especially that the significance of the arguments might be differential).

*Table 1: Pro- versus anti-growth impact of income inequality – an overview (own compilation)*

<b>Arguments for pro-growth impact:                      More unequal countries will experience faster growth because...</b>	
Aghion et al., 1999 Barro 2000	... a higher saving rate of rich people and the investment rate is positively related to the saving rate (Kaldorian approach); ... at least a few individuals are able to accumulate the minimum needed to start businesses and get a good education.
Lazear and Rosen, 1981	... incentives for innovation and entrepreneurship are provided.
Aghion et al., 1999	... work incentives are stronger in more unequal societies.
Becker and Chiswick, 1966	... returns to education and differentiation in labour earnings can spur human capital.
<b>Arguments for anti-growth impact                      Higher level of income inequality ...</b>	
Grossmann, 2001 Perotti, 1996	... leads to vaster redistribution of generated income, which results in the decreased effectiveness of resource allocation and in distortions.
Grossman, 2001 Perotti, 1996	... leads to limited access to education and to less investment in human capital in the times when capital market is imperfect.
Grossman, 2001 Perotti, 1996	... results in political and social instability as well as in foreign investors' limited trust.
Grossman, 2001	... can results in fertility rates grow, which makes investment in human capital fall due to women's limited access to education.
Galor and Moav, 2004 Stiglitz, 2012	... deprives the ability of lower-income households to stay healthy and accumulate physical and human capital; ... can lead to underinvestment in education as poor children end up in lower-quality schools and are less able to go on to college. As a result, labor productivity could be lower than it would have been in a more equitable world.
Bardhan, 2005	... damages trust and social cohesion (conflicts are particularly prevalent in the management of common resources).
Corak, 2013	... lowers levels of mobility between generations, with parent's earnings being a more important determinant of children's earnings.

Table 1. includes a mixture of views and findings, but beyond the names mentioned there are also scientists who prove that no relation exists (Deininger, Squire, 1998, pp. 259–287)<sup>2</sup>. The content of Table 1. might be seemingly antithetical but it is worth pointing out, however, that the character of the relationship between income inequality and economic growth depends mostly on the assumptions in particular concerning proposed growth theories that explain complex processes illustrated in economic models. Thus, conclusions (the degree and the direction of correlation between inequality and growth) are obviously dependent on these assumptions.

Certain models can be perceived as too simplistic and may lead to the opinion that additional factors should be taken into consideration. Providing for any additional variables puts a researcher in a dilemma. On the one hand, it brings one closer to reality, but on the other hand, simplification is essential given the enormous complexity of economic processes taking place in reality. It is a model's purpose to explain the complicated world in a simple way, and the most elegant are analytical models with the outcome of maximising the functions of economic growth. Despite this fact, one should also have in mind the sentence by John M. Keynes: it is better to be roughly right than precisely wrong. Thus, it is worth mentioning context models, which at the expense of quantification and mathematical elegance, provide some additional variables like the specificity of a country or society. „Optimal” or „pro-growth” is understood as „not restraining economic growth”. In such an approach, an interval of values (of Gini coefficient) is posited. To estimate the pro-growth inequality interval, three steps must be taken (Malinowski 2016, p. 93):

- 1) To gauge the inequality pattern (with initially assigned inequality intervals),
- 2) To assess economic development (measured with GDP per capita),
- 3) To analyse cultural issues (those which have an impact on inequality acceptance and redistribution preferences).

The range inequality set within the first step should be adjusted with every stage.

### 3. EXEMPLIFICATION OF THREE-STEPS APPROACH

Within the framework of the first step, an inequality pattern must be identified. Such a challenge was accepted for example by Hoeller et al. (2012) who – on the basis of a set of 24 indicators – mapped inequality for OECD countries across various inequality dimensions and summarised them using inequality outcome diamonds. The authors also provided a cluster analysis, identifying groups of countries that share similar inequality patterns. The distinguished group of countries and the details are presented in Figure 1.

*Figure following on the next page*

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<sup>2</sup> Less disputable than income inequality is poverty (as a result of extreme inequalities) and social exclusion – they are perceived as unambiguously negative phenomena which should be eradicated.

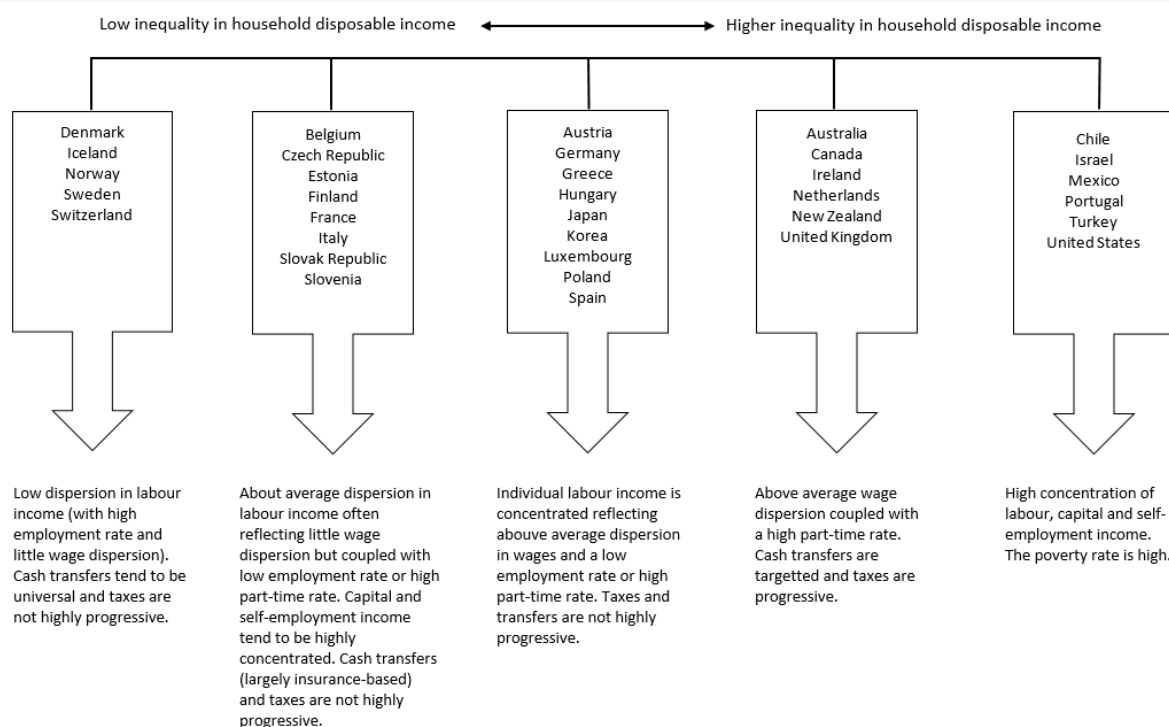


Figure 1: Five groups of countries share similar inequality patterns (Hoeller et. al, 2012, p. 24)

It turns out (Fig. 1) that OECD countries differ widely with respect to the level of labour income inequality among individuals of working age. Labour income disparity is shaped by differences in wage rates, hours worked and inactivity rates. Individual labour income inequality is the main driver of household market income inequality, with family formation as well as self-employment and capital income dispersion playing a smaller role. Household disposable income dispersion is lower in all OECD countries than household market income inequality, due to the redistributive effect of tax and transfer systems, but redistribution differs widely within the whole group.

Then, such defined groups must be assigned inequality intervals. It can be done on the basis of an average Gini coefficient value and minimum and maximum values as well (in possibly the longest period of time). In example, the intervals of Gini coefficient ordered to the groups of OECD countries (Fig. 1) can be enumerated respectively: <23,64; 29,17>, <24,48; 32,76>, <25,80; 32,82>, <28,97; 34,28>, and <35,68; 40,00> (Malinowski 2013, pp. 29-30). The validity of treating these intervals as pro-growth comes from research done by Berg and Ostry (2011). They proved that inequality negatively affects growth and its sustainability, especially in the long term. They documented multi-decade and multi-country evidence that greater equality can help sustain growth. Most of their examples concern right OECD countries.

If an inequality pattern is identified, subsequently there must be an adjustment of the range referring to the level of economic development. It is almost common knowledge that poorer countries are permitted to have bigger income disparities and it does not impede growth. In the early stages of development, it can be explained to some extent by Kuznets' hypothesis<sup>3</sup>. There are also some other explanations based on important determinants of economic growth. In the early stages, the basic driver of economic growth is physical capital accumulation: inequality spurs development, as rich individuals have a higher propensity to save than the poor. In the

<sup>3</sup> Kuznets' curve did not find verification on higher stage of development (Latin America case is an exception confirming the inverted-U relationship).

later stages of development, human capital becomes the crucial trigger for economic growth and large inequalities by aggravating the negative impact of credit constraints on human capital accumulation, which becomes detrimental to growth (Galor and Moav, 2004, pp. 100-126, Thorbecke i Charumilind, 2002, p. 1481). Contemporary theories put an emphasis on social capital as a crucial determinant of economic growth in developed countries. Bonds between individuals are weaker in the circumstances of significant disparities – people who are aware of their worse living standards feel discriminated against. It contributes to a reciprocal mistrust, lack of cooperation and thus, to weaker economic performance.

Apart from the reasons for the varying importance of determinants of economic growth depending on economic development, there is a question of how the proposed intervals should be modified. The direction of adjustment follows the line of thought presented in the previous paragraph, but what is problematic is the scale of modification. In other words, where exactly an upper and lower endpoint for particular countries with definite GDP per capita should be, since no “exchange rate” exists. Some tips can be gleaned from Milanovic's (2004) work. He concluded that in Latin America, economic development is responsible for 5,5 points of Gini coefficient in comparison with average Gini in OECD countries. On the basis of this, Malinowski (2013) suggests that OECD countries with the lowest GDP per capita (below 20 000 USD – Mexico, Turkey, Chile) can take the liberty of having higher inequality (by 10%), whereas the richest countries (GDP p.c. higher than 45 000 USD – USA, Switzerland, Norway and Luxembourg) should reduce inequality also by 10%. It means that only one endpoint of each interval is adjusted. There are also “intermediate operations” for countries with GDP per capita between 20 000 and 30 000 USD (+ 5% - i.a. Poland, Hungary, Portugal, Israel) and with GDP p.c. between 30 000 and 45 000 USD (-5% - i.a. Spain, South Korea, Germany, Australia). Such instrumentation is obviously not precise, but at least can be helpful in some conversions. The most challenging for economists is the last step. It is indisputable nowadays that culture matters (Harrison, Huntington 2000). The implicit nature of it makes it difficult to measure the phenomenon and its impact. Cultural norms come with long histories, and are reinforced by multiple sources of influence. Being deeply rooted, they must determine behaviour and attitude to everything, including economic issues, and are described as informal institutions. Certain academics claim that irrespective of ideology, culture, and religion, people care about inequality, which can be a reflection of persistent disadvantage to particular segments of society (Dabla-Norris et. al 2015, pp. 4-6). These authors seem to wrongly identify equality with fairness which, indeed, is cherished in most societies, but it cannot be interpreted uniformly. It is highly dubious whether „fair” means „equal” – such a rule could be accepted in socialist systems (Morawski 2011, pp. 298-301). In market economy systems, some degree of inequality may not be a problem insofar as it provides incentives for people to excel, compete, save, and invest to move ahead in life. Since culture can be the prism through which people understand the world, it is disputable how „some degree of inequality” is seen by them. Here, the biggest controversy begins, because societies differ from each other and certain values are attached to particular nations, societies or regions. It means that the identical value or range of Gini coefficient can be received disparately in two different countries (even with similar GDP per capita). Consequently, the same inequality level can motivate people to act (pro-growth impulse) in one country, whereas it can raise caveats in another one. Alesina and Giuliano (2009) also show that preferences for redistribution vary greatly among countries – not only do differences in macroeconomic volatility affect the preferences, but in religion and culture as well.

Seemingly, there are common features of some groups of countries. For instance, the European Union is associated with such values as solidarity and respect for the individual. There is a deeply rooted respect towards human dignity and the belief that everybody should be included in the common welfare and take advantage of it. It means that the Europeans are able to accept



lower inequality and greater redistribution than i.e. the American society. However, the EU is heterogeneous (although, less than OECD). Even among countries which theoretically have adopted the same type of economic system (i.a. Poland, Germany – a social market economy), there are significant differences. The member states have variable experiences and history behind them. The past determines people's economic behaviour, including their attitude to income inequality. Examples of similarly-juxtaposed countries within the EU can be presented which successfully deflate the validity of a “corporate analysis” within the third step.

Coming back to the search for a pro-growth interval, the question occurs: How should cultural impact be counted? Intuitively, in more liberal countries redistribution is supposed to evoke a stronger demotivating impulse, hence the upper endpoints of the intervals should be lengthened because bigger inequalities are tolerated. The contrary operation should be done in less liberal states. A precise measurement of the impact of cultural factors is impossible, albeit some tips on how to be “less roughly” right can be proposed. It seems that it would be helpful to draw on social surveys (in the European Union countries – i.e. Eurobarometer). They include opinions on various topics, i.e. about problems of inequality and poverty. An inspiration for further development on the topic can be found in G. Hofstede's studies on national values (<https://geert-hofstede.com/>), often used in the business field.

#### **4. THE DEFICIENCIES OF THE APPROACH**

In fairness, limitations to the presented approach should be mentioned, some of them naturally evoked in the previous section. It is impossible to indicate one precise optimal numerical value of Gini coefficient. Instead of this, an orientative range of values is posited whose scope is determined by economic, political, and cultural variables. It seems to be paradoxically the biggest advantage and disadvantage of the context model and not only because of the lack of mathematical elegance which was mentioned on the very beginning and accepted. On the one hand, the individual character of a given society which, among other things, determines economic behaviour is not ignored. On the other hand, values or attitudes are difficult or even impossible to quantify, hence it is easy to miss or misinterpret something. The methodological problem of the subjectivity of the researcher arises.

There is another analysis difficulty concerning especially countries of transition. The problem stems from an informal institution continuity. The objects of research are mainly trends and collective behaviour visible in the public sphere, whereas some changes in individual behaviour break through to the public level more gradually. It transpires in such a way because – apart from a reformation of individual attitudes – whole life strategies based on the oldest customs must be changed. Such a reformation demands cooperation and synchronisation of individual behaviour according to shared and commonly accepted tenets and goals, something more closely resembling evolution than revolution. Because of changes barely discernible on a national level, they can be omitted in analyses. This paragraph shows that another potential methodological problem arises – the risk of stereotypical thinking in a researcher.

Modelling reality – beyond the simplistic form of explaining complicated processes and phenomena – should have an application value. In other words, conclusions from the inequality-growth relation analysis should be a fundamental tenet of socio-economic policy in a given country: how to attempt to shape income distribution to boost economic growth. The presented context approach seems to be more suitable here than analytical models, but controversies with interpretation can occur. Let's consider an example of a country known to have large economic disparity. Such opinions can be expressed in social surveys (i.e. Eurobarometer). When juxtaposed with data applying inequality and poverty, it turns out that there is significant variance between subjective opinions and objective data, which has been improving for years. Should the situation be an incentive to increase redistribution because that would motivate the society, or should it be rather associated with the median-voter hypothesis? (Milanovic 2000).



With the median voter as decisive, more unequal societies (or, in this case, perceived by themselves as much poorer) will therefore choose greater redistribution. The more the median voter has to gain through the joint action of taxes and transfers, the more likely he or she is to vote for parties offering higher transfers (at the price of higher taxes sooner or later). Intensified redistribution is associated with Okun's leaking bucket (effectiveness losses), impeding economic growth. Thus, obtaining reliable survey results seems to be impossible.

The doubts presented above do not remove the legitimacy of the context approach. Each type of modelling, both analytical and context, has its flaws, but most crucial for scientists is an awareness of their nature.

## 5. CONCLUSION

While some scholars have successfully proved that a certain level of income inequality is desirable and beneficial, finding one optimal value of Gini coefficient is mission impossible. After the analysis, it looks that the question about the relation between inequality and growth should not be whether inequality is a barrier or trigger of economic growth. The correct question should be: In which circumstances might inequalities be harmful to economic growth and in which can they be beneficial? The circumstances are tantamount to the level of economic development, the culture of a certain country and its character. Historical times and implemented economic system also matter. The nature of these determinants renders that not everything can be precisely measured and only approximate pro-growth intervals of inequality can be fixed. Moreover, given that additional conditions must be considered, international comparisons are not the best tool to find the relationship between inequality and growth to formulate conclusions – rather only one country should be an object of such an analysis. There is also no “one-size-fits-all approach” to tackling inequality. The nature of appropriate policies depends on the underlying drivers and country-specific policies and institutional settings.

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## COMMODITY SHINES IDENTITY: AN ANALYSIS OF CONSPICUOUS CONSUMPTION IN RELATION TO SELF-IMAGE CONGRUENCE AND MATERIALISM

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### ABSTRACT

*The purpose of this study is to test a model with direct and indirect effects of self-image congruence and materialism on conspicuous consumption. There are several studies investigating different aspects of these concepts, yet interrelations are not adequately explored. Research data is gathered using an online 5-point Likert questionnaire. E-mail invitations for participating the survey were sent to university personnel and public servants, and 561 attendants from different towns in Turkey replied the call. Structural equation modelling is used to test the hypothesis and reveal the relationships between mentioned constructs. The results exhibit that self-image congruence and materialistic values are positively related to conspicuous consumption, and materialism mediates the relationship between self-image congruence and conspicuous consumption. Findings shed light on conspicuous consumption from a socio-psychological viewpoint by involving self-concept and materialistic value system. This study has an extensive perspective to indicate clear practical results on product choice, yet it is inspirational for further studies with elaborative product categories.*

**Keywords:** *conspicuous consumption, consumer behaviour, materialism, self-image congruence, symbolic consumption*

### 1. INTRODUCTION

We are all wearing masks functioning in society as intelligence, wealth and sophistication cues. The car a consumer buys, a pair of shoes, a red dress, haircut, facial hair, make-up, a fancy wine and many other products may act as tools to construct identity apart from their physical functions. As Belk (1988) explained, products shape contexts of social interaction and an individual's being. This relationship is even more obvious when luxury products are considered. Conspicuous consumption therefore can be interpreted as a materialistic way of communicating the self-concept with others. This relationship is recognized with materialistic view of an individual, how much a consumer translates commodities into well-being. In this respect, this research aims to relate self-concept and conspicuous consumption with materialism, and support the assumptions made on this relationship empirically.

### 2. CONCEPTUAL FRAMEWORK

After 1980s, materialism has been a subject of consumer research, respectively by means of contributions of Belk (1984) and Richins and Dawson (1992). And in 1990s research on symbolic consumption, as well as conspicuous consumption, arose swiftly (Marcoux, Filiatrault, Chéron, 1997), nevertheless both empirical support (Winkelman, 2012) and causality of the constructs is not adequately revealed.

#### 2.1. Conspicuous Consumption

Thorstein Veblen criticised conspicuous consumption in his work "The Theory of the Leisure Class" in 1899 as a wasteful, lavish spending to show off, and expose wealth (1995). Chaudhuri, Majumdar and Ghoshal (2011, p. 217), on the other hand, defined conspicuous consumption as “a deliberate engagement in symbolic and visible purchase, possession and usage of products and services”. Starting from this point of view, in consumer theory, conspicuous consumption

is not only identified as a tool to display but as a mechanism to enhance self-concept and inform others about one's self-image (O'Shaughnessy, O'Shaughnessy, 2002).

Products function as symbolic agents when visible, changeable and personified (Holman, 1981). In today's world, uniqueness and social desirability motivates conspicuous consumption, according to Memushi (2013, 252). Thus, conspicuous consumption is defined as a tool of self-construction via visible consumption and use of symbolic products (Grace, Griffin, 2009, p. 15). Chaudhuri et al. (2011) offers an understanding for the complex phenomenon and relates three dimensions borrowed as social visibility (Moschis, 2011), individualism (separateness-connectedness, orig.) (Wang, Mowen, 1997) and desire for unique consumer products (Lynn, Harris, 1997). It is hoped in this study to concretize the conspicuous consumption concept in this context.

## **2.2. Materialism**

Materialism as a social phenomenon, has drawn attention after 1980s with the continuing upgrowth of communication channels globally, therefore became a charming theme for behavioural economy (Richins, Rudmin, 1994). Philosophically, materialism signifies the understanding, that matter and action is the main elements of existence, while in consumer research it is the main source of consumers' perception of aims and success and relationship with commodities (Richins, Dawson, 1992). Two main approaches on materialism as an economical phenomenon arises as a personality trait giving importance to worldly possessions (Belk, 1984, p. 291) and as a value system putting meta in the centre of everything (Richins, Dawson, 1992). As a value system, materialism functions as receiver for personal and social cues (Douglas, Isherwood, 1979), and demonstrates one's self-concept and success in social contexts (Sherry, 1983; Campbell, 1987).

Following Richins' approach, materialism is a value system with three belief dimensions as success, acquisition centrality and happiness (Richins, Rudmin, 1994). This means that the more materialistic an individual is, possessions gain more importance to perceive success, acquiring more possessions gain importance for the individual and the individual seeks happiness more in acquiring possessions. Hunt, Kernan and Mitchell (1996) interpreted materialism as an information processing construct, meaning that materialistic individuals evaluate both others and themselves with what they have or what they control. Thus materialists are expected to be more sensitive to materialistic information, more eager to interpret these information as cues of success and status and more accustomed to remember and present these interpretations to others.

Evolving after 1980's with a new materialistic generation and life-styles (Segal, Podoshen, 2013, p. 190), materialism and conspicuous consumption are found to be correlated even in different cultures (Podoshen, Li, Zhang, 2011). Apart from the relationship between materialism and conspicuous consumption, Wong (1997) has also demonstrated that this relationship occurs along with “the self”. Therefore, following Richins' approach, I support the argument that constituting identity via possession also comprises a materialistic understanding of things, even more with ostentatious expenditures.

## **2.3. Self-Image Congruence**

It is explained in the literature that product choice reflects symbolic contents and consumers' identity (Birdwell, 1968; Kassarian, 1971). As a way of constructing the self, consumers express themselves by choosing among several product variants (Coleman, 1983). Alongside with cultural patterns, possessions function as a tool to help individuals to identify themselves

in every stage of life (Belk, 1984). Belk (1988), suggests that starting with the interaction of an infant with the world, individuals learn to construe symbolic cues attached to the objects, as well as products around them, and therefore, possessions play an essential role on self-construction.

The term self-concept is used by Sirgy (1982) as a multidimensional construct effecting one's relationship with the products interacted with. According to this understanding, consumers relate products' symbolic cues with the images perceived about themselves, other consumers, products, brands or retailers. Thus consumption choice is motivated by consumers' perceptions and self-image congruence (Sirgy, Grewal, Mangleburg, 2000). Self-image congruence, consumers' positive association with the symbolic meanings of the products, is then expected to influence attitudes and purchase intentions as a result (Achouri, Bouslama, 2010; Souiden, M'Saad, Pons, 2011), and it is possible to leave good impressions on others just by visibly using a product (O'Saughnessy, O'Saughnessy, 2002) and create a positive congruence with the self-concept (Onkvisit, Shaw, 1987; Aaker, 1999; Jamal, Goode, 2001; Kressman et al., 2006).

Self-enhancement by consumption indicates a loop of elevation need of self, satisfaction and status seeking by acquiring more possessions (Wang, Griskevicius, 2014), or even a system of belief, mindset and happiness (Baudrillard, 2016). Absence of possessions in that case, leads to a self-deception which leads to paying attention to product images, what people have and conspicuous consumption in general (Arrow, Dasgupta, 2009). In consequence it can be said that self-image concept and self-enhancement is highly associated with materialistic value system, causing a will to alter product choices in a flashy way. Materialism as a tool for understanding life (Hunt et al., 1996) has direct effects on constructing the self (Belk, 1984; 1985; 1988) and structuring social contexts (Sherry, 1983). Conspicuous consumption, therefore, as being highly related to possessions (Veblen, 1995), is also expected to be related to materialistic values.

Eventually, this paper seeks to empirically support the conceptual relations between conspicuous consumption orientation, materialism and self-image congruence in the next section as hypothesized below:

H1: Self-image congruity is positively related to materialism.

H2: Self-image congruity is positively related to conspicuous consumption orientation.

H3: Materialism has is positively related to conspicuous consumption orientation.

H4: Materialism mediates the relationship of self-image congruity and conspicuous consumption orientation.

### **3. METHODOLOGY**

Conceptual research model is presented in figure 1. A survey is conducted and structural equation modelling is used to shed light on the complex relationships between factors with better recognition to validity and reliability.



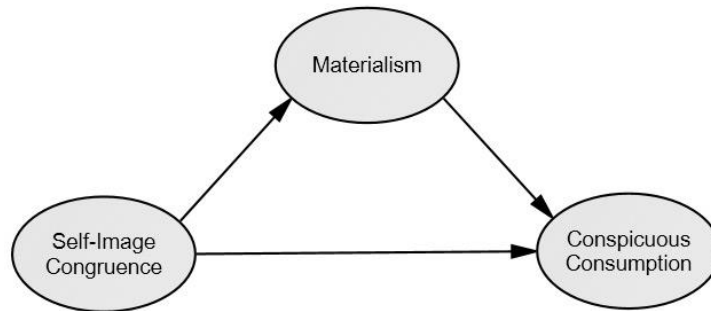


Figure 1: Research Model

### 3.1. Measures

To test the hypothesis, a 5-point Likert form is prepared by translation of 5-item self-image congruence scale adapted from Sirgy et al. (1997), 9-item materialism scale from Richins (2004) and 11-item conspicuous consumption orientation scale from Chaudhuri et al. (2011). The translation is controlled by 3 PhD. students and a pilot study with 65 attendants was conducted to detect and correct instrument errors.

### 3.2. Sample

The data is collected using an online questionnaire and personnel in universities, municipalities and other public offices from several geographic regions of Turkey were invited by e-mail to fill the form in August and September 2016. The sample consists of 561 participants and demographics are show in table 1. According to t-tests, age on materialistic values; and monthly income on materialistic values and conspicuous consumption have slight significant effects, yet these relationships are not strong enough to analyse further.

Table 1. Demographics

Gender	Freq.	%	Residence	Freq.	%
Female	231	41,2	Rural	268	47,8
Male	330	58,8	Metropolitan	293	52,2
Age	Freq.	%	Monthly income	Freq.	%
25 and younger	61	10,9	1500 TL and below	37	6,6
26-35	245	43,7	1501-3500 TL	74	13,2
36-45	147	26,2	3501-5500 TL	303	54,0
46-55	75	13,4	5501-7500 TL	18,9	18,9
56 and older	33	5,9	7501 TL and above	41	7,3
			<b>Total</b>	<b>561</b>	<b>100</b>

### 3.3. Factor Analysis

Confirmatory factor analysis is conducted to validate the scales before path analysis. One item indicating materialism and one item indicating conspicuous consumption are distracted while factor loadings of these items are calculated lower than 0,4. Ultimately, materialism and self-image congruence scales display well-fit values. Conspicuous consumption orientation scale, on the other hand, display lower yet acceptable fit scores. Model fit values and descriptive statistics are presented in table 2.



*Table 2. CFA fit values and descriptive statistics*

	Mean	SD	$\alpha$	CMIN/df	GFI	NFI	CFI	RMSEA
Materialism	2,35	,76	,819	1,571	,986	,974	,990	,032
Self-Image Congruence	2,83	,87	,8	2,209	,995	,994	,996	,046
Conspicuous Consumption	2,09	,68	,835	3,832	,955	,923	,942	,071

### 3.4. Path Analysis

Path analysis results are shown in table 3. The results indicate that self-image congruence is significantly related to materialism ( $\beta = .567$ ,  $P < 0,001$ ), H1 is supported. Further, it is shown that self-image congruence is significantly related to conspicuous consumption orientation ( $\beta = .294$ ,  $P < 0,001$ ), therefore H2 is also supported. Likewise, it is shown in the table that materialism is positively related to conspicuous consumption orientation ( $\beta = .572$ ,  $P < 0,001$ ), meaning that H3 is also supported. The results in the table indicate that self-image congruence is also indirectly related to conspicuous consumption ( $\beta = .324$ ,  $P < 0,001$ ), since materialism partially mediates this relationship and partial effect of self-image congruence occurs through materialism in the proposed model.

*Table 3. Regression Weights*

	Direct	Indirect	
MAT <-- SIC	,567***	-	H1
CCO <-- SIC	,294***	,324***	H2, H4
CCO <-- MAT	,572***	-	H3
CMIN/DF=2,902, GFI=.903, NFI=.877, CFI=.915, RMSEA=.058			

\*\*\* $P < 0,001$

## 4. CONCLUSION

The relationship between self-image congruence and conspicuous consumption is supported in this study. Consistent with the theoretical background, consumers' congruity for product image and self-image effects conspicuous consumption positively. This supports the general argument that product symbolism is effective on consumer choices (Featherstone, 2005, p. 39; Aguirre-Rodriguez et al., 2012) and findings in the literature that self-congruence is effecting conspicuous consumption (Soudien et al., 2011).

Materialistic values are similarly found to have positive significant effect on conspicuous consumption orientation. That is to say, consumers giving more importance to worldly possessions are also more eager to functionalize consumption ostentatiously, which is consistent with the previous findings (Podoshen, Li, Zhang, 2011). It is also supported that materialism, as a value system, mediates the relationship between self-image congruence and conspicuous consumption. In other words, it is supported that image seeking forms a worldly understanding of things, and so consumer tends to purchase ostentatious goods. Revealing the mechanism how consumer choices are motivated gains importance considering the fact that symbolic consumption is a highly profitable field. The results of this study suggest implications for researchers of conspicuous consumption. As the aim of this study, improving the understanding of conspicuous consumption and proposing a model for self-image effect on it, encourages further studies. The model uses a general product and general consumer perspective, while narrowing the research with specific products, brands or cases would reveal more detailed and practical results both for researchers and businesses. It is recommended for further studies to use more specific product types and sample for obtaining more detailed practical results.

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## IMPACT OF ECONOMIC FREEDOM ON REAL GDP GROWTH - EMPIRICAL STUDY (CASE OF GEORGIA)

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### **ABSTRACT**

*Almost twenty-five years have passed since dissolution of Union of Soviet Socialist Republics and it may be asserted that, market economies have been established in almost all of the former USSR countries with varying degrees of success.*

*From early 1990s' Georgia was a victim of several civil wars, revolutions or even later Russian occupation. There was a great need of institutional changes to turn “Soviet Mentality Society” into rationally forward-thinking people. In this case, economic freedom was becoming more and more popular through post-communist countries.*

*Improving economic freedom shows the positive relationship between different social and economic parameters, bringing greater prosperity, cleaner environments, human development, democracy etc.*

*In this Paper, I am going to examine impact of economic freedom on real gdp growth, using different macroeconomic parameters.*

**Keywords:** *Economic Freedom, Economic Growth, Real GDP Growth*

### **1. INTRODUCTION - BRIEF REVIEW OF FREE SOCIETY AND GEORGIAN RECENT ECONOMY**

*“Fundamentally, there are only two ways of coordinating the economic activities of millions.*

*One is central direction involving the use of coercion—the technique of the army and of the modern totalitarian state. The other is voluntary co-operation of individuals—the technique of the market place.” - Milton Friedman*

In an economically free society every individual controls the fruits of his/her own labor and initiative. In such kind of society people succeed or fail based on their individual effort and ability, institutions do not discriminate either or in favor of individuals to any factor unrelated to individual merit, government decision-making is characterized by openness and transparency. The rule of open market is quite fair, the allocation of resources for production/consumption is based on the open competition so that every individual gets the chance to succeed.

When we are talking about economic freedom, people see a critical relationship between individuals and government. Generally, state action or government control that interferes with individual autonomy limits economic freedom, but the goal is not simply an absence of government coercion or constraint but creation of a mutual sense of liberty for all. The government has its exclusive role in this layout. It must provide the framework for the whole system, so that every individual has to follow the principles of “fair play”.

After dissolution of USSR economic freedom was becoming more and more popular through post-communist countries. Though it was very difficult to change the mentality of the people who were born and grown up on communistic principles and lived under centrally planned

economic system. Every country of former Soviet Union which accepted the new challenges of the modern world had to implement a lot of institutional changes.

The most important institutional changes in Georgia began in 1992, when the process of privatization started, but due to high level of corruption it had not brought the fruits that were expected, though important steps forward had been taken. After gaining independence, there was developing a convenient environment for free trading regime, e.g. in 1992-1996 there were abolished some restrictions on import and in 1995 there was cancelled a quotation system what leaded Georgia to WTO<sup>1</sup> as on 14<sup>th</sup> of June, 2000 Georgia became 137<sup>th</sup> member of the organization. (Papava, 2013)

At those times, the main barrier for Georgian economy was lack of investments and high levels of corruption, what was caused by several reasons (unstable geo-political environment, shadow economy etc.). In 1990's the level of Foreign Direct Investment (FDI) was insignificant, until the beginning of building Baku-Supsa Pipeline<sup>2</sup> what raised investment ratio to GDP up to 7.3 percent, but then there was a big fall to 2 percent. This parameter was normalized only in 2003 (sustained 8.4 percent to GDP), what was caused by the new project known as Baku–Tbilisi–Ceyhan (BTC) Pipeline<sup>3</sup>. (Papava, 2013)

The “New Era” in Georgia started after “Rose Revolution” in November, 2003, when there were taken strict changes to the whole economic system, what resulted to reduced level of bureaucracy and corruption, improved private property, reduced incidence of taxation etc. Georgia became one of the top reformer countries as it was simplified starting business, registering property or getting credit. It was a great incentive exceptionally to small and medium businesses and entrepreneurs to start a new business and grow.

## **2. BODY OF PAPER - IMPACT OF ECONOMIC FREEDOM ON REAL GDP GROWTH, DESCRIPTION AND ESTIMATION THE MODEL**

Data used in our empirical study covers 1995 - 2015 period and was collected from the three main sources. Economic freedom index rates were collected from the Heritage Foundation and the inflation rates, real gdp, budget deficit, expenditures on education were collected from National Bank of Georgia and National Statistics Department of Georgia. (Table 1)

*Table following on the next page*

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<sup>1</sup> The World Trade Organization (WTO) is an intergovernmental organization which regulates international trade. The WTO deals with regulation of trade between participating countries by providing a framework for negotiating trade agreements and a dispute resolution process aimed at enforcing participants' adherence to WTO agreements, which are signed by representatives of member governments

<sup>2</sup> The Baku–Supsa Pipeline is an 833-kilometre long oil pipeline, which runs from the Sangachal Terminal near Baku to the Supsa terminal in Georgia.

<sup>3</sup> The Baku–Tbilisi–Ceyhan (BTC) Pipeline is a 1,768 kilometers long crude oil pipeline from the Azeri-Chirag-Guneshli oil field in the Caspian Sea to the Mediterranean Sea.



Table 1 - Data for empirical study (National Statistics Department of Georgia, National Bank of Georgia, Heritage Foundation)<sup>4</sup>

<i>Year</i>	<i>Overall Index</i>	<i>Budget Deficit/Real GDP</i>	<i>Real GDP</i>	<i>Real Expenditures on Education</i>	<i>Inflation Rate</i>
1996	44.1	-0.067	5334.440	2.695	0.394
1997	46.5	-0.080	5895.57	2.950	0.071
1998	47.9	-0.062	6078.624	2.950	0.036
1999	52.5	-0.071	6253.035	3.450	0.192
2000	54.3	-0.030	6367.988	3.765	0.040
2001	58.3	-0.015	6673.998	3.822	0.047
2002	56.7	-0.018	7039.322	3.927	0.056
2003	58.6	-0.018	7817.737	3.457	0.048
2004	58.9	-0.003	8275.648	3.828	0.057
2005	57.1	-0.026	9070.081	3.745	0.082
2006	64.5	-0.034	9921.170	4.243	0.092
2007	69.3	-0.048	11169.21	3.759	0.092
2008	69.2	-0.062	11461.09	4.063	0.100
2009	69.8	-0.092	11032.28	4.872	0.017
2010	70.4	-0.066	11716.40	4.852	0.071
2011	70.4	-0.036	12558.28	5.006	0.085
2012	59.4	-0.035	13362.07	4.854	-0.009
2013	72.2	-0.028	13805.69	5.153	-0.005
2014	72.6	-0.022	14443.97	5.085	0.031
2015	73.0	-0.020	14844.78	4.894	0.040

Let us begin by analyzing the effect of economic freedom on log of Real GDP by using an overall index of economic freedom. The log of Real GDP will simplify the interpretation of the model in that it will allow us to see the percentage effects of each independent variable on Real GDP. Also, in our model we will use economic freedom index calculated by the wall street journal and heritage foundation. For analytical understanding and presentational clarity let's briefly discuss the economic freedom index calculated by heritage foundation.

The overall index consolidates ten different economic freedoms which are divided into four broad categories:

- Rule of Law – *property rights; freedom from corruptions,*
- Government size – *fiscal freedom; government spending,*
- Regulatory efficiency – *business freedom; labor freedom; monetary freedom,*
- Market openness – *trade freedom, investment freedom, financial freedom.*

Ranked countries are given a score ranging from 0 – 100 on each of ten components of economic freedom, and these scores are then averaged (using equal weights) to compute country's final score.

<sup>4</sup> [http://www.geostat.ge/index.php?action=page&p\\_id=1145&lang=eng](http://www.geostat.ge/index.php?action=page&p_id=1145&lang=eng) - National Statistics Dep. of Georgia  
<https://www.nbg.gov.ge/index.php?m=304> - National Bank of Georgia  
<http://www.heritage.org/index/explore> - Heritage Foundation



For this study I will use log of real GDP as a depended variable, and the explanatory variables will be log of an overall index, expenditures on education to GDP ratio and lagged variable. At the first stage, it was interesting to put in effective labor and capital as explanatory variables in the research, but due to the incomplete statistical information it could harm the degree of explanatory power of the model. I will use Error Correction Model (ECM) to analyze influence of economic freedom index on economic growth. Assume that the factors which have some influence on GDP in a long run period are: ***Overall Index and Real Expenditure on Education***.

The long term part of our model is as follows:

$$\log(\text{RealGDP}) = \alpha_0 + \alpha_1 \text{Ov.In} + \alpha_2 \text{EducExp.}(-1) + \varepsilon_t$$

(Model 1)

Where  $\log(\text{RealGDP})$  is natural logarithm of the real GDP, Ov.In is of overall index of economic freedom, EducExp. is real expenditures on education and  $\varepsilon_t$  is an error term (there should be some combinations of structural innovations, such as ARMA process).

If I accept the intuition underlying the basic macroeconomic model for GDP, I expect that any components of the model 1 that would likely increase consumption, investments, government spending, or net exports will probably have a positive relation to real GDP, so an overall index is expected to have a positive relation to GDP, as well as the level of education.

Estimation of this model yields the following results (Table 2)

Table 2 - Estimation of the Model 1

Dependent Variable: LOG(GDP)

Method: Least Squares

Date: 06/16/16 Time: 17:01

Sample (adjusted): 1996 2015

Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.743837	0.181708	42.61681	0.0000
OVERALL_SCORE	0.016057	0.004100	3.916851	0.0011
EDU	0.000933	0.000193	4.835743	0.0002
R-squared	0.970749	Mean dependent var	9.122073	
Adjusted R-squared	0.967308	S.D. dependent var	0.338706	
S.E. of regression	0.061241	Akaike info criterion	-2.610516	
Sum squared resid	0.063758	Schwarz criterion	-2.461156	
Log likelihood	29.10516	Hannan-Quinn criter.	-2.581360	
F-statistic	282.0915	Durbin-Watson stat	1.034934	
Prob(F-statistic)	0.000000			

See the interpretation of the Model 1 below:

$$\log(\text{RealGDP}) = 7.74 + 0.16\text{Ov.In} + 0.001\text{EducExp.} + e$$

$e \sim \text{AR}(1)$

(Model 2)

Notice that the model has high explanatory power, as  $R^2$  equals to .9707, meaning that approximately 97.07 percent of the sample variation in Real GDP is explained by independent variables.

Correlogram - Q-statistics show that there is first order autocorrelation in the model 2 (caused by stationary AR(1) error term). I tested the null hypothesis the model is homoscedastic. A rejection of null hypothesis would imply that the model is heteroscedastic<sup>5</sup>, but failure to reject null hypothesis indicated that model is homoscedastic. (Table 3)

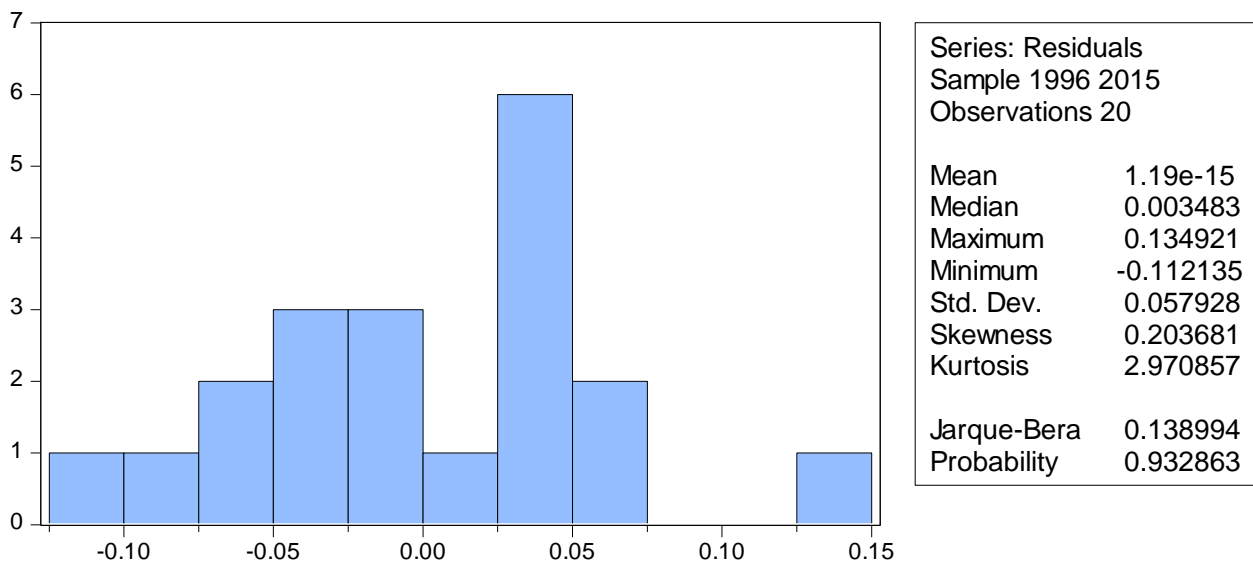
Table 3 - Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.177323	Prob. F(2,17)	0.3320
Obs*R-squared	2.433158	Prob. Chi-Square(2)	0.2962
Scaled explained SS	1.732341	Prob. Chi-Square(2)	0.4206

Also Jarque-Bera test showed failure to reject null hypothesis the model is normal, what means that residuals describing structural shocks of our model is normal. (Figure 1)

Figure 1 - Histogram normality test



Now, we have to prove that results of Model 2 are sustainable. When there is a correlation between any variables in a long run period, one have to examine and find out if this correlation is sustainable. For instance, when the long run equilibrium breaks down, correlated variables should return to the status quo independently if the correlation level is strong enough. As we have already assumed, long term factors do not have short term impacts, so, for short term dynamic, we have to use other variables which are not having any effects in the long run period, such are inflation and fiscal deficit over GDP.

<sup>5</sup> heteroscedasticity (also spelled heteroskedasticity) refers to the circumstance in which the variability of a variable is unequal across the range of values of a second variable that predicts it.

In our ECM model, dependent variable is differential of log GDP (percent change) and explanatory variables are structural shocks of the Model 2, change in Overall Index<sup>6</sup>, inflation and fiscal deficit over GDP.

To make sure that this model qualifies as ECM, consider following ECM:

Equation 1

$$\Delta y_t = \gamma(y_{t-1} - \alpha_1 x_{1t-1} - \alpha_2 x_{2t-2}) + \beta_1 \Delta x_{1t} + \beta_2 \times \Delta x_{2t}$$

Imposing following over-identified restrictions:  $\alpha_2 = 0$ ;  $\beta_1 = 0$  gives new equation.

Equation 2

$$\Delta y_t = \gamma(y_{t-1} - \alpha_1 x_{1t-1}) + \beta_2 \Delta x_{2t}$$

Where  $x_1$  is long term factor and  $x_{2t}$  is short term factor.

Hence, a new model is as follows:

$$\Delta \log(\text{RealGDP}) = \beta_0 + \beta_1 \text{Residual}(-1) + \beta_2 \Delta \text{Ov.In} + \beta_3(\pi) + \beta_4 \text{Bud.Def} + \epsilon$$

(Model 3)

Where Residual(-1) is the deviation from the long run equilibrium in (t-1) period (residual of long-run model),  $\pi$  is the inflation rate, Ov.In is an overall economic freedom index and Bud.Def is the budget deficit/GDP.

Estimation with Ordinary Least Square (OLS) leads to the following results. (Table 4)

Table 4 - Estimation of Model 3

Dependent Variable: DLOG(GDP)

Method: Least Squares

Date: 06/16/16 Time: 17:29

Sample (adjusted): 1998 2015

Included observations: 18 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID01(-1)	-0.269507	0.124104	-2.171617	0.0476
D(OVERALL_SCOR				
E)	0.006017	0.003282	1.833558	0.0881
$\pi$	0.380348	0.120698	3.151241	0.0071
Bud. Def.	0.866515	0.192988	4.489989	0.0005
R-squared	0.478867	Mean dependent var		0.051303
Adjusted R-squared	0.367195	S.D. dependent var		0.036561
S.E. of regression	0.029084	Akaike info criterion		-4.044142
Sum squared resid	0.011842	Schwarz criterion		-3.846282
Log likelihood	40.39728	Hannan-Quinn criter.		-4.016860
Durbin-Watson stat	2.106967			

<sup>6</sup> We only include Overall Index differential in the model, because differential of expenditure on education does not have statistically significant impact.

See the interpretation of model 3 below:

$$\log(\text{RealGDP}) = -0.27\text{Residual}(-1) + 0.01\Delta\text{Ov.In} + 0.38\pi + 0.87\text{Bud.Def}$$

(Model 4)

Differential of economic freedom index equaled to .006, what proves statistically significant positive impact of the overall index on GDP growth.

Correlogram - Q-statistics show that there is no autocorrelation in the Model 4. I tested the null hypothesis the model is homoscedastic. A failure to reject null hypothesis indicated that Model 4 is homoscedastic. (Table 5)

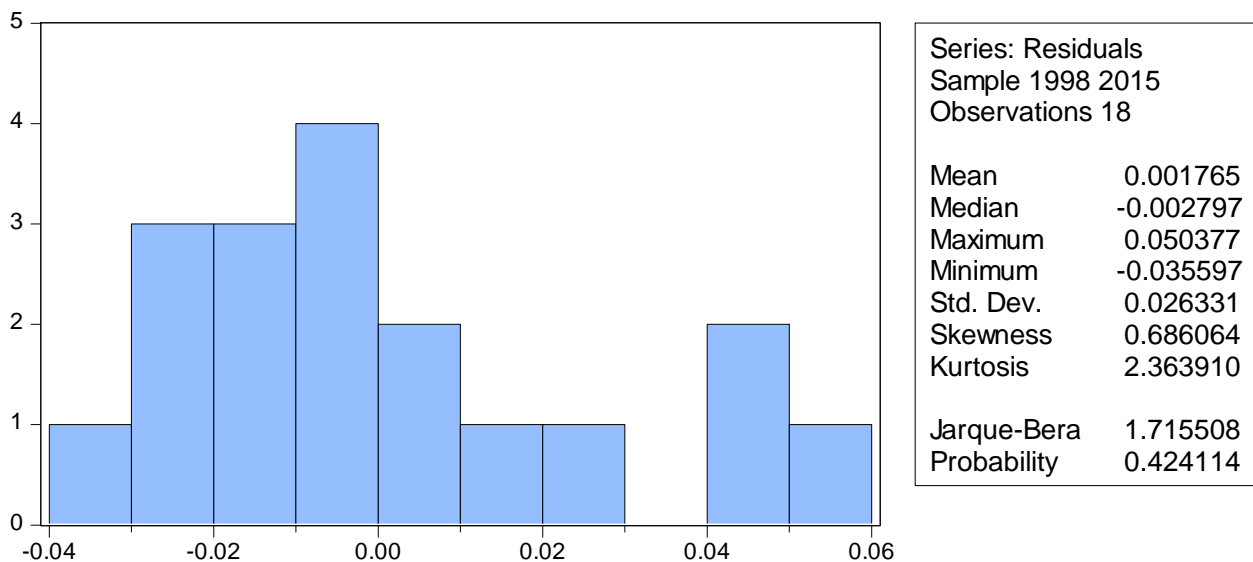
Table 5 - Heteroskedascisity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.786272	Prob. F(4,13)	0.5542
Obs*R-squared	3.506428	Prob. Chi-Square(4)	0.4769
Scaled explained SS	1.651775	Prob. Chi-Square(4)	0.7995

Also histogram normality test showed failure to reject null hypothesis the model is normal, what means that our model is normal. (Figure 2)

Figure 2 - Histogram normality test



The most important finding in the Model 4 is the meaning of coefficient of Residual (-1) = -0.27, it proves the main objective about sustainability of a long run model: every next year, model compensates deviation from long run equilibrium in the previews year by 27%.

### 3. CONCLUSION

The main objective of the paper was to show relation between economic freedom and the most important macroeconomic parameter - Real GDP growth, also we had to discuss an importance of economic freedom in transition period.

An empirical study proved our sense about sustainable correlation between freedom and growth in a long term. Model 4 clearly defined that, if in the period  $t$ , there are any shocks causing disequilibrium, in the period  $t+1$  (*ceteris paribus*), they will be reduced to 0.26, in the period  $t+2$ , to  $0.26^2$  and it gradually disappears.

It must be underlined that differential of the overall index (in Model 4) showed positive impact on gdp growth but education did not. This was expected due to several reasons. As it was mentioned above, an overall index consolidates 10 different components which influence different macroeconomic parameters. For instance the components which are gathered in the category of **MARKET OPENESS** (*trade freedom, investment freedom, financial freedom*) are expected to have short and midterm impacts on gdp, so as soon as the level of economic freedom goes down, firms immediately reduce investments, households start to save etc.

Transformation period from centrally planned economic system to market economy is hardly to be implemented without mistakes. The heritage from the USSR was high level of corruption and crime and civil wars in Abkhazia and South Ossetia. After dissolution of USSR some of the countries had to start from the bottom, but Georgia was even below. It was too difficult to concentrate on institutional changes when the future of the country was blurred. More or less Georgia made some steps forward, but due to the low level of economic freedom the results were poor.

Free society is doubly important in this case, but the point is that we must not confuse freedom and chaos. Government still has a significant role to guarantee fair frameworks to each individual who decides to enter the market. The only danger throughout transition period is the lack of knowledge of how to act, as in the beginning individuals with irrational expectations and irrational behavior can simply harm not only themselves but the overall system.

As Adam Smith has mentioned many years ago, “the only fair is laissez-faire”, so every government itself must be limited. Maybe in the exceptional cases we can approve government interventions, but it should be strictly limited and unavoidable. Government’s core functions are maintaining defense, keeping order, building infrastructure or promoting education. It should keep market economy open and free and not act in ways that distorts it. As the only thing that creates progress is open competition and economic freedom is a vital factor for it.

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## CORRUPTION AS AN OBSTACLE TO ECONOMIC GROWTH OF NATIONAL ECONOMIES

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### **ABSTRACT**

*There is no unified definition of the concept of corruption existing today at the level of theoretical or practical application. However, all current approaches agree that corruption represents any unfair behaviour with the goal of gaining a certain unqualified advantage at the expense of others. Professional literature presents mixed evidence about its impact on economic growth. Some authors consider corruption as a "driving force" of the economy, but others argue that it is "sand in the wheels". Most authors are of the opinion that corruption complicates economic transactions because it reduces the security of property rights and contributes to inefficient allocation of resources. Corruption often threatens the role of the government and makes it difficult for government intervention. It also leads to poor resource allocation, since the structure of public expenditure often changes in favour of certain sectors, especially those which have more obvious corruption opportunities.*

*This paper, based on findings in theoretical literature and empirical studies, validates the hypothesis on the negative impact of corruption on economic growth in the European Union in the period 1999 - 2014. Using information from the literature, an econometric model has been derived for this purpose, which provides an overview of what effect corruption in the selected sample of countries has on economic growth. This econometric model has shown that corruption negatively affects economic growth in the selected set of countries, not only directly but also indirectly through distribution channels. The distribution channels through which corruption affects economic growth within the selected group of countries have been defined as household expenditures, government expenditures and investments.*

**Keywords:** *Corruption, Economic Growth, European Union, Panel Data Analysis, Transmission channels*

### **1. INTRODUCTION**

Corruption is a serious issue which society has faced from time immemorial. It is a persistent and widespread problem, yet has never been successfully resolved. The professional literature says that corruption affects the economic situation in a country, particularly its economic growth. For decades, the issue of the impact of corruption on economic growth has been subject to a number of theoretical and empirical studies. Some authors consider corruption as a “driving force” of the economy, but others argue that acts as notional “sand in the wheels”. In examining the relationship between corruption and economic growth, a number of authors have come to the conclusion that the significant impact of corruption on economic growth tends to fade or change its direction and degree of influence in the incorporation of other important determinants of economic growth. This suggests that a significant portion of the effect, which impairs economic growth, is transmitted indirectly via the main determinants of that growth, which are also referred to as transformation or transmission channels.

The aim of this paper is to verify the validity of the hypothesis of the negative impact of corruption on economic growth in countries of the European Union using panel data analysis for the period 1999 - 2014. In the analysis, the above-mentioned transmission channels are also taken into account, through which corruption could affect the economic growth of the selected group of countries.

## **2. THEORETICAL ARGUMENTS ON THE ECONOMIC EFFECTS OF CORRUPTION**

One of the most important arguments for the favourable impact of corruption on economic growth was presented by Leff (1964) and Huntington (1968) in the 1970s. According to them, corruption has the ability to accelerate time-consuming and inefficient administrative processes. Hence it can be described as an indispensable “lubricant” for government administration. Conversely, Myrdal (1968) argued that this approach could result in even greater delays and other inefficiencies in order to attract a larger amount of bribes or a higher amount.

Contrary to the belief that corruption can have a positive impact on the economic performance of a country, the number of authors having published studies confirming the negative effects of corruption is greater and more unified in their opinions. The negative effects of corruption on foreign investment are shown by Shleifer and Vishny (1993). Corruption tends to reduce investment incentives for both local and foreign entrepreneurs. When the latter are often forced to pay bribes before creating their business or when they are solicited to pay large sums of money to public officials in order to remain in business, corruption hinders and even blocks the creation and development of companies and hence, disadvantages economic growth. In addition, corruption increases transaction costs, impedes the development of a market economy, undermines the system of free markets by increasing the degree of uncertainty and reduces government revenues while raising its spending (Rose-Ackerman, 1997; Tanzi 1998). In particular, it compromises the fundamental role of the state in some areas such as contract enforcement and protection of property rights, and makes it difficult for government intervention to impose necessary regulatory controls and inspections to correct for market failures. Corruption leads also to a misallocation of resources, particularly when the investment of public funds and approval of private investments are decided not on the basis of economic or social value of a project, but rather on the potential revenue that public officials may expect to receive from their decisions (Jain, 2001).

Based on his empirical studies, Mauro (2002) found that countries characterised by low productivity and large public sectors have a much greater likelihood of low economic growth and widespread corruption. More recent empirical studies indicate that the impact of corruption on economic growth cannot be explained without taking into account the institutional framework of each country. The authors Meon and Weill (2010), for example, have provided evidence that corruption has a detrimental effect on economies with effective institutions, while countries with inefficient institutional framework may benefit from corruption.

### **2.1. Transmission Channels**

One of the first studies to focus on transmission channels was created by Mo (2001). Although it initially found a significant negative correlation between corruption and economic growth, the extent of this effect subsequently decreased and became statistically insignificant after the inclusion of other determinants of economic growth, namely investments, human capital and political instability. Based on this finding, these have been identified as transmission channels. The authors Pellegrini and Gerlagh (2004), continuing on from his work, defined trade openness as another transmission channel. Based on their study, they showed that the most important

channel through which corruption hinders economic growth is investment. This issue was also dealt with by Dridi (2013), who considered the transmission channels to be investment, human capital, political instability, inflation and government spending. Using his studies, he found that negative effect is transmitted mainly through human capital and political instability, while the effect of the investments channel appeared to be less than that corresponding to the previous empirical studies.

In conclusion, it can be said that there are various professional studies with different results, but they are predominated by those which show a negative impact of corruption on economic growth. Some studies have shown a significant negative impact of corruption on economic growth, while others revealed that this effect is statistically insignificant and show preference to other factors as variables affecting economic growth. Empirical studies also show that corruption acts on economic growth in a negative way directly as well as indirectly through the transmission channels.

### 3. METHODS

The hypothesis on the negative impact of corruption has been validated on a panel data set. An estimation of the model parameters was made using a model with fixed effects, which uses artificial variables to model individual effects. This regression has a great many response variables, but still, it is a regression model. Thus, all facts are presented here related to the regression model and to the equation (1):

$$Y_{it} = \alpha_N D_{it}^{(N)} + \beta X_{it} + \epsilon_{it} \quad (1)$$

This model assumes a diversity of transversal units in absolute terms, and hence for a model of fixed effects it is necessary to create  $N$  different artificial variables, denoted as  $D^{(j)}$ , where  $j = 1, \dots, N$  (Baltagi, 2013).

Before being applied, the estimated econometric model must be verified and evaluated. For this purpose, typical assumptions are used which in econometrics are considered to be in the context of regression errors; i.e., random elements  $\epsilon_i$  and are expressed as follows:

- $E(\epsilon_i) = 0$ . Zero means value of the random elements.
- $var(\epsilon_i) = E(\epsilon_i^2) = \sigma^2$ . Constant error variance (homoscedasticity).
- $cov(\epsilon_i; \epsilon_j) = 0$  for  $i \neq j$ . Random components are uncorrelated.
- $\epsilon_i$  is normally distributed.
- $X_i$  is fixed; it is not a random variable.

The significance level used for the analysis is the standard; i.e., 0.05.

### 4. ANALYSING THE EFFECTS OF CORRUPTION IN ECONOMIC GROWTH IN COUNTRIES OF THE EU-28

The hypothesis on the negative impact of corruption was tested with the help of the econometric model assembled using a method of fixed effects in the Gretl program<sup>1</sup> for countries of the EU-28 in 1999-2014. Specifications of the model were derived from empirical papers of authors who dealt with the identification of transmission channels through which corruption affects economic growth. Based on these studies, the authors of this paper have assumed that corruption affects economic growth directly, as well as indirectly through transmission channels. These transmission channels are considered to be those of **investments, human capital, political instability, government spending, and trade openness**. Apart from these transmission channels and the determinants of economic growth, another factor included in the model was

<sup>1</sup> This is a freely available program used to estimate econometric models. It is available on the following website: <http://gretl.sourceforge.net/>.

household consumption, as one of the fundamental elements determining the gross domestic product.

After testing the stationarity of the variables, a model was constructed as follows (2):

$$GDP\_Growth_{it} = \beta_0 + \beta_1 CPI\_Growth_{it} + \beta_2 HOUSexp\_Growth_{it} + \beta_3 INV\_Growth_{it} + \beta_4 GOVexp\_Growth_{it} + \beta_5 d\_NX_{it} + \beta_6 HC\_Growth_{it} + \beta_7 d\_PS_{it} \quad (2)$$

A description of each variable is given in Table 1.

Table 1: Description of Variables (Authors' own work)

Variable	Description	Unit	Estimated sign
<i>i</i>	Country		
<i>t</i>	Year		
<i>GDP_Growth</i>	Gross domestic product <sup>2</sup>	% growth	
<i>CPI_Growth</i>	Corruption Perception Index	% growth	positive
<i>HOUSexp_Growth</i>	Household consumption	% growth	positive
<i>INV_Growth</i>	Investment <sup>3</sup>	% growth	positive
<i>GOVexp_Growth</i>	government spending	% growth	positive
<i>d_NX</i>	Foreign trade balance	absolute change	positive
<i>HC_Growth</i>	Human capital <sup>4</sup>	% growth	positive
<i>d_PS</i>	Index of political stability	absolute change	positive

### Testing the Hypothesis of Direct Impact of Corruption on Economic Growth

The first part of the analysis validates the hypothesis of the direct negative impact of corruption on economic growth. In the event that the analysis should also show a positive effect of one of the determinants (except for CPI) on economic growth, the hypothesis of the indirect negative impact of corruption on economic growth will be tested in another part.

### Estimating the Model Parameters

An estimation of the model parameters based on the construction of the model described above is given in Table 2.

Table 2: Estimated Parameters of All Response Variables (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
const	0.308596	0.221999	1.390	0.1658	
CPI_Growth	-0.0103355	0.0333384	-0.3100	0.7568	
HOUSexp_Growth	0.558857	0.0457314	12.22	4.12e-027	***
INV_Growth	0.108689	0.0162584	6.685	1.56e-010	***
GOVexp_Growth	0.0696448	0.0213172	3.267	0.0012	***
d_NX	3.76316e-05	1.15964e-05	3.245	0.0013	***
HC_Growth	-0.00164874	0.00528940	-0.3117	0.7555	
d_PS	1.12822	0.711527	1.103	0.0921	

This model presents 76% variation of the response variable *GDP* ( $R^2 = 0.76$ ). The variable *CPI* failed to show any statistical significance and also hinted at the opposite direction of effect before the specification of variables predicted. As well, no statistical significance was proved for the variables *HC* and *PS*. Because of the considerable differences between the assumptions

<sup>2</sup> Real gross domestic product.

<sup>3</sup> Expressed by the indicator Gross Fixed Capital Formation.

<sup>4</sup> Expressed by the indicator: Number of Registrations in Secondary Education.

and the results of this analysis, a model was tested from which the given statistically insignificant variables were taken (except for the variable *CPI*). The test results are presented in Table 3.

Table 3: Estimated Parameters of Selected Response Variables (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
<b>const</b>	0.406976	0.197465	2.061	0.0402	**
<b>CPI_Growth</b>	0.0484305	0.0450301	2.4093	0.06826	*
<b>HOUSexp_Growth</b>	0.534373	0.0428145	12.48	9.25e-029	***
<b>INV_Growth</b>	0.115351	0.0151493	7.614	4.02e-013	***
<b>GOVexp_Growth</b>	0.0730911	0.0202077	3.617	0.0004	***
<b>d_NX</b>	3.60494e-05	1.13827e-05	3.167	0.0017	***

This model presents 74% variation of the response variable *GDP* ( $R^2 = 0.74$ ). After removing the statistically insignificant variables *HC* and *PS*, the variable *CPI* began to change the direction of its effect on economic growth. After a detailed examination, it was found that the variable *CPI* shows a negative sign only when the variable *PS* is incorporated into the model. As well, after eliminating these variables, the statistical significance of the variable *CPI* grew and became statistically significant. For the coefficients of other variables, no significant changes occurred.

Due to the fact that the variable *CPI* has been found to have low statistical significance in previous models and its ambiguous effect on the response variable, the possibility of its effect with a time delay to the response variable was verified. It is important to note that this delay was added only to the variable *CPI*, and not to other fundamental determinants of *GDP*, as the article's authors did not anticipate that these determinants would affect the response variable with a time delay. The model did not include any variables which failed to demonstrate statistical significance in the previous models (i.e., *HC* and *PS*). The outputs of the model are shown in Table 4.

Table 4: Estimated Parameters of the Time Delay Model (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
<b>const</b>	0.413394	0.198910	2.078	0.0386	**
<b>CPI_Growth_1</b>	0.0548594	0.0242974	2.5612	0.06751	*
<b>HOUSexp_Growth</b>	0.530530	0.0483374	16.22	5.61e-028	***
<b>INV_Growth</b>	0.117009	0.0153492	7.623	3.86e-013	***
<b>GOVexp_Growth</b>	0.0730911	0.0202077	3.617	0.0004	***
<b>d_NX</b>	3.61804e-05	1.14005e-05	3.174	0.0017	***

This model presents 74% variation of the response variable *GDP* ( $R^2 = 0.74$ ). The variable *CPI* appeared in this model with a positive sign and as statistically significant. This suggests that corruption has no adverse effects on economic growth, either directly or with a time delay.

### Testing the Hypothesis of Indirect Impact of Corruption on Economic Growth

The previous models were able to demonstrate the positive impact of the variables *HOUSexp*, *GOVexp*, *INV*, and *NX* on economic growth. Here, the question is whether they could be considered transmission channels through which corruption could affect economic growth indirectly. For the purposes of this hypothesis, three models were constructed, in which *HOUSexp*, *GOVexp*, *INV* and *NX* became the response variables. In order for these response variables to be designated as transmission channels, the variable *CPI* must show a positive sign.



Models taking into account the stationarity of the variables were constructed as follows (3), (4), (5), (6):

$$HOUSexp\_Growth_{it} = \beta_0 + \beta_1 CPI\_Growth_{it} + \beta_2 GDP\_Growth_{it} + \beta_3 INV\_Growth_{it} + \beta_4 GOVexp\_Growth_{it} + \beta_5 d\_NX_{it} + \beta_6 HC\_Growth_{it} + \beta_7 d\_PS_{it}$$

$$GOVexp\_Growth_{it} = \beta_0 + \beta_1 CPI\_Growth_{it} + \beta_2 GDP\_Growth_{it} + \beta_3 HOUSexp\_Growth_{it} + \beta_4 INV\_Growth_{it} + \beta_5 d\_NX_{it} + \beta_6 HC\_Growth_{it} + \beta_7 d\_PS_{it} \quad (3)$$

$$INV\_Growth_{it} = \beta_0 + \beta_1 CPI\_Growth_{it} + \beta_2 GDP\_Growth_{it} + \beta_3 HOUSexp\_Growth_{it} + \beta_4 GOVexp\_Growth_{it} + \beta_5 d\_NX_{it} + \beta_6 HC\_Growth_{it} + \beta_7 d\_PS_{it} \quad (4)$$

$$d\_NX_{it} = \beta_0 + \beta_1 CPI\_Growth_{it} + \beta_2 GDP\_Growth_{it} + \beta_3 HOUSexp\_Growth_{it} + \beta_4 INV\_Growth_{it} + \beta_5 GOVexp\_Growth_{it} + \beta_6 HC\_Growth_{it} + \beta_7 d\_PS_{it} \quad (5)$$

### Estimating the Model Parameters

The first to be tested was the direction of effect of the variable *CPI* on the response variable *HOUSexp*. The results of this model are shown in Table 5.

Table 5: Estimated Model Parameters for the Variable *HOUSexp* (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
const	1.74954	0.218725	7.999	5.06e-014	***
CPI_Growth	0.0547152	0.0229164	2.3876	0.0176	**
GDP_Growth	0.679367	0.0555928	12.22	4.12e-027	***
INV_Growth	0.0614081	0.0190981	3.215	0.0015	***
GOVexp_Growth	0.0231396	0.0288934	0.8009	0.4238	
d_NX	-3.29344e-	1.28874e-05	-2.556	0.0112	**
HC_Growth	-0.00326841	0.00582929	-0.5607	0.5755	
d_PS	-0.0112647	1.02465	-0.01099	0.9912	

This model presents 73 % variation of the response variable *HOUSexp* ( $R^2 = 0.73$ ). In this model, the variable *CPI* showed a positive sign and statistical significance.

Another possible transmission channel was found to be government spending. The outputs of this model are presented in Table 6.

Table 6: Estimated Model Parameters for the Variable *GOVexp* (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
const	5.30181	0.560375	9.461	2.69e-018	***
CPI_Growth	0.0369787	0.0132721	2.786	0.0058	***
GDP_Growth	0.601786	0.184198	3.267	0.0012	***
HOUSexp_Growth	0.0506286	0.170648	0.2967	0.7670	***
INV_Growth	0.588268	0.0358350	16.42	2.65e-041	***
d_NX	-3.70039e-	3.47350e-05	-1.065	0.2878	
HC_Growth	-0.0102790	0.0155375	-0.6616	0.5089	
d_PS	-7.71748	2.68676	-2.872	0.0044	



This model presents 70 % variation of the response variable *GOVexp* ( $R^2 = 0.70$ ). For government spending, the variable *CPI* was able to demonstrate a high statistical significance. Another possible transmission channel was found to be investments. The outputs of this model are presented in Table 7.

Table 7: Estimated Model Parameters for the Variable *INV* (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
<b>const</b>	-6.92226	0.674204	-10.27	8.66e-021	***
<b>CPI_Growth</b>	0.635935	0.369327	1.7219	0.0861	*
<b>GDP_Growth</b>	1.42429	0.213054	6.685	1.56e-010	***
<b>HOUSexp_Growth</b>	0.661960	0.205872	3.215	0.0015	***
<b>GOVexp_Growth</b>	0.892138	0.0543456	16.42	2.65e-041	***
<b>d_NX</b>	-3.31351e-	4.28224e-05	-0.7738	0.4398	
<b>HC_Growth</b>	0.0131716	0.0191327	0.6884	0.4918	
<b>d_PS</b>	-2.22853	3.36114	-0.6630	0.5079	

This model presents 82 % variation of the response variable *INV* ( $R^2 = 0.82$ ). In this case, the variable *CPI* was also able to demonstrate a high statistical significance.

The last variable was the response variable *NX*. The results of this model are shown in Table 8.

Table 8: Estimated Model Parameters for the Variable *NX* (Authors' own work)

	Coefficient	Std. Error	t-ratio	p-value	
<b>const</b>	2649.40	1192.68	2.221	0.0272	**
<b>CPI_Growth</b>	-7.37360	24.7852	-0.2975	0.7663	
<b>GDP_Growth</b>	1099.43	338.795	3.245	0.0013	***
<b>HOUSexp_Growth</b>	-1774.04	678.631	-2.556	0.0112	**
<b>INV_Growth</b>	-73.8743	95.4718	-0.7738	0.4398	
<b>GOVexp_Growth</b>	-125.115	117.443	-1.065	0.2878	
<b>HC_Growth</b>	-3.45226	28.5948	-0.1207	0.9040	
<b>d_PS</b>	2763.85	5020.08	0.5506	0.5824	

This model presents only 9 % variation of the response variable *NX* ( $R^2 = 0.09$ ). In this case, the variable *CPI* was not able to demonstrate a high statistical significance, although it hinted at a positive direction of effect of the response variable *NX*.

### Statistical and Economic Verification

In all models, the Gauss-Markov assumptions were met except for the assumption of identical distribution of random components with zero mean. The hypothesis of normal distribution of random components was thus rejected. The results of such models cannot be generalised to a larger population (i.e., to other countries) or to another time period.

## 5. DISCUSSION AND CONCLUSION

The results of this analysis show that corruption has a truly negative impact on economic growth, as the variable *CPI* appeared in most of the models with a positive sign, and statistically significant. Statistical significance was exhibited even when this variable had a time delay of up to one year. This suggests that corruption can affect economic growth not only immediately but also with a time delay.

This paper also tested the hypotheses of an indirect negative impact of corruption on economic growth. The variables *HOUSexp*, *GOVexp*, *INV* and *NX* also appeared as potential transmission

channels, as the previous models demonstrated their statistical significance and positive impact on the response variable *GDP*. The analysis confirms this assumption for the variables *HOUSexp*, *INV* and especially *GOVexp*. They should therefore be identified as transmission channels, through which corruption affects economic growth. This means that with the decreasing value of the *CPI* (i.e., increasing the perception of corruption), household consumption and net exports are also reduced, which adversely affects gross domestic product. This raises the question of how corruption could affect economic growth through these transmission channels. For the variable *NX*, the validity of this hypothesis could not be demonstrated.

The transmission channels of government spending and household consumption could be associated with the inefficient management of certain EU-28 countries. An example is the issue of public tenders, which is the most common area of corruption on a global scale and which results in inefficient government expenditures and a waste of taxpayers' money. As a result of this waste of tax money, there are then losses in government budgets and a resulting need for governments to raise taxes, leading to reductions in household consumption and, by extension, to the reduction of economic growth.

Investment can also be described as a transmission channel through which corruption negatively affects economic growth. A negative relationship between corruption and investment exists because of the uncertainty and heightened risk of failure because corruption agreements are unenforceable. This also results in higher additional costs that must be spent on maintaining secrecy of corrupt activities. It is possible however to find positive effects of corruption on investment. As an example, we can again look at the issue of public tenders. In a case where the national government issues a tender, for example, for the construction of a new highway, a company may pay some money to be selected as the winning contractor. The moment they are named as the winning contractor, they may charge exorbitant prices or skimp on quality. In this case, the company benefits from corruption and can further develop its investment activities.

In conclusion, it can be stated that the group of EU-28 countries was able to confirm the hypothesis dealing with the negative impact of corruption on economic growth. To a greater extent, the corruption in these countries has reduced their economic growth. At the same time, the analysis showed that corruption affects economic growth not only directly but also with a time delay.

However, this analysis also confirmed another statement of the authors regarding foreign empirical studies on the impact of corruption on economic growth becoming statistically less significant after including other determinants of economic growth. This indicates that corruption affects economic growth directly as well as indirectly through these determinants. After testing this hypothesis, it was found that corruption has a negative effect on economic growth through household consumption and net exports.

The results of this paper cannot be generalised to other countries or to other time periods, as the hypothesis of the normal distribution of random components was rejected. Thus, these conclusions can only be applied to a set of EU-28 countries in the time frame of 1999 to 2014.

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## A CRITICAL LITERATURE SURVEY OF THE MACROECONOMIC EFFECTS OF FISCAL POLICY IN LIGHT OF RECENT EMPIRICAL EVIDENCE

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### ABSTRACT

*The present paper offers a fundamental critique of the macroeconomic effects of fiscal policy after it surveys the theoretical and empirical literature on the macroeconomic effects of fiscal policy. It emphasizes the importance of the fiscal policy after reviewing the revolution of almost all economic schools . This paper links the developmental role of the fiscal policy with the objectives and measures of the economic transformation. Thus, the importance of this study can be seen from several perspectives: First, it reviews the theoretical harvest of fiscal policy and provides a comparison between the main revolutionary Economic thoughts; the classical school, Keynesian school, and monetarist school. Then it turns to conclude the fiscal policy from the new consensus mainstream economic schools. Third , the study present the macroeconomic effects of fiscal policy in developed vs developing countries according to empirical pieces of evidence provided by empirical studies applying VAR approach, finally the paper concludes the macroeconomic effects of fiscal policy according to theoretical consensus and Empirical evidence in a nutshell. Thus, the study is important for the policymakers as well as scholars as it gives its recommendations upon the last analysis in the form of “policy implications”.*

**Keywords:** *Economic Transformation; Fiscal Policy; Macroeconomic Effects; and public spending*

### 1. INTRODUCTION

Fiscal Policy is an important determinant of economic developments, and often government decisions on spending and taxes play a crucial role in speeding up or slowing down economic growth. Thus fiscal policy can be defined as the use of government spending and taxes to manage the behavior of the economy by the power it has on the aggregate demand. It functions as a balancing act between the negative impacts of taxes on economic activity, and the flourishing of it by government's spending. The two main instruments of fiscal policy are changes in the level and composition of taxation and government spending. Although these changes can affect many macroeconomic variables, the effectiveness of fiscal measures is still a debate among economists. There are three branches of fiscal policymaking following the work of Musgrave in 1959; typically: allocation, distribution and stabilization; that remain a useful conceptual framework for discussing, analyzing, and evaluating fiscal policies.

Macroeconomic effects of fiscal policy shocks still a subject of lively debate, as neither theoretical nor empirical studies have reached a consensus on either the qualitative or quantitative properties of such effects. The reason behind this lack of consensus is that fiscal

policy has received less attention compared to monetary policy specially regarding the measurement of its effects on economic activities.

The literatures on the macroeconomic effects of fiscal policy are established on two different schools of thoughts, the classical view versus the keynesian view. The classical believe in the crowding effects of government expenditure and it will not have any effect on the economy, while the keynesian position is that fiscal policy actions are the appropriate tools to stabilize the economy in the short-term. However, seminal works based on these strong positions have mixed results, with strong arguments in support of fiscal policy having a major impact on output and consumption, while others argue that fiscal policy changes do not have any effects on aggregate demand; given that individuals smooth out their consumption pattern over time (blanchard & perotti, 1999; blinder & solow, 2005; ramsey, 2008).

A modern synthesis view about the efficacy of fiscal policy emerged from the economic debates of the 1970s and 1980s. The key elements of that view are: proper timing is both difficult to achieve and of crucial importance, automatic stabilizers reduce the fluctuation of aggregate demand and help to direct the economy toward full employment, fiscal policy is much less potent than the early keynesian view implied. Between 1985 and 2000 there are about 7000 nber working papers released, of which 5 said anything in thier title or abstract about fiscal policy. The whole discussion of fiscal policy essentially disappeared from macroeconomics. (paul krugman, 10th of june 2009, lionel robbins memorial lectures)

Even though, the 2008 financial crisis has contributed to revive the interest of governments, central bankers and academia in the role of fiscal policy. The fiscal developments around the global financial crisis of 2007–09 are undoubtedly a major factor behind that comeback. The large fiscal stimulus packages adopted by many countries in the face of large adverse shocks have triggered an unusually heated debate among academics, policymakers, and commentators alike.

The question of interest here is: what is the new consensus regarding the macroeconomic effects of fiscal policy? , and how it can be used to attain Economic Transformation?

## **2. THE THEORETICAL HARVEST**

Economic thought may be roughly divided into three phases; namely: pre-modern (Greco-Roman, Indian, Persian, Islamic, and Imperial Chinese), early modern (mercantilist, physiocrats) and modern (beginning with Adam Smith and classical economics in the late 18th century). This section will review the theoretical literature of fiscal policy on two parts; part one compare between the classical school, Keynesian school, and monetarist school as the main revolutionary Economic thoughts. Then part two will conclude fiscal policy from the new consensus mainstream economic schools.

### **2.1 Fiscal policy in Classical, Keynesian, and monetarist schools**

The Classical school was the primary school of thought in economics until the 1930's and the time of the Great Depression. Classical economics focused on the supply side of the economy (thesis). As they believed in Say's Law "Supply creates its own demand". Classical economists' view of fiscal policy was much more limited than it is viewed today. The idea of discretionary policy was not widely accepted, since Governments were simply expected to balance their budgets annually. Thus, expansionary fiscal policy, for example increasing government spending without increasing taxes to stimulate the economy, was not generally considered by policy makers. Since the economy was assumed to be at full employment with potential output, an expansionary policy could only lead to higher prices. Prior to the 1930s, the fluctuations in the level of economic activity is thought to be were largely self-correcting, depending on monetary policy to prevent excessive movement in prices. Thus, according to classical economists, fiscal policy is ineffective in boosting demand, due to the nature of markets to settle at equilibrium at all times.



Keynesian economists, on the other hand, argue that the recuperation of equilibrium in markets is a prolonged process, and fiscal policy (in coordination with monetary policy, according to neo-Keynesians) is required to elevate private consumption and private investments (Anti-thesis). The standard “Keynesian” response to a recession is a fiscal stimulus. According to the Keynesian models, either tax cuts or increased government spending can increase total demand, and therefore total output and employment. An initial increase in spending (by either the government or the recipients of the tax cuts) results in new series of additions to income results in a total increase in GDP greater than the original increase in government spending or reduction in taxes. Thus with “multiplier greater than one.

The Monetarism revived the interest in monetary policy, as the stagflation period of the 1970s was among the theoretical and practical developments that led to the rejection of fiscal policy as a macroeconomic stabilization tool or even a full employment determination. The monetarists argue that while it is not possible to have full employment of the labor force all the time (as classical economists argued), it is better to leave the macro-economy to market forces. Friedman modified some aspects of the classical theory to provide the rationale for his noninterventionist policy recommendation. In essence, monetarism emphasized that the use of fiscal policy is largely ineffective in altering output and employment levels. Moreover, it only leads to the crowding out. While, Monetary policy- on the other hand- is effective, but with a condition that monetary authorities do have adequate knowledge to successfully manipulate the money supply. Hence, monetarism advocates that neither monetary nor fiscal policy should be used in an attempt to stabilize the economy because this may lead to greater instability in the economy, and the money supply should be allowed to grow at a constant rate. Thus, The monetarist policy recommendations are similar to those of the classical economists, but with some different justifications.

The main differences between those three main Economic schools regarding Fiscal policy can be summarized in a nutshell as follows; First, with the classical believe in the little role of fiscal policy to manage aggregate demand, so it is seen as the basis for Monetarism who believe that Fiscal Policy is often bad policy and a small role for government is good. In contrast to the Keynesians who believe Governments need to use fiscal policy, especially in a recession, Friedman's model argues that current fiscal spending creates as much of a drag on the economy by increased interest rates as it creates present consumption, shifting demand from the investment sector (I) to the consumer sector (C). and so it has no real effect on total demand.

Second, Concerning Government borrowing, the Keynesians Suggest that government borrowing may be necessary to increase overall aggregate demand, unlike the monetarists who believe that fiscal policy based on borrowing is harmful, as they point out that it will lead to an increase in interest rates which in turn reduces private expenditures on consumption and investment, thus government spending crowds out private sector spending.

Third, respecting supply side policies, both monetarist and classical economists emphasize the role of supply side policies in promoting long-term economic growth. Monetarists recommend it to be used to reduce market imperfections, they consider it the only non-inflationary way to get increases in output; increasing the capacity of the economy to produce (the long-run AS) and so be able to reduce the natural rate of unemployment. Although; Keynesians doesn't reject supply side policies, they say they that it may not always be enough. E.g. in a deep recession, supply side policies can't deal with the fundamental problem of a lack of demand.

## **2.2 MACROECONOMIC EFFECTS OF FISCAL POLICY IN THE NEW CONSENSUS (SYNTHESIS) MAINSTREAM ECONOMIC SCHOOLS**

The fiscal policy synthesis is a compromise between the Keynesian macroeconomics and the classical microeconomics, which can be seen in The Neo-classical and the neo-Keynesian



theory. With the stagflation period of 1970s and the monetarist's counterrevolution, a new consensus stated the repudiation of fiscal policy as a useful tool for macroeconomic stabilization. (e.g. Allsopp and Vines 2005; Bernanke 2002 and 2003; Blinder 2004; Krugman 2005; Solow 2005; Wren- Lewis 2000). Thus there is a camp sees that mainstream economics has entered an era of the New Economic Consensus (NEC) (Snowdon and Vane 2005; Goodfriend 2004).

The New Consensus's defining characteristic is the claim that the macroeconomic outcomes are determined by the choice-theoretic micro-foundations; accordingly, all macroeconomic models must adequately incorporate “rational” individual intertemporal decision-making. Thus it gives much importance to the monetary to lead and correct the economy. However, it sees that Central Banks can not any more neither exogenously alter the stock of money nor set the short-term interest rate, and so it has to leave the credit needs of the economy determine the money supply endogenously. Thus, it is recognized that both monetary and fiscal policy must be coordinated together; they have to play the same tone; and this is because of the fiscal policy's potential effects on output and inflation. Thus, an inflation targeting monetary policy can also influence those fiscal effects (Woodford 1998). And so, according to NEC monetary and fiscal policies must be closely coordinated (Bernanke 2002; Woodford 1998; Wren-Lewis 2000).

The main goal has been always filling the difference between actual and potential output “demand gap”, however the nature of this gap is what distinguishes between post Keynesians and the new Consensus view. Potential output; according to the new Consensus; is achieved only if prices and wages are perfectly flexible, this is in contrast to the New Keynesian I which it is considered as a measure of full employment . With the pro-investment pro-growth approach of the New Keynesian that depends on 1) increasing aggregate demand, 2) stimulating investment, 3) increasing productive capacity, and thereby reducing this demand gap. This policy could range from defense spending up to building roads. For Arestis and Sawyer, the main virtue of functional finance is that it always raises demand (unlike in the NEC, where fiscal policy has demand side effects only in non-Ricardian regimes). (Arestis and Sawyer 2004, p. 132).

In the NEC it does not matter whether government finances spending by bonds or by printing money, excessive amounts of each will be inflationary. The new consensus has advocated the need for fiscal policy as a stabilization tool in times of crises. Many economists now believe that fiscal policy should be allowed to dominate; especially that fiscal policy had an important role to play in a Japanese-style deflationary drag when monetary policy reached its zero interest rate bound.

With respect to the choice-theoretic foundations in Bernanke, Woodford, and other NEC economists, fiscal policy would operate as a supply-side or demand-side tool depending on how it impacts incentives and expectations. They conclude that Fiscal policy can manage inflation by anchoring expectations appropriately. However, according to them; based on the fiscal theory of the price level, fiscal policy comes in the second place after monetary policy. This is in contrast to the Post-Keynesians who believed in fiscal policy as the most potent tool for macroeconomic coordination and stabilization. Suggesting that there is nothing inflationary about fiscal policy in a world where the norm is to have uncertainty, involuntary unemployment, and capacity underutilization with administered prices and money contracts.

### **2.3 THE ROLE OF THE MACROECONOMIC EFFECTS OF FISCAL POLICY IN TARGETING THE ECONOMIC TRANSFORMATION**

Recent decades witnessed many paradigm Shifts regarding the concept of economic development to either inclusive growth; that implies both macroeconomic and microeconomic

determinants of the economy; or Sustainable economic growth. The microeconomic dimension captures the importance of structural transformation for economic diversification and competition, while the macro dimension refers to changes in economic aggregates such as the country's gross national product (GNP) or gross domestic product (GDP), total factor productivity, and aggregate factor inputs. Since Transformation in economics refers to a long-term change in the state and the structure of existing economic sectors, thus a new broad concept has emerged and it is used now widely especially in respect to strategic development planning; for ex. Malaysia's National Transformation Program (ETP), Obama's promise of achieving economic transformation, many Statements by IMF Managing Director Christine Lagarde recommending policies to achieve the needed Economic Transformation for Egypt, Pakistan...etc. There are many specialized centers around the world studying analyzing the Economic Transformation like The Center for Economic Transformation (CET) at New York City's, ECDP ...etc. Also there is a well-known two reports with two different methodologies measuring the progress in economic transformation around the world. The first report is the “BTI” report that measures Economic Transformation. in terms of seven criteria, which are based on a total of 14 indicators. The BTI's concept of a market economy includes not only aspects such as economic performance, regulatory or competition policy and property rights; it also includes elements of social justice, such as social safety nets, equality of opportunity and sustainability as it considers comprehensive development not only aims at economic growth, but also requires successful poverty alleviation and the freedom of action and choice for as many citizens as possible.” The second report is “ ACET” ,in which Economic Transformation means Growth with “DEPTH” that stands for ( Diversification, Export competitiveness, Productivity, Technological upgrading and Human well-being by providing more productive jobs and higher income, and that everyone benefits from shared prosperity).

Thus while pursuing further improvements in the macroeconomic and business environments, countries have to diversify their production and exports. The 2016 African Transformation Forum remarkable consensus, both within and outside Africa, that economic transformation holds the key to sustained growth and prosperity. This new approach follows Amartya Sen's multidimensional development focusing on human well-being (Sen, 1999). According to UN 2013report, a profound Economic Transformation can end extreme poverty and promote sustainable development, improving livelihoods, by harnessing innovation, technology, and the potential of business.. .

Thus, Economic Transformation is not a new term , it is a more generalized concept for development with inclusive growth that can be defined as a dynamic process through which a country's economy, society and institutions modernize and move to more developed levels;(Breisinger, C. and Diao, X. 2008.p.15) ; targeting the Linking of the poor to transformation through investments that enable them to participate in the process (Timmer 2008).

Generally Speaking, Fiscal policy influences saving, investment, and growth in the long run. In the short run, fiscal policy primarily affects the aggregate demand. Although the role of fiscal policy in developed economies differs from the role of it in developing ones, it is important for achieving the transformation in both the developed and the developing countries. In developed economies, a fiscal policy aims at maintaining full employment and stabilizing growth. While in developing countries fiscal policy is used to create an environment for rapid economic growth as the government has not only to mobilize more resources for investment but also to direct the resources to those channels where the yield is higher and the goods produced are socially acceptable. (Popa Ionela, Codreanu Diana. 2010, pp.2, 3).

For both developed and developing economies, Fiscal tools can be used to redistribute income in favor of the poor by both tax and expenditure policies without avoiding the efficiency concerns. In advanced economies, fiscal policy can get this goal by raising retirement ages in

pension systems, with adequate provisions for the poor whose life expectancy could be shorter; improving the access of lower-income groups to higher education and maintaining access to health services; implementing progressive personal income tax (PIT) rate structures; and reducing regressive tax exemptions .while In developing economies, it can do so by consolidating social assistance programs and improving targeting; introducing and expanding conditional cash transfer programs as administrative capacity improves; expanding noncontributory means-tested social pensions; improving access of low-income families to education and health services; and expanding coverage of the PIT”.(IMF policy paper,2014). Fiscal tools can also be employed to contain inflationary and deflationary tendencies in the economy. And for sure it can be used to promote the growth for those industries that have high employment generation potential by increasing employment opportunities in the form of Fiscal incentives by tax-rebates and concessions.

### **3. THE DEVELOPED COUNTRIES VERSUS THE DEVELOPING COUNTRIES IN THE LATEST EMPIRICAL PIECES OF EVIDENCE**

There are many obvious differences between developed and developing countries, Generally: government budgets as shares of GDP are smaller than in developed industrialized countries ; In developing countries consumption of goods and services- especially government wages - are the biggest share of government spending, while transfers are commonly small; the biggest component on the revenue side are often the indirect taxes. The existing empirical studies can be divided mainly into two groups: the Structural Vector Auto regression (SVAR) approach and the narrative approach. Studies using the SVAR approach generally find results consistent with the New Keynesian model unlike those produced with the narrative approach which tend to be consistent with the neoclassical model. Since Modern macroeconomics views the economy as a dynamic, stochastic system, The VAR model has proven to be especially useful for describing the dynamic behavior of economic and financial time series and for forecasting. With respect to the evaluation of macroeconomic effects of fiscal policy , VAR approach is widely used , in contrast to SGE where there are few empirical evidences in developed countries and almost non studying macroeconomic effects of fiscal policy in developing countries.thus the coming review will be with VAR approach studies.

With respect to pro-cyclicality of the fiscal policy, There are strong pieces of evidence that fiscal policy (including total expenditure, the share of total expenditure in GDP, public consumption and public investment) has been procyclical in developing countries as Fiscal expansions tend to take place in good times, and not in bad times.( See: Gavin and Perotti (1997), Kaminsky, Reinhart and Végh (2004), Ilzetzki and Végh (2008), and Calderón and Schmidt-Hebbel (2008)). These Fiscal procyclicality can be due to the findings of positive correlations between fiscal variables and output over the business cycle which can be explained by the procyclical bias of discretionary policies and the weakness of the automatic stabilizers (ex. income taxes and transfer programs) .This is in contrast to the countercyclical discretionary fiscal policy that exist in developed countries aiming at dampening aggregate fluctuations. , and using the automatic stabilizers to increase the government spending and reduce tax revenues during downturns. One can conclude that empirical pieces of evidence from almost last three decades suggest that developing countries have not been so successful in using discretionary fiscal policy to stabilize output fluctuations; however some successes do exist. However, IMF (2005) Provides evidence that in developed countries automatic stabilizers improve overall budget performance by 1/2 percentage point (van den Noord, 2000; Bouthevillain and others, 2001; IMF, 2004), so its findings suggest that developed countries used discretionary procyclically as well.

Regarding fiscal multipliers, they vary with: country characteristics; stance of monetary policy; and the state of the business cycle. Neither theory nor empirical evidence suggests that

they are not constant Both Ilzetki, Mendoza and Vegh (2012) and Kraay (2012b) provide evidence suggesting that multipliers in developing countries are larger during recessions. other existing empirical evidences suggest that the stimulative effect of government spending in these countries is likely to be quite small; For instance , (Ilzetki, Mendoza and Vegh ,2012) used quarterly fiscal and national accounts data for a sample of 27 emerging markets using VAR-based identification schemes and found a one-year government spending multiplier equal to about 0.3.; while Kraay (2012a, 2012b) used a large sample of developing countries to develop an identification strategy assuming substantial lags between the approval and implementation of aid-financed development projects and the findings suggest that the government spending multiplier is on average somewhere between 0.4 and 0.5. These in contrast to (Biau and Girard , 2005) evidence of a cumulative multiplier of government spending larger than one, and positive reactions of private consumption and private investment in France. Afonso and Furceri in their 2008 research conclude that for OECD and EU countries in the period from 1970 to 2004 overall size and volatility of government expenditure have strong negative influences on economic activity, as they find that an increase in total expenditure share in GDP decreases economic activity growth by 0.13 percentage points in OECD countries and by 0.09 percentage points in OECD countries. Perotti and Monacelli (2006) focused on the joint response of trade balance, consumption and real exchange rate,they find that a rise in government spending induces real exchange rate depreciation and a trade balance deficit.

Fata's and Mihov (2001) assuming that government spending categories are contemporaneously unaffected by GDP and its components to apply a VAR approach with identification of fiscal shocks by Choleski ordering of the variables,their findings show persistent increases in private consumption and insignificant reactions of private investment in response to a spending shock; thus their outcomes correspond to (New) Keynesian predictions. After this , Blanchard and Perotti (2002), developed a structural VAR (SVAR) approach with US data concluding a rising private consumption after a spending shock with spending multipliers for consumption and output between one third and unity their results support both neoclassical and New Keynesian models.;however, spending and tax shocks trigger a fall in private investment. Also Perotti (2004) empirical evidence provide a relatively large positive effect on private consumption and no response of private investment, investigating the effects of fiscal policy in Australia, Canada, Germany and the U.K . While in West Germany using data over the period (1975:1 – 1989:4), Perotti (2005) provides evidence of a significant positive cumulative response of GDP to a government spending shock at 4 quarters which reverses into negative at 12 quarters; For the same sample period, private consumption and private investment show insignificant responses at 4 quarters and a significant decline at 12 quarters; however, results are sensitive to the chosen sample period. For 1960:1 – 1974:4 the cumulative private consumption response at 4 quarters proves to be significantly negative. (Heppke- Falk et al. 2006) found increases in output and private consumption as a result of a positive shock in government spending in Germany, although the effect is relatively small.

Regarding the empirical evidence of some recent study upon the effects of expenditure shock in developing countries, Lozano and Rodríguez (2011) found that an expenditure shock in Colombia has positive and significant effects on output, private consumption, employment, prices, and short-term interest rates. Unlike Ravnik and Žilić (2011) have suggested that a revenue shock in Croatia has a long-lived diminishing effect on the overnight interest rate and an expenditure shock leads to an immediate decline in the short-term interest rate. Ben Slimane and Ben Tahar (2013) also conclude that a revenue shock in Egypt has a persistent negative impact on short-term interest rate following a short-lived immediate increase.



#### 4. CONCLUDING REMARKS

There is some kind of consensus in the previous researches and empirical evidences that fiscal policy becomes more important, thus it can play a crucial role in achieving the relatively required Economic Transformation in both the developed and the developing countries, but the role of it may differ in developed economies from developing ones. Fiscal policy can influence saving, investment, and growth in the long run, and in the short run, fiscal policy primarily affects the aggregate demand; The new consensus has advocated the need for fiscal policy as a stabilization tool especially in short run in a recession period. Those macroeconomic effects typically include effects of government spending and government revenues on economic growth, inflation, interest rate, public and private investment, and private consumption. The two macroeconomic effects from the change in government purchases are called the multiplier effect and the crowding-out effect. According to The NEC, it does not matter whether government finances spending by bonds or by printing money, excessive amounts of each will be inflationary. In developed economies, a fiscal policy aims at maintaining full employment and stabilizing growth. While in developing countries fiscal policy is used to create an environment for rapid economic growth as the government has not only to mobilize more resources for investment but also to direct the resources to those channels where the yield is higher and the goods produced are socially acceptable.

The extensive empirical literature reviewed here studied the macroeconomic effects of fiscal policy using VAR approach and there are some policy implications that can be concluded as follows: Fiscal multipliers are not constant, but vary with country characteristics. The macroeconomic effects of public investment vary depending on how it is financed, Government projects financed through debt issuance have stronger expansionary effects than budget-neutral projects that are financed by raising taxes or cutting other spending;

Some general recommendations for the potential macroeconomic effects in any country can be provided including: First, Fiscal interventions need to be timely in order to be effective, and the interventions must be productive based on adequate data. Second, the spending should focus on projects that act as automatic stabilizers, along with sustainable finance; Spending increases should concentrate on areas where the expenditures are either reversible or likely to increase growth in the future, focusing in areas such as infrastructure where there are reasonable expectations of long term growth benefits merely, expanding tax bases as well as direct cost recovery through future user fees. Third, It is a must to build a strong fiscal position and large reserve stocks that saved in good times to finance the needed fiscal expansion in bad times. Fourth, Developing countries should consider the following priorities in the use of the limited scope they may have for expansionary fiscal policy:

1. Strengthening social safety nets is vital. A side benefit of strengthening such safety nets is that it also strengthens automatic stabilizers that are widely viewed as a more effective form of countercyclical fiscal policy;
2. One significant difference between developed and developing countries arises from the nature of the tax systems in the two sets of countries. A progressive tax system, which may be more typical of the developed country case, would generate counter-cyclical behavior, whereas a regressive one, most likely to prevail in developing countries, would generate pro-cyclical behavior;
3. Governance is probably the most important and significant factor that affects the relatively higher deficit bias in developing countries, as it relates to poor tax administration and expenditure management;

With all these theoretical insights and empirical evidence in hand, one can conclude that fiscal policy as a tool of demand management is most likely to be used far less frequently and intensely in developing countries than in developed ones because of the relatively high marginal propensity to consume identified for these countries

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## ROLE OF SOCIAL PARTNERS IN PROTECTING AN EMPLOYED WHISTLEBLOWER AS AN ELEMENT OF SOCIAL DEVELOPMENT

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### ABSTRACT

*The successful fight against corruption and other illegal acts endangering public interest becomes more and more important element of the economic and social development, especially in posttransitional countries. Therefore the subject of analyses in this paper is role of social partners in protecting the rights of employed whistleblower, which derives from the obligation of the employer in case of internal whistleblowing and the role of trade unions in protecting the employees rights. The role of trade unions to indirectly protect public interest by protecting whistleblowers is complementary to the role of protecting the employees rights. The direct aim of trade unions is the protection of whistleblowers and indirect important aims are the protection of public interest and fight against corruption as a prerequisite of development. The association of employers, starting from their role in achieving these aims, gives preference to the protection of employed whistleblowers comparing to partial interests of its members, who make illegal, immoral or illegitimate acts. The contribution of social partners to social development is being done in a significant amount through the affirmation of a concept of employed citizen who has a right to deny loyalty to his employer and point to illegal proceedings. The importance of trade union protection may be greater if the protection of employed whistleblowers is provided in similar manner to the protection of trade union representatives or workers councils, by which higher quality of protection is provided as well as direct participation of social partners.*

**Keywords:** *economic and social development, employer, employers association. protection of rights of employed whistleblowers, trade union*

### 1. INTRODUCTION

Introduction of whistleblowers' protection in many countries shows that whistleblowing is an important form of fight against corruption and other illegal acts that are detrimental to public interest. Fight against corruption at both national and international level becomes increasingly important element of economic and social development, especially in post transitional countries. Protection of whistleblowers rights is a direct goal of legal provisions, while elimination of corruption as a destructive phenomenon and impediment of social progress, is an indirect goal.

This paper starts from a theoretical approach on aims of legal regulation, according to which, a direct goal is a precisely determined behavior which is either commanded or allowed and that the underlying point, which is not in the forefront, is an indirect goal and that the rules most often have both direct and indirect goal, and accordingly what the law provides that we should do or not do, is a direct goal, while indirect goal is what the law thrives for, if we obey it (Fridmen, 2014, p. 75.).

By having recourse to legal provisions on the right to national whistleblowing and protection of whistleblowers rights, employees may reveal hidden information on corruption and corporate crime by his employer. In the case of corporate crime, due to great territorial and time gaps between the victim and a criminal, it may happen that people do not recognize themselves as being victims, or do not know how to request a redress for damages they sustained. (Gidens, 2007, p. 244). Social development, corruption elimination and protection of whistleblowers are interrelated goals, which has been recognized by the United Nations Convention against Corruption, marking corruption in its Preamble as a transnational feature affecting all societies and economies, threat for security and stability of societies jeopardizing sustainable development and rule of law, feature that encompasses enormous assets that may present a significant part of state resources (UN, 2003). Consequences of corruption are political ones (credibility of democratic institutions is endangered), economic (it prevents safe and rational investment, fair economic market, it causes disperse spending of state budget), social (it leads to enhanced poverty and inequality of citizens, contributes to general sense of insecurity and disaffection), which have negative impact to fair civil and economic relations (Gidens, 2007, p. 244)

The above mentioned convention provides for Contracting Parties to discuss the possibility of providing certain measures of protection from unjustified action towards a person to report to competent authorities in good faith and on reasonable grounds, about the facts that are related to criminal acts provided by the Convention (Article 33). This concerns a normative approach which corresponds just partly to attitude about dramatically damaging corruption as stipulated in the Convention, because it does not entail an obligation to deal with that issue, but only an obligation to consider it. The obligation to deal with this issue, is provided by the Civil Law Convention on Corruption of the Council of Europe of 1999<sup>1</sup> as well as by the Termination of Employment Convention of International Labor Organization (ILO) No. 158. According to this ILO Convention, complaints or participation in judicial proceedings against employer which relates to alleged violations of laws or regulations or addressing competent administrative authorities, are not a valid reason for termination of employment (Article 5).<sup>2</sup>

Legislative principles on whistleblowers are provided by the Resolution of Parliamentary Assembly of the Council of Europe No. 1729/2010, but it is not mandatory. By its relevance, the Recommendation of Council of Europe CM/Rec (2014) and the Appendix thereto should be stressed, as acts by which the Member States are recommended to issue a normative, institutional and judicial framework in order to provide protection to persons who have status of whistleblowers, who, in the context of working relations, report or reveal information on threats or damaging public interest, and which provide for the need for adoption of national legislation for protection of whistleblowers. Most of the Member States of the Council of Europe have not provided for comprehensive provisions on ‘whistleblowers’ protection, and many of them have enacted provisions dealing with various aspects of ‘whistleblowing’ in regulations on working relations, criminal proceedings, media, and on special measures for fight against corruption (CoE, 2010).

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<sup>1</sup>The Convention provides that every Member State should provide in its internal law, the protection from any unjustified sanction against employees in public and private sector, who have a reasonable suspicion about the corruption and who, in a good faith, report on their suspicion to responsible persons or bodies. (Article 9).

<sup>2</sup>Provisions of this Convention are implemented on the grounds of laws or regulations, if their application is not enabled in other way through collective bargaining, arbitral awards or judicial decisions or some other way which is in line with the national practice. (Article 1) (ILO Convention No. 158).

The European union requires the posttransitional countries of South Eastern Europe to achieve economic development necessary for stabilisation and accession, and also to lower the corruption at the bearable level, in the process of providing rule of law. International research on the spreadness of corruption have proved that the requirement of fight against corruption is justified.<sup>3</sup> The said requirements and national need for eradication of corruption as obstacle for social development, have urged for a trend of regulation of whistleblowers protection in this part of Europe, so that the following laws have been issued: Law on protection of persons who report corruption in the Institutions of Bosnia and Herzegovina (2013), Law on whistleblowers protection in the Republic of Serbia (2014), Law on the Fight against Corruption in the Republic of Montenegro (2014).

The said laws provided for the meaning of whistleblower, in accordance with recommendations of European and international organisations (Mirjanić, Čošabić, 2016, p. 97). In Republic of Croatia, the whistleblower protection has been regulated having in mind the rule that reporting by employee, or state official for a justified suspicion about the corruption or reporting about that suspicion to competent persons or state authorities, is not a justified reason for termination of employment, according to Labor Law (Article 117.) (2014), and according to Law on State Servants (Article 14a) (2005-2015).

Theoretical grounds in this paper are based on conception about the nature of whistleblowing, according to which the whistleblowing is a form of fight against corruption and other actions contrary to public interest, form of freedom of expression exercised by employed citizen and a form of resolving problems in working surroundings through activities of social partners. In labor legislation, both in theory and praxis, a unique conception of whistleblowing is not adopted, but this feature is attributed by several various functions and meanings.<sup>4</sup>

In the said theoretical frame, due to limited possibilities for a more thorough analyses with more sources and information, narrower paper topic are two issues: expressing opinion in labor relations and departure from the obligation of loyalty towards employer, and role of trade unions and other social partners in the protection of labor status of employed whistleblower. Relation between whistleblower and employer based upon legal provisions on protection of whistleblowers, affects the individual labor relation but also collective labor relations (industrial relations). The state of collective working relations is a reliable indicator about achieving joint interests and the level of development of industrial democracy at the employers'. The basic joint interest in which all other interests of industrial relation participants are concentrated, is the profitability of a company, or its existence in wider and more and more demanding market competition, and without exercise of this joint interest, it is not possible to achieve individual interests of industrial relation participants (Marinković, Marinković, 2015, p. 138). This analyses is based on the attitude of ILO experts that labor legislation that corresponds to contemporary economic and social challenges, may serve as an important mean for democracy at a working post; framework for employers, workers and their representative

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<sup>3</sup> According to research of the perception of corruption in those countries in average 80% of interviewed has stated that the corruption is spread out; index of perception of corruption in neighbouring countries in 2010 is between 3,2 in Bosnia and Herzegovina and 6,4 in Slovenia; average evaluation of the corruption spreadness in transitional countries at the scale from 1 to 7 is 5,30 in Montenegro to 2,18 in Slovenia. (Savić, 2013, p. 11-19)

<sup>4</sup> According to one of them, whistleblowing should be considered as an aspect of freedom of expression (especially stressed out in the jurisprudence of the European Court of Human Rights); in some scientific and expert bibliography it is considered that whistleblowing is first of all a mechanism for dealing for problems in working surroundings. (Kovačević, 2015, p. 41)

should be provided, in order that they make interrelations at the working post; processes through which principles and rights may be achieved, should be established (ILO, 2001, p. 9 ).

Starting from the presumption where successful fight against corruption and other illegal acts becomes increasingly important element of economic and social development, and that relation of social partners towards internal whistleblowing shows their relation towards the protection of public interest, but also towards social progress, thesis regarding the protection of rights of employed whistleblower are hereby presented: employer has a right to free expression of opinion and pointing out to corruptive and other illegal act at the employer that endanger public interest, despite to the obligation of loyalty to employer; role of trade union in protection of rights of employed whistleblower and duty of employer to refrain from adverse actions cannot be regarded separately; participation of trade unions in protecting rights of whistleblowers and duty of employer to react to opinion of trade union on violation of their rights if it is submitted to employer, should be regulated.

## **2. PROTECTION OF PUBLIC INTEREST OR LOYALTY TOWARDS EMPLOYER**

Legal regulation of whistleblowers protection is a normative protection of whistleblowers right to expression of opinion in working relations in case of discovering corruption and other illegal acts at the employer. The development of concept of employed citizen in comparative law led in a consequence to providing special protection to employed whistleblower, in order that public interest is protected, which is endangered by employer; this confirms indivisibility, mutual conditionality and interrelation of basic human rights (of all ‘generations’) – in this case it confirms relation of the right to work, right to express opinion, right of entrepreneurship and other economic rights (of employer) (ILO, 2001, p. 9) (Lubarda, 2011, p. 442).

The possibility of employee to freely express his opinion when suspects corruption or other illegal act, may bring him into dilemma about the relation of that right and a duty to be loyal to employer. Apart from this dilemma, whistleblower is in post transitional countries faced with a question how to provide for his existence, due to unfavorable labor market and the risk of long-term unemployment. One of biggest problems of unemployment of transitional countries is the duration of unemployment, which is predominantly a consequence of very low fluctuation between unemployed persons. Lack of fluctuation at labor market means that the probability of an average unemployed person to leave the group of unemployed persons is small, and with the lapse of time, more and more individuals will be unemployed for longer periods (Obadić, 2005, p. 53). Employed persons face a question of what should be the priority – protection of public interest, and accept the risk of jeopardizing his working security, or being loyal to employer, and avoid this risk. In solving of this inner dilemma, but also in solving judicial working disputes between employers and whistleblowers-employed ones, there is a recourse to test of good faith (*bona fide*) in order to first answer the question of what is and what isn't exercise of a right to whistleblowing, or to define a protected whistleblowing (Sargeant, 2009, p. 73). The obstacle is the lack of clarity of phrase ‘good faith’. In the context of British law, the court concluded that this phrase means that a motive of employee may be taken into consideration, while organization PCaW (Public Concern at Work – whistleblowers non-governmental organization that designed British law) took the attitude that it should mean ‘honest’. Is the motivation of whistleblower important if there are reasonable grounds for doubt? It is obvious that making allegations without reasonable doubt, which is in bad faith, should be punishable (UNDP, 2012, p. 17).

Employee who considers that the public interest is both legally and morally more superior than private interest of employer, and follows moral norms as references for acting, may do it in



good faith, which means without intention to do something unfair or illegal, or without being aware or not capable of being aware of doing something unfair or illegal. According to Resolution of the Parliamentary Assembly of the Council of Europe No. 1729/2010, point 6.2.4., it is considered that a 'whistleblower' acts *bona fide* if he could reasonably believe that revealed information are correct, even if it is later established otherwise, and even if he did not have intention to pursue some illegal or unethical goal. Whistleblower enjoys protection all until he acts according to law, and if not, that protection could not be applied. Whistleblowing that points to abuse, or violation of law (criminal or administrative legislation), obstruction of justice (for example, when whistleblower – employee reasonably suspects that employer will hide the evidence), health dangers, security and environment endangering, enjoys special protection, if it was done towards specific persons under prescribed circumstances (Selvin, 2011, p. 316).

Will, responsibility and rational acting are main features of whistleblowing. Although, at first sight, one could conclude that the ones who step out against the company are those who are always unsatisfied, persons who are not content with their status, salary, promotion, or simply who do not feel good among colleagues, the truth is the opposite. The great majority of 'whistleblowers' are people who do not question the authority, who support the system, and believe in it. They are least prone to making a problem, however they are so shocked with what they notice at their working post, that they simply do not have other choice but to go publicly with it (Habazin, 2010, p. 346). The potential whistleblower is expected to be capable of recognizing corruptive or other illegal act, to be aware of possible consequences, to check the information and get the available evidence, to sustain the retaliation by the employer and not to give up from reporting due to threats or settlement.

The protection of whistleblowers relies on principle of non-discrimination, respect of freedoms and protection of rights in accordance with national legal order, international and European legal standards, and above all with the European Convention for the Protection of Human Rights and Fundamental Freedoms. Apart from acts of the Council of Europe, the case law of the European Court of Human Rights is also important, which by its judgments provides for guidelines and recommendations not only to states parties to the proceedings, but according to principle of general prevention, to all Member States, as a legal framework that they should obey, in order to avoid the similar proceedings against themselves in future. When speaking of case law of the European Court of Human Rights, judgments that relate to the protection of whistleblowers are related to Article 10 of the European Convention for the Protection of Human Rights and Fundamental Freedoms, which regulates the freedom of expression, and the right to impart information (Mirjanić, Čošabić, 2016, p. 103). The characteristics of the right to express opinion in working relation and of protection of rights of whistleblowers may be shown at the example of the judgment of the European Court of Human Rights in the case of *Matúz v. Hungary*, where the applicant was a journalist employed at the State television company (Magyar Televízió Zrt.) from 2001.<sup>5</sup> The applicant was also president of the trade union. The television company dismissed the applicant in November 2004<sup>6</sup>. He complained to the European Court of Human Rights alleging that his right to freedom of expression has been

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<sup>5</sup>According to labor contract, he was obliged by professional confidentiality, and was not supposed to publish information that he learns about in the course of his work, and if he would do otherwise, that would result in his dismissal. The applicant noted that new director of a cultural programme changes and puts censorship of some parts of the show 'Éjjeli menedék' and informed the president of the tv company about that, but he received no reply, and in 2004, he published a book on censorship on Hungarian state television.

<sup>6</sup>The applicant submitted an action to Labor court in Budapest. The Court has dismissed the action, alleging that the applicant has violated his labor contract by publishing information on his employer without his consent. The same attitude was taken by the District court and Supreme court, so that the applicant lost at all regular judicial instances in Hungary.



violated by being dismissed due to publishing a book in which he revealed internal documents of his employer.<sup>7</sup> The Court has found a correlation between the dismissal of the applicant and his publishing a book. The Court noted that the applicant was employed at the state television company according to Labor Law, and stressed out that Article 10 of the Convention may be applied not only to working relations determined by public law, but also by private law, so that a state has a positive obligation to protect the right to freedom of expression even in relations between individuals. The Court has considered dismissal to be interference into the right protected under Article 10 of the Convention.<sup>8</sup> The Court has stressed out that in this case, there was a question and a limit of loyalty of journalist, and in this context the Court takes into consideration the fact that the employees bear towards the employers a duty of loyalty, reserves and discretion, so that the measure by which the applicant was dismissed from his job due to violation of confidentiality, is not by itself contrary to requirements of Article 10 of the Convention. The Court makes difference between the position of the applicant in this case – the position of journalist employed by state television according to provisions of general Labor law, and the position of a person employed in public sector who in a certain way points to illegal acts at the work place when he, being the employee or public servant, was the only person or was in a narrow group of persons who knows what is going on at work, and is therefore the most competent to act in public interest by alarming the employer or public. However, the Court did not evaluate in which category is the applicant in this case, because the public interest of transparent editing the programme of state television would anyway require domestic evaluation of proportionality of applied measure (dismissal).<sup>9</sup> The Court has considered that the book concerned public interest, and it especially considered that the applicant as a president of trade union had a right and obligation to publish the documents at issue and to comment on issues of public interest regardless of the confidentiality clause in his labor contract. The Court has come to the conclusion that the role of journalists in society and their responsibility to encourage public debate must be taken into consideration, and that the duties of discretion and confidentiality cannot be applied with equal force to journalists, due to the very nature of their profession. The Court has considered that the authorities had to take into consideration the public interest when assessing the acting of the applicant. The applicant acted in good faith in order to draw the attention of public to censorship in state television. In this case the Court has considered, on one hand the importance of the right to freedom of expression in matters of public interest, and professional duties of applicant as a journalist, and on the other hand, the duties and responsibilities of employees towards employers, and balanced the interests and came to a conclusion that the interference in the right to freedom of expression of the applicant was not 'necessary in a democratic society'. Public interest is more important than a private-law relation between the employer and employee.

### **3. SOCIAL PARTNERS AND PROTECTION OF RIGHTS OF EMPLOYED WHISTLEBLOWER**

The main subject of legal provision on protection of whistleblowers rights is the protection of rights from working relations, and therefore the regulation of participation of trade unions in the protection of whistleblowers rights is a logical subject matter of those provisions. In that

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<sup>7</sup>The book consisted of parts of different interviews recorded in 2003, that have not been emitted in cultural programme, allegedly due to instructions of director of culture. The book called for readers to decide for themselves whether the comments presented show legitimate performing of monitoring by director, or interference into the freedom of expression.

<sup>8</sup> The Court recalled previous cases *Fuentes Bobo and Wojtas-Kaleta v. Poland* which related to journalists who publicly criticized public television broadcaster.

<sup>9</sup> The Court accordingly analysed the case according to principles established in the *Guja* case. It also took into consideration the lack of efficient judicial review of the implemented measure, that could cause the violation of Article 10.

regard, the Recommendation of the Committee of Ministers of the Council of Europe regarding the whistleblowers' protection, No. CM/Rec (2014)7 which stipulates that the Member States should protect whistleblowers from any form of retaliation, either direct or indirect, by employer, persons who work for him or act for him, and the retaliation may entail dismissal, suspension, degradation, loss of the possibility to be promoted, punitive transfers, decrease of salary, disturbance of whistleblowers or other criminal or discriminatory acting (Article 21.). According to legislative praxis of neighbouring countries the participation of trade unions could be the matter of legal regulation on the protection of whistleblowers, laws on prevention of corruption or labor laws and state servants laws. The said laws in the neighbouring countries do not provide for provisions on the role of trade unions in the protection of rights of whistleblowers, so the provision on participation of trade unions in the protection of rights of employees under labor legislation are applied. The importance of the participation of trade unions in the protection of rights of whistleblowers, is based on the very nature of trade unions as independent, democratic and selfdetermining organization, which has a unique and irreplaceable role in the protection of rights of employees, the role which formally and genuinely cannot be replaced by another subject. The participation of trade unions in the protection of whistleblowers' rights, is connected with the protection of public interest, but also with the protection of dignity at work. The protection of rights of workers to dignity at work is the duty of trade unions and other social partners: in order that the efficient enjoyment of this right is provided, the parties are taking duty to promote the awareness, being informed and to prevent any such behavior which could be judged or is extremely negative and offensive against an individual employee at the working post, and also to take all the measures to protect workers from such behaviour (CoE, 1996).

Starting from the importance of trade unions, it is possible that their role in the protection of whistleblowers' rights is determined in a similar way the protection of trade union representative from dismissal or other reverse acts, by which he is put into less favourable position comparing to other employees, which means, on the grounds of use of various forms of protection of trade union representatives, in a way that corresponds to legal system of a concrete country, for example, that the employer is obliged to react upon the opinion of trade union or that trade union may request that a retaliating act of employer towards employee is suspended until the final court decision. The possibility for the president of trade union at the employers' or of other trade union representative who has a right to a special protection of working status, to take the role of employed whistleblower, and according to the case of *Matúz v. Hungary*, stresses out the questions if and how much the problem of protection of working status of employed whistleblower may be compared to the protection of trade union representative at the employers, although two different roles are at issue. The employed whistleblower protects the public interest, and the trade union representative protects the rights and interests of employees. The employed whistleblower may get support in a way that the trade union will influence its members to support him by allowed means of trade union fight, taking into consideration the solidarity and moral duty. If it is correct that duties are in line with the provision of solidarity, it is also correct that the solidarity from which the said duty originates, may be visible in to various degrees. That is sometimes clear to those concerned; and sometimes, it still goes by thin and incomprehensible flow through social institutions and praxis (Fuler, 1964, p 38). From the point of view of the fight against corruption and the participation of trade unions in the protection of rights of employed whistleblower, it is necessary that employees with the same employers have a will and capability to put themselves into his position, and, it is undisputably important for autonomous impression about law and its legal norms, the circumstance whether, and to what extent, the life emotions, difficulty and apiness, are merits and failures of other community members, are well known to other

community members. That is a precondition, in the absence of which, the individual with his actions cannot become aware about the benefits or damages done by his acting or non acting to others. That is a precondition of every solidarity in a society (Bock, 2013, p. 16). Trade unions may influence the personal relations in working surroundings and build up a positive attitude of employees towards the whistleblower, and the awareness that the protection of public interest is a common goal, including also employers to co-operate with it. The politics that encourages the employees to inform them by internal routes, before the problems grow into crises, is a good business logic, supported also by American Sarbanes-Oxley Act, which makes a duty to companies to establish independent internal committees for review, and to give the chance to employees to safely, even anonymously, by internal paths, report irregularities regarding bookkeeping and financial issues (Chapter 301) (Stivenson, 2012, p. 29).

Accordingly, the role of the employers association is encouraging employers not to make corruptive acts and other forms of illegal actions, including illegal acts towards the employed whistleblowers. In order that the protection of public interest is provided, the association of employers should give preference to the protection of employed whistleblowers, comparing to partial interests of its members, who make illegal, unmoral or illegitimate acts.

#### 4. CONCLUDING REMARKS

Direct goals of participation of trade unions and co-operation of social partners are better protection of rights of employed whistleblower and participation of employees in revealing corruptive and other criminal acts, hidden from public, and indirect goals are the success of governing institutions in the fight against corruption due to possibilities to get information on corruptive acts and corporative crimes, and also more favourable possibilities for development of business companies who respect regulations and public interest. Contribution of trade unions to protection of rights of employed whistleblowers depends on the fact whether the law on protection of whistleblowers or any other law specifically regulated the role of trade unions therein. The importance of trade union protection of whistleblowers may be even greater if the protection of employees rights is provided similarly to the protection of trade union representatives exposed to retaliation of employers and thus, apart from the greater scope of protection, participation of social partners is provided.

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