

eee 2019

8TH INTERNATIONAL CONFERENCE
EMPLOYMENT, EDUCATION AND ENTREPRENEURSHIP



Faculty of
Business Economics
and Entrepreneurship

EDITORS: Zorana Nikitovic, Sladjana Vujcic, Ivan Piljan

**THE EIGHTH INTERNATIONAL
SCIENTIFIC CONFERENCE**

EMPLOYMENT, EDUCATION AND ENTREPRENEURSHIP

THEMATIC PROCEEDINGS

17-19 October 2019, Belgrade - Serbia

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Publisher:

Faculty of Business Economics and Entrepreneurship, Belgrade, Serbia

ISBN 978-1-993029-3-1

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THE REPUBLIC OF SERBIA ON A GLOBAL SOCIAL CAPITAL INDEX SCALE

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ABSTRACT

The most important lecture we all need to learn from the literature investigation and research conducted so far on the topic of social capital is how the ways and conditions bonding people to the others imply on to the community welfare, regardless of the fact if they live in rich or poor countries. Numerous findings appeared independently in interdisciplinary social research which correspond to a contemporary perspective in social capital understanding. It refers to the findings how a community plentiful in social capital achieves better economic results and has no need for omnipresent and wasteful state government. This type of social community is not marked by a high corruption level and unnecessary social expenses and issimultaneously very well bonded and self-organised as acontrolling and corrective body of the state government. Social capital structured out of social and institutional trust brings people together for collaboration, association and collective action. Thus reaching and achieving collective interests abandoning far beyond the individual action frame contributes to societal and legal norm collective respect.

This paper is based on the conjoint data of the Legatum Prosperity Index through the correlationresearch of social capital and Prosperity Index as well as nine belonging subindices in 149 countries of the world: Economic Quality, Business Environment, Governance, Education, Health, Safety & Security, Personal Freedom and Natural Environment in order to determine the closest bond of Social capital to the indexes named. The paper shows social capital index movement from 2007 until 2018 and places The Republic of Serbia on the global social capital indexscale.

Keywords: Social Capital, Legatum Prosperity Index, The Republic of Serbia

1 INTRODUCTION

Current literature and research results show that social capital contributes to the prosperity of the community to the extent that it is used by community members. Social capital in this context implies trust between people, trust in institutions, respect for norms and association. Most of these studies are based on World Values[1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12]. [12] within Legatum Prosperity Index (LPI), collects social capital research from the Gallup World Pool and the International Institute for Democracy and Electoral Assistance (IDEA) and stresses that social networks, and the cohesion and society experience when people trust and respect one another, have a direct effect on the prosperity of a country. A person's wellbeing is best provided in a society where people trust one another and have the support of their friends and family. Societies with lower levels of trust tend to experience lower levels of economic growth. Thus the word "capital" in "social capital" highlights the contribution of social networks as an asset that produces economic returns and improves wellbeing.

[13] defined national prosperity as the well-rounded combination of material wealth but also the life satisfaction of people. Its purpose is to encourage policymakers, scholars, the media, and the interested public to take a holistic view of prosperity. Prosperity extends beyond material wealth [14]. LPI is the global measure of economic and social wellbeing and presents an insight into international wellbeing by identifying the conditions required for prosperous nation. Its broad range of indicators allows the Prosperity Index (PI) to pinpoint not only the drivers, but also the obstacles to a nation's prosperity. It is based on nine pillars of prosperity: Economic Quality, Business Environment, Governance, Personal Freedom, Social Capital, Safety and Security, Education, Health and Natural Environment. Each of the subindices provides two important analyses: an economic assessment, and an assessment of a country's subjective wellbeing, or happiness. Wellbeing is more closely linked to prosperity than it is to GDP. A rise or fall in prosperity is correlated with a rise or fall in wellbeing. On the other hand, a rise in GDP per capita is not particularly

correlated with a rise in wellbeing, although countries with falling GDP will experience a drop in wellbeing [12]. The study [15] which evaluated the Legatum Prosperity Index as an effective measure of wellbeing or prosperity by comparing it with the Gross National Income, concluded that the Legatum Prosperity Index may be considered a valid source of wellbeing assessment because it refers to those dimensions that are fundamental to individual or national wellbeing and it allows tapering off the dependence on GDP measures. By determining the factors that are most closely related to prosperity and country valuation by these factors, the Legatum Prosperity Index identifies countries that have the right foundation for creating a strong economy and citizen welfare.

This paper based on published data by Legatum Prosperity Index examined the statistical correlation of its subindices. The relative position of: 1. Serbia in the world, 2. Serbia as a part of Eastern Europe excluding the countries of Western Asia, and 3. 28 EU countries including Serbia was examined in the period between 2007 and 2018.

2. THEORITICAL FRAMEWORK

According to [12] The Social Capital pillar measures countries' performance in three areas: social cohesion and engagement (bridging social capital), community and family networks (bonding social capital), and political participation and institutional trust (linking social capital). This understanding of Social Capital is explained in [16]. This pillar evaluates how factors such as volunteering, helping strangers, and donating to charitable organizations impact economic growth, life satisfaction and improved wellbeing. It measures levels of trust - whether citizens believe they can rely on others and whether they can rely on institutions such as the police force. It also measures whether citizens feel and act as if they have a say in the political process. Empirical studies on social capital have shown that citizen wellbeing improves through social trust and family and community ties.

The views of the Legatum Institute are in line with the previous studies, such as [17], [7] and [18], suggesting that a higher level of confidence could lead to more intensive economic growth. Furthermore, [2] found that the effect of confidence in economic growth is more present in the poorer countries, contrary to the results of [1], [19] and [20] which showed that generalized trust among citizens is significantly and negatively related to productivity growth and economic growth, respectively. In the structure of social capital, empirical evidence indicates that social networks, ie. participation in the society, is one of its most important dimensions [21]. The literature generally shows both sides of the participation in associations. Thus, according to [22] participation is the main economic driver of the community and [23] portrays that managers who actively engage in associations produce better business results. However, according to [7], there is a weak support to a higher level of active participation in civil associations has a positive increase in economic growth. [21] [24] demonstrate that institutional trust and trustworthiness are weakly correlated with the perception of civism, and that if citizens believe that predatory behavior is not present in the region, their trust in institutions can be higher than in regions where, for example, government is perceived to be corrupted. The results presented by [25] show how regions of Middle and East Europe show a decrease in levels of social capital. According to this finding, the extremely low level of social capital is present in Serbia [26]. According to [27] and [28], the double implications of primary bonding are most common in transition countries when close family and friendships are not used for the benefit of everyone but for the realization of their own interests. The state of social capital in Serbia is best illustrated by [29], it is necessary to create a social climate and culture in which network contacts, activities and impacts - social capital would not be the privilege of a few transitional beneficiaries.

3 THE POSITION OF SERBIA ACCORDING TO PI AND SUBINDICES

Overall results in 2018 by [12] show that prosperity has grown globally and is at its highest ever point in the history of the Index and the gap between the highest and lowest score is the largest it has ever been. The most important driver of this improved prosperity is the significant strengthening of the world's Business Environment [30]. Accordingly, the value of PI and most of the subindices in Serbia has increased. Table 1 shows Prosperity Index (PI), Economic Quality (econ), Business Environment (Business) and Social Capital (associates). Although there was no change in 2018 in PI, compared to 2017, Serbia has risen to one place in a row. The subindex grew and Serbia grew three places in the ranking, while the subindex business, despite the increase in value, did not record a change in rank. Social capital in Serbia has risen by 3.38%, and this increase is significant (increase for 16 seats).

The relative changes in PI values and the econ, business and partner index are shown in chart 1. The changes range from 2007 to 2018 and show changes in the previous year (the previous year = 100).

Table 1. PI, econ, busi and soci in Serbia in the period between 2007 and 2018

year	PI			econ			busi			soci		
	value	Δ*	rank	value	Δ*	rank	value	Δ*	rank	value	Δ*	rank
2007	58,7	-	64	56,5	-	92	43,3	-	82	42,4	-	120
2008	58,9	0,28	65	56,7	0,30	93	43,4	0,39	88	42,4	0,08	123
2009	59,4	0,85	65	57,7	1,82	91	44,2	1,68	94	42,4	0,00	117
2010	58,6	-1,31	69	55,8	-3,30	100	46,2	4,57	91	40,7	-4,04	135
2011	59,0	0,65	71	54,5	-2,35	110	46,1	-0,17	92	41,0	0,85	134
2012	58,8	-0,39	73	53,4	-2,06	117	47,2	2,29	88	41,3	0,74	128
2013	58,8	-0,03	76	53,2	-0,34	118	50,1	6,18	82	43,9	6,18	113
2014	59,0	0,44	75	53,0	-0,27	119	49,8	-0,63	78	43,0	-2,07	131
2015	60,3	2,16	66	56,3	6,23	102	49,0	-1,47	91	44,3	3,04	122
2016	60,4	0,13	67	56,7	0,54	98	49,8	1,50	92	44,2	-0,30	123
2017	62,0	2,61	57	57,8	1,96	92	52,0	4,41	81	46,4	5,05	107
2018	62,2	0,42	56	58,3	0,86	95	52,7	1,35	81	47,9	3,38	91

*% change relative to the previous year

Source: Authors according to data [12]

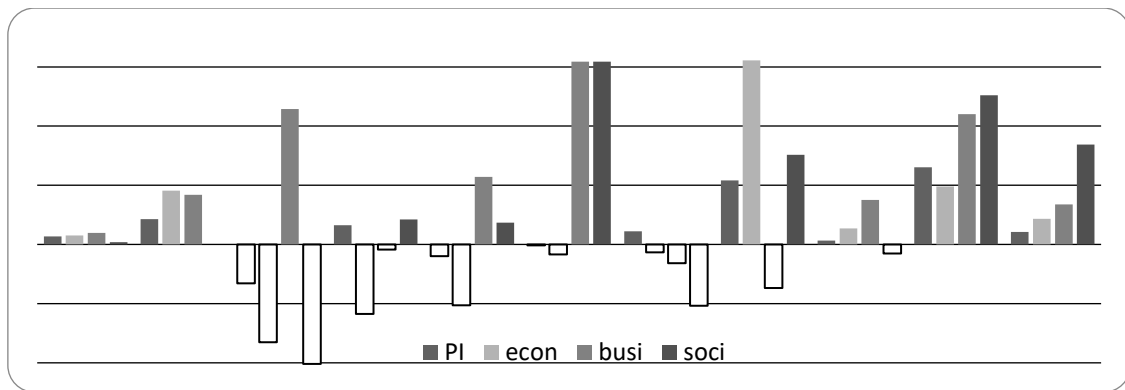


Chart 1. Relative changes in value PI and subindex econ, busi and soci

Source: Authors according to data [12]

In order to compare Serbia based on social capital with the countries of Europe with the highest and lowest levels of social capital, Chart 2 shows Norway with the highest level and Greece with the lowest level of social capital. The highest and lowest levels of social capital of the countries of Europe also belong to the countries of the EU28 + Series.

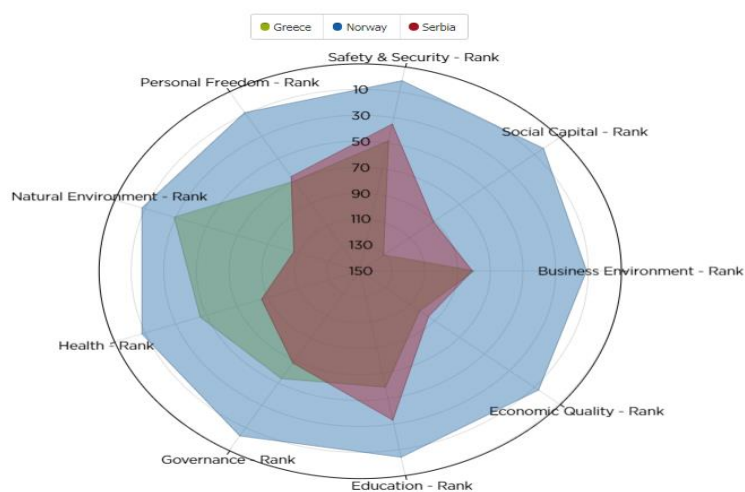


Chart 2. Subindices by rankings for Norway, Greece and Serbia

Source: Generated by The Legatum Institute, <https://www.prosperity.com/data-explorer?country>

Norway as the country with the highest PI in the EU shows a high level of all subindices. Greece, with the lowest level of social capital in the EU, also shows a lower level of economic outcomes than Serbia, but a higher level in the areas of population health, state management, democratic and encouraging citizen participation and the quality of the natural environment.

4 METHODOLOGY

LPI covers 149 nations and based on 104 indicators and 15,000 data points. The Methodology Report [31] describes the methodology of calculating The Legatum Prosperity Index and individual subindices. The research used in this paper was the data used to calculate the The Legatum Prosperity Index. Based on the conjoint data of the Legatum Prosperity Index this paper research correlation of Social Capital and other eight subindexes in 149 countries of the world in the period 2007-2018.

4.1 Data

Data for the 104 variables listed in the Prosperity Index are drawn from a wide range of sources including intergovernmental organizations such as the United Nations, World Bank, International Monetary Fund and World Health Organization; independent research and non-governmental organizations such as Freedom House, Amnesty International and Transparency International; and databases compiled by academics. For the subjective variables, two major global surveys are used: the Gallup World Poll and the Executive Opinion Survey organized by the World Economic Forum. All the data for the Pillar (subindex) Social Capital have been collected from the Gallup World Pool, in addition to voter turnout data collected from the International Institute for Democracy and Electoral Assistance (IDEA) [31]. Table 2 describes the area. Pillars of Prosperity are explained in detail in the Methodology Report [31]

Table 2. Pillars of Prosperity – Subindices of Legatum Prosperity Index

Subindex	Description
Econ	The Economic Quality - ranks countries on the openness of their economy, macroeconomic indicators, foundations for growth, economic opportunity, and financial sector efficiency
Busi	The Business Environment - measures a country's entrepreneurial environment, its business infrastructure, barriers to innovation, and labour market flexibility
Gove	The Governance - measures a country's performance in three areas: effective governance, democracy and political participation, and rule of law.
Educ	The Education - ranks countries on access to education, quality of education, and human capital.
Heal	The Health - measures a country's performance in three areas: basic physical and mental health, health infrastructure, and preventative care.
Safe	The Safety & Security - ranks countries based on national security and personal safety.
Pers	The Personal Freedom - measures national progress towards basic legal rights, individual freedoms, and social tolerance.
Soci	The Social Capital - measures the strength of personal relationships, social network support, social norms, and civic participation in a country.
Envi	The Natural Environment - measures a country's performance in three areas: the quality of the natural environment, environmental pressures, and preservation efforts

Source: Authors according to [32]

Each subindex was created through a statistical analysis of data describing per-capita income and living satisfaction of the country's citizens. The Social Capital subindex is designed to answer the question of what kind of social networks and relationships, the level of trust in fellow citizens and institutions are associated with higher levels of prosperity and national income.

Some variables are important for determining the level of well-being and some for determining income, and some for both categories, such as for calculating the subindex The Governance. The weighing values of the variables are summed up with the purpose of calculating the country rank by income and well-being in each subindex. Standardized earnings and welfare results are aggregated, resulting in a subindex result for the country. Ultimately, the LPI result of the country is determined by taking the average of nine subindexes, and for each country, the overall income and total outcomes of well-being are also published.

The data thus prepared were used for further analysis of the relationship between the Social Capital subindex and other subindices, and for determining the relative position of Serbia in the world and in Europe.

4.2 Experimental design

This research attempts to answer the following question: what is the correlation between the indexes of soci, econ, busi, bove, educ, heal, safe, pers, envi. For this purpose, correlation analysis was calculated: Pearson's Correlation Coefficient [33] and Spearman's rank correlation coefficients (Spearman's Rho) [34]. For calculating the Pearson Correlation Coefficient, the calculated subindex values of all countries were used, and Spearman's calculations used the rankings of countries by subindices. In both cases there are 1788 observations. Attention is focused on the correlative relationship between Social Capital and the underlying indices.

The second step is to establish the relative position of Serbia in the world (142 countries), Eastern Europe (19 countries), Europe (42 countries), Europe without Western Asia-Eastern Europe (39 countries) and EU28 + Serbia (29 countries) for the period 2007 to 2018. LPI's subindices are used for this purpose. To determine the relative position of Serbia in prosperity compared to other countries, absolute measure of dispersion - standard deviation (σ) were calculated and then standardized variable Z-score [35] [34] for PI index and each subindex in each of the analyzed groups countries. Distribution normality was investigated and it was found that it is present only in data for the whole world and between the EU28 + Serbia countries.

5 RESULTS AND DISCUSSION

Pearson's Correlation Coefficients have shown that there is statistically significant strong positive correlation between all variables. There was a strong correlation between social capital and other subindices ($n = 1788$, $p < 0.0005$). These results are in line with some of the research findings outlined in Chapter 2. Although the results indicate that welfare is dependent on the level of social capital, yet it is a social capital variable that is least related to other variables, PI subindices (econ $r = 0.659$, $r = 0.683$, gove $r = 0.717$, educ $r = 0.545$, heal $r = 0.579$, safe $r = 0.497$, pers $r = 0.615$, envi $r = 0.581$). The correlation among other variables is strong, especially educ-heal $r = 0.866$, econ-heal $r = 0.823$, econ-bus $r = 0.807$, econ-gove $r = 0.788$, econ-educ $r = 0.795$, econ-safe $r = 0.759$, gove-safe $r = 0.733$, gove-pers $r = 0.825$.

Spearman's rho which uses the rank base for the base also show that the Social Capital variable that is statistically significantly associated with other subindices of prosperity, but that linkage is somewhat larger than when the index value is included in the calculation.

The highest variation in indices and subindices for the World (the largest variables in the bovine index) was determined by examining the variability (σ) of the index by country groups (World, Eastern Europe, Europe, Europe without Western Asia-Eastern Europe and EU28 + Serbia). The lowest variables are present in the group of countries of the EU28 + Serbia and in the group of Eastern European countries but differently in individual subindices. The EU28 + Serbia countries most differ in the subindices of business, baa and soci, and the countries of Eastern Europe in the subindices of bovine, peoples and environments. Examining the variability of countries by subindices has been found to be the highest in all groups of countries in the subindex gove, pers, soc and busi.

Preliminary analysis has shown how assumptions normality is present in data for countries of the world and countries of EU28 + Serbia. For data analyzed in Eastern Europe, Europe, and Europe without Western Asia, some assumptions of normality are disrupted. Therefore, the deviation of Serbia in the index value was examined in the group of countries of the world and in the countries of the EU28 + Serbia. The deviation was calculated using the Z-score by comparing the corresponding indexes for Serbia with the average of the world or the EU28 + Serbia expressed in standard deviations. Based on the Z-score, the percentage of countries that are worth the index is better than Serbia (Table 3).

According to the results, comparing Serbia with countries around the world, prosperity is lower in 54% of countries than in Serbia. Watching Serbia within the EU28 + Serbia, in 5-15% of European countries is lower ranked than Serbia. In the group of countries of the world there are also positive deviations from the average index (educ 0,68 σ , heal 0,11 σ , safe 0,63 σ , pers 0,21 σ). By the quality of education Serbia has significantly better results than in the established subindices. In 75% of countries, the quality and level of education is lower than in Serbia, but looking at EU28 the quality and level of education is lower in only 20% of the world countries.

Table 3. Deviation of Serbia from the rest of the world and from the EU28 countries

Index and subindex	Average Serbia	World (142 countries)		EU28 + Serbia	
		Z-value	%*	Z-value	%*
PI	59,68	0,01	46,00	-1,62	94,74
econ	55,81	-0,56	71,23	-1,79	96,33
busi	47,80	-0,26	60,64	-1,31	90,49
gove	48,08	-0,12	54,78	-1,44	92,51
educ	72,22	0,68	24,83	-0,86	80,51
heal	70,69	0,11	45,62	-1,53	93,70
safe	81,82	0,63	26,43	-1,08	85,99
pers	61,67	0,21	41,68	-1,36	89,80
soci	43,32	-0,90	81,59	-1,27	89,80
envi	55,68	-0,42	66,28	-2,30	98,93

*% of countries better than the index and subindex value of Serbia

Looking at Serbia in a group of countries, the negative deviations of the index from the average are considerably smaller than the deviation of social capital (-0.90). 81.6% of the world's countries have a higher Social Capital, and in the EU28 + Serbia 89.8%. According to most of the indexes, Serbia is in a much better position than it is when it comes to Social Capital, Economic Quality and Business Environment, and in European proportions by Social Capital and other benefits it is similar to many EU countries, while overall economic prosperity and economic quality still needs improvement.

6 CONCLUSION

Previous research on social capital is based on various sources. WVS data is most commonly used while the Legatum Institute for the calculation of the social capital level uses Gallup World Pool and IDEA data. Research results show that social capital is one of the drivers of economic development, but there are different results regarding the level of social capital linkage and economic progress.

The paper examines the linkage of social capital as subindex and other Legatum Prosperity Index subindices, and a statistically significant medium strong positive correlation has been established which relates to the relationship between social capital and economic quality, social capital and business environment. There is still a greater link between other subindices that contribute to the overall welfare of the nation (Economic Quality - Health, Economic Quality - Education, Health Quality, Economy Quality - Safety & Security, Governance - Safety & Security, Governance - Personal Freedom).

The overall prosperity in Serbia is on average higher than in other countries in the world, and in the run-up to the EU28 countries is almost at the bottom. On a world scale, Serbia's social capital in the last year has grown considerably in rankings, but still needs improvement. Economic indicators have also risen, but last year they did not follow the increase in the rank of social capital, so positive consequences are expected in the coming period.

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HIGHLY SKILLED HUMAN CAPITAL - ECONOMIC GROWTH NEXUS IN ROMANIA: A REGIONAL ANALYSIS IN THE CONTEXT OF KNOWLEDGE ECONOMY

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ABSTRACT

The paper explores the impact of highly skilled human capital on economic growth at regional level in Romania for the period 2000-2017. Based on EUROSTAT data regarding Romanian regions, the panel data analysis reveals a positive significant effect of tertiary educated people and employment in knowledge-intensive sectors on regional economic output in Romania. The Granger causality test concludes that tertiary students and employment in knowledge-intensive sectors cause the increase of regional economic output with a delay of 2 years.

Keywords: regional growth, tertiary education, knowledge-intensive employment

1 INTRODUCTION

The multifaceted concept of human capital encompasses innate talents, different types of investments in education, health and nutrition, knowledge and skills possessed by people and meant to increase their ability to engage productive activities and to create well-being (see: [1]-[4])

There is a consensus among researchers regarding human capital as an important determinant of economic output and its particular role in today's knowledge-driven economy [5].

The knowledge economy could be defined as production and services embedding knowledge-intensive activities that contribute to technical and scientific progress [6]. It relies on highly skilled people, able to absorb, create and use knowledge.

Regarding the discussion on human capital as driving force of regional economic growth in the general frame of knowledge economy, it is to mention two factors of influence: (1) quantitative: the capitalized human capital share on the labour market or the active human capital share, and (2) qualitative: the educational attainment (expressed by the share of tertiary educated people).

We consider that in the framework of knowledge economy, the highly skilled human capital plays a critical role in economic development. Therefore, for the purpose of the present paper, we refer to human capital as the people's educational capital acquired through tertiary education and the valorisation of human capital on the labour market within economic activities that are specific for knowledge economy.

The aim of the paper is to provide evidence on the impact of tertiary education and employment in knowledge-intensive sectors on regional economic output in the case of Romania.

The structure of the paper is as follows. After a brief literature review on human capital, the methodology and data of the study are explained. The fourth section exposes the main findings and the last section is dedicated to conclusions and policy implications.

2 LITERATURE REVIEW

The human capital theory considers that the investment in knowledge and skills generates a higher productivity (see: [1],[7]-[9]) and human capital is seen as a production factor in creating national wealth.

There is an impressive number of studies proving the strong effect of change in educational level of labour force on economic growth (i.e.[10]-[13]). Human capital has a positive significant impact on economic growth ([14]-[24]). Mamuneas, Stavides and Stengos (2002) [25] found that the sensitivity of the human capital to the economic output depends on the development level: it is positive for developed countries and it is lower or zero for developing and underdeveloped.

Human capital development and infrastructure enhance economic growth [26]. Change in age structure and human capital level affects the regional income groups of economies by different magnitude and pace. The effect is more powerful in relatively developed regions and high income groups [27].

Different types of human capital can have different impacts on economic growth. For example, tertiary education is more relevant for growth in OECD countries [28] and the difference on human capital stocks can be a convergence factor among countries [29]. Regions with a higher level of investment in higher education tend to have a larger concentration of ICT sectors [30].

A large empirical evidence suggests that the importance of human capital as input of production has grown over time, as the production processes have become increasingly knowledge intensive [2]. The knowledge-intensive sectors requires highly skilled human capital and their development stimulates the human capital development through new types of learning, nature of work, new occupations, digitisation, etc.

Regarding the human capital of the regions in Romania, we mention the study authored by Popescu (2012) [31] regarding the effects of economic crisis on human capital endowment of Romanian regions as a result of the internal migratory flows, generating development gaps among regions. In a similar approach, another study [32] analyzes the human capital loss at regional level as a consequence of economic crisis and external migration abroad of Romanian labour force and other studies [33], [34] reveal the positive significant association between human capital endowment of regions and economic output.

3 DATA AND METHODOLOGY

Data was extracted from Eurostat for the period 2000-2017 [35] for the 8 Romanian regions (Centre, North-West, West, South-West Oltenia, North-East, South-East, South Muntenia, Bucharest-Ilfov).

Based on the above conducted literature review, the author suggests to use two significant human capital proxy variables as independent variables - share of tertiary students in the population employment in technology and knowledge-intensive sectors as percentage of the total employment. The dependent variable is Gross Domestic Product (GDP) per capita as natural logarithm.

In order to highlight the impact of human capital on growth we start with a production function, similar to Mankiw, Romer, and Weil (1992) [14]:

$$Y_t = A_t \cdot K_t^\alpha \cdot H_t^\beta \cdot L_t^\gamma \quad (1)$$

where: Y denotes the output, A-total factor productivity, K-physical capital, H-human capital, L-labor, α , β and γ denote the output elasticities of physical capital, human capital and respectively, labour.

In order to capture the impact of human capital and labour we modify the equation 1 as follows:

$$Y_t = f(H_t, L_t) \quad (2)$$

Taking into consideration the selected variables for the purpose of this study, the appropriate regression model in a panel approach is the following:

$$\ln GDP_{percapita_{i,t}} = c + a_1 \cdot Empl_KIE_{it} + a_2 \cdot TERTS_{it} \quad (3)$$

where i denotes the region (1-8), t denoting time. The i subscript denotes the cross-section dimension whereas t denotes the time-series dimension, c is a scalar, a_1 and a_2 are regression coefficients, $EMPL_KIE_{it}$ is the employment on knowledge-intensive sector as % of total employment in the region i at time t , $TERTS_{it}$ is the share of tertiary educated people in regional population in the region i at time t , and u_{it} is the error.

There are two main approaches in the analysis of panel data: the fixed effects model and the random effects model. In a fixed effect model, the variation accross regions can be correlated with the independent variables and the effects of time-invariant characteristics are not taken into consideration. In a random effects model, the variation across regions is assumed to be random and uncorrelated with the independent variables [36], [37].

In order to select a fixed or a random effects model, the use of Hausman test is indicated. The Hausman test is designed to detect violation of the random effects assumption, by calculating the H, the chi-square distribution. When the value of Prob is less than 0.05 (the conventional level of significance), the two

models are different enough to reject the null hypothesis, meaning that the fixed effects model is selected. In the opposite case, a value of Prob higher than 0.05, indicates that the null hypothesis is accepted and the random effects model is appropriate [38].

In order to ensure the robustness of the results, we will run stationarity test proposed by Levin, Lin and Chu (2002) [39] for all variables included in the model and use the method of Robust Least Squares.

We will conduct a Granger causality test between GDP per capita and the chosen human capital proxy variables by using the EViews software. The test introduced by Granger (1979) [40] is computed by running regression with a selected number of lags of the tested variables.

4 MAIN FINDINGS

The stationarity of all the variables considered in the model is confirmed and the summarised results are displayed in the Table 1.

Table 1. Unit root test (2000-2017)

Variable	Statistic	P-value
lnGDPpc (ln)	-3.65959	0.0001
TERTS	-3.07897	0.001
EMPL_KIE	-2.47628	0.006

Source: author's own computation using EViews 10 software

Based on upon results, the null hypothesis of non-stationarity is rejected for all variables considered in the model. The number of lags was automatically selected based on Schwartz criterion.

Table 2. Summary of panel regression results

Dependent variable: lnGDPpc								
Sample: 2000-2017								
Periods included: 18								
Cross-sections included:8								
Total observations: 144								
	Panel fixed effects (FE)				Panel period random effects (RE)			
Variable	Coefficient	Std.Error	t-Stat.	Prob.	Coefficient	Std.Error	t-Stat.	Prob.
EMPL_KIE	0.093080	0.014561	6.392225	0.0000	0.059288	0.014033	4.22490	0.0000
TERTS	0.030565	0.004459	6.855191	0.0000	0.043140	0.004227	10.2046	0.0000
C	8.641554	0.036776	234.9770	0.0000	8.546899	0.043389	196.982	0.0000
					weighted statistics			
R-squared	0.935426				0.798292			
F-statistic	94.54168				279.0146			
Prob(F-statistic)	0.0000				0.0000			
					unweighted statistics			
R-squared					0.680724			

Source: author's own computation using EViews 10 software

When running the Hausman test, due to the fact that the value of Probchi2 is 0.0000 lower than 0.05 (the significance level) the null hypothesis is rejected and the fixed-effects (FE) model is selected (Table 2).

Table 3. Hausman test

Test Summary	Chi-Sq.Statistic	Chi-Sq.d.f.	Prob.
Period random	80.401370	2	0.0000

Source: author's own computation using EViews 10 software

According to data displayed in the Table 2, the estimated equation 3 is the following:

$$\ln GDP_{pc} = 8.641554 + 0.093080 \cdot EMPL_KIE + 0.030165 \cdot TERTS$$

The econometric model and all coefficients are statistically validated for a significance threshold of 1%. For an increase of one unit of tertiary educated people, the GDP per capita (as ln) will increase with 0.03 units and it will increase with 0.09 units when the employment in knowledge-intensive sectors increases with one unit.

When checking the results' robustness (see Table 4) we found that for the EMPL_KIE variable the results are not robust, due to the fact that the value of Prob is 0.1538, higher than 0.05. For the other variable, TERTS, the robustness is confirmed (the value of Prob is 0.0000).

Table 4. Results of robustness test

Dependent variable: lnGDPpc
Method: Robust Least Squares
Sample: 2000-2017
Periods included: 18
Cross-sections included:8
Total observations: 144

Variable	Coefficient	Std.Error	z-Statistic	Prob.
EMPL_KIE	-0.035434	0.024846	-1.426168	0.1538
TERTS	0.007428	0.007008	11.04797	0.0000
C	8.296739	0.060927	136.1752	0.0000

Source: author's own computation using EViews 10 software

According to the above findings, the tertiary education of population and the employment in intensive-knowledge sectors have a positive effect on regional income in Romania. This positive association is consistent with findings of other regional studies conducted for the Romania case [33], [34] as well as European Union [41], [42].

Table 5. Pairwise Granger causality test Lag=2

Null hypothesis	Obs.	F-statistic	Prob.
EMPL_KIE does not Granger cause lnGDPpc	128	5.75628	0.0041
lnGDPpc does not Granger cause EMPL_KIE	128	1.29968	0.2763
TERTS does not Granger cause lnGDPpc	128	3.13991	0.0468
lnGDPpc does not Granger cause TERTS	128	0.90352	0.4078
TERTS does not Granger cause EMPL_KIE	128	2.85258	0.0615
EMPL_KIE does not Granger cause TERTS	128	0.58490	0.5587

Source: author's own computation using EViews 10 software

As we noticed in Table 5, the causality relationship between employment, human capital and GDP per capita is investigated. The value of Prob is 0.0041, lower than 0.05 in the case of the relationship between GDP per capita and EMPL_KIE, meaning that the null hypothesis is rejected and the causality running from EMPL_KIE to income is validated, for a 5% significance threshold. A similar situation is found in the case of GDP per capita and TERTS: the value of Prob is 0.0468, revealing that the causality from TERTS to GDP per capita is validated for 5% significance threshold. The causality relationship between tertiary educated people and employment in knowledge-intensive sector could not be demonstrated.

5 CONCLUSIONS

The paper intended to explore the impact of human capital and knowledge-intensive employment on regional growth in the case of Romania. A positive significant effect of these two variables on regional economic output is found. It is revealed also a validated causality running from tertiary educated people and employment in knowledge-intensive sectors to regional GDP per capita, with a delay of two years.

Taking into consideration that Romania experienced a process of income divergence among regions [34] (Neagu, 2013), public policies aiming to support human capital investment will generate regional wealth and may stimulate the process of regional convergence. In a same view, the increase of employment in knowledge-intensive sectors could have as result an increase of regional specialisation, which has a decreasing tendency in Romania in recent period [43].

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STANDARD OF LIVING, QUALITY OF LIFE AND HAPPINESS SCORE AS INDICATORS OF ECONOMIC DEVELOPMENT

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ABSTRACT

The paper intends to put into correlation the basic indicators that determine the level of economic growth and development: GDP, quality of life, and happiness score. Although the economic categories of quality of life, happiness score, as well as general well-being and living standards of the population are close and related, emerging or performing one from another, they are certainly not identical categories. In this sense, the paper has a goal to present basic similarities and differences between them and to put them in a correlative relationship, in the same time correlating them with GDP per capita as a basic indicator of the level of economic development.

Starting from the basic premise of the economy as a science (oikonomia - *oikos*, "household"; and *nomos*, "law," or "custom", all together "Household Management" or Management of State"), that is, to manage limited resources in order to meet unlimited human needs, the question that arises is when people feel well, have a feeling that they have "quality" life, and when they feel happy.

Although these categories depend on a huge number of economic variables and are closely related to the level of economic development and the scale and scope of meeting different needs, they still have a strong expression of a subjective experience and are also determined by other non-economic factors (psychological, sociological, philosophical, cultural, etc.). On the other hand, the distinction between growth and development of a defined economic space must be taken into account. The basic indicator used to measure economic growth is undoubtedly the GDP and GDP per capita. But one has to take into account the distinction between quantitative growth and qualitative development, whereby GDP is an indicator of growth. Development is a broader concept that covers growth, but also technological and any other kind of advancement of the social community. Development as a qualitative feature means the advancement of the qualitative characteristics of society and the well-being of individuals, and the well-being is not only the increase of GDP, but the subjective sense of the people in the community that they live better, a sense of improving the quality of life.

Despite the complexity of all these terms, the paper is attempted to set them in an interdependent relation to the example of the 20 most developed economies, in order to be noted the current correlations of the basically set economic categories, without the intention that it will be a universally set rule that would be valid at any time and in any space.

Keywords: economic development, standard of living, GDP per capita, quality of life, happiness score, welfare, correlation

1 INTRODUCTION

Economic development is a process that takes place under the influence of objective economic lawfulness and principles which affect independently of people's will. But also, in order to accelerate and make development more efficient, the measures of the economic policy of the state can also be used. Economic development is a very complex process that takes place with different intensity in time and space, depending on the strength of the action of the factors that condition that development. It is expressed through the continuous growth of production and employment, through the improvement of the economic structure by developing and expanding modern activities and through the growth of the quality of life of the population. All this leads to the material and cultural development of the country and to the improvement of the living and working conditions of people, which in fact expresses the general level of economic development of the country.

Considering that growth and development are conditioned by a number of different factors (factors of socio-political nature, scientific and technological progress, capital - sources of investment funds, labor, natural

resources, infrastructure conditions, entrepreneurship and management, etc.), there are also a number of indicators that quantify growth and development, which put more emphasis on certain factors and results of growth and development. So, the basic indicator used to measure economic growth is undoubtedly the GDP (and GDP per capita) as “an aggregate measure of production equal to the sum of the gross values added of all resident and institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). The sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchasers' prices, less the value of imports of goods and services, or the sum of primary incomes distributed by resident producer units”.[1] GDP per capita is often considered an indicator of the standard of living of a given country, as it reflects the average wealth of each person residing in a country. It is therefore the standard method used to compare how poor or wealthy countries are in relation to each other. But, of course, for a more comprehensive picture it is necessary to take into account other complementary indicators that are aimed at showing the welfare and personal perception for quality of life of the population and which can and should be in parallel use in the analysis of the economic development. In this sense, the indicator of the quality of life can be used as a highly subjective measure of happiness, which is an important component of many financial decisions; and happiness score (which at first sight looks very closely related to the quality of life and can be determined as an index that is used to measure the collective happiness in a nation.

Every production process and every economic activity in general, find their sense in consumption, i.e. are aimed at providing profit to the one who organizes them, to meet certain needs in the sphere of consumption. If we look at the distribution of the macroeconomic aggregates by purpose (or, if GDP is analyzed from the aspect of the expenditure principle for example), then it will be noted that two significant items are: personal consumption (C - consumption) and public consumption (G - government). These two sizes constitute the current consumption, i.e. refer to the concept of standard of *living*. Against the category of standard of living, the category of quality of life (that is very close to the standard of living) is considered, but the second one has a somewhat broader scope and among other things points to the non-monetary aspects of human needs in the broad sense of the word. Factors that play a role in the quality of life vary according to personal preferences, but they often include financial security, job satisfaction, family life, health, and safety. Financial decisions can often involve a tradeoff wherein quality of life is decreased in order to save money or earn more money, or, conversely, quality of life can be increased by spending more money. The most accurate determination of the quality of life refers to the satisfaction from work and life in general, through all aspects that make up the complex of people's needs, not just material needs, but needs that give meaning to life in every way, even in philosophy of life ultimately. When it is used in a work-related way, quality of life often refers to the time and ability to do the things people enjoy. If a job pays a lot of money but requires so many working hours that the worker cannot enjoy any of the money earned, that is a poor quality of life. If a job provides time to enjoy life but leaves the worker too tired, injured, stressed out, or otherwise unable to enjoy his or her earnings, this is another detriment to the quality of life. It is common today to weigh both salary and quality of life when considering how good or bad a job is.

World happiness score is another indicator for development which is in use from 2012 when first World Happiness Report was released (April 1, 2012). In the reports, experts in fields including economics, psychology, survey analysis, and national statistics, describe how measurements of well-being can be used effectively to assess the progress of nations, and other topics. Each report is organized by chapters that delve deeper into issues relating to happiness, including mental illness, the objective benefits of happiness, the importance of ethics, policy implications, and links with the Organization for Economic Cooperation and Development's (OECD) approach to measuring subjective well-being and other international and national efforts. Data is collected from people in over 150 countries (156 in 2018 Report). Each variable measured reveals a populated-weighted average score on a scale running from 0 to 10 that is tracked over time and compared against other countries. These variables currently include: real GDP per capita, social support, healthy life expectancy, freedom to make life choices, generosity, and perceptions of corruption. However, this score is also subject to criticism regarding the three basic issues: Metrics, Methodology, and Philosophical concerns [2]. This indicator (World happiness score) is published annually in the World Happiness Report as an annual publication of the United Nations Sustainable Development Solutions Network (SDSN). SDSN engages scientists, engineers, business and civil society leaders, and development practitioners for evidence based problem solving. Although this indicator is based on the UN General Assembly resolution 65/309 Happiness: Towards a Holistic Definition of Development adopted on 19 July 2011, it is clearly stated that The World Happiness Report was written by a group of independent experts acting in their personal capacities. Any views expressed in the report do not necessarily reflect the views of any organization, agency or program of the United Nations.

2 STANDARD OF LIVING, QUALITY OF LIFE AND HAPPINESS SCORE – SIMILARITIES AND DIFFERENCES

Standard of living is a complex concept. It basically refers to the *use and enjoyment of material and spiritual goods and services that are personally acquired or provided by the state*. It is obvious that, depending on how material and spiritual goods and services which are subject of enjoyment are provided, the standard of living can be seen as a whole composed of two parts: personal consumption and public consumption. Personal consumption represents that part of the standard of living that covers the consumption and enjoyment of material and spiritual goods and services that are personally acquired. The social standard (i.e. the part of public consumption) refers to the spending of material and spiritual goods and services provided by the state, so people use them individually or collectively without paying anything or paying only partial compensation for them. Whenever the standard of living is discussed, inevitably is the question about the factors that determine its level, among which the basic factor is the level of economic development of the country. The higher the level of development is, the higher the average level of the standard of living for the population as a whole is (which certainly does not exclude differences between individual layers of the population). Namely, the higher level of economic development means, above all, higher personal consumption of material and spiritual goods and services, but also a larger state budget as an assumption for better satisfying the needs in the sphere of public consumption. More importantly, countries with a higher level of economic development basically have higher labor productivity, primarily because of the better equipment and better human capital. This provides a more permanent basis for a high standard of living, because ultimately the standard of living depends on the achieved level of labor productivity in the given economy [3]. Apart from the level of economic development, the living standard also depends on other factors that can be summarized in the following way:

- the level of economic development of the country (in this context, labor productivity should be mentioned);
- macroeconomic (in)stability in the country;
- distribution policy, etc.

Statistics measure the standard of living most often through so called Laeken indicators of poverty (a set of common European statistical indicators on poverty and social exclusion, established at the European Council of December 2001 in the Brussels suburb of Laeken, Belgium), through household consumption, and also through data on the use of time and balancing between work and family. The Household Budget Survey is used for collecting data on the average available assets according to the sources, the amount of used assets according to the purpose of consumption, the quantities of foodstuffs and other commodities intended for personal consumption, as well to the household possession of durable goods. The data from this survey are used as base for calculation of the personal consumption in GDP in National Accounts but also for calculation of weights for the Consumer Price Index. The Time Use Survey provides data on how the average citizens use their time on detailed activities. This survey also represents a source of relevant indicators for creating policies related to the working time, for the growing share of women in the labour force, the overall position of the elderly people, and according to that, for creating certain aspects of the social policy pertaining to the household and the gender structure. The Survey on Income and Living Conditions enables compiling statistics on income distribution and indicators of monetary poverty. The EU-SILC Survey also serves to produce reliable quantitative information on social exclusion and material deprivation [4].

So, standard of living refers to the level of wealth, comfort, material goods and necessities available to a certain socioeconomic class or geographic area, while quality of life is a subjective term that can measure happiness. If they are not correctly determined, the two terms are often mixed and at first glance it may appear to be the same category. But, correctly determining the different nuances of each category, the differences on the basis of which the national economies are evaluated when measuring the level of economic development can be determined. In that sense, standard of living is a tangible, quantifiable term that refers to factors available to a certain socioeconomic class or geographic area. Quality of life is a subjective term that can measure happiness, and both can be flawed indicators because the factors can vary between people in the same geographic area or socioeconomic class. Quality of life is a more subjective and intangible term than standard of living. As such, it can often be hard to quantify. The factors that affect the overall quality of life vary by people's lifestyles and their personal preferences. Regardless of these factors, this measure plays an important part in the financial decisions in everyone's lives. However, although in the case of *Quality of Life* it is a subjective category that reflects the feeling of happiness and life satisfaction, there is still a methodology that covers certain variables on the basis of which an appropriate *Quality of Life Index* can be quantified. The purpose of the quality of life index is to provide a tool for community development which can be used to monitor key indicators that encompass

the social, health, environmental and economic dimensions of the quality of life in the community [5]. Precisely because of such quantification, it is necessary to precisely distinguish the categories of standard of living and quality of life. *Quality of Life Index* (higher is better) is an estimation of overall quality of life by using an empirical formula which takes into account purchasing power index (higher is better), pollution index (lower is better), house price to income ratio (lower is better), cost of living index (lower is better), safety index (higher is better), health care index (higher is better), traffic commute time index (lower is better) and climate index (higher is better). The formula for the appropriate quantification that is currently being used has been several times amended in order to update and change the weights for the individual constituent components, thus changing the significance and impact of individual variables on the total index. The formula used from June to December 2017 reduced the weight of cost of living index. Quantification used from November 2015 to June 2017 bring higher weight to the climate index (which was challenged in Internet forums). Also, there is a change in the way of calculation of the climate index, using the feedback provided by website visitors. And before November 2015, there was in use formula which doesn't take into account climate index. Following are the corresponding quantifications of this index, starting from the current and backward [6]:

Current formula (written in Java programming language):

```
index.main = Math.max(0, 100 + purchasingPowerInclRentIndex / 2.5 - (housePriceToIncomeRatio * 1.0)
- costOfLivingIndex / 10 + safetyIndex / 2.0 + healthIndex / 2.5 - trafficTimeIndex / 2.0 - pollutionIndex *
2.0 / 3.0 + climateIndex / 3.0)
```

Formula used between June 2017 and Decembar 2017

```
index.main = Math.max(0, 100 + purchasingPowerInclRentIndex / 2.5 - (housePriceToIncomeRatio * 1.0)
- costOfLivingIndex / 5 + safetyIndex / 2.0 + healthIndex / 2.5 - trafficTimeIndex / 2.0 - pollutionIndex * 2.0
/ 3.0 + climateIndex / 3.0)
```

Formula used between November 2015 and June 2017

```
index.main = Math.max(0, 100 + purchasingPowerInclRentIndex / 2.5 - (housePriceToIncomeRatio * 1.0)
- costOfLivingIndex / 5 + safetyIndex / 2.0 + healthIndex / 2.5 - trafficTimeIndex / 2.0 - pollutionIndex * 2.0
/ 3.0 + climateIndex / 2.0)
```

Formula used before November 2015

```
index.main = 65 + purchasingPowerInclRentIndex - (priceToIncomeRatio * 2) - costOfLivingIndex / 5 +
safetyIndex * 3 / 4 + healthIndex / 2 - trafficTimeIndex / 2 - pollutionIndex
```

The Happiness Index was first created by the Global Happiness Council, a group of independent academic happiness specialists. This group of people has released the World Happiness Report (WHR) every year since 2012. This index rates the happiness of countries on a scale from 0 to 10. The definition of the Happiness Index originates from the Bhutanese Gross National Happiness Index. In 1972, Bhutan started prioritizing happiness over other factors such as wealth, comfort and economic growth. They created an indexation for happiness based on multiple measurable factors, and have kept track of this index ever since. But, the World Happiness Report has steered away from the very first definition of this indicator. The word "Happiness Index" doesn't even occur in the 2018 World Happiness Report at all and the report now determine the same concept as that of a "Happiness ladder". So, we can talk about happiness index, happiness ladder or happiness score as almost identical terms. The 2018 World Happiness Report defines the Happiness Index (or "Life ladder" or happiness score) as follows: "Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time, assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you feel? [7]" This ladder is known as the Cantril Ladder. It's used in a lot of studies as a simple way to ask people to rate their current satisfaction with life - or happiness. More than a million people worldwide have been asked this question, and the answers have been used to create the yearly Happiness Index. The Happiness Index - or Life ladder - or happiness score is simply calculated by averaging the answers to this Cantril Ladder to a single number [8]. In 2018, the World Happiness Report included Happiness Index data in 157 countries. The average Happiness Index of all the 157 countries for 2018 is 5.38, which very low level of happiness on a world range, and can be understand something like people in a world as a whole a not very happy or vary unhappy in average.

It must be borne in mind that happiness is a highly complex and multidimensional concept. Even Aristotle defines happiness as a general sense and the essence of life (*Happiness is the meaning and the purpose of life, the whole aim and end of human existence - Aristotle*). Given that the sense of happiness is such a broad and psychological category that has a strongly expressed subjective element, it is difficult to determine the same

with only one number. That's why the World Happiness Report goes further. The authors have found a number of key factors that could likely explain the variance in happiness. The authors of the World Happiness Report have determined 7 key factors that are correlated most to the Happiness Index:

- GDP per capita
- Social support
- Healthy life expectancy
- Freedom to make life choices
- Generosity
- Perceptions of corruption
- Unexplained happiness.

When talking about the quality of life and the feeling of happiness, the sense of happiness has a much more pronounced qualitative character, and therefore, in spite of the numerous indicators that can be used in measuring happiness, it is much more difficult to quantify. The quality of life on the other side can be simply measured by measuring the objective and subjective factors that determine it. Subjective quality of life is about feeling good and being satisfied with things in general. Objective quality of life is about fulfilling the societal and cultural demands for material wealth, social status and physical well-being (Quality-of-Life Research Center, 2005).

Despite the intertwining and interaction relations of the indicators being analyzed, there is still a difference in the ratings of countries ranked by quality of life, the index of happiness and GDP per capita. The following is a review of 20 top and 20 lowest ranked countries by categories that are subject to analysis.

Table 1. First 20 and Last 20 Ranked Countries by Quality of Live Index in 2018

	Country	Quality of live Index[9]	Happiness Index 2016-2018[10]	GDP nominal share[11]	GDP pc/ Times to the world		Country	Quality of live Index	Happiness Index 2016-2018	GDP nominal share	GDP pc/ Times to the world
1.	Denmark	197.75	7.600	0.418	2.86	41.	Bosnia And Herzegovina	129.33	5.386	0.0236	0.502
2.	Finland	195.30	7.769	0.326	2.57	42.	Turkey	127.64	5.373	0.841	0.767
3.	Netherlands	191.25	7.488	1.07	3.12	43.	Mexico	126.42	6.595	1.41	0.846
4.	Switzerland	190.81	7.480	0.836	3.59	44.	Serbia	123.48	5.603	0.0562	0.599
5.	Austria	190.22	7.246	0.542	2.88	45.	Chile	122.73	6.444	0.353	1.42
6.	Germany	190.04	6.985	4.75	2.92	46.	India	122.09	4.015	3.17	0.177
7.	Australia	188.70	7.228	1.68	2.89	47.	Malaysia	116.05	5.339	0.409	0.942
8.	New Zealand	182.40	7.307	0.243	2.22	48.	Indonesia	112.89	5.192	1.18	0.333
9.	United States	180.56	6.892	24.2	3.45	49.	Colombia	112.15	6.125	0.397	0.595
10.	Sweden	176.81	7.343	0.654	2.91	50.	Hong Kong	110.28	5.430	0.425	4.24
11.	Estonia	176.44	5.893	0.0348	1.85	51.	Russia	103.32	5.648	1.86	0.963
12.	Norway	176.27	7.554	0.520	4.10	52.	Thailand	101.18	6.008	0.578	0.623
13.	Japan	176.04	5.886	5.98	2.46	53.	Pakistan	100.35	5.653	0.362	0.134
14.	Slovenia	175.36	6.118	0.0648	2.03	54.	Brazil	100.13	6.300	2.25	0.803
15.	Spain	174.92	6.354	1.69	2.23	55.	China	99.43	5.191	15.9	0.847
16.	Canada	173.90	7.278	2.04	2.76	56.	Philippines	99.11	5.631	0.391	0.273
17.	United Kingdom	171.89	7.054	3.31	2.52	57.	Ukraine	95.96	4.332	0.149	0.261
18.	Portugal	166.71	5.693	0.280	1.77	58.	Iran	92.43	4.548	0.507	0.459
19.	France	166.22	6.592	3.29	2.52	59.	Egypt	84.42	4.166	0.294	0.226
20.	Belgium	164.00	6.923	0.632	2.66	60.	Vietnam	81.09	5.175	0.285	0.225

Source: own review in accordance to appropriate official ranking

The previous table No. 1 gives an overview only to the 20 first ranked and 20 last ranked countries in the world according to official reports for 2018. In conditions of limited space for the full list of countries being analyzed (according to GDP — 193; according to the Quality of life Index — 71; and according to Happiness Score - 157), this review shows vividly enough the diversity of the countries that occupy different places according to the different indicator. In this regard, follows an overview of the mutual correlation between the three indicators mentioned above, using the Pearson Correlation Coefficient. For greater reliability of the results, the analysis was made using a data sample for the 20 highest ranked countries.

3 CORRELATION ANALYSIS – RESULTS

Despite differences in the concept, content and the width of the indicators of standard of living, quality of life and index of happiness, it is obvious that they have a certain overlap, and in at least one of their aspects (without going into a deeper analysis about that what derives from something else, i.e. the cause-and-effect relationship of some of their constituent elements) show similarities and generally represent the well-being of people and their perception of that well-being. The comprehensiveness and multidisciplinary of the factors that determine these indicators contribute to the differences between them. The difficulties in the methodology for quantification of some of these factors impose a need for qualitative analysis, and in this section, a correlation analysis of the indicators for the 20 top-ranked countries in 2018 is made, starting with the official ranking according to Quality of Life Index. The analysis is done using the Pearson Correlation Coefficient, i.e. Pearson product-moment correlation coefficient. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient, for short) is a measure of the strength of a linear association between two variables and is denoted by r . Basically, a Pearson product-moment correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, r , indicates how far away all these data points are to this line of best fit (i.e., how well the data points fit this new model/line of best fit). The Pearson correlation coefficient, r , can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association; that is, as the value of one variable increases, so does the value of the other variable. A value less than 0 indicates a negative association; that is, as the value of one variable increases, the value of the other variable decreases. The stronger the association of the two variables, the closer the Pearson correlation coefficient, r , will be to either +1 or -1 depending on whether the relationship is positive or negative, respectively.

I Correlation Coefficient (Quality of life Index/Happiness score)

X Values - Quality of life Index — best 20 in 2018

Y Values - Happiness score 2018 — corresponding countries

X - M _x	Y - M _y	(X - M _x) ²	(Y - M _y) ²	(X - M _x)(Y - M _y)
17.471	0.666	305.218	0.443	11.633
15.021	0.835	225.615	0.697	12.540
10.971	0.554	120.352	0.307	6.076
10.531	0.546	110.891	0.298	5.748
9.941	0.312	98.814	0.097	3.100
9.761	0.051	95.267	0.003	0.496
8.421	0.294	70.905	0.086	2.474
2.121	0.373	4.497	0.139	0.791
0.281	-0.042	0.079	0.002	-0.012
-3.469	0.409	12.037	0.167	-1.419
-3.839	-1.041	14.742	1.084	3.997
-4.009	0.620	16.076	0.384	-2.485
-4.239	-1.048	17.973	1.099	4.444
-4.919	-0.816	24.201	0.666	4.015
-5.359	-0.580	28.724	0.337	3.109
-6.379	0.344	40.698	0.118	-2.194
-8.389	0.120	70.384	0.014	-1.005
-13.569	-1.241	184.131	1.540	16.842
-14.059	-0.342	197.670	0.117	4.810
-16.279	-0.011	265.022	0.000	0.182
M _x : 180.279	M _y : 6.934	Sum: 1903.297	Sum: 7.599	Sum: 73.143

The value of R is 0.6082.

Result Details & Calculation	Key
<p><i>Values</i></p> <p>$\Sigma = 3605.59$ Mean = 180.279 $\Sigma(X - M_x)^2 = SS_x = 1903.297$</p> <p><i>Y Values</i></p> <p>$\Sigma = 138.683$ Mean = 6.934 $\Sigma(Y - M_y)^2 = SS_y = 7.599$</p>	<p>X: X Values Y: Y Values M_x: Mean of X Values M_y: Mean of Y Values X - M_x & Y - M_y: Deviation scores (X - M_x)² & (Y - M_y)²: Deviation Squared (X - M_x)(Y - M_y): Product of Deviation Scores</p>

<p><i>X and Y Combined</i> $N = 20$ $\sum(X - M_x)(Y - M_y) = 73.143$</p> <p><i>R Calculation</i> $r = \frac{\sum((X - M_x)(Y - M_y))}{\sqrt{((SS_x)(SS_y))}}$</p> <p>$r = 73.143 / \sqrt{((1903.297)(7.599))} = 0.6082$ <i>Meta Numerics (cross-check)</i> $r = 0.6082$</p>	
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This is a moderate positive correlation, which means there is a tendency for high X variable scores go with high Y variable scores (and vice versa).

The value of R², the coefficient of determination, is 0.3699.

II Correlation Coefficient (Quality of life Index/GDP nominal share)

X Values - Quality of life Index — best 20 in 2018

Y Values - GDP nominal share 2018 — corresponding countries

X - M _x	Y - M _y	(X - M _x) ²	(Y - M _y) ²	(X - M _x)(Y - M _y)
17.471	-2.210	305.218	4.884	-38.610
15.021	-2.302	225.615	5.299	-34.578
10.971	-1.558	120.352	2.427	-17.092
10.531	-1.792	110.891	3.211	-18.871
9.941	-2.086	98.814	4.352	-20.736
9.761	2.122	95.267	4.503	20.711
8.421	-0.948	70.905	0.899	-7.983
2.121	-2.385	4.497	5.688	-5.057
0.281	21.572	0.079	465.350	6.051
-3.469	-1.974	12.037	3.897	6.849
-3.839	-2.593	14.742	6.725	9.957
-4.009	-2.108	16.076	4.444	8.452
-4.239	3.352	17.973	11.236	-14.211
-4.919	-2.563	24.201	6.570	12.610
-5.359	-0.938	28.724	0.880	5.027
-6.379	-0.588	40.698	0.346	3.751
-8.389	0.682	70.384	0.465	-5.721
-13.569	-2.348	184.131	5.513	31.862
-14.059	0.662	197.670	0.438	-9.307
-16.279	-1.996	265.022	3.984	32.494
M _x : 180.279	M _y : 2.628	Sum: 1903.297	Sum: 541.111	Sum: -34.402

The value of R is -0.0339.

<p>Result Details & Calculation</p> <p><i>X Values</i> $\sum = 3605.59$ Mean = 180.279 $\sum(X - M_x)^2 = SS_x = 1903.297$</p> <p><i>Y Values</i> $\sum = 52.561$ Mean = 2.628 $\sum(Y - M_y)^2 = SS_y = 541.111$</p> <p><i>X and Y Combined</i> $N = 20$ $\sum(X - M_x)(Y - M_y) = -34.402$</p> <p><i>R Calculation</i> $r = \frac{\sum((X - M_x)(Y - M_y))}{\sqrt{((SS_x)(SS_y))}}$</p> <p>$r = -34.402 / \sqrt{((1903.297)(541.111))} = -0.0339$</p> <p><i>Meta Numerics (cross-check)</i> $r = -0.0339$</p>	<p>Key</p> <p>X: X Values Y: Y Values M_x: Mean of X Values M_y: Mean of Y Values X - M_x & Y - M_y: Deviation scores (X - M_x)² & (Y - M_y)²: Deviation Squared (X - M_x)(Y - M_y): Product of Deviation Scores</p>
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Although technically a negative correlation, the relationship between the variables is only weak (*nb.* the nearer the value is to zero, the weaker the relationship).

The value of R^2 , the coefficient of determination, is 0.0011.

III Correlation Coefficient (Happiness score/ GDP nominal share)

X - M _x	Y - M _y	(X - M _x) ²	(Y - M _y) ²	(X - M _x)(Y - M _y)
0.666	-2.210	0.443	4.884	-1.472
0.835	-2.302	0.697	5.299	-1.922
0.554	-1.558	0.307	2.427	-0.863
0.546	-1.792	0.298	3.211	-0.978
0.312	-2.086	0.097	4.352	-0.651
0.051	2.122	0.003	4.503	0.108
0.294	-0.948	0.086	0.899	-0.279
0.373	-2.385	0.139	5.688	-0.889
-0.042	21.572	0.002	465.350	-0.909
0.409	-1.974	0.167	3.897	-0.807
-1.041	-2.593	1.084	6.725	2.700
0.620	-2.108	0.384	4.444	-1.307
-1.048	3.352	1.099	11.236	-3.513
-0.816	-2.563	0.666	6.570	2.092
-0.580	-0.938	0.337	0.880	0.544
0.344	-0.588	0.118	0.346	-0.202
0.120	0.682	0.014	0.465	0.082
-1.241	-2.348	1.540	5.513	2.914
-0.342	0.662	0.117	0.438	-0.226
-0.011	-1.996	0.000	3.984	0.022
M _x : 6.934	M _y : 2.628	Sum: 7.599	Sum: 541.111	Sum: -5.556

X Values - Happiness score 2018

Y Values - GDP nominal share 2018 — corresponding countries

Result Details & Calculation	Key
<p><i>X Values</i> $\sum = 138.683$ Mean = 6.934 $\sum(X - M_x)^2 = SS_x = 7.599$</p> <p><i>Y Values</i> $\sum = 52.561$ Mean = 2.628 $\sum(Y - M_y)^2 = SS_y = 541.111$</p> <p><i>X and Y Combined</i> $N = 20$ $\sum(X - M_x)(Y - M_y) = -5.556$</p> <p><i>R Calculation</i> $r = \frac{\sum((X - M_x)(Y - M_y))}{\sqrt{(SS_x)(SS_y)}}$ $r = -5.556 / \sqrt{(7.599)(541.111)} = -0.0866$</p> <p><i>Meta Numerics (cross-check)</i> $r = -0.0866$</p>	<p>X: X Values Y: Y Values M_x: Mean of X Values M_y: Mean of Y Values X - M_x & Y - M_y: Deviation scores (X - M_x)² & (Y - M_y)²: Deviation Squared (X - M_x)(Y - M_y): Product of Deviation Scores</p>

The value of R is -0.0866.

Although technically a negative correlation, the relationship between the variables is only weak (*nb.* the nearer the value is to zero, the weaker the relationship).

The value of R^2 , the coefficient of determination, is 0.0075.

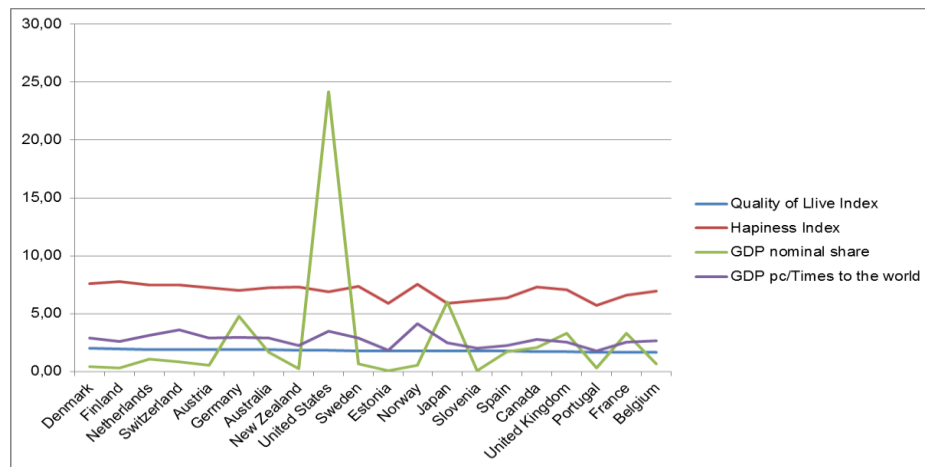


Fig. 1. Graphical Overview of the Analysed Indicators

Source: Own calculations in accordance to official data

The previous figure presents a graphical overview of the overlapping of the indicators that are analyzed, and which give light to the level of economic growth and development from a different perspective. Although at first glance the line diagram shows a significant degree of tracking the movement of the indicators analyzed, a deeper analysis requires the detection of factors that distinguish the mentioned indicators.

4 CONCLUDING OBSERVATIONS

Although a simple overview of any economic space gives a certain impression of the level of economic development, it is necessary to quantify this impression, as well as empirically and numerically be confirmed. The basic indicator used to measure economic growth is undoubtedly the GDP and GDP per capita. However, it must be borne in mind that: (1) growth and development of the economy are very complex phenomena; (2) there are some differences between quantitative growth and qualitative development; (3) development is much more than only quantitative and monetary expression of production; (4) people are not only economic beings and this issue requires a multidisciplinary approach. In this sense, there are more indicators of economic growth and development that can be in a parallel use in order to get more comprehensive picture, and the paper elaborates Quality of Life Index and World Happiness index, besides GDP (GDP nominal share and GDP per capita/times to the world). It must be mentioned that those indicators do not exclude each other, but there is a need for calculation of the degree of their mutual correlation. This is particularly important if there are different indicators or indicators that mutually exclude or have a negative correlation. This only confirms the thesis of the need for a more comprehensive analysis of the proposed issues, and suggestion of a more comprehensive indicator that would be a complementary set of several alternative and complementary ones that would eliminate the shortcomings of its constituent parts, thereby obtaining a relevant indicator of economic development and welfare, without any intention to propose a concrete solution. Such an analysis requires a lot of time and space, as well as an expert team from many areas, and this paper makes a limited analysis of the correlative relationships of the three basic indicators that measure growth and development in countries around the world. Limited in terms of a sample of only the top 20 countries, and limited in terms of applying only one indicator of correlation between the indicators which are analyzed. Despite the mentioned limits, the results of the conducted analysis lead to the following conclusions:

- there is a moderate positive correlation in a case of Quality of Life Index and World Happiness index (probably due to the large overlap of the constituent components of these two indicators);
- although there is technically a negative correlation between Quality of life Index and GDP nominal share, the relationship between those variables is only weak;
- although there is technically a negative correlation also between Happiness score and GDP nominal share, the relationship between the variables is only weak.

In the case of the second and third correlation it must be noted that particular attention should be paid to the size of the economy, and of course to the psychological and cultural perceptions of the subjective experience and understanding of welfare. In any case, careful consideration is needed in understanding the differences between the indicators determining growth and development, as well as a multidisciplinary approach, in order to increase the objectivity and scientific significance of the detected level of growth and the development of a certain economic space.

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THE LIVING STANDARD AS ONE OF THE FACTORS OF THE MIGRATION OF SERBIAN CITIZENS

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ABSTRACT

The paper presents statistics that indicate the problem of internal and external migration of our residents. The paper presents research data that highlights the high dispersion in terms of standards for citizens of small and large cities. The causes of the aforementioned problems are identified and potential solutions are listed.

Keywords: living standard, migrations, quality of life, Serbia.

1 INTRODUCTION

The standard of living is one of the most important indicators of the state of a country's economy. Citizens determine the quality of their lives on the basis of their standard of living, among other things. An individual's access to food, clothes, hygiene, education, and other important factors of quality of life are the measure of the standard of living.

An aging population is a problem many countries, including the Republic of Serbia, are faced with. Looking at the projections of population growth in the Republic of Serbia in the first half of the 21st century, it can be concluded that the process of depopulation is taking place. According to each of the five variants of the projection, the number of Serbian inhabitants in 2041 will be lower than in 2011, considering that Serbia is projected to be a country with a negative natural growth rate. Thus, the proportion of people over 65 would increase from 17% to 24%. According to this assessment, every fourth inhabitant of the Republic of Serbia will be older than 65 years of age. [1]

There are many valid obstacles that young people are faced with, which significantly influence reasoning, as well as making decisions about internal or external migration. Some of the obstacles are the following:

- An adverse financial and social situation,
- Lack of an adequate infrastructure,
- The slowness of social reforms and the limitation of freedom of movement in the region, which in turn contributes to the rising of xenophobia.

These phenomena affect a significant interest of young people in migration to larger and more developed cities within the Republic of Serbia or even migration to some of the developed countries of Western Europe or elsewhere in the world. [2]

2 THE RESULTS OF RESEARCH

During 2018, some 122,193 persons changed their place of residence, i.e. permanently moved from one place (settlement) to another within the Republic of Serbia. The average age of a migrant who changed their place of residence is 34.2 years (34.8 for men and 33.6 for women). [3] Given the age category, it can be stated that these are individuals who have permanently abandoned their former places of residence and resettled in larger cities in order to provide for themselves and their family (if married) a higher level of standard and a safer future for their children

Table 1. Workers working outside their original place of residence, according to age structure

Place of origin	Number of migrant workers	Age structure of migrant workers (%)						City population	Percentage of migrant workers
		15-24	25-34	35-44	45-54	55-64	65 and over		
Beograd	342,818	4	24	27	29	15	1	1,659,440	21
Niš	45,093	6	25	27	30	10	2	260,237	17
Novi Sad	24,590	7	30	28	24	11	0	341,625	7
Požarevac	5,743	1	18	22	46	11	1	75,334	8
Prokuplje	3,955	10	15	35	15	25	0	44,419	9
Pančevo	2,960	26	19	17	26	13	0	123,414	2
Kragujevac	2,786	18	24	15	27	6	9	179,417	2
Bujanovac	2,324	7	24	11	48	11	0	18,067	13
Vranje	2,246	8	21	29	35	4	2	83,524	3
Stara Pazova	2,221	14	24	16	37	8	0	65,792	3
Other municipalities	109,401	14	28	22	21	11	3	4,335,593	3
Total	544,137	7	25	26	27	13	1	7,186,862	8

Source: ARS 2014 data and SORS data from the 2011 census, SORS, 2015.

Internal migrations are a population's movement from one municipality or region to another. The following table presents the results of internal migration, relating to the category of the populace working in a municipality or city as migrant workers. Many working-age citizens choose to work in another municipality and/or town in order to secure themselves a safe or well-paid job in relation to their usual place of residence.

The data from Table 1 indicate that there are three cities in the Republic of Serbia that stand out according to the number of migrant workers. Belgrade takes up the first place and significantly deviates from other cities: 342,818 workers came to Belgrade in search of work and income. In addition to Belgrade, 45,093 came to the city of Niš and 24,590 to Novi Sad. It is also distinctive that the largest number of workers migrating to big cities to find jobs is the population aged between 25 and 54.

External migration is a significantly greater problem than internal migration in the demographic, economic, defence sense. The Serbian diaspora is very numerous. Based on the estimates carried out by the Ministry of Diaspora, the number of Serbian citizens living and working abroad is between 3,908,000 and 4,170,000 persons. Based on the 2002 census, it was established that 414,838 Serbian citizens were absent from the country during the census due to working for a foreign employer, independent work or residing abroad with relatives. From this number, the majority of citizens reside in the Federal Republic of Germany (102,799), the Republic of Austria (87,844), the Swiss Confederation (65,751), the Republic of France (27,040), etc.

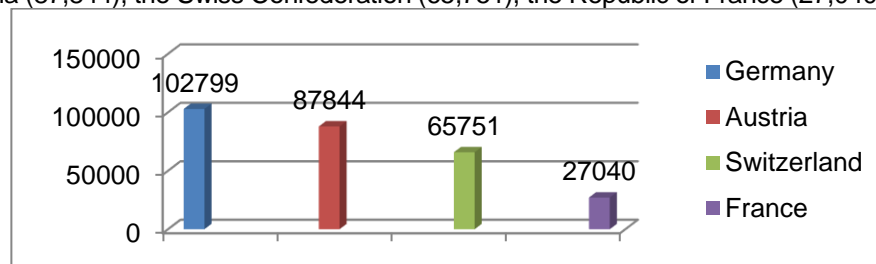


Chart 1. The number of Serbian citizens working or residing abroad [4]

The data presented in Chart 1 show that the largest number of citizens of the Republic of Serbia is residing in the Republic of Germany for temporary or permanent work and residence. Also, a significant number went to the Republic of Austria. The majority of citizens choose their country of destination based on the recommendation of relatives or friends who reside and work there at the time, as well as on the basis of a personal insight of the country's living standard and the level of difficulty of immigration procedures.

It is estimated that in the last decade of the 20th century, some 30,000 university-educated citizens left the then Republic of Serbia and Montenegro. The largest brain drain of citizens with tertiary education was in the industrial sector, where the number of researchers and engineers fell by 45 percent during the 1990-2003 period. [5] The first stage of mass emigration was caused by war and sanctions, and later turned into economic emigration caused mainly by a low standard of living. The massive emigration wave taking place during the last 10 years has been caused by the greater openness of these countries for the influx of foreign workers, with a significant easing of the work visa rules.

The living standard of an individual is determined by the access to certain possibilities in regards to personal consumption. Political developments on a global scale and the instability which they usually bring, as well as the instability in commodity markets and reduced economic growth in developed countries, have led to the fact that foreign investors have become more cautious when making investment decisions. [6] This is also one limiting element, among others, related to the ambition of each individual in regards to their life and economic improvement.

The following table presents data that relate to income and personal consumption per household member in 2017, according to region.

Table 2. Money income and personal consumption, monthly average per household member, 2017.

	Total	Belgrade Region	Vojvodina Region	Šumadija and the West Serbia Region	South and East Serbia Regions
Household income in cash (per member) – city	24,588	30,053	24,536	21,084	20,183
Personal consumption – city	24,810	28,577	25,398	22,384	21,032
Household income in cash (per member) – rural area	17,972	22,958	20,078	16,261	16,394
Personal consumption – rural area	20,497	22,930	21,841	19,638	19,486

Source: <http://publikacije.stat.gov.rs/G2018/Pdf/G20182051.pdf>, p. 60.

The data presented in Table 2 show that there is a significant difference between rural and city areas in terms of the correlation between income and consumption. There is a significantly more difficult situation in the countryside, where household income in cash is often insufficient to cover the level of personal consumption. The situation is somewhat better in the cities, but the standard of living is still quite low. This presents additional incentives for young people to leave the villages for the cities.

The following table presents data that relate to the activity of the work-age population by region for 2017.

In addition to a significant number of citizens of working age who are inactive but may want to work, the table also shows figures indicating a large number of citizens of working age who have lost hope of finding a job. Insufficient information about entrepreneurial possibilities, development funds, and credit relief for beginners, are some of the aggravating circumstances. Thus, it is necessary to work on entrepreneurship development in concert with the development of the existing entrepreneurial capacities. [9]

Table 3. The population according to activity, 2017 (in 000).

	Total	Belgrade Region	Vojvodina Region	Šumadija and West Serbia region	South and East Serbia Region
Total	6990.8	1687.4	1874.9	1974.0	1481.5
15 years and over	5984.7	1435.4	1602.6	1664.7	1282.0
Inactive	2754.9	634.8	762.6	739.3	618.2
Inactive, willing and able to work	282.6	61.1	73.7	75.0	72.9
Inactive and unwilling to work due to loss of hope in finding a job	68.4	11.7	18.0	20.7	17.9

Source: <http://publikacije.stat.gov.rs/G2018/Pdf/G20182051.pdf>, p.76.

The enchanted circle consisting of the living standard, the market, purchasing power, demography, cultural aspects, traditions, and entrepreneurship is a challenging task for the government of every country - both the developed ones and those countries that are in a transitional or post-transition stage. Most countries are faced with a dilemma whether to provide an optimal economic environment first and thereby expect a wave of investments or interventions in the form of incentives, and consequently, anticipate market consolidation and balance. Entrepreneurship can only be developed in an open society freed of any administrative, market, political and similar impediments and lobbying. [10] According to 2017 data, as many as 68,400 citizens in the working-age population have lost hope of finding a job.

Serbia belongs to the group of countries with the oldest population in the world. A negative birth rate and the emigration of young (potential parents) to developed economies have contributed to the continuous reduction of the relative percentage of young people in the total population, and the increase in the number of the elderly (60 and over). Taking into account the fact that young, work-age members of the society should provide an income for the older population (contributions for pension payments), it can be concluded that the social security program for the elderly is on uncertain ground. [2]

It is a fact that the living standard of citizens depends on their monthly income. There is a significant difference in terms of the value of average earnings in cities and in municipalities. Table X shows the average earnings per capita per municipalities and cities in the Republic of Serbia for April 2019. The table also shows data on average earnings per region, as well as the cities and municipalities within the region with the highest and lowest average wages.

The results presented indicate that the anticipated highest value of average wages is in the region of Belgrade. Interestingly, the income in other regions is on average lower than the national average. Also noted is a significant difference in average wages within the regions.

Table 4. Average earnings per citizen by cities and municipalities, April 2019 (in RSD)

	Average earnings without taxes and contributions I-IV
Republic of Serbia	53,967
Belgrade Region	67,149
Vračar municipality	89,690
Sopot	45,016
Vojvodina Region	50,787
Novi Sad	59,333
Bač	41,221
Šumadija and West Serbia Region	45,939
Lučani	52,685
Ivanjica	39,126
South and East Serbia Region	47,466
Kostolac	66,939
Svrljig	35,333

Source: <http://www.stat.gov.rs/vesti/20190625-prosecne-zarade-po-zaposlenom-april-2019/>

3 INTERPRETING THE RESULTS

Serbia is one of the developing countries that are constantly facing the problem of skilled labour outflows. Thereby, it is necessary to carry out systemic changes in the legal system as well as in the business environment so that young people can note a real shift in the process of planning an entrepreneurial environment. [7] The state must provide a favorable economic environment to motivate young people to stay and start their own businesses. Serbia has opportunities to develop in three parallel social areas: agriculture, tourism and information technology.

Internal migrations occur in most urban areas, with three cities in the Republic of Serbia standing out according to the number of economic migrants. Belgrade is the city that attracts the largest number of working-age citizens for the purpose of employment. Apart from Belgrade, Niš and Novi Sad are also distinguished by a significant number of newly arrived migrant workers. These data highlight the evident problem of a demographic imbalance and the rapid so-called extinguishing of rural areas. Migrations to big cities are the result of modern lifestyles. Stimulating families who want to stay in the countryside and elevate agro-economics and tourism to a higher level is only possible with compelling incentives.

Apart from internal migrations, there has also been a tendency of external migrations growth, especially during the last 20 years. Given that our diaspora is already numerous, it is assumed that in the near future it will be equal to the number of citizens in the Republic of Serbia, unless immigration into Serbia from Syria and other countries ceases. In addition to the demographic deficit, external migration can be a significant problem for economic, military and other reasons. Most of our citizens reside in Germany, Austria, Switzerland and France, and the United States, Canada and Australia. In recent years, there has also been a noticeable migration of Serbian citizens to China. External migration is not easy to stop. In addition to the program of intensive job creation, external migration can also be mitigated by promoting the return of people from the diaspora. They can be attracted by favorable investment conditions and strong support from the state.

The results of the survey show that there are significant differences in terms of average salaries within the region as well as in different cities of the Republic of Serbia. This is definitely the reason for a significant number of internal migrations, as citizens search for a better living standard and general living conditions. The social economy is not recognized by the market economy. Profit and solidarity are diametric categories of society. Forced imports of agricultural products have hampered the competitiveness of domestic farmers. The protection of domestic agricultural products would strengthen the standard of farmers. A higher standard of farmers would reduce the internal and external migration of people from the countryside.

The statistics indicate that there is a significant number of work-age citizens who are inactive but can and want to work, as well as a large number of work-age people who have lost hope of finding a job. It is precisely this category of citizens that, if they choose to emigrate to some of the developed countries in Western Europe or elsewhere, is the potential demographic, social, economic, defensive shortfall of the Republic of Serbia. The state of affairs in Serbia and especially in the European Union clearly shows that the country needs a thoughtful, organized and quality development of the education system as this is one of the key conditions for Serbia's development towards a knowledge-based society capable of providing optimal employment opportunities for its citizens (Strategy development of education in Serbia until 2020). [8]

4 CONCLUSION

Numbers of young people have continually been leaving small towns and villages in order to find work in the largest cities. There has been a general trend of young as well as middle-aged individuals moving from their places of residence to large cities for economic improvement. The migration of the work-age population from rural to urban areas has been a tendency since the half of the last century, with massive migration being observed over the past twenty years. In fact, it is troubling that a total number of 544,137 Serbian workers have moved to some of the big cities, thus directly affecting the demographic, social and economic balance between the rural and urban areas, as well as between smaller towns and the largest cities of the Republic of Serbia.

An added problem is the fact that in addition to the internal migration that disrupts the demographic balance, there are a significant number of citizens (work-age) seeking work and income and finding them in the developed countries of Western Europe or elsewhere in the world. One of the main reasons for such massive internal and external migrations is a low standard of living.

Thereby, it is necessary to implement a series of measures aimed at reducing external migration while simultaneously controlling internal migration. The Government of the Republic of Serbia has adopted the

National Youth Strategy (Official Gazette of the RS, no. 55/08) aimed at increasing the professional and general mobility of young people, increasing access to various contents for young people especially in smaller and less affluent environments, increasing the level of information among young people regarding the choice of occupation, employment opportunities and prospects in the labor market, achieving mobility, etc. [2] The results that point to a constant rise of migration movements of youth and educated individuals to the developed countries of Western Europe and elsewhere in the world point to the apparent limitations of the results of strategy implementation.

Job creation is one of the measures that can alleviate the problem of migration. It is necessary to define a sustainable strategy that involves activities that would permanently solve the problem of internal and external migration.

Potential solutions could be the following:

- Birth rate promotion
- State support for the development of farmers' competitiveness
- Promotion and support of rural tourism development
- Support for reorientation from primary to final product production
- Protection of domestic production
- Promotion and support of family business development
- Development of education and entrepreneurship in the field of information technology.

These are proposals for potential measures to improve the living and working conditions of young people. Coordinated action by ministries, media and education is needed to define and implement the strategy.

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ECONOMIC ASPECTS OF NEW GLOBALIZATION AND INTERNATIONAL MIGRATION

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ABSTRACT

Numerous professional and scientific works, textbooks and other written materials have been written about globalization, its positive and negative effects. Modern globalization took place and still takes place under the strong influence of non-liberalism and US domination. The basic characteristic of this globalization is that it takes place under the strong economic and political pressure of developed countries, often armed conflicts. This kind of non-liberal globalization, which in fact represents the exploitation of small and poor by the rich and the strong, results in a steady rise in inequality between the countries and within individual countries.

The new globalization encouraged by the Chinese project, "One belt, one road", eliminates exploitation as the basic content of Western-type globalization and directs the new globalization to the principle of cooperation and mutual respect, of which China should also have benefits, as the initiator of this project and all other countries involved in this project. In fact, this project represents the revitalization of the ancient "Silk Road", but with many other participants and a number of directions.

The main goal of this paper is to present the basic economic aspects, primarily economic migration in the context of globalist Western-type changes, while looking at economic globalist changes as a result of the project "One belt, one road".

Keywords: New globalization, one belt one road, integration, migrants, host country, capital.

1 INTRODUCTION

The Western-type globalization results in the exploitation of the weak and the small by the great and the powerful, and it constantly creates and encourages growing differences between the rich and the poor [1]. At the same time, this globalization promotes international migration and integration. In contemporary conditions of migration and integration, they are the result of economic inequalities, but also of war conflicts, as well as various other reasons. Therefore, migration and integration are viewed from different aspects, such as economic, sociological, anthropological, geographical, mathematical, etc [2]. It is known that the economic aspects of migration have both positive and negative consequences for both the country of migration and the country of origin of migrants. Migrants bring with them into the host country different types of capital, their unique culture and many other peculiarities that should integrate with all the specifics of the host country. In this way, when the diversity of everything that migrants bring is integrated with the diversity of the host country, new richness to both migrants and residents of the host country are gained and all that contributes to overall economic development. However, in addition to these certainly positive effects of migration, there are also a means of trade with various drugs, people, conditions for terrorism are created, etc.

The project „One belt one road, which was initiated by China several years ago, will certainly lead to a new type of globalization, but that will be reflected in a number of forms of cooperation, respect for national sovereignty and any other benefit for all participants.

2 WESTERN-EUROPEAN GLOBALIZATION

The concept of globalization comes from the Latin word, which means globe, global, entire, total. The Western-European type of globalization aims to eliminate all barriers at borders, thus ensuring that all markets are available and open. But it is quite clear that developed countries have the greatest benefit from open borders and thus create conditions for the exploitation of small and undeveloped ones [3].

The World Bank defines globalization as the freedom and ability of individuals and businesses to initiate exchanges with residents and enterprises in other countries [4]. The economic theory that has been so far has divided the process of globalization into two waves: the first from 1850-1914 and the other from 1960 onwards. However, the Chinese project One Way One Way, which began in the second decade of the 21st century, leads to a third and different wave of globalization.

Previous experience shows that globalization has two different dimensions: spreading and deepening. This means that it covers and extends to all parts of the planet but at the same time it enhances the level of intensity of action in all areas and in all parts of the world [5]. TUK-MNK is considered to be the bearers of globalization in economic terms, that is, it is a strategy that TNK-MUK perform on the international market and conquer international space, that is, exploit small and poor. There is also the view that globalization is nothing more than the production and distribution of the same or similar products in different markets by the most developed ones, which again results in endangering production in domestic markets because small and underdeveloped countries can not achieve, productivity and automation of production as large and developed.

Globalization has resulted in liberalization and contributes to the free movement of goods, capital, labor, information, etc. Globalization and liberalization, in fact, represent two sides of the same process.

The globalization of national economies requires opening towards the world market, and opening towards the world market implies that domestic prices are placed in relation to world prices, regardless of productivity, low technological representation, etc.

The contemporary phase of globalization is characterized by incredible achievements in the field of electronics, information technology, and communications, which are at a much higher level than the early phase of globalization. The emergence and development of the Internet has eroded the border of the domestic and international markets, the distance from the buyer to the seller almost does not exist, the time of the trade has been significantly reduced, etc.

It is undoubtedly that the globalization process has very significant positive effects, which is why they are highlighted by its advocates. But, like any socio-economic phenomenon and globalization, has its negative effects that are contained in increasing the differences in wages and living standards around the world [6]. Then it leads to an unequal distribution of the positive effects of globalization (MNCs choose where to invest, without taking into account the needs of certain social and national structures, but are guided exclusively by profit), equalizing habits, tastes, behavior and the like, enhancing the strength and transferring crises from one area to another, the dominant character of human rights in relation to state sovereignty, the exploitation of children for work, the increase and intensification of theft, prostitution, drug trafficking, the intensification of terrorism and the like [5]. According to the authors of this paper, the greatest negative effect of globalization is the ever-widening gap between the rich and the poor. The best illustration of this negative effect is the fact that one percent of the US population, as the bearer of modern globalization, enjoys wealth, while everyone else is in debt, and a large number is overdebted and fearful of rising poverty.

Therefore, one should not only consider the positive effects of globalist changes, but always have to bear in mind its negative effects [7].

3 NEW GLOBALIZATION AND NEW PROTECTIONISM

As already mentioned, the third wave of globalization comes from the East. Namely, China as the most populous country in the world and a country whose economy is at the very top of the world's largest economies has launched a project called "One belt one road" or as it is often called "New Silk Road". This project belongs to the line of long-term projects should be completed by 2050 (So, China plans 30 years in advance). The project „One belt one road,, includes more corridors, such as:

1. China-Mongolia- Russia,
2. China-Kazakhstan-Russia,

3. China-Kazakhstan-Uzbekistan-Turkmenistan-Iran-Turkey continues to Europe,
4. China-Central Asia-West Asia,
5. China - Pakistan and
6. Bangladesh - China, India, Myanmar.

The first three corridors are northern corridors and they connect China with the countries of the former Soviet Union, and the connection with the European countries is established through Iran and Turkey. Financing of these projects will be done through the Asian Infrastructure and Investment Bank (AIIB), which has 77 members from around the world.

The realization of these projects is definitely a new globalization, but now it comes from the East. From the West, it is noticeable (mostly by the United States) that these projects represent a "hidden future China's hegemony," undermining and destroying this project. At the same time, a large number of countries want to become part of this project (about 150 countries have joined this project), while at the same time fearing Chinese domination, but want to encourage the development of their frozen economy through Chinese investments.

Chinese officials, and most of all the president of China, point out that it is a project of the century, that entire humanity will benefit, that is, that it is the most important public good that China has given to the world. Namely, Chinese officials say that two thousand years ago, on the Eurasian continent, a market was opened that used the ancient "silk route". Trade was taking place regardless of major obstacles such as wars, natural obstacles and other disadvantages. On this way, endless caravans of camels travelled carrying spices, silk, glass, porcelain, etc., but at the same time technology and religion traveled and was transported in both directions, and in this way the East and the West were connected. **According to the President of China and other Chinese officials, the New Silk Road represents the spirit of peace and cooperation, openness and involvement of all those who want it, mutual learning and mutual benefit. As a result, all countries that see it and their common interest can join this project. One of the very important goals of this project is to reduce the gap between the rich and the poor.**

This project should contribute to the development of a large number of countries, it should point to their potential and to release them so as to achieve mutual economic integration, which will provide benefits for all. The task and goal of this project is to establish stable and sustainable very different financing models, in accordance with the capabilities of individual countries and connecting private and state capital. Also, one of the objectives of this project is to respect the sovereignty and territorial integrity of all countries, to respect the ways and methods of their social development, to respect the prospects of all countries and to genuinely care for one another. Also, the goal of this project is to abandon models that are based on rivalry and introduce a model based on partnership and mutual interests, which can overcome stagnation in economic global development and reduce the enormous gap between the rich and the poor. It is particularly important that this project is launched at a time when protectionism is increasingly becoming a feature of international exchange.

Thus, although the project „One belt one time „, can not be described but as a new model of globalization, it seems that it differs significantly from the basic characteristics of the globalization of the Western type. Namely, this type of globalization is based on international cooperation whose main characteristic is partnership and common interests, which should lead to a reduction of the great gap between the rich and the poor. The bearers of the globalization of the Western European type are the United States. However, today's still, the most powerful economy in the world, does not correspond to full liberalization, which is why it is resorting to new protectionism. The main driver of protectionist measures is US President Donald Trump. Paradoxically, the United States has advocated liberalization and free trade for years, without obstacles, as a way for the world to become rich. But since the United States is large and powerful, they can alter and align their attitudes, although directly opposite to their previous positions, exclusively according to their own interests. Because of this, the United States has taken protectionist measures against certain countries, among which the most important are Mexico, China, Canada, Japan and Europe.

The source of the conflict with Mexico are migrants who, from Mexico, legally but more illegally, entering the United States. Because of this, President Trump, still in the election campaign, has threatened to build a wall to protect against the entry of migrants from Mexico. In the economic sphere, although Mexico is America's largest trading partner, customs are imposed on it and the goods are kept at the border, which is the most obvious aspect of protectionism. China and the US exchange about \$ 730 billion annually in commodities. In addition, the US raised tariffs from 10 to 24% to 200 billion annual imports from China. These protectionist measures have negative consequences for US companies that make significant profits with business with China, but China also has an interest in doing business with the US, primarily in the area of computer chips and software. Of course, China also responded to protectionist measures so that

more than one tens of billions of dollars in goods from the United States introduced more customs duties. USA and Canada reached an agreement on the export of their dairy products. However, due to the US-China conflict, the US-Canada Trade Agreement contains a clause "The Chinese Clause," which exerts pressure on free trade between Canada and China. If these protectionist measures are added to economic sanctions imposed on Russia, Iran. It is visible to Syria and other countries that the United States is working exclusively in its own interest without taking into account the interests of other countries and nations.

Although the United States has for years advocated that bi-lateral agreements should be replaced by multilateral ones, now they want trade agreements to conclude bilaterally. So the US is seeking to secure a Japanese market for its agricultural products through a bilateral agreement with Japan. If that does not happen, there is a threat to various protectionist measures. There is also a dispute between the US and the EU in the field of automotive and agricultural products. Although the US has not yet introduced protectionist measures to import cars from Europe, there is a constant threat of their introduction if the EU does not allow the unobstructed import of agricultural products from the United States.

All these protectionist measures that encourage the US result in a response to measures that in effect lead to a reduction in the exchange between the most developed. Under the impact of protectionist measures, small and economic impoverished countries have not yet arrived because they do not have much participation in commodity exchange with the big ones.

4 INTEGRATIONS AS A FACTOR OF GLOBALIST WAVES

The concept of integration is etymologically derived from the Latin word "integratio", which means renewal, unification, complementation. If we take into account the etymological significance of this concept under integrations, it implies the integration of peoples or groups of peoples, national communities, integration of ideas, integration of subjects, integration of scientific knowledge, integration of philosophical views, integration of psychological processes, etc. From this definition it is evident that the notion of integration is multidisciplinary and that it is used in various sciences and scientific disciplines such as economics, sociology, physics, computing, medicine, etc.

When integration is viewed from an economic point of view, then this term implies the merging of economic entities, regions, or states. In economic theory and practice, functional and institutional economic integrations are known. Functional economic integration is represented by multinational companies, and institutional economic integrations represent the linking of regions, certain entities or states at different levels so that in this case we can distinguish different types of integration, such as preferential trade agreement, free trade zone, customs union, common market, economic union and monetary union.

From the sociological point of view, integration refers to processes that connect individuals and certain social groups into a harmonious or coherent whole. Sociological integration is very important during migrations of any kind. If migrants of any kind could not integrate with the population of the host country, there would be very big problems related to theft, murder, diversion, terrorism and the like.

Globalization, among other things, implies freedom of movement and workforce. When this phenomenon of globalization joins the wars and underdevelopment of some countries, the population moves from one destination to another inevitably. According to some data, there are currently 65 million forcibly displaced persons in the world. These persons are called refugees or migrants.

Refugees are those persons who are basically linked to persecution based on racial or religious affiliation (Evans G. 1998), but also those who flee from armed conflicts when their lives are endangered. It is dangerous for these people to return to their homes because they do not enjoy the protection of their country. It is therefore necessary to provide refuge and protection of these persons in other places in accordance with international law. Their status was resolved by acts such as the Convention on Refugees adopted in Geneva in 1951, then the 1967 Protocol. The essence of the refugee is that refugees at the time of their leaving their home country break up any connection with that state and its organs, who until then had an obligation to protect its rights [8].

The basic rights of refugees consist in the fact that they can not be expelled and returned to the danger they have escaped. The countries to which refugees have fled must ensure that they respect fundamental human rights such as full security and dignified life.

The term migrant comes from the Latin word "migrario", "migrare", which means moving, wandering. Migrate means moving from one destination to another, or moving a family of people or groups from one region or from one country to another for a better life. After the Second World War, a large number of residents of the former SFRY went to Western Europe for temporary work.

These were typical economic migrants. Thus, "migrant" is the person who migrates, or changes the location of his life [9]. Unlike refugees, migrants independently choose to leave their own country, not because they have a direct threat of persecution or death, but because they want to improve their social and material position, for better education or for family reunification. **Therefore, migrants do not have an obstacle to returning to their homes and, if that happens, they have the right to protection from their domicile state.** In addition to the term "migrant", there is also the notion "emigrant", which should not be confused with the term "migrant". The emigrant is a person who left his country exclusively for political or religious reasons. [9]

5 THE CAUSES OF MIGRATION

Migration as a social phenomenon is not only a feature of modern society, but rather a phenomenon that has occurred since the emergence of social communities. There is no period of human history in which individuals and groups of people did not move from one place to another in search of a better life, which is contained in better economic, political, cultural and other conditions. In the history, forced migrations of entire collectivities are known. Thus, the Bible describes the suffering of Moses' people for religious persecution, which is why he sought salvation in other states that accepted them. And in our history, we have movements of almost the entire people under Arsenije Carnojevic.

It is believed that the XXI century will be the century of migration because all mankind or the greatest part wants to live in roughly equal terms.

In any case, globalization encourages migrations that can be classified into three groups. The first group consists of wealthy individuals, who are looking for new and bigger profits. They go all over the world, where they find cheaper workforce cheaper raw materials, new markets for existing and new products, etc. Such cases are also acceptable for the country from which they come and for the host country. Namely, in the country from which it goes, returns the profit that is achieved in other markets, and the host country benefits because new employment arrives, the number of potential social cases decreases, and the state costs are reduced, new technology is obtained. The second group is a middle class migrating for economic reasons. The third group makes them the poorest with a low level of education and they are looking for any kind of business. This type of migrant does not contribute to significant economic development in the host country and represent an economic burden for it until the moment of employment, and often afterwards.

6 ECONOMIC ASPECTS OF MIGRATION

Given the different types of migration, then the economic aspects of migration are very different. But, in common with all economic aspects of migration, they are reduced to income and expenditure, ie benefits and costs of migration.

Migrants, during their stay in another territory, should be provided with the living conditions of a decent person, that is adequate accommodation, adequate food, treatment and any other care, they should be allowed to learn the domicile language, and then other types of education and training. **Funds for providing adequate living conditions are provided from the budget of public authorities. Since the budgets are getting their funds by collecting various fiscal levies from taxpayers, it follows from this unambiguously that the living conditions of migrants are financed by taxpayers.**

As already mentioned, economic aspects of migration depend on the types of migration. Often, wealthy and wealthy individuals or groups of individuals come to another territory because of a search for high and higher profits, using cheaper labor and the abundance of cheap resources. In this case, there are positive effects both for the country of origin of migrants and for the country of migration. Profits earned abroad will be returned to the country of origin. In the country of migration unemployment will decrease, the need for social benefits will be reduced, the state will collect public revenues, there will be exchange and conquest of new technologies.

Migrants middle class, which in a country of migration coming exclusively to improve their economic status and living standards. The negative consequence of such migrations is the dissatisfaction of the domicile population, which in turn gives rise to more unnecessary competition for jobs. For the state and businesses, competition is desirable because migrants accept the same type of work as the domicile population, but for a much lower wage.

The third type of migrants are the least educated and poorest population groups. For them, it is always necessary to provide language learning, food, housing, clothing, etc. Unlike the previous group, they are also desirable for the state, businesses and population because they perform the simplest and most difficult tasks for which the domicile population is not interested. However, from the economic point of view, they at the beginning of their migration time cost most, because they come with very small means or without any means.

7 INTEGRATIVE MIGRANT EXPENSES

As has been said to date, migration means moving from one place to another, whether it is the same country, and more often it is moving to other countries. This movement implies different types of costs for both the migrants themselves and the host country. In further consideration, we will only monitor the costs of the host country. And in conditions when there are no mass migrant movements, each country provides its own border and these costs do not imply migration costs. However, in the case of migrant movements, the security of the state border must be multiplied in many ways because there is a reasonable presumption that migrants, or under their name, move persons or groups that have completely different intentions ranging from drug trafficking and other prohibited means to a person who deal with terrorism.

At the time of entry into a country, every country, whether it is transit or the country that is the target destination of migrants, has the cost of acceptance of migrants, which includes the costs of their registration, temporary or permanent accommodation, food, health care, etc. In the case of a country representing a transitional zone, that country is obliged to transport migrants to the outward boundary and to ensure them in any sense until leaving their territory.

The host country has disproportionately higher costs than transit countries. Firstly, all the costs of transit countries have host countries. In addition, the host country also has other very different integration costs in terms of domiciliary language, vocational education or education, education about the need to accept the cultural specifics of the host country and maintain its cultural specifics. In addition, there are costs of impact on the labor market that migrants need to accept as a new working age population, which should contribute to the development of the economy of the host country. Namely, the domicile population should be trained to accept migrants, not only as the initial cost, what they are, but they are in the future also a development and income opportunity for the host country This is especially important if one takes into account the fact that fertility is below the level for the replacement of generations and increases the length of human life, and therefore the age of the working population, especially in European countries. Therefore, migration should be viewed as an economically positive process. The project "one belt-one road" will also result in economic migration. Economic in the first place.

8 CONCLUSION

Although migrations and integration are almost as old as human history, these phenomena are still regarded as negative phenomena. In earlier times, migrations almost always meant assimilation at the place of reception. Assimilation implies a complete or dominant "drowning" in the religious, cultural and overall flows of the host country's social relations. However, contemporary migration and integration of migrants into host societies have very positive effects. Migrants carry different types of capital, such as human capital, cultural capital, social capital, financial capital. These capitals by properly activating become the development potentials for the host country, and at the same time for the country of origin. At the same time, the diversity brought by migrants and their integration into social relations in the broadest sense in the host country becomes the wealth of the host country. Negative aspects of migration relate to the fact that the host country at the very beginning of the migration route has different and not small costs, and for the domicile population the labor market is being adjusted. At the same time, security issues should not be excluded as a negative consequence of migration, especially if mass migrations are involved.

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NEGATIVE ASPECTS OF PRIVATIZATION IN SERBIA

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ABSTRACT

In Serbia, the foundations of a modern economic system of transition are formed at the end of 2000. The basics of this system were: general liberalization, deregulation and privatization. Economic policy is based on lowering inflation, which has harmed employment and monetary stability.

State property transformation into private property as leading property model, was the key aspect of transition process. Privatization problems is in that the chosen model led to stimulating one and dissimulating other stakeholder group

Its main purpose was economic efficiency and social desirability. Advantage of privatization is private property that drives growth and rational managing of resources. Privatization alone is not the aim for itself, but leads to productivity, efficiency and effectivity growth.

Privatization is based on the approach aimed at public tenders to an unlimited number of subjects. Negative aspects are seen in favoring public incomes and sacrificing economic development and employment.

Privatization effects are seen as negative concerning the fact that half of million of people lost their jobs just in the first decade of the process, and many contracts following tenders are nulled. The growth and development itself that were seen as outcomes were not the least what was expected.

The flaws in privatization activities and legislature are analyses as factors that led to a high failure rate in the privatization of companies. Weaknesses are identified in design, monitoring process, implementation.

Keywords: privatization, negative effects, Serbia

1 REASONS FOR PRIVATIZATION

Defeat of empirical concept of state socialism, the actors of the then political scene in socialist states are seen as the exclusive way to liberal capitalism dominated by three pillars, namely private ownership, deregulation of the economy liberalization. From this arises the need to privatize the former state-owned enterprises with an explanation that the transformation will bring greater productivity and efficiency, and higher growth, and development. Looking back supports the thesis that in most cases, redistribution of wealth has not led to the development and additional negative aspects are the growth of the unemployment and indebtedness of the country.

Approach to the transition and transformation is possible in principle through two models- evolutionary model and the "shock therapy" model. In the first state plays an active role when it comes to the ownership structure, and she intervenes in the economy while the privatization proceeds gradually taking into account the circumstances, the achieved level of development, the order in which the sectors will be transformed. Other happens automatically, where the state withdraws from regulation and intervention in the economy.

The approach that is adopted is second, and there is another prevalent belief in the ideas of Friedman and the power of the free market. In order to establish a free market the basis was transformation of property in private because it is a state that is, public property economically inefficient or less efficient form. Establishing a complete liberal market requires the full privatization of the state and social forms of ownership.

Meggison and Netter constitute a review of empirical studies on privatization as a comparative overview on the global scene and concluded that the companies that have passed, the transformation to private property as a rule, become more profitable and more efficient, increased capital investment and strengthened in terms of financial leverage.[1] Similar to conclude and Havrylyshyn and McGettigan, who analyzed transition countries and conclude that by itself privatized enterprises perform better than

government.[1] Private property is the cornerstone of an efficient economy, according to this view, but it is not the only prerequisite for a healthy economy and individual companies in the macro environment. This requires good economic policies and overall institutions that would ensure a smooth appearance on the market and preventing monopolies.

Several objectives of privatization is in countries in transition. The primary objective is to create an efficient economy, which would be based on private ownership as pillar which is the foundation of growth and management based on results and performance. The conclusion was that the planned economy and forms of ownership that time and unhealthy incentives can realize growth and development, and that it was expected that owners and managers to improve performance and drive innovation and new technologies and products that will be available to new funding sources, better organization, more rational human sector. Other tion was seen in improving the financial situation of the country through the sale of state property that can service the debt or invest in issues of general interest. The goal was the elimination of favoring the public sector versus private. The political objectives of privatization are democratization and the introduction of the Western liberal model of democracy, strengthening of the middle class, depoliticization.

2 PRIVATIZATION FLOW IN SERBIA

In the eighties economists began to make more explicit view that there was a significant inefficiency of the self-governing economy, that development was slowing down systematically, and that bad aspects could be prevented if the model of general privatization was adopted. The Federal Administration then brings the 1988 Law on Enterprises, which stipulates that a company can do business assets in social, cooperative, mixed and private property in order for it came first in a series of privatization laws-law on traffic and utilization of social capital. It regulates that social capital can be sold, in whole or in part, to domestic and foreign legal entities and individuals, at public auction, if such a decision is taken by the workers' council. He made it clear provisions on the sale of social capital, as well as the conversion, manage, share in profits, capital increase, but did not constitute an obligation for the transformation of businesses. Disadvantages of this law are eliminated the adoption of the Law on social capital in a very quick period of time, which defines the model of employee shareholding and predict recapitalization by issuing shares or selling its stake in the company. With the workers' council's decision to sell transferred to the control authority, and professional and consulting fees established by the Agency for restructuring and recapitalization. In the first four months of its entry into force, 169 companies were privatized, in the first eight months of the next year as many as 1051 companies. [2]

The third privatization law in a row, for the first time was bring by the central government of RS, that is, the National Assembly of the Republic of Serbia in mid-1991. It was the Law on conditions and procedure of turning public property into other forms of ownership. Here, as the model predicts the share issue and restructuring of enterprises in the form of companies and to the active role of the Agency.

New law introduced a number of commitments that have compounded the procedure and therefore are only 34 companies privatized by the end of 1991, and 139 enterprises next year. The next major stage there was a galloping inflation which leads to devalue value of social capital and accelerating the privatization process, and by the end of next year, 465 companies were privatized. In 1994, amendments to the laws, which were carried out successively for three years, changed most of the privatizations carried out and stipulated that the companies reevaluate the value, so the result was a reduction of the share capital in the total capital of the company by ten times.

In 1996, the Law on the Basics of Changing the Ownership of Social Capital was adopted, and then the Law on Property Transformation. [3] According to this act of evaluation is left to the Directorate for evaluation of capital. For the first time provides for free distribution to 60 percent of the total capital of the company employees, but also to all citizens. As a method of privatization is envisaged autonomous sale of shares, with the payment of funds to a certain proportion-Development Fund of 50%, the Institute for Labor Market and 25% Republican PIO Fund 25%. [4]

Privatization Act of 2001, has introduced as a novelty mandatory privatization and determine the deadline for her. As the subject are determed privatizations of social and state capital in enterprises, and for the competent institution are determined the Privatization Agency, Share Fund and the Central Registry of Securities. Privatization models were determined by the sale of capital through a public tender and public auction, as well as the transfer of capital without compensation. [2]

This law was resented for insisting on a model of transformation that did not guarantee mass and speed. There was a delay in holding back on forms of recapitalization, joint ventures and similar practices, although it was evident that investors were solely seeking the most profitable entities.

3 RESULTS OF TRANSITION, MACRO ENVIROMENT AND NEGATIVE ASPECTS OF PRIVATIZATION

Transition results are reflected in a series of indicators. One of them is the movement of per capita income, measured by purchasing power parity, where Serbia is making the smallest qualitative shift with respect to European transition countries. By 2012, Serbia was at the bottom of the reference countries of Europe, just behind Belarus. [3]

In terms of segment ratings, Serbia has achieved the best results in the part of privatization of small businesses, in the domain of price liberalization, trade and exchange rates. Its basic lack are structural reforms.

Initial successes were recorded in restructuring public enterprises by reducing the number of employes and extract secondary from the main side of the business, during the middle of the last decade, first slows down and then stop serious reform process. As the biggest problems remain local public companies that are ground politicking and employment outside and beyond the needs of the employer.

Republican authorities recorded a significant progress in the intensification of the adoption of systemic laws to regulate certain segments of the system, but the problem remains as the application of the law. Passed laws are not consistently enforced. Sometimes the problem is a lack of adequate secondary legislation needed for implementation, as well as training institutions for implementation.

Strategy and policy development of the industry of the Republic of Serbia by the RS government in 2011 for the period from 2011 to 2020, according to experts, it's been a decade late. Composite index of world organizations are not favorable for Serbia. The Global Innovation Index is not a favorable indicator for the economy, so in 2012, it ranked on the 46th place out of 141 countries in the sample.

Table 1. Global Innovation index 2011-2017[5]

Year	Position	Index of innovation
2011	55	36.31
2012	46	40
2013	54	37.87
2014	67	35.89
2015	63	36.47
2016	65	33.75
2017	62	35.30

According to the World Economic Forum and the World Competitiveness Report, among 142 countries, Serbia was 95th for 2011-2012 year. In a report on operations, the World.

Bank and the International Financial Cooperation rank 86th in Serbia out of 185 countries in the world, according to which it is making progress because of the undertaken reforms in the field of entrepreneurship, contract implementation, insolvency resolution.[5]

For 2017, the Global Innovation Index ranks Serbia 62nd, while for example Croatia ranked 41st, Romania 42nd and Slovenia 32nd globally. The competitiveness situation of the composite index places it 72nd out of 138 countries, which is an improvement over the 90th position it previously occupied.

Table 2. Global Competitiveness Index 2016-2018[6]

	Rank (137)	Score (1-7)
2016-2017	90	3.97
2017-2018	78	4.14
2018-2019*	65*	60.9*

According to the Global Competitiveness Index for 2018* Serbia is located at 65th position in the competition of 140 countries and the value of its index IGK is 60.9. It is evident that there was a methodological change implemented by the SEF in the calculation of the index, and the index ranges from 0 to 100. For the purpose of comparability, values for 2017 have been recalculated and almost all the countries have made progress, except Bosnia and Herzegovina. Croatia with an identical result and Macedonia for which there are no comparable data. Of the countries observed, Serbia recorded the largest jump of 1.7 points.[6]

The latest Strategy for Supporting the Development of SMEs and Entrepreneurship and Competitiveness for the period 2015-2020 was adopted. It identified the problems of existence and obstacles to the development of this sector, set clear goals and established measures, primarily in relation to improving the business environment, access to sources of financing, human resources development and strengthening

sustainability and competitiveness. The Strategy is also accompanied by the Action Plan for 2015 and 2016. Funding sources point to the unfavorable supply of bank loans, the lack of use of EU funds guarantee schemes, the absence of venture capital funds or business angel investments, as a source of financing for innovative businesses with rapid growth potential.

The Belgrade Stock Exchange was restored in Serbia in 1989 and is still part of the underdeveloped capital markets. The Securities Commission and the Central Registry were established and an institutional framework for operations in this market was provided.

Although the stock market has been operating as a renewed market since the 1990s, a significant shift in trading has only taken place in 2000, with the beginnings of more intense privatization. For the first time since the Second World War, they have been included in the secondary turnover of actions from privatization procedures that have been completed. Starting in 2001, old foreign currency savings bonds began trading.

From the outset, this market was reflected in low turnover and a short list of securities that were in constant circulation on the stock market. Market capitalization in Serbia, compared to GDP, was around 30%, and the conclusion is that in the first decade of its existence, the stock market had insufficient or marginal importance for the overall economy. The problem was also seen in the lack of progress of this market in the field of liberalization, deregulation, privatization. During the beginning of the transition, the Belgrade Stock Exchange recorded a fall in the total transaction turnover, from 2002 to 2005, and growth was recorded from 2005 to 2006. [7] Many listed companies did not have a steady turnover, so the shares of most listed companies were not traded for months, and in some cases longer than a year.

The idea was to create, through the transition, a stable, reliable and liquid capital market attractive to investors and significant to the overall economy. In Serbia, from 2000 to 2015, there was no developed market for long-term corporate bonds, the only significant market for analysis was the stock market on the Belgrade Stock Exchange. [8]

Through privatization procedures, which mostly meant the elimination of social ownership, thousands of companies were transformed into joint stock companies that had numerous shareholders because of the adopted model of voucher privatization - from among employees, former employees and citizens. In this way, there was a significant dispersion of ownership and this was considered by economists to be detrimental to effective management based on theories of organizational management and the adopted performance criteria. Despite the Belgrade Stock Exchange returning to the Serbian economy again after six decades, its importance was marginalized by the fact that the trade was conducted not by the market pattern but by the force of law, which means that the listing of the stock exchange was not done by the companies that came through it. The initial offer was already made up of companies that were obliged to privatize and be listed according to stock exchange regulations. It was up to the management of the companies whether or not to enter the free market, which was massively avoided because of the obligation to valorize under strict rules and because of the danger of hostile takeover.

The very effects of completed privatizations were also reflected in a number of shortcomings that resulted in the cancellation and termination of privatization contracts. Thus, between 2002 and 2012, 671 privatization contracts were terminated, with a share of 41.5% in the total number of privatizations under both models. [3]

Part of the commitments undertaken by the privatization contracts has not been fulfilled, and one part has missed the investment in terms of loss of capital of the former owners. The most common cause of termination in these cases was the failure to pay arrears of the sale price and failure to maintain business continuity and disregard of the social program. This is followed by non-fulfillment of an investment obligation, failure to provide a bank guarantee, etc. In particular, the number of breaks has increased due to the effects of the World Economic Crisis.

Privatization should also lead to the restitution of nationalized property and should remedy the situation created by the nationalization of private property. Restitution was seen as a pillar of transition without which there is no break with the totalitarian system. It means restoring or restoring ownership or rights of individuals or groups, which may take the form of physical or natural restitution, or modalities of combination. The legal solution was to allocate 5% of the proceeds of each sale to future restitution benefits. However, restitution was not regulated further, and everything remained under some future denationalization law.

Restitution began in the 1990s with the return of agricultural land, and then in 2006 a special law was adopted and property was returned to churches and religious communities, which, apart from other disadvantages, opens a further problem-discrimination of a positive type with respect to other holders of the right to restitution. Thirteen draft laws on restitution were drafted in Serbia by 2010, without any version

coming to parliament. It was not until September 2011 that the RS National Assembly adopted the Law on Restitution of Seized Property and Compensation, with omissions and deficiencies noting which led to numerous implementation problems. The biggest problem lies in the financing of this refund, so it has emerged from the norms that the titular of the right to a refund will receive in monetary terms much less than the real value of the deducted, with payment in installments.

Another negative aspect concerns the adopted Law on the right to free shares in 2007, which were opposed by many experts in the given time, and provides the right to this action all adult citizens of Serbian citizens who do not achieve on other grounds. In addition to fundamental economic reasons who opposed this division, it is considered that this has had negative consequences for the public finances, particularly in the area of public debt.

Privatization of construction land was another problem, and in 2009 the right to use land observed as the main motivation for purchase in the privatization process. [8] The goal was to invest, not in existing businesses, but in an attractive location in which to investors has a much larger potential market in relation to the purchasing entity. Therefore, the Law on planning and building passed in 2009 allows owners to pay their fair value if the land belongs to this group that it occurred at a significantly lower price than the real, and in this way the first time in decades, an opportunity to gain private ownership of urban construction land.

Positive effects are absent, but the damage suffered construction industry over the next year, and budget. The main barrier concerned the application of norms on conversion of rights of use to rights of ownership and their incompleteness, which is the conversion itself was very difficult to implement.

Negative aspects of the transition, and within it, privatization, can be primarily state and generated high unemployment. The result is a decline in production and employment system inherited accumulation in the state sector. At the end of the privatization process is expected to reduce the pace of layoffs. Sam problem is particularly accented because of the lack of capital for investment in new projects and programs, as they are for the competitiveness required a huge investment, but only through it is possible to solve the problem of unemployment.

The RS transition balance is not very satisfactory. The backlog of the Serbian economy, which has been recording since the 1990s, is slowly reaching, there is no reduction in the backlog of EU-15, and it is increasing relative to the countries admitted to the EU in 2004.

In the pre-transition period due to wars and sanctions, it is estimated that Serbia has lost thirty years of growth and development, and it is an economic regularity that it takes twice as long to return to the previous equilibrium than that in which there was an imbalance.

Serbia's economic growth is at the level of 1976, at 78.1% of the average of gross domestic product recorded in 1990. [9] The industry today employs more than 500,000 fewer employees than the reference year. The standard of living in Southeast European countries in 2016 is close to three times lower than the EU average, while the unemployment rate is three times higher. The transition economies of this region show insufficient resilience and adaptability for globalization, a competitive match.

Jakopin sees the following shortcomings as essential problems of the transition period and the privatization with which he is concerned: [4]

- the process of privatization was not accompanied by consistent institutional arrangements, and the effects themselves were smaller than expected;
- the expected growth of industrial unemployment is not accompanied by a corresponding growth in the entrepreneurship sector;
- economic growth is based on the growth of the services sector, the tradables sector;
- consumption did not follow economic growth but grew faster, leading to an increase in external debt;
- structural reforms were slow, selective and partial.

4 CONCLUSION

Privatization can not be separated from the process of transition and ownership restructuring and the setting up of entrepreneurial initiative at the center of development plans and strategies and is characteristic of all the areas where there has been a shift of the socialist regime and the transition to a market economy. This is expected to lead to greater efficiency and profitability, as evidenced in a series of empirical studies that have followed parallel public and private companies.

Yet privatization by itself is not sufficient for these results and the positive impact on the overall economy. Positive effects in Serbia are followed by negative ones - privatization funds were not invested effectively, there was no harmony between total and public spending and economic growth leading to debt, the Serbian economy as a whole lacks good composite indicators of innovation and competitiveness, unemployment is significantly higher than EU countries, as well as indices that measure social inequality. There are numerous reasons for this, and there are frequent changes in the model of privatization in search of the optimal model, as well as the influence of the social component, the choice of workers' shareholding as a model, and the systemic shortcomings that have been slowly remedied.

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EU COST-BENEFIT ANALYSIS METHODOLOGY

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ABSTRACT

This paper will present a methodology for carrying out the cost-benefit analysis (CBA) that has been widely used in projects for many years. The idea is to make available key details and elements of project analysis that are applicable in the EU, and how to prepare in time for project funding in accordance with EU methodology. Today, the rules on investing, ie. financing of projects within the European Union's integrated space. A growing number of businesses are funded by large funds, whether private or institutional. The strong commitment of the EU and the beginning of the process of harmonization of Serbia with the EU points to the importance of cost-benefit analysis and its increasing application in projects involving all EU Member States.

Keywords: Cost-benefit analysis, project financing, EU.

1 INTRODUCTION

An essential condition for a better quality of life for Serbian citizens is the modern infrastructure. Investing in construction, i.e. developing existing infrastructure brings multiple benefits. First, the immediate benefit relates to the employment of economic capacity, and the second, in the long term, to meet the basic life needs of the community. For investors, both institutional and individual, the financing of infrastructure projects is very attractive as it provides a stable cash flow in the long run with relatively little risk. One of the most successful models of financing infrastructure projects is project financing. In project finance, making the right decisions is a very important strategic issue and requires a series of analyzes. One of the main and most used is cost-benefit analysis (CBA). Otherwise, this analysis is required by the EU and domestic legislation, it is very important because it is the only analysis that takes into account both the economic and non-economic effects of the project. Economic analysis is important first and foremost from an investor perspective, the basic question is whether the investment is worthwhile. While non-economic analysis must evaluate the effects that the project brings to the wider community and which are difficult to quantify. Cost-benefit analysis further helps creators of social development to avoid subjective decisions. In fact, the benefit is certainly multiple, the state comes up with the necessary funds for development without borrowing, while individual investors come to the possibility of increasing their own capital.

The subject of this paper is Cost-benefit analysis, one of the specific scientific methods within project finance. This method is mandatory for those projects where, in addition to the economic analysis of investment feasibility, value assessment and non-economic benefits are necessary, the benefit of those not directly involved in the project itself. In these situations, we say that this analysis is binding and indispensable. Going back to the definition of infrastructure, we will see that there is a great deal of economic benefit to infrastructure projects. There are numerous examples: constructing a highway, citizens will shorten travel from one destination to another; building a water supply network, citizens will have access to healthy water, and there are many similar examples.

Cost-benefit analysis assesses the objectives and identifies alternatives, then evaluates the weaknesses and strengths of the alternatives offered, and selects the one that achieves the greatest benefit at the least cost. To make the right, economically justifiable decision, it is necessary to apply this method before investing. If we have a positive result by analyzing the costs and benefits, it means that we are well on the way that the funded investment brings multiple benefits and that a financing project needs to be started. So, cost-benefit analysis is intended primarily for those who make investment decisions. That is why there is so much importance to this method.

The aim of this paper is to explore the elements of cost-benefit analysis and to familiarize yourself with the EU regulation on the use of cost-benefit analyzes in project financing. Our legislation has accepted this analysis as part of the project work.

The paper is divided into five sections. In the first part, after the introduction, we define project financing. The second part of the paper gives a clear definition of project financing, while the third part explores the elements of cost-benefit analysis. The fourth part deals with financial analysis. The final section provides concluding considerations.

2 PROJECT FINANSING

At the beginning of this paper, the term project finance needs to be precisely defined. A precise definition is important because it will help in obtaining the answer and in the conceptual definition of the given expression.

Project financing is a financing model that, to this extent, means novelty in relation to corporate financing, that the guarantor of the borrowed funds is not the assets of the financed company, but the cash-flow of the funded project [7].

Project financing is used to finance specific projects aimed at solving major infrastructure problems. Project financing has long been a widely used funding model around the world, especially in the United States, Australia and the United Kingdom. This model of financing should be widely accepted, especially in developing countries, because in the midst of indebtedness, this is the cheapest way to reach the necessary resources to solve the accumulated infrastructure problems [1].

In this paper, we will present project financing as one of the project financing models, with general characteristics, utilization potentials, advantages and disadvantages for both the financial institution and the recipient of the funds.

In Serbia, project financing is underutilized, and the reasons should be sought primarily in the absence of knowledge, as well as insufficient awareness of the problems and possibilities of this financing model. There are also normative solutions, which are sometimes late. The solution to this problem is to organize as many educational programs that will address this issue.

3 COST-BENEFIT ANALYSIS

The basic objective of cost-benefit analysis (CBA), in the context of cohesion policy, is reflected in two key details. The former, from an economic point of view, assessed the project as worth co-financing. Another, from a financial point of view, considered that co-financing should be designed. As a rule, the CBA is implemented at the project preparation stage, ie. at the end of the preliminary phase of the project.

Thus defined, the CBA must be aligned with the predefined policy objectives and bear the relevant social context (local, region, state). Such analysis must be identifiable (incremental analysis - assessment with and without investment) and comparable to other projects, in order to determine the relevance of the investment and assess the risk of investment. And most importantly, in terms of project viability, the CBA must be measurable (in money) [11].

The European Commission is creating a CBA for investment projects. It is prepared to follow developments in EU policies and methodology for analyzing, preparing and evaluating projects during the previous Cohesion Policy programming periods. The aim of the guide is to offer practical guidance on larger project appraisals, as incorporated into cohesion policy legislation for 2014-2020. As in previous versions, the guide should be seen as contributing to the evaluation of project appraisal. The main objective is to illustrate common principles and rules for implementing CBA approaches in the practice of different sectors.

The main task of cost-benefit analysis is to support the implementation of effective projects, writing and presenting them, to assure the sources of funding that the financial support provided will contribute to such development projects that will be financially efficient and socially beneficial [5]. To accomplish these tasks, three elements of cost-benefit analysis are used:

- Analysis of alternatives aimed at proving that the best alternative has been selected;
- Financial analysis, refers to the most efficient financing model, taking into account the costs and benefits, as well as cash-fow (the sustainability of the project should be considered in this framework);
- Economic cost analysis, the purpose of which is to analyze the costs and benefits based on the chosen technical model (to supplement the financial benefits and costs with non-financial benefits and costs).

In addition to the financial and economic analysis, a risk analysis and a sensitivity analysis of the project need to be done. In the project preparation phase, cost-benefit analysis plays an active role in technical preparation and planning, setting institutional and financial conditions, as well as protecting the environment and climate change. This option analysis needs to be integrated with the feasibility study design process [6].

Within the CBA, it is necessary to conceptualize the project idea in a way that is verifiable. In other words, it is necessary to determine both the variant with and without the project and on this basis compare the difference of development between the two models. Certainly not as a realistic option, but as an aid in evaluating the project. The point of the diversity development method is to concentrate on the impact and sustainability of the project without addressing any current problems. The case without the project essentially refers to the analyzed period, where a detailed description of the situation in case the project is absent is described. Since the CBA only covers effects from the project, it is necessary to separate those impacts that would occur without the project. In the case of a method of divergence of development during the CBA, from the cost of the project, maintenance and operation, as well as from earnings, it would be necessary to deduct the amount that would occur without the project [4].

A case project analysis should include:

- Short description of the technical content - if it is possible to plan investments without external financing, and financing should be planned to the level that can be covered from own resources;
- Estimation of maintenance costs during operation;
- Revenue estimation;
- Showing the impact.

With project financing, it is important to set the right parameters so that the investment does not fail. Therefore, it is important to focus on the basic parameters:

- Exchange rate - the results of the analysis should be expressed in dinars at the middle exchange rate of the NBS;
- Inflation - if relative price forecasts deviate significantly from expectations, a correction of relative prices is required;
- Analysis period - represents the number of years in which the CBA makes forecasts (referring to financial and socio-economic analysis);
- Discount rate - is the minimum income rate below which each investment project is deducted; it is necessary to rely on promising elements: average returns on the financial market, return on capital, risk assessments;
- Economic discount rate - this discount rate is not determined by inflation, nor expected return on investment, nor the risk of investment, but by the interests of the entire community [8], [9].

Certainly, for deeper analysis it is necessary to identify potential changes. The results obtained that record the changes by stages should be presented in a clear way. In the case of legal and technical feasibility of change, taking into account EU guidance, change analysis can be carried out using the following methods: cost-effectiveness analysis and multi-angle evaluation [4]. During the analysis of changes, all costs incurred are calculated as an economic cost. Three important details should be considered when determining changes:

- Properly formulate solutions that meet legal and technical requirements and their analysis;
- Displaying the achievement of the target state;
- If the decision to change relates to one element of the project, the link with the other parts of the project should be described.

The CBA conducted in this way has not been completed. A number of other analyzes also need to be done to definitely make a decision on accepting project funding or giving up. The key financial elements of the CBA will be analyzed below.

4 FINANCIAL ANALYSIS

The objectives and details of the financial analysis determine the category of investment required, based on decisions made by EU general conditions. However, how detailed the analysis will be will depend on the size of the project.

4.1. Objectives of Financial Analysis

The main objective of the financial analysis is to evaluate the cash-flow project based on the decision on changes. Based on this assessment, the basic indicators of the financial performance of the project are calculated as follows: net present value (NPV) and internal recoupment rate (IRR). The financial analysis also includes demonstrating the sustainability of the project upon completion of the investment phase. This means that the project must produce enough cash flow to make the development level sustainable [6].

Financial analysis in practice implies that investment flows are tabulated, and it includes: investment costs, operating costs, revenues, sources of investment and total cash flows.

The calculation of return on investment should be divided into two variants:

- 1) Reimbursement of total investment costs, i
- 2) Budget return on invested capital.

In the cost analysis, the estimate of investment required must be consistent with the feasibility study. The total cost should be the product of the quantity and unit price of each element of the investment. When analyzing the financial sustainability of a project, the total cost of the investment should be taken into account. An important element of the financial analysis is the calculation of the missing funding for the project, which means that part of the funds that is not sufficient to recover from the net worth of the future course of the project.

Functional cost estimates should be made on the basis of EU guidance, with particular attention to the support relationship. And those are:

- Operating cost
- Maintenance cost
- Replacement costs

4.2. Estimation of residual value

According to EU guidelines, residual value is shown when investing (with opposite sign). The addition to EU guidelines provides that, when calculating the aid ratio, the discounted net inflow must also include the value of the balance sheet. By displaying the value of that residue in a separate column. The purpose of this presentation method is to show investment costs separately.

4.3. Indicators of project financial strength

The ability of a project is measured by the ability to repay an investment. The most important indicators of ability are:

- Net Present Value (NPV) – shows the level of revenue and expenditure generated over the life of the project. There are two scenarios: when $NPV > 0$, the project is accepted and the other scenario when $NPV < 0$, then the project is not acceptable. So if the discounted income is greater than the discounted outflow, the project is acceptable.
- Internal Rate of Return (IRR) is a discount rate that equates the present value of the expected net inflow with the present value of the investment, and in this case we have two scenarios: if the $IRR > d$ (discount rates) project is acceptable and if $IRR < d$ the project is unacceptable.

The objective of financial sustainability analysis is to show the long-term financial balance of the project. The project sponsor (financier) is responsible for the financial sustainability of the project. In the event that project revenues, including donations, are insufficient to operate, the project sponsor is required to provide the missing funds.

4.4. Economic cost-benefit analysis

The total cost of the project is the sum of the total investment costs and the total operating costs, together with an evaluation of the possible residual.

- Financial costs are adjusted against
- Budget (fiscal) adjustments;
- Transition from market to agreed price;
- External influences acting.

4.5. Budgetary (fiscal) adjustments

Economic analysis comes from a financial cost estimate, but market prices as an element of financial estimates may contain taxes as well as donations that affect relative prices. In order to avoid these discrepancies, the general rule is that economic analysis does not contain indirect taxes.

In the case of direct tax, the taxpayer is the same person who is economically liable to tax. An example of such a tax is the property tax. We talk about indirect tax if the taxpayer differs from the taxpayer.

Based on the above principles, the following adjustments should be made:

- VAT (value added tax)
- Subsidies

4.6. Transition from market to agreed price

Market distortions prevent the efficient allocation of resources, and the state is forced to intervene. The state can ensure this through the legal system, where the users of the resources are forced to contract, that the distribution is at a socially optimal level. The state can also provide an optimal level through subsidies. Since neither the state nor the market functions ideally, therefore, the value of resources is more or less different from the market price.

- In a perfectly functioning labor market, the price of black labor would be equal to the market price. Pricing in the black market is rarely done in practice, given that little information is available. When making a CBA investment, we can state that the labor market is not ideal, but it values the price of labor, so there is no need to calculate the price on the black market.
- In the case of natural resources, market price adjustments may be necessary due to the neglected interest of future users. This can be resolved through the determination of taxes and fees.

4.7. Project Benefit Assessment

Project effects can be:

- Immediate to project beneficiaries or benefits that occur to service users.
- External economic impacts that are not directly attributable to the project

There are several methods to evaluate benefits for direct users:

1. Benefits can also be calculated on the basis of monetary savings on the resources resulting from the completed project.
2. Valuation benefits from income, as a starting point. Sources of revenue can be a starting point in economic analysis of users, if it adequately reflects the benefits that occur to users of infrastructure projects. This is true if prices are realized at market prices. When measuring social benefit, financial gain should take into account the part that benefits the beneficiary. If the user is entitled to a VAT refund then this should be deducted, if the user is not entitled to a VAT refund the same should not be deducted.
3. The benefit that occurs to the end user can be determined by the survey method.

Note: Negative benefits, that is, damages, must be shown when showing total costs.

From all of the above, we can observe that the CBA involves comparing and adding up all the benefits and costs in a few steps:

- Quantitative representation of project inputs and outputs;
- Assessing the benefits and costs of the community;
- Compare results.

4.8. Sensitivity to change and risk analysis

An indispensable part is change sensitivity analysis and risk analysis. These analyzes provide answers to the questions: What are the risks we face during project implementation? What is the probability of these risks occurring? How will this affect performance indicators? How sensitive is the project to those changes?

When we talk about sensitivity analysis, we pay attention to cost and earnings indicators as well as the impact of these changes on performance indicators. And when it comes to risk analysis, it should be borne in mind that most projects are based on projections for the future, very careful and thorough preparation is required to identify, evaluate and undertake the necessary activities to eliminate or reduce the risk to an acceptable level [11].

4.9. Sensitivity analysis

The purpose of sensitivity analysis is to determine the critical factors and indicators whose changes would most affect the calculated efficiency indicators. The basic types of questions in sensitivity analysis are „what-ifs“.

Critical factors, those that directly and indirectly affect the financial indicators as well as the efficiency indicators, are obtained by cost-benefit analysis.

The factors that directly affect are:

- Financial income
- Financial cost of the investment
- Financial costs of operation
- Benefits

Factors that directly affect the NSV (net present value), IRR (internal rate of return) as well as BCA (cost benefit analysis). If the direct factors do not reach the critical value of 1%, and their change does not affect more than 5% the efficiency indicators, then the indirect factors need not be further analyzed [7].

The following factors should primarily be analyzed within the framework of the analysis:

- Investment costs
- Cost of operation
- Different elements of profit and the main factors for their calculation

In this part, it is very important to accurately identify the factors that exclude those who are interdependent. The reason is simple - the interdependent factors distort or double the result. The analysis of the strength of the variables of the variable factors can be carried out by a quantitative method (recalculation based on new indicator values) and a qualitative method (we get an answer, strong or weakly flexible).

4.10. Risk Analysis

The key limitations of sensitivity analysis and change analysis that leave the probability of an event out of focus. This limitation is partly addressed by the risk analysis through several steps - from identifying the analysis to taking action to eliminate or reduce it to an acceptable level.

In the process of qualitative analysis, we analyze the risks of a variable that, by virtue of their negative effects, have a risky effect on financial and performance indicators. Other qualitative risks are also analyzed.

Quantitative analysis involves the quantitative and value assessment of the impact of events identified as risky events on the project objectives set. This is implemented through several methods, such as data collection and modeling and simulation techniques [3], [8].

It is crucial that we propose risk management solutions based on risk analysis. Main Risk Management Methods:

- Abandoning parts or the whole project;
- Creating a cost reserve;
- Risk elimination through commitments, insurance and guarantees;
- Risk sharing between stakeholders.

5 CONCLUSION

This paper analyzes cost-benefit analysis (CBA), a specific scientific economic method that comprehensively analyzes the return on investment, comparing costs and benefits. First of all, this method is applicable to those projects where it is necessary to evaluate in addition to the economic and non-economic benefit of the project. The economic benefit or profitability is primarily of interest to investors and companies implementing these projects and is relatively easy to quantify, ie. determines if the project is worthwhile. Non-economic benefits can be more difficult to determine, because in this analysis the benefits are difficult to quantify, in this case the cost-effectiveness should be viewed from a broader social point of view such as: energy, waste, traffic social, environmental, etc. because of its impact on the welfare of the community. Thus, a detailed, comprehensive and demanding analysis helps in selecting a project that will benefit the wider community in the long run and ensure a return on investment for the project's investors.

The preceding pages have analyzed the elements and steps of the CBA, with a detailed analysis of the elements of this analysis, and then chronologically arranged in the form of a practical manual to assist in assessing the cost-effectiveness of projects.

The hypothesis of this paper is the necessity and purpose of cost-benefit analysis. The need comes primarily from an EU regulation which, as a condition for financing projects, set a cost-benefit analysis as a condition for granting funds for any project.

The expediency arises from the results of the analysis, because they are needed to make the right investment decisions with as few subjective opinions as possible, which is a great help in the correct choice of projects and financing methods.

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THE FINANCIAL MANAGEMENT AND CONTROL SYSTEM AS AN IMPORTANT INSTRUMENT FOR IMPROVING PUBLIC SECTOR EFFECTIVENESS

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ABSTRACT

Establishing a governance process in public sector organizations that will responsibly (meaning in accordance with applicable regulations and standards), as well as effectively and efficiently (by providing citizens with the best possible services at the lowest possible cost) ensure the use of public resources is an imperative of all modern democratic societies. One of the key instruments for achieving these goals is the Financial Management and Control System (FMCS), which have been developing since the early 1990s on the general international principles of financial auditing and control defined by *The International Organization of Supreme Audit Institutions* (INTOSAI). These principles are accepted by the EU and their acceptance and incorporation into the functioning of the public sector is one of the preconditions for opening a chapter related to the field of finance, i.e. it is one of the conditions that EU candidate countries must fulfill in the process. The paper presents five basic, interconnected elements on which the organization and functioning of FMCS is based. These are the following: control environment, risk assessment, control activities, information and communication system and monitoring and evaluation.

Keywords: financial management, risk management, efficiency, ethical values of management, communication systems.

1 INTRODUCTION

The Financial Management and Control System (FMCS) in the public sector is part of the comprehensive internal financial control (IFC) system. In addition to FMCS, the overall IFC system is a system of internal audit (IR), and in the Republic-mandated constituent part it is also considered the central unit for the harmonization of the coordination of FMCS, i.e. the methodology for harmonization that this central unit is responsible for [1], [2].

It defines the internal financial control of the public sector as an integral process happening within the public sector organizations where its management and all other employees participate, in which they, in the attempt to mitigate the risks, try to realize the mission and goals of the organization [3]. Thus, there is an emphasis on the *integral aspect of the process* (it permeates all the parts of the organizations and involves both management and all employees); on its *direction for the achievement of the mission and the goals* (in the public sector it primarily involves providing services and securing benefits for citizens); the achievement of a *reasonable level* of objectives which means the respect of the limitations of the risks that the organization faces in its functioning.

The FMCS is defined as the entire system of financial and financial controls, which includes the organizational structure, methods and procedures not only of financial systems, but also of the operational strategic systems of organizations within the public sector. These controls, through risk management, reasonably assure that the following objectives of the organization will be achieved [1]:

- conducting public business in a proper, ethical, economical, effective and efficient manner;
- compliance of public sector organizations with laws, regulations, policies, plans and procedures;
- protection of public property and other resources of losses caused by mismanagement, unjustified spending, irregularities and fraud;
- strengthening the accountability of public sector employees for the successful accomplishment of their tasks.

2 THE BASIC COMPONENTS OF FMCS

According to the integrated framework of internal control developed by COSO (*The Committee of Sponsoring Organizations of the Treadway Commission*) [4], which were accepted and incorporated within the so-called INTOSAI International Standards, the FMC system consists of five interconnected components, namely:

- 1) Control environment,
- 2) Risk assessment and management,
- 3) Control activities,
- 4) Information and Communication,
- 5) Monitoring and evaluation.

These components are closely interconnected and, in everyday practice, they are, as such, a unique integrated entity. This unit influences the realization of the above goals of FMCS and within the organization as a whole, as well as any single organizational units (sectors, departments, etc.).

Each of the individual components listed is separately presented and elaborated in the text below.

2.1 Control environment

The control environment is where the financial control process is carried out which penetrates all other components, providing the structure and discipline for its functioning. This component ensures the formation of an awareness of the positive attitude of management of all employees towards the practice of internal financial control, which makes it part of the organizational culture.

The control environment consists of the following elements:

- Personal and professional integrity and ethical values of management and all employees of the organization,
- Employee commitment and striving towards competencies,
- Managerial style and business philosophy of managers,
- Organizational structure,
- Management of human resources.

Ethical values and integrity are key elements that contribute to a good control environment. Within the financial management and control system, standards have been established that form the framework for employee behavior. Employees should be guided by ethical values when making all decisions, as well as when handling personal and professional integrity in adhering to ethical values, while management has the responsibility to establish and convey the ethical values of the organization and to take action to become part of the organizational culture of the organization.

Employees should be familiar with the general rules governing the ethical conduct of public sector employees, especially when it comes to avoiding conflicts of interest, preventing fraud and reporting suspected corruption, double-dealing and other illegal activities. The head of the organization is obliged to initiate the adoption of internal procedures, which every new employee with the signing of the employment contract receives as a legal act (e.g. the code of conduct, Law on Civil Servants and Employees, provisions of the employment contract, etc.). Appropriate training should also be provided to ensure that employees are fully aware of these rules and codes of conduct. Public sector organizations in specific areas e.g. the police, tax administration, customs administration and the like should have specific codes of conduct and special training for their employees.

The mission is the reason for the existence of the organization. It provides a sense of direction and purpose to all employees of the organization, regardless of their position, and provides guidance for making important decisions. During change, the mission ensures cohesion in the organization as well as helping to maintain its true course. The mission of the organization should be a statement, approved by management and/or management. Management should present to employees the mission of the organization and explain how their jobs contribute to its achievement. The mission statement will be most effective if all employees realize that they have a personal stake in it.

The organizational structure is the framework within which the organization's plans are implemented. It should define the functional sub-units of the organization as well as their interrelationships. The

organizational scheme should be made known to all employees in order to understand the functioning of the organization as a whole, the relationships between its various parts, and where their units fit within the organization. Management should periodically review the organizational chart to ensure that it accurately reflects the organization's structure. The organization should have an internal organizational chart with clearly defined jobs. Each job should have a job description detailing key tasks, responsibilities and necessary qualifications and experience. The organizational chart is updated regularly to reflect changes in regulation and goals.

Workplaces at particular risk (e.g. exposure to conflict of interest, access to cash and information, special powers) should be identified and appropriate controls should be implemented, such as segregation of duties, introduction of double-signature procedures, temporary staff rotation, restrictions mandates, immediate oversight, etc.

2.2 Risk management

Risk management is a component of internal financial control that is directly linked to the set goals of the organization. The concept of financial control assumes that there is a need for assertion of uninterrupted assurance that the organization will achieve its objectives. Their full realization is, by definition, unrealistic, given the risks the organization faces.

In order to mitigate the risks, it is necessary to manage them, which involves the identification, assessment and control of potential events and situations (risks), which can have a negative effect on the realization of the goals of the public funds beneficiaries, with the task of providing a reasonable assurance that the objectives will be achieved.

A risk should be assessed and managed throughout the organization to identify, evaluate and monitor events that could jeopardize the achievement of the organization's goals. For each identified risk, management should decide whether to accept it, reduce it to an acceptable level, or take measures to avoid it.

Risk identification is carried out in relation to the goals set for all significant business processes and is realized during the process of planning the annual budget of the organization. All risks should be defined together with measures to control them.

The risks may be general to the public sector and / or specific to a particular public sector organization. Examples of key risks that can affect a public sector organization are the following:

- unreliable inventory of assets,
- fraud and corruption,
- (non)compliance with laws and regulations,
- false and incorrect reporting,
- changing the political, economic, legal and social environment,
- adequacy of key financial and management information,
- inadequate protection of property and information,
- unrecorded liabilities,
- unauthorized access to IT systems,
- inadequate debt management,
- physical destruction,
- loss of reputation,
- etc.

This list can and should be constantly updated. The organization should focus on setting priorities and managing key risks in order to achieve its goals. Risks should not be seen as negative phenomena per se, as this could stifle initiative and overlook opportunities for potential improvements.

After identifying the risks, the impact assessment of such risks is conducted in relation to the likelihood of their occurrence and the possible negative impact on the achievement of the goals of the organization. This includes consideration of cost-effective action, which is assessed in relation to the risk ranking, the likelihood of their occurrence and impact. The proposed action to be taken is then recorded/mapped against the specific risk, together with a deadline for taking appropriate action against the emergency and the person designated as responsible for risk management.

The estimated risks are entered in the organization's risk register, which contains the business objectives, a description of the identified risks, the classification, the likelihood of occurrence of the risk and the potential impact, the envisaged risk control measures and the names of the persons responsible for their implementation. The risk register is regularly assessed, as the risks for an organization rarely remain static and are constantly changing

2.3 Control of activities

The control of activities involves the definition of written policies and procedures and their timing, in order to provide a reasonable belief that the risk of attaining the goals are acceptable. The procedures and policies that define the activity of control of activities are numerous and they are formulated for each organization separately. With control activities, like with others, the managers constantly compare their effects to the costs. As has been noted many times before, the final aim is not to achieve a complete elimination of risk, which would, by definition, entail considerable costs, but to achieve a reasonable certainty and the achievement of the set goals.

The control environment reflects the commitment and attitude with respect to the implementation and maintenance of effective control, influences the design and implementation of control policies and procedures, and determines how effective control is in reducing risk and achieving goals. To be effective and efficient, control should be as follows:

- Timely - allowing problems to be detected early enough to limit cost exposure;
- Economical - providing a "reasonable" assurance that the planned results will be achieved with minimal cost with the least number of side effects;
- Responsible - allowing individuals to show responsibility for the task assigned;
- In the right place - located in the places where they will produce the greatest results;
- Flexible - to be defined so that changes in procedures can be accepted without significant alterations;
- Cause-oriented - to enable not only the problem to be identified but also its causes;
- Responsible - to have the correct effect on troubleshooting.

Depending on the moment, manner and purpose with which it changes, the following basic categories of controls differ:

- **Preventive controls** - the goal of this type of control is to prevent the occurrence of inefficiencies, omissions, errors or weaknesses. They cannot guarantee that a controlled event will not occur, but they can significantly reduce the possibility of it occurring. Examples of preventive control measures include: separation of duties, existence of authorization and approval procedures, control of access to property and information, etc.
- **Detective controls** - the goal is to identify and correct errors, defects or irregularities. They cannot prevent adverse events since they act after the event has taken place or after the outcome has already occurred, but they should reduce the risk of adverse effects as they allow additional measures to be taken. Detective controls are most effective when they form part of the feedback monitoring their results and are used to improve procedures or preventive controls. Examples of these controls include: post-payment checks, inventory verification and reconciliation with bank statements, etc.
- **Directive controls** - their goal is to cause or encourage the activities and events necessary to achieve the goals. Examples include: clear policy definition, goal setting and appropriate staff selection and training.
- **Corrective controls** - the goal of these controls is to correct errors when they are identified. Examples are contingency planning or disaster recovery planning. In practice, these types of controls cannot be clearly separated from one another, so one control can function to cover two or more functions.

2.4 Information and communication

Important information in an organization should be identified, processed and communicated in a timely manner that enables employees to appropriately carry out internal control responsibilities and to transmit the acquired information (to communicate) to individuals on positions as defined in the procedures. The prerequisite for obtaining reliable and relevant information is timely collection, processing and proper

classification of events. Therefore, all transactions and significant events within the internal control system should be fully documented. Key results of the functioning of information systems are the reports which contain operative, financial and non-financial information which enable the functioning of an organization, including carrying out internal financial control.

Information systems create reports that contain information related to business, finance, and that enable the business to be managed and controlled. They deal not only with information collected within the organization, but also with information about external events, activities and conditions that are necessary for informed business decision making and external reporting.

Effective communication must be established so that it flows efficiently from the bottom up, but also from the top down, and throughout the entire organization. All employees must receive clear messages from top-level management that accountability for controls must be taken seriously. They need to understand their role in the internal control system and how their individual activities affect the work of others. They must have a way to pass on significant information to superiors. There must also be effective communication with external partners such as clients, suppliers and regulators.

2.5 Monitoring and evaluations

Once a system of internal financial control is in place, it is necessary to continuously monitor and evaluate the adequacy of its functioning. This part of the FMC is implemented through: (i) regular managerial supervisors and/or (ii) periodical, especially initiated evaluations.

The purpose of monitoring is to determine whether internal controls have been adequately established and effectively implemented. Internal control is adequately established and properly implemented if all five elements of internal control (control environment, risk assessment, control activities, information and communications, and monitoring) exist and are operational.

Monitoring can take place through a number of different activities. Some of the most commonly used are the following:

- Regular review of the risk register in relation to changes in goals, the internal and external environment - the internal act on establishing and maintaining the risk register defines its obligation to be subject to regular monitoring by the head of the organization. Given that the risk register reflects a systematic approach to risk management, any changes to the internal or external environment and objectives may provide a reason to take appropriate measures to address the risk changes.
- Provision of written or oral reports - an internal information and communication system should provide the organization's manager with regular and current written or oral information related to the achievement of goals that will allow for timely response and corrective action.
- Self-assessment questionnaires - the FMC system implies that self-evaluation organizations perform self-evaluation once a year based on a questionnaire prepared by a higher level of government. The problem is that they are implemented once a year and over time, controls can weaken. Also, the result may not reflect the correct circumstances because executives may not be objective in their replies.
- Interviews with employees - Interviews with employees can reveal weaknesses in internal control and provide suggestions for possible improvements. It cannot be stressed enough how important the item of employee involvement in internal control is.
- Other types of monitoring related to on-going and on-the-spot checks through comparisons of different databases, setting benchmarks in the form of performance comparisons with other organizations, etc.

A specific form of monitoring is provided to the head of the organization by an internal auditor who, in relation to his/her integrity and use of professional guidance, evaluates according to his/her own risk analysis the effectiveness of the internal control system, as well as identifying weaknesses and making recommendations for improvement.

3 SYNERGISTIC ACTION OF FMC SYSTEM COMPONENTS

The five components of the FMC system (control environment, risk assessment, control activities, information and communication, and monitoring) are closely interconnected and as such represent an integrated whole that synergistically affect the functioning of an organization overall. The FMC system is intertwined with the operational activities of an organization in the public sector and it is most effective when controls are embedded in its day-to-day functioning and when it becomes an integral, organic part that directly determines the behavior of each individual in the organization and thus ensures the organization's functioning in the organization as a whole in accordance with the principles of efficiency, effectiveness and ethical consistency. The synergistic action of the five components of the FMC system and their immediate relationship with the activities taking place within the observed organization and the role in achieving the key objectives is shown in the matrix in Figure 1.

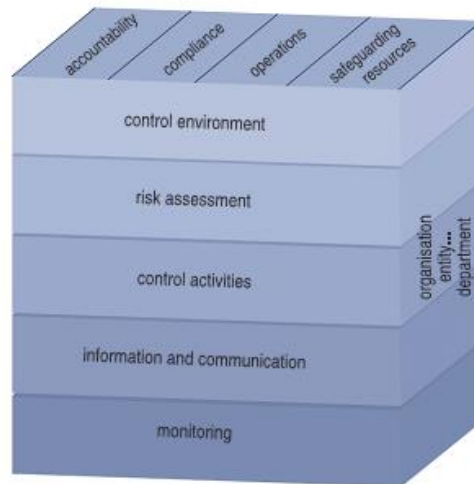


Fig. 1. Correlation between FMC components, goals and organizational units [4]

The matrix illustrates the direct link between the five components and the four key goals of public sector organizations (ethics and level of performance, legality in work, resource conservation, accountability). All components are relevant to achieving each of these goals. An effective FMC system implies that all five components are always present in the achievement of each individual goal.

4 CONCLUSION

The Law on the Budgetary System of Financial Management and Control (FMC) introduced the system of public finances in Serbia. In this paragraph of the Law, the FMC stipulates: "...the system of policies, procedures and activities established and maintained regularly updated by the head of the organization, which ensures that the risk management assures that the goals of the organization will be achieved in a proper, economical, efficient and effective manner" [7].

The establishment of the FMC system has been determined as the obligation of the users of all public funds implemented by policies, procedures and activities with the task of providing a reasonable assurance that they will achieve their goals through the following:

- 1) business activities in accordance with regulations, internal acts and contracts;
- 2) the realities of the integrity of financial and business reports;
- 3) economical, efficient and effective use of funds;
- 4) protection of data and media (information). [7]

The successful establishment and subsequent functioning of the FMC system in the public sector in Serbia will, by definition, be a long-term process in which actors, managers of organizations, as well as all employees, should make a full contribution. Some of the most important prerequisites to be fulfilled are the following:

- Building awareness of the importance of the FMC - in order for the FMC system to be a truly effective system, and not just a form without the right content, it is necessary for the awareness of its importance to be present and very clearly articulated at all levels of the public sector, from the

- National Assembly, the government, to branches of the republic and local authorities, as well as entities that are in the system of using public resources and performing public functions;
- Training of actors - all actors, from the representatives of the so-called top management, through middle and lower level management, and each individual in public sector organizations, must be familiar with the role and importance of their roles in the FMC system,
 - Modernization of the public sector - financial management of the control of the organization as a whole, their employees, resources and processes. It is a constituent part of an organization, and not an attribute attached to an organization.
 - Supporting the top leadership - the role of all participants in the process is important, but the role of the people at the top, as those who are most responsible for the functioning of the organization as a whole, and for each employee in the organization, should be singled out.
 - Strategic planning process and success measuring (performance) of its implementation - the FMC system is a formal system that relies on the official mission and goals of the organization; it is therefore essential that public sector organizations define these parameters and then incorporate them into the FMC system.
 - The formal establishment of a FMC system - a way of functioning of the public sector implies that systems such as the FMC are based on formal documents (rulebooks, plans, guidelines, etc.); therefore, it is important for organizations to develop and adopt a set of these documents.

Considering the complexity of all these preconditions for the efficient and effective functioning of the FMC, it is clear that establishing it in its full capacity is a lengthy process that requires perseverance, commitment and willingness to allocate adequate human and material resources for this purpose.

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FINANCIAL CRISIS CYCLE AND ITS IMPACT ON THE MARKET MODEL

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ABSTRACT

The article substantiates the role of the stock market as a necessary and significant element of a country's economy, which might be, also massively influenced by financial crises. The goal of the research is to study the influence of the financial crisis cycles on the stock market and its financial instruments. The logical presentation claimed its priority rather than the crises advance description, with respect to their unity. Theoretical aspects of financial crises are considered as well, including the crises classification in the context of the budget crisis, banking, monetary circulation, currency and stock crisis. In terms of the classical four-phase economic cycle model, the scientific and practical expediency of crisis research is specifically emphasized. In addition, the crucial role of scientific and technical innovations for the cycle changes is established. The stock crisis stages and their genesis are defined as well. The financial crisis impact on the Russian economy is carefully examined as well as the vulnerability factors are brought out. On top of that, the long-term socio-economic development scenarios are outlined and presented to be chosen from. Additionally, effective investment portfolio recommendations and its valid use in times of crisis are given; this in its turn will be able to reduce risks and neutralize the crisis negative consequences.

Keywords: economic cycle, crisis, supercycle, K- cycle, stock market bubble, development scenarios, financial instrument.

1 INTRODUCTION AND LITERATURE REVIEW

In modern economic conditions, the stock market development is crucial to its country. Due to economic crises, the stock market's stable operation must be ensured, as well as the ability to recognize the market signals and react to them in a timely manner.

Financial globalization finds its expression in the transformation of local financial resources into international, a general increase in cross-border investment flows and, accordingly, the expansion of financial markets [1].

The relevance of the research topic is due, on the one hand, to the increasing importance of the stock market and the increasing influence of financial crises on it, and, on the other hand, to the significant role of the stock market in modeling and disseminating shock phenomena in the financial market, which ultimately contributes to the emergence of a crisis. In this regard, early diagnosis of a crisis in the stock market in order to reduce the negative impact on the whole of the economic space is an urgent task.

The aim of the research is to study the influence of the financial crisis cycles on the stock market and its financial instruments.

The tasks to be solved according to the goal are as follows:

1. To research the base of crises and their main components;
2. To research the patterns of financial crises;
3. To analyze the causes of crises;
4. To advise on an effective investment decisions in times of crisis.

The logical presentation claimed its priority rather than the crises advance description, with respect to their unity. At the same time, there is a continuity of economic categories, structural principles, traditions in the study of cyclical changes, which favor the development of crises.

In any economic system throughout its existence, there are cyclical changes that might cause crises. The financial crisis is a deep frustration in the state financial and monetary system, which manifests itself in the sharp discrepancy between budget revenues and expenses, instability and a fall in the exchange rate of the national currency, mutual non-payments of economic entities, inadequate money supply in circulation with the requirements of the law of monetary circulation, inflation [2].

The financial crisis can take the form of a banking, budget, currency, stock (exchange) crisis, or at the same time combine several (or all) forms [3]. It is also advisable to highlight the crisis of monetary circulation.

The typical characteristic of banking and credit crises is a sharp loan interest rate increase, the worsening of the banking system, massive loan defaults, as well as a decrease in banks liquidity, capital scarcity and, consequently, massive bankruptcies.

The budget crisis consists of the federal budget deficit, inadequate tax collection, and public debt growth. The currency crisis is a crisis that embraces the external financial sphere. The typical features of this crisis are the state balance aggravation, massive capital migration, currency reserves reduction and uncontrolled depreciation of national currency, all these lead to devaluation.

Stock crisis is about a sharp decline in securities rates, predominantly shares. The crisis entails a decrease in the stock market operations; securities issue reduction/termination, as well as companies operating in the stock market going bankrupt.

The crisis of any financial sector rarely remains isolated and most often spreads to foreign markets. This is especially typical for stock crises, since its participants exchange information continuously and tend to follow the same trade trends [4].

The monetary circulation crisis is all about cash payments violation throughout the economy, also the monetary surrogate development and cash shortage.

Financial crises can be caused by much different factors, which are studied in detail in the scientific literature. The development of economic processes is cyclical: growth is necessarily accompanied by a recession, followed by recovery and new growth. The theory by A. Burns and W. Mitchell, who formed the basis of a major scientific project carried out by the National Bureau of Economic Research (NBER) for several decades in the USA, are devoted to identifying general patterns in economic cycles [5]. In the economic literature there are:

- Kitchin cycles, or stock cycles (2-4 g);
- business cycles (7-12 years);
- Kuznets cycles, or "building cycles" (20-25 years);
- long waves (large cycles) Kondratiev (47-60 years) - (doubled Zhuglar cycle);
- Modelsky cycles;
- 300-year cycles of C. Joel and V. Scherer;
- civilization cycles.

Moreover, the theory of "cyclicity bubbles" by E. Jensen has now become popular, according to which the cycles of "bubbles" replaced the business cycles. According to the Institute for the Study of Economic Cycles (ECRI), USA [6], there are 75 types of cycles of general business activity lasting from 16 to 60 years and 23 types of wave cycles from 35 to 108 years. In total, 1,380 varieties of economic cycles with a duration of 20 hours to 700 years were identified.

However, the further determination of the timing of the phase change of a large cycle has become the subject of controversy. Researchers of this problem can be divided into two main groups, applying different approaches to periodization and identifying the boundaries of cycles. Accordingly, these groups of researchers have identified so far either five or four cycles. The first group of scientists (which in its analysis uses indicators of the real economy (production indicators, GDP dynamics, employment dynamics, investment activity, various structural imbalances) believes that the bearish wave of the third cycle ended with the outbreak of World War II. Supporters of this point of view also that cycles are condensed and compressed, which is associated with accelerated scientific and technological progress and the more frequent emergence of new types of economic activity.

Kondratiev N. D. was the founder of the economic cycles theory, having analyzed the macroeconomic indicators Western European countries and the USA from 1790 to 1920, and also having constructed and leveled the charts, he found the synchronous movement of these indicators in the long-term period [7].

It should be noted that scientific and technological innovations play a decisive role in cycles changing. The first wave is inventions in textile industry and cast iron production; the second wave is the railways construction and sea transport development; the third wave – the electrical engineering inventions and the massive introduction of electricity, radio and telephone.

Some cycles tend to overlap. Longer fluctuations always include several short cycles. For instance, the cycles are compressed in the second half of the 20th century up to 40 years, whereas in the 19th century their duration was on average 50-55 years. It is all due to the intensive scientific and technological progress. Kondratiev's cycles and typical scientific discoveries for each stage are presented in table 1.

Table 1. Kondratiev's cycles chronological arrangement and scientific inventions

Cycle number	Cycle start	Max growth and discovery point that caused development	Minimum production point, cycle end
Cycle 1 (≈64 years)	1779	1814 (textiles, cast iron)	1841-1843
Cycle 2 (≈52 years)	1844-1851	1870-75 railways, sea transport)	1890-1896
Cycle 3 (≈40 years)	1896	1914-1920 (electricity, radio, telephone)	1929-1933
Cycle 4 (≈42 years)	1933	1960-1966 (synthetics, plastic, computer)	1973-1975 likely, before 1981
Cycle 5 (≈42 years)	1975	Mid 1990s (micro processors, genetic engineering, biotechnologies)	before (forecast) 2010-2017
Cycle 6, forecast (≈43 years)	2017-2025	2040 (nanotechnology, solar power engineering and nuclear power)	2050-2060

Thus, the crisis is the first stage of the cycle, which is characterized by a sharp decline of several indicators. These negative events contribute to the onset of the next stages, which are to revive and grow to a level higher than the pre-crisis level. Consequently, the crisis is an objective reality that carries the onset of negative consequences, which should be surmounted. And then comes the time of further development and growth.

To wide extent, the stock crisis is understood as a 'shock' in the securities market (i.e. large-scale falls in securities prices, breaks in market liquidity, a sharp increase in interest rates), all these lead to a further expansion of crisis phenomena into a full-scale financial crisis [8], in restricted sense, it is a special phase of the cycle, meaning that the market is being 'overheated' and there is recapitalization with a pronounced bubble effect.

A bubble is a market trend, in which the cost a security or merchandise rises to a level that does not have an objective market basis [9].

The bubble, in the context of the stock market, is the continuous speculative growth in asset prices, leading to a deviation of its current price for a long time, followed by a significant sharp drop. There are several stages of a bubble formation:

- The first stage is the bubble formation.
- The second stage is the rational bubble appearance.
- The third stage is the speculative bubble emergence.
- The fourth stage is the critical stage transition.
- The fifth stage is the crisis.

The exchange continues to play an important role in the accumulation and mobilization of money capital [10], in this connection it is expedient to identify an exchange bubble. The exchange bubble is usually a bubble developing in the capital market, and, unfortunately, it is almost impossible to distinguish a growing bubble from an ordinary upward trend. The stock market analysis shows that in most cases bubbles precede crashes, but it should be noted that there is a possibility that the bubble will not burst: in this case, the investors' expectations get reassessed and the asset price gradually decreases, it is now called bifurcation.

The first two global bubbles were in the intensive growth phase and lasted for exactly five and a half years. Rallies 1932-1937; 1953-1956; 1962-1966; 1982-1987 and 2003-2007 are not a bubble, but a restorative attempt after a protracted depression or a market collapse. Although after each recovery rally, followed at least 30 per cent of market correction with regard to inflation. Moreover, after each of these local rallies it took at least 5 years to recover.

The bubble burst had long-term market and macroeconomic consequences. The peak of 1929 was overcome only in 1959 (after 30 years), and the peak of 2000 was surmounted in 12 years; though there were two 50 per cent collapses.

The current rally is one of the most powerful in the market history and is fully classified as the third global bubble. The duration records have already been set for recoilless growth and the lowest volatility.

Nowadays, analysts are expecting a new bubble formation; it is connected with the social networks development such as Facebook and Twitter. The audience is just enormous and it attracts investors. If this bubble bursts, it is likely to be ten times more destructive.

It is difficult to imagine what exactly will be the actual cause of the collapse, but according to the 84-year financial cycle, the year 2018 will have to be at the same stage as the year 1929.

In the future, one should expect the growth of financial market efficiency, i.e. the transition to a more mature state up to new industrial markets standard. [11]

2 RESULTS AND DISCUSSION

The further determination of a cycle phase change has become the subject of controversy. Researchers of this problem could be divided into two main groups, applying different approaches to periodization and identifying the boundaries of cycles. Accordingly, these groups of researchers have identified so far either five or four cycles. The first group of scientists (who uses indicators of the real economy - production indicators, GDP dynamics, employment dynamics, investment activity, various structural imbalances) believes that the bearish wave of the third cycle ended with the outbreak of World War II. Supporters of this point of view also that cycles are condensed and compressed. This is due to the acceleration of scientific and technological progress and the more frequent emergence of new types of economic activity. According to experts position we have a developing downward wave of the cycle, which will last until approximately 2012–2025 (forecast). Following this logic, an upward wave should be expected from 2025 to 2035–2045.

The second group of researchers, who rely more on financial indicators in their methodology (dynamics of stock indices and dynamics of bond yields). According to this approach, the K-cycle consists of four distinct phases, or distinct sharp changes in moods, the tone of which is determined by the actions of people involved in the economy. The K-cycle goes through four different phases:

- Spring (profitable inflation, inflationary growth, expansion);
- Summer (stagflation, recession);
- Autumn (deflationary growth, profitable deflation, plateau);
- Winter (depression).

According to this approach, the world economy entered a bearish wave of the fifth (according to another version - fourth) K-cycle, a natural question arises - will this wave stretch until 2025. or be limited to 2012.-2015.? In order to find the answer to this question, it seems necessary to analyze the hierarchy or subordination of cycles of different durations. About once every half a century, several economic cycles of different durations enter the downward phase at the same time and a resonance effect occurs. In 2007-2008 it was precisely the resonance effect that arose when in the cycles of Kitchin, Zhuglar, Kuznets and Kondratyev the vertices of the corresponding cycles were passed almost simultaneously, and the phase of decline or recession began. It seems that a deeper study of the relationship between these types of economic cycles is needed. The SMECT3 model and Bronson's BAAC supercycle fill the missing link, and also demonstrate the close relationship and conditionality of the stock market dynamics with long cycles in the economy. The securities market is sensitive to any external and internal economic irritants. The dynamics of securities prices reflectively reflects the state of the sphere of production, the profitability of individual companies, and the state of the market for loan capital. Supercycle BAAC. About 40 years ago, R. Bronson, head of the research center (Bronson Capital Markets Research), developed the BAAC supercycle (Bronson Asset Allocation Cycle), demonstrating the presence of long waves in the stock industry. The logic of the relationship of K-waves and BAAC supercycles. A BAAC supercycle consists of two waves: an upward wave (or a BAAC supercycle of a bullish market period) and a downward wave (or a BAAC supercycle of a bearish market period). The BAAC supercycle has been established for approximately 16 years \pm 4 g. In turn, the K-cycle includes two BAAC supercycles. Thus, the waves of the BAAC supercycle are as follows related to the phases of the K-cycle: BAAC super cycle of the bullish period of the market (K-cycle spring); BAAC super cycle market bearish period (K-cycle Summer); BAAC super cycle bull market period (K-cycle Autumn); super market BAAC bear market period (K-cycle Winter).

The validity of the SMECT model is confirmed by historical data, in addition, it is obvious that the relationship between the cycles has become stronger.

So, from 1896 to the present, 28 cycles of Kitchin's business activity (economic cycles) were recorded, including 21 recessions registered by NBER [6], as well as 33 recessions in the stock market (Kitchin's stock cycle), including stock market falls, which were not accompanied by recessions. The relationship of the business cycle and the stock cycle. There is an obvious relationship between the business cycle and the short-term stock cycle (Fig. 6). The close interweaving of cyclicity with crises is confirmed by examples from the US economy. A comparison of business activity cycles (economic cycles), stock cycles and K-cycles allows us to speak about the pronounced cyclical nature of the US economy. From 1796 to 2010, 73 stock cycles were identified, and from 1854 to 2010, the National Bureau of Economic Research registered 33 recessions, with each economic downturn preceded by a downturn in the stock market. Stock crash occurred on average in about 6 months. before the economic downturn, and the collapse was preceded by a period of economic recovery.

The current period of the supercycle (bearish period of the bear market of the supercycle) will show a further fall in the bearish wave and will end approximately in 2014. Moreover, it will consist of 4 Kitchen cycles (± 1). The decline in Kitchin's cycle manifested itself in a sharp drop in global demand for most goods (according to the WTO in 2009, world trade fell by 12%). The decline in the Juglar cycle was manifested in a sharp decrease in the utilization of production capacities, an increase in unemployment, and a decrease in the rate of renewal of fixed capital. The decline in the Kuznets cycle was manifested by a mortgage crisis and a sharp reduction in construction volumes, as well as falling housing prices. The decline of the K-cycle was manifested in the fact that in the early 2000s. the potential for the development of the fifth technological structure was completely exhausted⁴, and the world economy came to the necessity of forming a new sixth technological structure without which its further growth would simply be impossible. All these cycles have different durations and reach their bottom at different intervals, therefore, after the initial resonant fall, they begin to work in antiphase. High unemployment, low capacity utilization, lack of adequate lending to the real sector of the economies of developed countries and a drop in investment in the renewal of fixed capital allow us to conclude that the global economy will continue to fall within the framework of the Zhuglar cycle. In the Kuznets cycle, the world economy will not reach its lowest point of decline not earlier than 2018, while in the Zhuglar cycle a new phase of the crisis will already begin. In the K-cycle, the bearish wave will end in 2018-1920. Starting in 2015, due to the rise in the Kitchin and Zhuglar cycles, but against the background of the ongoing crisis, the revival of the world economy will begin in the cycles of Kuznets and Kondratiev.

The Russian economy, like many other economies, has experienced numerous war, revolution, new economic policy and planned economy crises. However, the political crisis prevailed over the stock crisis, since the stock exchange was not a significant part of the country's economy at that time.

There are a number of external and internal factors, there are three scenarios of socio-economic long-term development, and these are conservative, innovative and targeted (forced) scenarios. The first scenario is a conservative one, characterized by economic moderate long-term growth rates. It is based on the fuel-energy and raw materials sectors modernization in the Russian economy. At the same time, there is still a relative lag in the high- and medium-tech sectors. In the context of this scenario, the economy focuses more on imported technologies and knowledge. GDP growth rates are estimated at the level of 3.0 - 3.2 per cent in 2013-2030. The economy will increase by 1.7 times by the year 2030, the income will increase by 1.9 times, and the Russian share in the world GDP will decrease from 3.8 per cent in the year 2012 to 3.6 per cent in 2030. [12]

The second scenario is innovative. It is defined by investment trends in the economic growth. This scenario implies the creation of a modern transport infrastructure and a competitive sector of high-tech industries as well as the knowledge economy along with the energy and raw materials complex modernization. Innovative factors become the leading source of economic growth. The annual growth rate of the Russian economy is estimated at 4.0 - 4.2 per cent in 2013-2030, which will exceed the growth of the world economy and will increase Russia's share in the world GDP up to 4.3 per cent by the year 2030. [12]

The last scenario is a target or forced one. It is based on the previous scenario. This scenario is about the accelerated economic growth rate, the creation of a large non-primary export sector, which implies an increased private business accumulation rate and a significant inflow of foreign capital. The annual GDP rate is rising up to 5.0 - 5.4 per cent, which raises the Russian economy share in the world GDP up to 5.3 per cent by the year 2030.

All three scenarios imply price dynamics stabilization for oil and other raw materials. At the same time, there is always the risk of price dynamics and it might get lower for energy resources than initially intended. However, it is worth considering the fact that any operations and calculations, including international ones, are developing in conditions of uncertainty and inability to give a 100 per cent guarantee of achieving a pre-determined result. [13]

The main differences among scenarios stem from the internal factors such as the business behavior and state policy. Seeing this, the conservative alternative shows the dominance of current interests and does not imply a large-scale transition to a new development model.

Innovative and forced scenarios describe a more complex model of economy, which seems to be trickier to implement by the state and businesses. First, these models are associated with a major investment in high-tech projects and human capital, though the payback is well above the medium-term limits. The main barriers are the deficit of competitive staff at both the corporate and public administration levels, as well as the coordination ineffectiveness mechanisms.

Despite the second and third scenarios being complex, they are able to change the country's economic development course drastically; they will contribute to strengthening the value of the stock market in Russia.

3 CONCLUSION

The cyclical nature of financial crises has a significant impact on the stock market, which gives rise to a need of studying the crisis nature, understanding the stock bubbles onset, planning development scenarios and effective investment portfolio formation.

Of course, the ability to predict a crisis would undoubtedly help investors manage their capital more efficiently.

The assertion that the crisis is connected with economic indicators is logically and hardly disputed by anyone. At the same time, you can score as many as a hundred, and the market never repeats, which makes forecasts for the indicators extremely ambiguous. Another problem is that a number of indicators are triggered already during the crisis, i.e. does not have predictive ability.

History shows that the inverted curve is a reliable indicator of impending slowdown in the economy. Inversion is a sure sign of a recession. Faithful, but not the only one. There is a number of important forward-looking indicators that you should follow to be one step ahead and not to miss the right moment to make important decisions about your investments.

In addition to the treasuries curve, there are a number of other important macro indicators that, in our opinion, could give signals of an approaching decline:

- The PMI business activity index is the most important leading macroeconomic indicator that characterizes the state of the economy in the manufacturing sector and the service sector. PMI is one of the most popular indicators at the moment, although a retrospective analysis shows that its signals are not so obvious now.
- The Leading Economic Index, which is a composition of 10 different forecast indicators, is more specific regarding the US economy. The US government's Department of Commerce uses 10 business activity indicators that track various segments of the economy in an attempt to predict the direction of the US economy in the near future. I analyzed this indicator over a 50-year period: the history of the index shows that if the indicator was in the negative zone year by year, then this absolutely always became a signal of a future recession, as a rule, a year before its onset.
- Consumer confidence index (CCI) is an economic indicator based on consumer surveys. It shows the general expectations of the population about the situation in the economy. It is believed that the better the situation in the economy, the higher the consumer confidence index. Conversely, if things go wrong in the economy, consumers tend to save more and spend less.

This is the set of indicators which necessary to monitor regularly. It should be noted that recession indicators are not a panacea for all illness. Sometimes they give false signals, sometimes they are too far ahead of events. Indicators should be evaluated in the complex.

If a whole series of tools indicate a high probability of a recession, then it is necessary to guard against and revise the investment system, while increasing protective assets.

a. Acknowledgment

Research implemented with the support of RFBR by grant No. 19-010-00201\19

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CONSOLIDATION OF THE BANKING SECTOR - A CHEAP BUYING STRATEGY CASE

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ABSTRACT

On the Serbian market, we can find, ending 2018. year, 27 banks. By itself, this information can't mean much, but if we consider that Top 5 banks, have over 50% of whole market, in various criteria, we can pump the question – do we really need 27 banks on this market? According to official data, it is a matter of days that those Top 5 banks, will not be alone, on the north part of the rang list. On the next pages, focus was to present an acquisition, that was made, and to learn something from it, especially risk side and risk awareness, for both sides point of view. In the following article, we outlined an example, a good, and strategically designed acquisition, in which JP Morgan chase, bought Bear Stearns for a symbolic \$ 2 per share after the world economics crises.

Keywords: consolidation, banking, risks, acquisition, JP Morgan Chase, Bear Stearns

1 INTRODUCTION

For a long time, experts pointed out that for a small market, the size of Serbian is over 30 banks and too much [1]. Consolidation is announced year after year so that in the past two years it really happened. Consolidation and digitization are processes that marked the past decade of the banking sector's operations in the world. Digitization is one of the final key consolidation processes that began ten years ago in the wake of the global economic crisis. Billions of dollars spent on consolidation. According to Gartner's research from 2019, the banking sector will digitize the banking sector this year to spend as much as 519 billion dollars globally [2]. One of the world's largest banks, UBS, announced that it will spend 3.2 billion Swiss francs (of which 800 million on research and development). The world faces a reinterpretation of the term "bank", which has so far been experienced only as a counter in the branch [3]. The trend is to change the complete traditional model of the organization, which was based on investing in equipping and expanding branch networks and staff. Some banks in Europe, for example, now sell 20 percent of cash loans through digital channels [4]. In Germany, more and more FinTech companies are only dealing with the collection of deposits, which banks are greeting because in the end, the most beneficial are the clients. In this paper, we will explore the current situation in Serbia - how the Serbian banking sector is consolidating, with a view of the consolidation of the American bank Bear Stearns by JP Morgan Chase.

2 CURRENT SITUATION OF THE SERBIAN BANKING SECTOR

The Serbian banking sector, at the end of 2018, covers a total of 27 banks with over 23,000 employees. In Serbian banking system, we can recognize 2 impacts on total economy: through plasmas on the domestic market, and through consumption, due to above average salaries. This does not end with turbulence in the banking sector, which ended with 27 banks last year, and until the end of the year, eight years there were as many as 35 [5].

Table 1. Review of total net assets in 2018. within the banking sector Republic Serbia

<i>Banks in Serbia (ranked by Net Asset criteria)</i>	<i>Net Assets in .000 RSD</i>	<i>Net Assets in .000 EUR</i>	<i>Share in Net Assets</i>	<i>No.of Employees</i>	<i>Share in No. Of Empl.</i>	<i>Net Asset / Empl. EUR</i>
Banca Intesa a.d.	571,075,179	4,839,620	15.1%	3,055	13.2%	1,584,164
Unicredit Bank Srbija a.d.	437,400,289	3,706,782	11.6%	1,272	5.5%	2,914,137

Komercijalna banka a.d.	401,165,980	3,399,712	10.6%	2,801	12.1%	1,213,749
Societe Generale banka Srbija a.d.	316,087,334	2,678,706	8.4%	1,368	5.9%	1,958,119
Raiffeisen Banka a.d.	291,924,334	2,473,935	7.7%	1,559	6.8%	1,586,873
TOP 5	2,017,653,116	17,098,755	53.46%	10,055	43.6%	1,700,523
TOTAL	3,774,055,498	31,983,521	100.00%	23,067	100.0%	1,386,549

Given that the Serbian market is very small for such a large number of banks (addition to that we have the fact that some of them do not have a positive business for years), it is inevitable to have process of merging, in order to increase profitability, and to stop many years of business with a loss (for some of the banks) [6]. In mid-2017, Piraeus Bank was bought by the Direktna bank. Somehow at the same time, the acquisition of greek Alpha Bank took place by AIK Bank. In the end, before the end of last year, the sale of Vojvodjanska bank, which was owned by the National Bank of the Hungarian OTP Bank, was announced. Previously, all three banks cobbled with profitability and problem loans. During 2016, the property was changed by the former Hipo Alpe Adria Bank, which had been tracking various affairs at one time, and bought the American Investment Fund Advent in partnership with the EBRD and immediately changed its name to Addiko Bank. One year ago, the first Turkish bank entered the market when Halk Bank bought Cacanska Bank. Many are probably no longer remembering that more than 80 banks operated in Serbia two decades ago, almost all of them with domestic capital. Already in 2004 their number dropped to 47, and this trend continued, although in the meantime new "players", such as Bank of China or Mira Bank from the United Arab Emirates, arrived in the Serbian market. It is interesting that the Greek market was abandoned by all dreek banks, except one Eurobanka.

Table 2. Review of total revenue and profit 2018. within the banking sector Republic Serbia

Banks in Serbia	Rev. from Interest in .000 Eur	Total Net Rev in .000 Eur	Share in Net Revenue	Profit in .000 Eur	Share in Profit
Banca Intesa a.d.	198,060	229,130	15.4%	106,814	17.9%
Unicredit Bank Srbija a.d	137,382	153,703	10.3%	78,150	13.1%
Komercijalna banka a.d	116,482	161,048	10.8%	69,027	11.6%
Societe Generale banka Srbija a.d	122,598	136,549	9.2%	69,117	11.6%
Raiffeisen Banka a.d	84,507	139,798	9.4%	56,171	9.4%
TOP 5	659,029	820,227	55.03%	379,280	63.53%
TOTAL	1,239,155	1,490,433	100.00%	597,018	100.00%

As can be seen, the dominance of the first five banks on the domestic market is very significant, which together account for 53.46% of net assets, with 43.6% of the total number of employees, while, apart from the Komercijalna Banka, they exceed the average ratio of net assets. Consequently, these five banks are very positive P & L wise, - 55,03% of the total net income is created by these 5 banks, and when we look at profit, these banks participate with 63,53% of the total profit in the banking sector of the Republic of Serbia. On the end of 2018., only 2 banks are makerd loss in total amount of EUR 7.834k (Mira bank and Telenor bank). The efficiency of the top 5 banks at an average level is significantly higher than the entire banking sector (by 26% per net income, or 46% in terms of profitability), with the exception of Komercijalna Banka, which, due to obviously evident poorer business optimization, in relation on the competition, is below the average of the whole banking sector of the Republic of Serbia [7]. In this constellation, we have only 5 banks, that are dominate in Serbia, by all the criteria that were analysed: net asset level, total revenue and net profit. Domination in the banking sector is not unknown, and is characteristic of all economies of the world. In the case of Serbia, the question arises in which direction the banking sector can be tackled. The possible scenarios are as follows:

- That some of the bigger banks buy a smaller bank - this scenario happened in the previous period and example is the purchase of KBC Bank by Soge Bank and Telenor Bank,
- That some of the smaller banks buy a bigger bank - the current acquisition of Vojvodjanska bank and Soge Bank by OTP bank - this scenario is most common in a situation where a local bank, has a very strong mather abroad,
- Establishing a new bank, domestic or foreign, which will start with the purchase of smaller banks in our market - an example is the establishing of the Direktna Bank that bought the Findomestik Bank, and after that also the Piraeus Bank.

In the following article, we outlined an example, a good, and strategically designed acquisition, in which JP Morgan chase, bought Bear Stearns for a symbolic \$ 2 per share [8]. This example and the rapid collapse of a banking giant will serve to draw conclusions that each bank's management in Serbia should study.

3 JP MORGAN CHASE AND BEAR STEARNS

Bear Stearns & CO. (Bear), the fifth largest U.S. investment bank as 2008 began, burned through nearly all its \$18 billion in cash reserves during the week of March 10, 2008 [9]. Bear survived until Friday, March 14 only because of that morning's announcement: N.Y. Fed, using JP Morgan Chase & Co (JPMC) as a bypass, would secure financing to the Bear for a period of up to 28 days. Late on Sunday afternoon, March 16, with significant government assistance, Bear's board accepted JPMC's offer to purchase Bear for \$2 per share. Bear sought employees who were what they termed "PSD"- poor, smart and desperate to be rich [10].

The five members of Bear's Executive Committee, the group that oversaw Bear's day-to-day management, had led the firm since 2001 and had worked together for decades. At the end of 2007, Cayne (Chairman and CEO James Cayne) owned 6.4 million shares, representing about 5% of the company, and collectively the Committee members controlled about 9% of Bear's shares. The size of the Committee's annual bonus pool was determined by performance measured against Bear's after-tax return on equity.

Bear had three main operating businesses: 1) Capital Markets, 2) Global Clearing Services, and 3) Wealth Management. The problem started in Capital Markets sector – related to the biggest source of income, Mortgages and mortgage – backed securities [11]. At fiscal year-end (November 30) 2007, Bear reported book equity of \$11,8 billion and assets of \$395 billion, of which \$138 billion were the securities it owned (at their then estimated fair value). The firm's market capitalization was \$11.6 billion.

Table 3. Bear, Stearns & Co., Income sheet Data, as amended, 2004-2007, and unaudited Q1 2008 (in m\$)

FY ending November 30	Q1 2008	2007	2006	2005	2004
<i>Revenues</i>	3,427	16,151	16,551	11,552	8,422
Capital markets	1,036	3,919	7,322	5,722	5,305
Fixed income	66	685	4,190	3,293	3,147
Interest Expense	1,948	10,206	7,324	4,141	1,609
Net Revenues	1,479	5,945	9,227	7,411	6,813
Total Non-Interest Expenses	1,326	5,752	6,080	5,204	4,791
Employee Compensation and Benefits	754	3,425	4,343	3,553	3,254
Professional fees	100	362	280	229	197
Other	472	1,965	1,457	1,422	1,340
Net Pretax Incom, of which	153	193	3,147	2,207	2,022
Capital Markets	171	-232	2,801	2,020	1,915
Global Clearin Services	86	566	465	472	350
Wealth Management	-42	-45	69	37	67
Other	-62	-96	-188	-322	-310
Net income	115	233	2,054	1,462	1,345
Basic earnings per share (\$)	0.89	1.68	15.79	11.42	10.88
Return on Average Common Equity	0.97%	1.80%	19.10%	16.50%	19.10%

The downfall can be easily recognize in 2007, when we consider only Income statement, but in the same time, in the same year, they were considered as "to big to fail", and decision was made to increase external support, trough payables and long term borrowings.

JP Morgan Chase was the product of multiple bank mergers. These mergers had combined Manufacturers Hanover, Chemical Bank, Chase Manhattan, J.P. Morgan & Co, Bank One, and many smaller institutions, and created a firm with operations spanning commercial and investment banking. At year end 2007, JPMC was valued \$146,9 billion, assets of \$1.6 trillion, operations in over 60 countries, and 180.000 employees.

JPMC's CEO Jamie Dimon required that the entire firm use the same financial report data, with properly reflect the economics of each business, in terms of revenues, direct costs, and shared and allocated expenses. It amazes me how often information at other firms is not the same the next level down. There's no secret CEO's report here. It's the same information that everyone else has.

The committee's annual bonuses were determined by evaluating a mixture of quantitative and qualitative factors, and the heads of businesses units were paid both on the performance of their line of business and on the company. Operating committee members were required to hold 75% of the shares from vested stock and exercised options until they left the firm. CEO committed to holding all of his 100% shares.

JPMC's balance sheet was 12.7 times leveraged, at the year end 2007, while Bear was 33.5 times, Citigroup 19.2 times, and Goldman Sachs was 26.2 times leveraged. [12] Dimon and his team focused on implementing a "fortress balance sheet" strategy, with liquidity and capital levels that exceeded not only regulatory requirements but also those maintained by major competitors. JPMC estimated that concept of "fortress balance sheet" approach cost 5% on its ROE when compared to competitors. [13]

In one interview, JPMC's CEO noted that, they mistake was assuming that home prices would go up for a decade without losses. When the prices stopped rising, they get losses in P&L.

By early 2008 financial services firms had announced billions of dollars' worth of write downs related to their exposure to subprime mortgages. In mid-January, total write-downs from the housing crisis surpassed \$100 billion, with some redacting tat another \$100 billion in write-downs was likely to be forthcoming. The turmoil also cost several top CEOs their jobs, including Citigroup's Charles Prince and Merrill Lynch's Stanley O'Neal. Even in first year of World economy crisis, 2007, JPMC market increase of Net Revenue, Net Income, and earnings per share. Obviously strategy and clients approach, coordinated by Dimon, was definitely supported by almost all kind of business, especially in corporate banking sector.

4 BEAR'S FINAL DAYS

While Bear drew investor criticism over its 2007 performance, March 2008 began on a positive note: preliminary reporting indicated that Bear Would earn about \$1 per share for the first quarter of 2008. From Monday, March 10, to Sunday, March 16, Bear started with calculating days before shutting down, and ended with expecting some miracle in every seconds until the official end, and take over by JPMC. Bear also had an internal problem, in the house, with clients – hedge funds – the decide to go short with Bear, to speed (and to collect profit form) its decline. On March 14, Friday, Fed decide to provide Bear funding "as Necessary" through JPMC for up to 28 days. The funding would be secured by Bear's collateral and the Fed, not JPMC, shouldered the risk of losses if tat collateral fell in value. Bear immediately began searching for a buyer. Interested parties included JPMC itself, hedge fund giant Citadel Investment Group, and private equity firm J.C. Flowers & co. Despite the lifeline from the Fed, Bear's stock plunged 47%, in total, 1/3 of all stocks, owned by Bear's 14.000 employees, were forbidden from selling due to longstanding "lock-up" rules that applied during the weeks leading up to the firm's earnings releases.

Table 4. Liquidity positions of Leading U.S. investment banks, November 30, 2007

(in \$ billion)	Bear S.	Goldman S.	Lehman B.	Merrill L.	Morgan S.
Total Liquidity	35.3	168.6	169.8	181.9	118.0
Total Assets	395.4	1,119.8	691.1	1,020.1	1,045.4
% of total Assets	9%	15%	25%	18%	11%
Short term Unsecured Debt	20.6	71.6	21.5	73.3	65.3
Liquidity Ratio (total liquidity/Short-term Uns. Debt)	171%	236%	790%	248%	181%
Repo Financing	102.4	159.2	181.7	235.7	162.8
Repo Lending	27.9	85.7	162.6	221.6	126.9
Net Repo Financing	74.5	73.5	19.1	14.1	35.9
Liquidity as a % of Repo Financing	34%	106%	93%	77%	72%
Liquidity as a % of Net Repo Financing	47%	229%	889%	1290%	329%

When we compare, liquidity position, using data reported on November 30, we can conclude that liquidity and solvency was a really big issue for a Bear.

4.1. Bear's final hours

Buying a house is not the same as buying a house on fire. JPMC was debating the merits of a deal for \$8-\$12 per share, implicitly valuing Bear at between \$945m and \$1.4 billion.

The downside included the risk that Bear's \$395 billion of assets were overvalued, especially its mortgaged-related assets. Deutsche Bank analysts pointed to the potential cost in getting the value of Bear's assets wrong, since Bear was leveraged 30 to 1 given the level of tangible equity.

By 8.00am Sunday morning, it was clear that no one would be able to line up the financing its offer required, leaving JPMC as the sole remaining bidder. At 10 a.m. Dimon and the JPMC executives decided they could not make an offer. They had literally 48 hours to do what normally takes a month. Fed offered to provide special financing of \$30 billion to backstop any losses of JPMC incurred. At the end, final price per share was \$2.

Although the Bear board accepted JPMC's \$2 per share offer, subsequent resistance among Bear shareholders and the desire to avoid potential litigation led JPMC on March 24 to raise the offer, to \$10 per share, with Fed approval. JPMC took a reserve of \$6 billion against merger related costs, reducing Bear's capital to approximately \$5 billion, and estimated that the deal would add \$1 billion in incremental earnings once the integration was complete. Investment banking involved the underwriting of debt and equity securities, buying them from the issuer typically with a syndicate of other firms, and then selling them on to investors. Through this mechanism, commercial banks could borrow money from the Fed to create liquidity for their balance sheets, using loans and investment grade securities as collateral, without having to sell assets into a potentially unreceptive market in a time of systemic stress. On USA market, 21 of 5.154 bank (0.4%) holding companies under Fed supervision in 2005 controlled 62% of the nation's banking assets and were deemed to be "Large Complex Banking Operations" (LCBOs). According to the Inspector General (IG), following Bear's collapse, IG contended that Consolidated Supervisory Entities (SEC) failed to account for Bear's high leverage and concentration of mortgage assets, did not recognise a link between capital and liquidity, relied on the firm's auditors rather than external auditors (as required) to verify the quality of the risk management systems and models, and did not address problems with segregation of duties between traders and those monitoring risks [14].

Table 5. Efficiency and productivity ratios overview, compering Bear and JPMC

	<u>Bear</u>	<u>JPMC</u>
total assets (2008vs2004) %	55.9%	42.0%
total assets (2008vs2004) in \$m	143,045	485,614
total assets change vs Equity %	1202.5%	386.6%
Net Revenue (2006 vs 2004) %	35.4%	45.1%
net income	52.7%	223.4%
earnings per share	45.1%	160.6%

It was quite impressive how Bear manage to increase total assets for 55.9%, as a 1202,5% over equity. Leverage ratio was one of the biggest in investment banking sector.

5 CONCLUSIONS AND LEARNED LESSONS

The crisis that first hit the US real estate market did not arise by chance. The irresponsible business policy of the competent state institutions for the control of the financial market (FED and SEC) and the incompetence of rating agencies, as well as the weaknesses that existed for years in the field of financial control and regulation in the US are the main reason for crisis spread. The source of these weaknesses derives from the idea of unlimited liberalization of financial markets, with minimal regulation and weak control of the operations of investment banks and funds. [15]

We compered those two big banks, one specialised for investment banking, and other for almost all type of banking business. We can put some conclusions that need to be considered, as a check list, before any kind of cooperation, especially acquisition:

- In the case of Bear, the enormous risk was often changing board members;
- In the case of Bears, committee members were mostly started to cover each other rather than being transparent internally and externally - it was more emotional support, and less profesional;

- JPMC's CEO insisted that every employee must have the same number connected with each position in Financial statements, what was not the case in Bear;
- Bear was doing stress tests only when someone externally required them. Internally they didn't control them as it should be;
- In Bear, can be concluded that risk manager was definitely not strong enough to rise his voice;
- Having in mind, that Bear's board members, are owned the big part of the bank, and that there was more emotional approach, rather than professional, it is more likely not to have real and sustainable data,
- Great reputation risk is recognized.

The largest international exposure to risky securities caused by the crisis was felt by European countries, and above all by the EU countries, precisely because the US and EU economies are interconnected [16]. The consequences that the EU suffered due to the distinct link between the two economies has manifested itself through the slowdown in economic activity and thus created the recessionary chain effect that has affected other European countries, which is the dominant EU foreign trade partner. Since it is considered that banks made a wrong assessment of the investment risk when placing funds, the basic issue that was imposed was how to restore the creditworthiness of banks and revive functioning of the financial market. The issue of stimulating the flow of credit, both nationally and globally, is considered a key short-term task for the recovery of the world economy. [17]

In professional circles, there is almost a consensus that there is still a tightening in Serbia, because banks with a market share of less than one-two percent can hardly survive in the increasingly tough game. We are not sure that it will be able to sustain ten long-term banks with a market share of less than 0.4 percent, of which even six last year ended with net losses. The question is how much of their stockholders will have more patience to cover those minuses, just as something similar happens in other countries. This is a positive process, as it will raise performance and strengthen competition among banks, and this will bring benefits to customers as they will cheaper loans.

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SUCCESSFULNESS OF PROJECTS IN THE FIELD OF INFORMATION TECHNOLOGIES IN BANKING: ANALYSIS OF EXAMPLES FROM PRACTICE

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ABSTRACT

Whether a project will, or will not, be successfully implemented depends on a large number of factors. Pinto and Slevin defined the key factors for a project success by determining 10 factors as the crucial ones. As projects in the field of information technologies are frequently not implemented well, and most frequently due to the problems connected with the impossibility to define the characteristics of successful IT projects, DeLone and McLean defined the key criteria for the success of projects in the field of information technologies since the same are most frequently unclear in practice and deprived of strict guidelines to the achievement of a project success.

After the presentation of the theoretical basis of the project management concept, the critical factors for the success of the same, projects in the field of information technologies, the examples of successful IT projects in the banking industry are then analyzed in the paper in order to determine the critical factors for the success of the same by applying a comparative method and conducting a case study.

Keywords: IT projects, banking, project management, critical success factors.

1 INTRODUCTION

A project is a complex unrepeatable business endeavor undertaken in the future so as to achieve goals within the predicted time and with predicted costs. The phases of the lifecycle of a project are its initiation, i.e. making a concept of it, its planning, execution and, ultimately, finalization. The main participants in project management are the ordering party/investor, the project sponsor, the project manager, the project team, the main contractor, and subcontractors.

The research hypothesis reads as follows: If the project team ensures the quality of the banking IT System encompassed by the project, the quality and confidentiality of the information generated by the banking IT system, the functionality of the system, user satisfaction, the individual influence of the system and a positive organizational influence, the IT project in the banking industry will be successful.

2 PROJECT MANAGEMENT IN THE FIELD OF INFORMATION TECHNOLOGIES

The project management goal is the establishment of clear levels or authorities and decision-making, including the planning, influence and implementation of the project policies and activities. It includes the people, the policies and the processes that provide a framework within which project managers make decisions and undertake actions so as to optimize the outcomes in connection with their fields of responsibilities. This is achieved by defining and identifying the roles and responsibilities of all those involved in a project, including their interaction and the level of coordination with internal and external dependencies. [5]

Problems in the field of information technologies can be implemented well, but this is frequently not the case. A study of the Standish Group conducted in 1995 (CHAOS) revealed that only 16.2% of IT projects are successful in meeting the goals (time- and cost-related), whereas over 31% of IT projects had been cancelled prior to completion. A study carried out by the Pricewaterhouse Coopers company showed that a total of one-half of all IT projects failed, and that only 2.5% of corporations consistently fulfilled their projections with respect to the scope, time, and costs of their respective projects. [6] One part of the problem is connected with the impossibility of defining the characteristics of successful IT projects. The

criteria for the success of IT projects are often unclear and deprived of strict guidelines on success in a project. In 1992 and in 2003, two researchers, W. DeLone and E. McLean, analyzed several previous studies on IT projects so as to identify the key success indicators. [2] Their findings indicate that IT projects should at least be valued in accordance with six criteria [3]: the quality of the system, the quality of information, the use, user satisfaction, the individual influence: the organizational influence. DeLone and McLean's paper provides an important framework for the establishment of IT projects. The companies that have designed and implemented an IT system must dedicate their attention from the start to each of these criteria and make the necessary steps so as to ensure that the systems that are delivered are satisfactory. According to Atkinson, [1] all groups affected by a project (stakeholders) should assess its success. The context and the type of projects should be relevant in the determination of the criteria that will best define the success or failure of an IT project. A research study conducted on the critical success factors for projects demonstrated that acceptance by the client represents an important determinant showing whether a project is successful or not. [4] Acceptance by the client is an indicator that, simply, the handing in of a project to the buyer is not sufficient to ensure buyer satisfaction, but the same needs to be accompanied by the use and identification of its advantages, too. Acceptance by the client may be accompanied by numerous problems. Users may be dissatisfied due to their own limitations or levels of technical knowledge. For example, while transferring an IT project to buyers, it is a customary thing for them to experience initial confusion regarding the characteristics of the final product, or understand them in a wrong way. Some buyers will deliberately refrain from accepting a project unconditionally since they are afraid that, after they approve of it, they will lose the ability to request changes or corrections due to obvious errors. Ultimately, depending on how close a communication with the client the project team were maintaining during the development of the project, the final product may, but it does not have to, be what the buyer actually wants. [3] The implementation of IT projects in the banking industry is even more specific due to the nature of banking IT systems, data sensitivity, as well as the discontinuity component in the banking industry, appreciating the situation the industry has found itself in, especially bearing in mind the ever-increasing impact of the FinTech industries on banking.

Financial institutions nowadays face many changes from the economic and technological environment which forced, first of all banks to innovate products and services as respond to new needs, Banks in Serbia offer products that are difficult to differentiate. [7] In modern market there is a high degree of competitiveness and the globalization and therefore, every business segment must be thoroughly planned and analysed. [8] Business models used in banking operations are diverse, and their continuously innovative banks seek to ensure a significant competitive advantage on the market. [9]

3 ANALYSIS OF THE EXAMPLES OF SUCCESSFUL IT PROJECTS IN THE BANKING INDUSTRY

The examples of the implementation of two projects different from one another with respect to their respective content and the methodologies applied were taken for the needs of the analysis of the successfulness of the implementation of projects in the field of IT technologies in banking. IT projects in banking can be divided into the projects of the implementation of front-end systems, i.e. the IT systems directed towards the ultimate users of banking services, and the projects of the implementation of back-end systems, i.e. towards those projects in connection with the banking IT infrastructure including different systems for processing banking data, risk analysis and regulatory requirements. Project valuation in compliance with the six criteria defined by Pinto [3] needs to be observed through a prism of the specificity of IT projects in banking. The mentioned criteria have yet a few more dimensions through which they "cast light" on internal and external stakeholders, and those dimensions are as follows: trust, security, and time. The observed projects were implemented by applying two different project methodologies. The project of the implementation of one part of the front-end system was implemented by applying the agile project methodology, whereas the project of the implementation of the back-end system was implemented by applying the waterfall, i.e. cascading project methodology. Based on the criteria for the successfulness of project implementation, as well as the prism of the special quality-related criteria, a combined list of the successfulness criteria was created through the prism of special quality-related criteria, namely as follows:

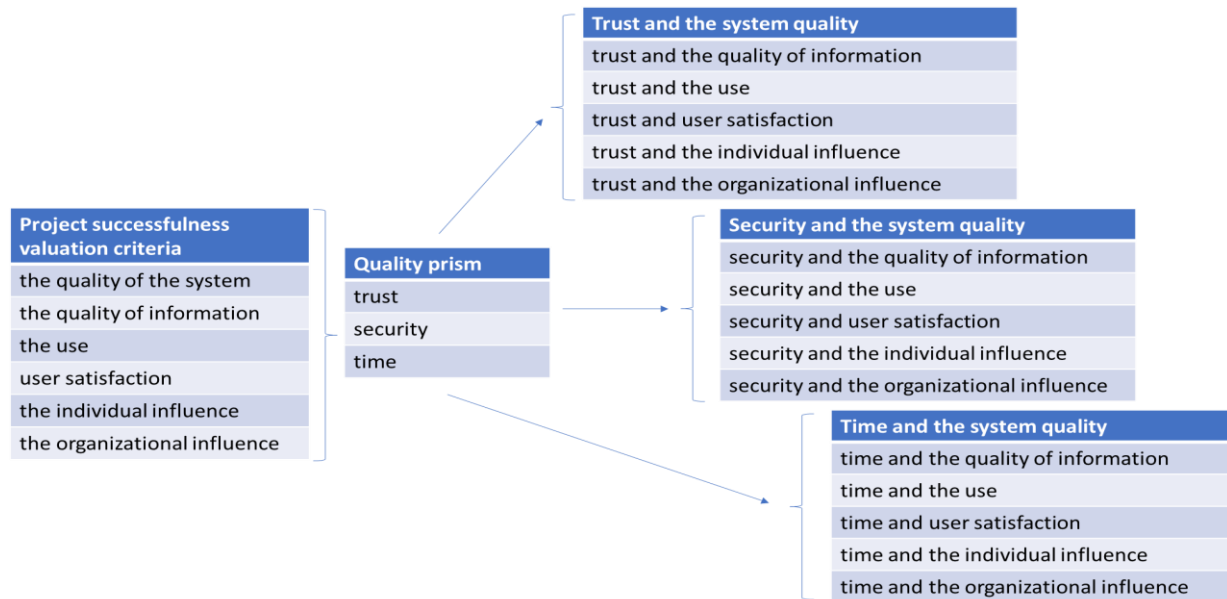


Fig. 1. The combined list of the successfulness criteria

Source: Authors

The effect of the implementation of the successfulness of both projects was assessed through a qualitative analysis of each single successfulness criteria observed through the prism of the quality of the special criteria, simultaneously bearing in mind the methodological framework used during the implementation of the projects.

3.1. Assessment of the Successfulness of the Front-End System Implementation Project

The front-end system implementation project was implemented by applying the agile methodology for project management. One of the agile methodology basic postulates is that the voluminous documentation by which the scope of a project is defined at the beginning of the implementation of that project is redundant, but the documentation is prepared along with the progress of the project instead. The other postulate of the agile methodology is that a project is implemented in smaller, iterative phases, with a continuous participation of end users, who assess and estimate the quality of the implementation. The reason why the agile methodology was chosen for the implementation of the project of the front-end system of the bank is exactly the fact that the final goal was to enable the bank's end users to have as good a customer experience as possible in working with the bank's front-end applications. The end users (through the selected representative segments) were involved in the assessment of the quality of each iteration and the course of the further implementation of the project was directed based on their feedback. The qualitative assessment of the implementation of the project according to the successfulness criteria and through the prism of the special criteria is as follows:

Trust

1. Trust and the quality of the system

One of the most important qualitative criteria is the quality of the system, which is obtained as a result of the implementation. In the case of the assessment of the successfulness of the implementation of the front-end system of the bank, the quality of the system represents the measure enabling that system to, first of all, satisfy the needs of the end users, which on its part will ultimately also determine the success of the overall business operations of the bank. One of the most important criteria for the quality of the banking applications accessed by end users is those users' trust in the quality of the bank's system. In the case of the observed implementation, the end users were surveyed at the end of every iteration about the level of the quality and trust they had acquired during the testing of each subject-matter iteration. Given the fact that the bank's final goal was a high-quality system, which its end users would be able to use with full trust, the results of each subsequent survey were better than those of the previous one(s).

2. Trust and the quality of information

As a logical cause-and-effect course, quality information are obtained resulting from a quality system. Given the fact that the IT system which, in this case, processes and presents sensitive financial pieces of information is in question, it is extremely significant that those pieces of information be of a high quality,

which will ensure that the end user trusts those pieces of information. In the case of the observed implementation, the end users were surveyed at the end of every iteration about the level of the quality of and of their trust in the presented information, which they had acquired during the testing of each subject-matter iteration. Bearing in mind the fact that the sensitive financial data that must be reliable and accurate were in question, every member of the control group was given the key by which he/she validated the information, apart from the possibility of making him-/herself sure that the information was accurate through calculation. In this manner, we ensured that all the members of the control group were extremely satisfied with the level of the quality of information, and simultaneously they acquired and reinforced their trust in the quality of the system and the outgoing information from that system.

3. Trust and the use

By ensuring a quality system and the quality pieces of information that the system generates and which end users have full trust in ensures the creation of a habit and the continuity of using that system. In the case of the observed implementation, it is exactly the combination of the first two criteria that led to a fast and widespread use of the bank's applicative systems, and the users mentioned trust as one of the most important choice criteria.

4. Trust and user satisfaction

Generally, the measure of the successfulness of quality, in this case of the banking front-end system, is the measure of the extent to which end users' needs are met. If a system meets clients' needs, then the system can be considered to have been successfully implemented. If users' satisfaction is observed through the prism of trust, the key assumption was that the banking IT system would always be meeting the end users' needs in the same and predictable, but reliable manner. The users were allowed to validate such a behavior of the system in every iteration of the implementation. The system always behaved in a predictable way and met the users' needs in the same way, which, in each iteration, raised the level of trust in the system's ability to meet the users' needs.

5. Trust and the individual influence

The measuring of the individual influence can be observed from the two point of view: the influence on the end user of the results of the project implementation, and the influence on individuals within the organization. If the influence on the end user is observed, the results of the implementation of the banking front-end IT system are very visible and sensitive, and their influence is certainly individual, but they have a mass appearance. In practice, it is extremely rarely that a result of an implementation only influences one single user; it almost always exerts a mass influence instead, for which reason suchlike implementations are extremely sensitive. Observed through the prism of trust, every individual opinion provided by end users is very important since it may have an influence on other users and, finally, the very success of business doing. If the influence on individuals within the organization itself is observed, it is exactly trust in the banking system and the orientation towards the end user that are crucially important in changing the paradigm of and creating a customer-oriented organization – inside-out.

6. Trust and organizational influence

Changes in the employee paradigm and the creation of a customer-oriented organization – inside-out are actually the main drivers of overall organizational change. The creation of a climate of trust inside an organization in the system that is being developed enables in the best possible manner the story to be conveyed and "sold" to end users. It is exactly this postulate that led to the fact that the bank's employees were the best advocates and sellers of its banking applications.

Security

1. Security and the quality of the system

Bearing in mind the nature of the banking work and the nature of the information and data processed, stored and presented to end users, one of the main pillars of trust in the quality of the system is also the relationship between security and quality. The basis of security in the measure of quality was the application of appropriate standards during the system implementation, such as the Payment Card Industry Data Security Standard (PCI DSS), which describes the infrastructural requirements for security, as well as the ISO 27001 standard, which regulates in full detail the system of the system security process and the flows of information passing through that system. The observed banking IT system is fully implemented in compliance with the requirements of the mentioned standards.

2. Security and the quality of information

By the implementation of appropriate security standards into the banking IT system, an exceptional degree of the quality of information was achieved; simultaneously, such information were absolutely secure and protected from any malicious external or internal manipulation attempts. The success of meeting this criterion was measured by the results of the tests of specialized companies which had tested the possibilities of exerting an influence on the quality of information.

3. *Security and the use*

The implementation of the most contemporary user authentication security mechanisms ensures the secure use of the system. At each and every iteration, the end users tested different possibilities of authentication, either successful or unsuccessful, and their influence on the possibilities of the further use of the system.

4. *Security and user satisfaction*

During the analysis of the successfulness criteria, a conclusion was drawn that there is a direct positive correlation between the degree of the security of the banking IT system and user satisfaction. In order to have full trust in the system, the end users expect the system to be fully secure to use, and the bank ensured its security in the manner described in the foregoing sections.

5. *Security and the individual influence*

In a way similar to trust analysis, measuring the individual influence can be observed from the two points of view: the influence on the end user of the results of the project implementation, and the influence on individuals within the organization. If the influence on the end user is observed, the results of the implementation of security measures in the banking front-end IT system are extremely important and raise one's awareness of the significance of security measures and of special attention to be paid to end users' sensitive financial data. If the influence on individuals within the organization itself is observed, taking care of security and the application of appropriate measures are not only a desirable, but also mandatory way of work and life in an organization such as the bank.

6. *Security and the organizational influence*

The organizational influence of the qualitative criterion for security is of crucial significance to the positioning of the bank as an institution of trust, and trust is exactly what represents the most important banking resource. Security procedures permeate every activity carried out in organizations, especially so in the organizations performing banking operations.

Time

1. *Time and the quality of the system*

Although as a criterion for the successfulness of the quality of a system time seemingly does not appear to be an important or obvious criterion, it is in fact one of the most important, especially if we bear in mind a banking front-end IT system in which the component of time is permeated by all operations. Observed through the prism of time, the quality of the system has several resulting components: the system implementation time – this is extremely important if we bear in mind the moment which the banking industry has found itself at, the speed of the changes dictated by the market, and particularly so the penetration of new players into the market, the FinTech companies that, due to the “shallow” organization, are in a position to offer many banking services to end users more quickly and of an approximate quality; the system response time – the end users of banking front-end applications expect the response of the execution of the called operations to be as quick as possible for the reasons of the comfortability of use as well as trust in service execution; the system changes implementation time – changes may occur due to external or internal requirements. It is very important that the system should be sufficiently flexible so as to be able to quickly change itself and either to dictate or to monitor the pace of imposed changes.

2. *Time and the quality of information*

Similar to trust, as a logical cause-and-effect course, quality and quick information are generated resulting from a quality system with an optimal or satisfactory time response. In the case of the observed implementation, the end users tested the speed of the system at the end of every iteration.

3. *Time and the use*

In the iterative tests, the end users monitored the times of the execution of different functional wholes: initial Access, changes in data, transaction execution, and reporting. Every mentioned category was positively rated by the end users of the banking front-end IT system.

4. *Time and user satisfaction*

Based on all of the described successfulness criteria through the prism of the time criterion for quality, the conclusion that time is exceptionally important to the end users offers itself. In the case of the observed implementation, a clear dependency between time and user satisfaction was established. As a result, each subsequent iteration was more optimized than the previous one.

5. *Time and the individual influence*

Observed from the point of view of the end user, the influence of time on individuals is important in the domain of user experience.

6. Trust and the organizational influence

As a criterion for quality, time exerts an influence on change in the organizational awareness and constantly reminds us of the fact that the on-time (if not so even in-time) project implementation is an important criterion for implementation success and one of the preconditions for the applicability of that project in post-production exploitation.

3.2. Assessment of the Successfulness of the Back-End System Implementation Project

The back-end system implementation project was implemented by the waterfall, i.e. cascading methodology for project management. One of the basic postulates of the cascading methodology is that the voluminous and clear documentation that defines in full detail the scope of the project at the beginning of the implementation of that project is extremely significant so as to avoid greater changes during the project implementation. The second basic postulate of the cascading methodology is that a project is implemented in phases, and that transitions from one phase to another are only executed upon completion and the acceptance of the results of the implementation from the previous phase.

The reason why the cascading methodology was selected for the implementation of the project of the back-end system of the bank lies in the fact that the system implementation requirements arise to the greatest extent from the clearly defined and determined rules, such as: the regulator's requirements, international card organizations' requirements, international capital reporting organizations' requirements, and so on – namely, everything is clearly determined by appropriate standards. The qualitative assessment of the project implementation according to the successfulness criteria through the prism of the special criteria for quality is as follows:

Trust

1. Trust and the quality of the system

One of the most important qualitative criteria is the quality of the system that we obtain as a result of the implementation. In the case of the assessment of the successfulness of the implementation of the bank's back-end system, the quality of the system represents the measure by which that system can, first of all, meet the regulator's requirements, the requirements imposed by international organizations operating in different functionality fields of banking operations, which has an influence on the bank's ability to conduct its business operations in compliance with regulatory requirements. One of the most important criteria for the quality of banking back-end applications is their ability to process appropriate data in a clearly defined manner and also to keep the trail of those activities and to be able to prepare appropriate reports on all such actions. In the case of the observed implementation, the implementation results at the end of each phase were tested against the regulatory requirements through the overall functional testing and the validation of the test results.

2. Trust and the quality of information

As a logical cause-and-effect course, quality information is generated resulting from a quality system. Given the fact that, in this case, the IT system that processes and presents sensitive financial information is concerned, it is extremely significant that those pieces of information should be of a high quality, which will ensure that the regulator and the other organizations significant to the business operations of the bank trust those pieces of information. In the case of the observed implementation, the resulting information was validated together with the correspondent institutions at the end of the implementation of all functional wholes of the back-end system so as to ensure that the information obtained were in compliance with the requirements. The measure of trust in the quality of the information was confirmed by appropriate certificates issued by competent institutions.

3. Trust and the use

Providing a quality system and the quality information generated by that system, which inspires trust in the users of the bank's back-end system, ensures the creation of a habit and continuity in using that system. In the case of the observed implementation, it is exactly the combination of the first two criteria that led to an extremely high level of trust of the system users and the institutions – the users of the bank's reports.

4. Trust and user satisfaction

The same as in the case of the implementation of the front-end system, generally, the measure of the successfulness of quality, in this case of the banking back-end system, is the measure of the extent to which the needs of the end users of that system are met. If a system meets users' needs, which, in this case, first of all reflects through the satisfaction of the regulator's requirements, then the system can be considered to have been successfully implemented. If users' satisfaction is observed through the prism of trust, the key assumption was that the banking IT system would always be meeting the users' needs in the same and predictable, but reliable manner. The users were allowed to validate such a behavior of the

system in every iteration of the implementation. The system always behaved in a predictable way and met the users' needs in the same way, which, in each iteration, raised the level of trust in the system's ability to meet the users' needs.

5. *Trust and the individual influence*

Measuring the individual influence can be observed from the two points of view: the influence on the end user of the bank's back-end system, and the influence on individuals within the organization. If the influence on the user of the system is observed, the results of the implementation of the banking back-end IT system are very visible and sensitive even for the users themselves and for the users of the results of the processing done by that system, and their influence is certainly individual, and their influence is critical. If the influence on individuals within the organization itself is observed, it is exactly trust in the banking system and the orientation towards the reliability of the results are crucially important in changing the paradigm of and creating a goal-oriented organization – inside-out.

6. *Trust and the organizational influence*

Changes in the employee paradigm and the creation of a goal-oriented organization – inside-out are actually the main drivers of overall organizational change.

Security

1. *Security and the quality of the system*

Bearing in mind the nature of the banking work and the nature of the information and data processed, stored and presented to the institutions of significance, one of the main pillars of trust in the quality of the system is also the relationship between security and quality. The basis of security in the measure of quality was the application of appropriate standards during the system implementation, such as the Payment Card Industry Data Security Standard (PCI DSS), which describes the infrastructural requirements for security, as well as the ISO 27001 standard, which regulates in full detail the system of the system security process and the flows of information passing through that system. The observed banking IT system is fully implemented in compliance with the requirements of the mentioned standards.

2. *Security and the quality of information*

By the implementation of appropriate security standards into the banking IT system, an exceptional degree of the quality of information was achieved; simultaneously, such information were absolutely secure and protected from any malicious external or internal manipulation attempts. The success of meeting this criterion was measured by the results of the tests of specialized companies which had tested the possibilities of exerting an influence on the quality of information.

3. *Security and the use*

The implementation of the most contemporary access control security mechanisms, as well as the introduction of double controls, i.e. "four-eye-principle" controls, ensures the secure use of the system. At each and every iteration, the end users tested different possibilities of authentication, either successful or unsuccessful, and their influence on the possibilities of the further use of the system with the implemented control procedures.

4. *Security and user satisfaction*

In the case of the implementation of the back-end system, user security and satisfaction can be observed, and in this case it was also analyzed in that way, from the following points of view of the user of the system itself, and the user of the end information generated by the system. During the analysis of the successfulness criteria a conclusion was drawn that there is a direct positive correlation between the degree of the security of the banking IT system and the satisfaction of the users of the system itself, whereas the connection between the security and satisfaction of the users of the end information generated by the system is in fact a measure of trust in the system.

5. and 6. *Security – the individual and organizational influences*

The security influence on individuals in an organization, as well as on the organization itself, reflects in the establishment of appropriate policies, procedures, processes and measures for the protection of the system and the environment around the system. In this manner, a security network is developed, which acts both from the individual towards the organization, and also from the organization towards the individual.

Time

1. *Time and the quality of the system*

As in the case of the influence of time on the quality of the front-end system, in this case it is also one of the most important criteria, especially if we bear in mind the fact that there are regulatory requirements with rigidly defined reporting deadlines, so that the operations of banking back-end IT systems are very much time-dependent. Observed through the prism of time, the quality of the system has several resulting

components: the system implementation time – this is an important component of the market competitiveness of the bank; the system response time – this is important to the generation of regulatory reports, as well as the response of the execution of the operations initiated from the front-end system; and the system changes implementation time – changes may occur due to external or internal requirements. It is very important that the system should be sufficiently flexible so as to be able to quickly change itself and either to dictate or to monitor the pace of imposed changes.

2. Time and the quality of information

Similar to trust, as a logical cause-and-effect course, quality and quick information are generated resulting from a quality system with an optimal or satisfactory time response. In the case of the observed implementation, the users of the system tested the ability of the system to deal with the requests initiated from the front-end system in an optimally defined time and also to meet the regulatory requirements for creating reports limited by appropriate time frameworks.

3. Time and the use

In the iterative tests, the users of the system monitored the times of the execution of different functional wholes: initial Access, changes in data, transaction execution, and reporting. Each one of the mentioned categories was positively rated by the users of the banking back-end IT system, and a positive opinion was also obtained from appropriate institutions.

4. Time and user satisfaction

Based on all of the described successfulness criteria through the prism of the time criterion for quality, the conclusion that time is exceptionally important to the users of the back-end banking IT system offers itself. In the case of the observed implementation, a clear dependency between time and user satisfaction was established.

5. Time and the individual influence

Observed from the point of view of the end user, the influence of time on individuals is important in the domain of user experience.

6. Trust and the organizational influence

The same as in the analysis of the influence of time on the organization in the case of the implementation of the banking front-end IT system, as a criterion for quality, time exerts an influence on change in the organizational awareness and constantly reminds us of the fact that the on-time (if not so even in-time) project implementation is an important criterion for implementation success and one of the preconditions for the applicability of that project in post-production exploitation.

4 CONCLUSION

A small number of companies have easily implemented project management procedures. The majority of them have been faced with a problem, starting from skepticism to the sabotage of the procedural system. The majority of them has been applying the incremental approach to the development and implementation of their own project management methodologies, which represents a multiple challenge to the management, first of all with respect to not knowing the technology, the budget and planning, the inclusion of the project team in the process itself, taking their data, support and dedication, as well as the establishment of the support environment.

Two banking IT projects were analyzed in the paper, and both were observed from the point of view of their respective successfulness as per the criteria defined by Pinto – for the successful implementation of IT projects – through the prism of the qualitative criteria that the authors identified as extremely important to the implementation of projects in the banking industry. It was concluded, by carrying out a qualitative analysis of the results of the implementations and observed through the defined successfulness criteria, through the prism of the special criteria for quality, that both projects were successfully implemented. Based on the foregoing, with the help of the methods of description, induction, and deduction, the research hypothesis: “If the project team ensures the quality of the banking IT System encompassed by the project, the quality of the information generated by the banking IT system, the functionality of the system, user satisfaction, the individual influence of the system and a positive organizational influence, the IT project in the banking industry will be successful.” has been affirmed.

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COMPULSORY PENSIONS INSURANCE AND PRIVATE PENSIONS INSURANCE IN SERBIA

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ABSTRACT

In most countries and especially in "countries in transition", the pension insurance systems are in crisis and they are trying to establish a model of sustainable functionality with reforms. In the period from 2001 to 2014, Serbia was reforming the pension system in order to deal with all the problems like: high deficit, debt, number of employed - pensioners ratio, negative demography, etc.

In this paper we have shown the research results in order to evaluate the opinions of Serbia's citizens about the existent compulsory pensions insurance and the trust in private insurance, as well as the opinions about the need for the additional reforms of the system.

The Hypothesis H0 has been confirmed: The citizens are not satisfied with the existent state of the retirement insurance, they think that the pension fund is empty and that it cannot guaranty reliable pensions. That means that reforms, taken until now, were not enough and that they need to be continued.

Keywords: compulsory pensions, private pension insurance, system reforms.

1 INTRODUCTION

Pension issue, as one of the most important social problems, is an actual issue on a global level. Already existing pension crisis was accelerated further with the second wave of the global economic crisis and it has become a burning issue without an adequate response. There are two major causes: 1. Inadequately set pension systems, based on a "pay as you go" principle; 2. Impacts of the global economic crisis, for the pension funds were the first to be hit by the crisis. The crisis has affected everyone, including both the developed and countries in transition. The attempts to implement various reforms did not succeed in making the system more sustainable. There is a model which singled out of numerous experimental solutions which in many countries has been perceived as a possible solution and the route to be taken when transforming pension systems. It is a Chilean model which encompasses the full privatization of pension insurance and the establishment of private pension funds with the state as a guarantor in order to build and secure the trust of the citizens who shall invest their contributions in the private funds. This model should enable employees themselves to determine their contributions and earnings in the future. Thus the burden on the state budget should be significantly reduced, while the significant accumulation of capital, as well as the positive effects on the economic activity, should be achieved.

At the beginning of the second decade of XXI century Serbian pension system consisted of compulsory public pension fund (The Pension and Disability Insurance Fund of the Republic of Serbia) and a number of voluntary private pension funds. In comparison to the private funds, public pension fund is highly prevailing. At the beginning of 2008 a single public pension fund (Republic Fund for Retirement and Disability Insurance – RFPIO) was established by merging the pension funds of employees, farmers and self-employed persons (entrepreneurs). As of 2012, the Military Retirement Fund has been included in the single public fund. The fact is that there has been an appreciable deficit in Serbian public pension and disability insurance system for many years, which is reimbursed by the budget funds. [3]

The health insurance systems in Europe are founded with the goal to assist health service users and prevent them from excessive private expenditures, which in case of serious illness, may have devastating financial effects on individuals and households. [2]

Public pension fund expenditures in 2014 (pensions, pensioners' health care, administrative expenses, etc.) accounted for 15.5% of Serbian GDP and they amounted to more than 1/3 of the consolidated government expenditures. Out of this figure, pension expenditure amounted to 13.1% of GDP. At the beginning of 2014 there were 6 voluntary private pension funds in Serbia with about 185 thousand policyholders. The total value of the private pension fund's net assets at the end of the first quarter of 2014 amounted to about 20.6 billion dinars (180 million Euros), which is around 0.55% of GDP. [4]

The sustainability of the public pension system is called into question due to the negative impact of numerous factors, the most dominant being: demographic variables (the average life expectancy, the age structure of the population, etc.), macroeconomic variables (GDP growth, employment and average earnings), fiscal parameters (contributions rate, contributions basis, etc.), pension system parameters (pension age limit and minimum pension age limit for men and women, general point indexation rule and pension indexation, the conditions for early retirement, the conditions for accelerated retirement etc).

Therefore, the pension system reform is recognized as one of the most prevalent and also one of the most socially sensitive topics in the reform processes in general in the last few decades, both in developed countries, as well as in the countries in transition. The main motives for the reforms of a pension system are to make it more resilient to demographic and economic perturbations and to make it less dependent on the state. [5]

The implementation of the reforms can be diverse. Reforms may include only the parametric changes, such as contributions increase or pensions decrease; they may be aimed at the rules for determining the amount of an individual pension or they may eventually result in the introduction of substantially different pension systems. [1] In countries in transition, reforms have most often been designed with the support of the World Bank and they entailed the three pillars: I pillar (compulsory state pension insurance, i.e. the system of intergenerational solidarity, which means that pension contributions paid by the current employees finance current pensions - pay-as-you go; PAYG system); II pillar (compulsory additional savings in private pension funds, the law prescribes the percentage share of compulsory contributions intended for the financing of the first pillar to be directed to the second pillar, so that employees are entitled to two pensions, the state pension, based on the first pillar, and the private one, based on the second pillar) and III pillar (voluntary supplementary pension insurance is intended for all citizens, regardless of their employment status, the payments do not have to be regular and they are kept on the individual accounts, while the members themselves determine the asset disposal method. [7] The fund assets are further invested and increased by subsequent income attributions. Voluntary pension fund management companies determine the minimum contributions amount (while maximum one is not set). However, after more than a decade of three-pillar model implementation, the World Bank has become more flexible when proposing concrete solutions. Thus, in the future, an acceptable level of employees' pensions could be a system based on five pillars. Zero pillar entails the payment in the form of the primary, i.e. a social pension to all citizens older than 65 to the amount of 20 to 25 percent of the average wage. As before, the first pillar would be the state pensions, the second pillar would be compulsory private pension insurance, and the third one would be voluntary private pension insurance, while the fourth pillar would be the budgetary assistance for the particularly vulnerable persons.

The current practice worldwide shows that there are countries with a unique systems of pension insurance (Bulgaria, Ireland, China, Canada, USA), the countries with pension insurance schemes based on all three pillars (Austria, Hungary, Germany, Slovenia, Croatia, Chile, Switzerland, Sweden) while the first and third pillars only are present in Serbia. [6]

Serbian pension system reforms from 2001 to 2014 were necessary due to the accumulated problems in the previous period (high deficit, debt, the employed-pensioners ratio) and expected negative demographic trends in the future. In the period from 2001 to 2014, several phases of pension reforms were implemented (2001, 2003, 2005, 2008-2009, 2014).

The first wave of reforms (2001-2003) improved the fairness of the system and reduced the potentials for abuse, while the reforms from 2005 and 2014 had significant long-term effects on improving the financial performance of the pension system. The measures taken in 2008 and 2009 had an extremely negative financial effect, and the Government tried to partially neutralize them by adopting additional measures (in 2009, 2010 and 2014). (Piljan et al., 2017, p.63)

The question is what the public opinion on the current pension insurance system after all those reforms is. Do people believe that further reforms are needed? The main objective of this research is to carry out the assessment of attitudes of Serbian residents in relation to the existing compulsory pension insurance, reliability of the private insurance, as well as the assessment of attitudes on the necessity of additional system reform implementation.

H0: Serbian residents are not satisfied with the current state of the pension insurance system and they believe that the reforms are necessary.

Irrespective of the fact whether the research results will lead to the acceptance or rejection of the null hypothesis, the answers to the following questions will be searched for: if there are significant differences in attitudes (1) between male and female population, (2) among the residents of different age (3) between the employed and unemployed residents, and (4) among the population differentiated by the level of education.

H1: There are no significant differences in the null hypothesis statement between female and male population.

H2: There are no significant differences in the null hypothesis statement among the residents of different age.

H3: There are no significant differences in the null hypothesis statement between the employed and unemployed residents.

H4: There are no significant differences in the null hypothesis statement among the population differentiated by the level of education.

This paper is organized as follows: after the introduction, the second part contains a literature review on the state of the pension insurance systems in Serbia and other countries; the third part explains the applied research methodology, the fourth part gives the research results, while the fifth part provides discussion of the results, conclusions and proposals for further research.

1.1 Research methodology

The research was conducted by using the method of theoretical analysis and empirical research method. Empirical research was conducted in three phases:

Data Collection by conducting the written surveys among respondents;

Classification and grouping of the data and

Data processing by using the method of statistical analysis (descriptive statistics, ANOVA, Tukey's "post hoc" test) and

Interpretation of the collected data.

Analysis of variance (ANOVA) was used as an analytical model for testing the significance of differences of all variabilities, as well as for the analysis of their mutual influence, which is otherwise impossible to estimate. Tukey's "post hoc" test was used to determine the critical differences which are used for comparison of the absolute value of the differences between the mean values. If the difference exceeds the critical difference, it means that the difference between the two mean values is significant.

A questionnaire in the form of Likert Scale for measuring attitudes, specially designed for a given research, was used for data collection. The questionnaire contained nine questions. Likert scale was defined by five levels of gradation: (1) strongly disagree, (2) slightly agree or mostly disagree, (3) undecided - I am not sure, (4) mostly agree and (5) strongly agree.

The results obtained by using this method were compared with the knowledge obtained through theoretical analysis and it enabled drawing more complete conclusions and making recommendations.

2 RESULTS AND DISCUSSION

The software SPSS for statistical data analysis has been used for the processing of the collected data.

Table 1. Arithmetic mean values, standard deviations, and the estimated values of mathematical expectation for a 95% confidence interval for the entire sample

Question	Descriptives						
	Gender	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Compulsory pension insurance is excellent (OPenzO1)	Male	48	2,4792	1,11068	,16031	2,1567	2,8017
	Female	61	3,1967	1,20858	,15474	2,8872	3,5063
	Total	109	2,8807	1,21507	,11638	2,6500	3,1114
I expect a good pension which will allow me to live a good life (OPenzO2)	Male	48	2,2083	1,16616	,16832	1,8697	2,5470
	Female	61	2,9180	1,30761	,16742	2,5831	3,2529
	Total	109	2,6055	1,29113	,12367	2,3604	2,8506
The pension fund is full, and it guarantees secured pensions (OPenzO3)	Male	48	1,8750	,98121	,14162	1,5901	2,1599
	Female	61	2,3934	1,06894	,13686	2,1197	2,6672
	Total	109	2,1651	1,05860	,10140	1,9642	2,3661
The reform of the compulsory pension insurance is necessary (OPenzO4)	Male	48	4,1667	1,05857	,15279	3,8593	4,4740
	Female	61	3,9836	1,07225	,13729	3,7090	4,2582
	Total	109	4,0642	1,06524	,10203	3,8620	4,2665
I would support the reform of the compulsory pension insurance (OPenzO5)	Male	48	4,2292	,95069	,13722	3,9531	4,5052
	Female	61	4,2295	,88305	,11306	4,0033	4,4557
	Total	109	4,2294	,90914	,08708	4,0568	4,4020
I have no confidence in private pension insurance (PPO1)	Male	48	2,6667	1,09803	,15849	2,3478	2,9855
	Female	61	2,8689	,93942	,12028	2,6283	3,1094
	Total	109	2,7798	1,01249	,09698	2,5876	2,9720
When I am investing money in private insurance, I am making smart savings (PPO2)	Male	48	3,3333	1,09803	,15849	3,0145	3,6522
	Female	61	3,3607	,85699	,10973	3,1412	3,5801
	Total	109	3,3486	,96586	,09251	3,1652	3,5320
Private pension insurance is absolutely necessary (PPO3)	Male	48	3,4375	1,07002	,15444	3,1268	3,7482
	Female	61	3,4918	,90596	,11600	3,2598	3,7238
	Total	109	3,4679	,97723	,09360	3,2824	3,6534
I do not have money for private pension insurance (PPO4)	Male	48	3,3125	1,18781	,17145	2,9676	3,6574
	Female	61	3,2131	1,18483	,15170	2,9097	3,5166
	Total	109	3,2569	1,18168	,11318	3,0325	3,4812

Source: Author

The results of statistical analysis of the data obtained through the survey show that the residents believe that the pension fund is not full and it does not guarantee secured pensions (mean = 2.3934, standard deviation = 1.06894), compulsory pension insurance is not excellent (2.8807, 1.21507) and that the reform of the compulsory pension insurance which residents would support is necessary (4.0642, 1.06524).

Residents do not have a clear attitude regarding the private pension insurance companies (Figure 1a) but they believe that the private pension insurance is absolutely necessary (Figure 1).

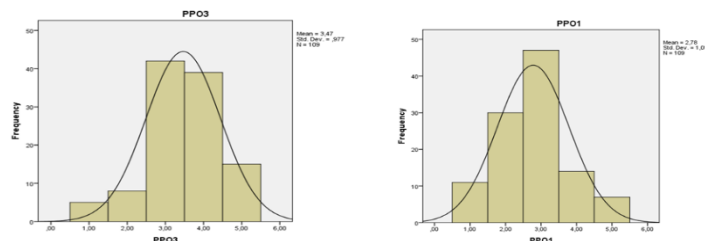


Fig. 1. Response frequencies to the questions 'I have no confidence in private pension insurance (PPO1)' and 'Private pension insurance is absolutely necessary (PPO3)'

However, most respondents do not have sufficient funds to invest in the private insurance or a clear position on this issue.

By using the "one-way ANOVA" method the effects of the following factors were analyzed: gender, age, employment or unemployment, and the education level, for one dependent variable. The research has

been conducted in such manner so that for each dependent variable, combinations of the considered factors were changed, and the obtained program results were analyzed.

The one-way analysis of variance (ANOVA) F-test shows if there is a difference between the groups, but not where the difference is. Tukey's test of inequality is used here to measure simultaneously the differences between more than two arithmetic means.

Table 2. The differences in attitudes between male and female population

[1] ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
OPenzO1	Between Groups	13,831	1	13,831	10,163	,002
	Within Groups	145,619	107	1,361		
	Total	159,450	108			
OPenzO2	Between Groups	13,530	1	13,530	8,695	,004
	Within Groups	166,507	107	1,556		
	Total	180,037	108			
OPenzO3	Between Groups	7,220	1	7,220	6,788	,010
	Within Groups	113,807	107	1,064		
	Total	121,028	108			
OPenzO4	Between Groups	,900	1	,900	,792	,376
	Within Groups	121,650	107	1,137		
	Total	122,550	108			
OPenzO5	Between Groups	,000	1	,000	,000	,998
	Within Groups	89,266	107	,834		
	Total	89,266	108			
PPO1	Between Groups	1,098	1	1,098	1,072	,303
	Within Groups	109,617	107	1,024		
	Total	110,716	108			
PPO2	Between Groups	,020	1	,020	,021	,884
	Within Groups	100,732	107	,941		
	Total	100,752	108			
PPO3	Between Groups	,079	1	,079	,082	,775
	Within Groups	103,058	107	,963		
	Total	103,138	108			
PPO4	Between Groups	,265	1	,265	,189	,665
	Within Groups	150,542	107	1,407		
	Total	150,807	108			

Source: Author

There are significant differences between the male and female population regarding the statements 'Compulsory pension insurance is excellent (OPenzO1)', 'I expect a good pension which will allow me to live a good life (OPenzO2)', and 'The pension fund is full, and it guarantees secured pensions (OPenzO3)'. There are no significant differences regarding the other statements. The statement that 'compulsory pension insurance is not excellent' was supported by 40.4% of the population, 32.1% have no clear position, while 37.6% believe that the system works in a satisfactory manner.

Table 3. The differences in attitudes among the residents of different age

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
OPenzO1	Between Groups	3,406	4	,851	,567	,687
	Within Groups	156,044	104	1,500		
	Total	159,450	108			
OPenzO2	Between Groups	9,363	4	2,341	1,426	,230
	Within Groups	170,674	104	1,641		
	Total	180,037	108			
OPenzO3	Between Groups	14,122	4	3,530	3,434	,011
	Within Groups	106,906	104	1,028		
	Total	121,028	108			
OPenzO4	Between Groups	2,364	4	,591	,511	,727
	Within Groups	120,187	104	1,156		

	Total	122,550	108			
OPenzO5	Between Groups	3,394	4	,848	1,028	,397
	Within Groups	85,872	104	,826		
	Total	89,266	108			
PPO1	Between Groups	2,888	4	,722	,696	,596
	Within Groups	107,827	104	1,037		
	Total	110,716	108			
PPO2	Between Groups	2,591	4	,648	,686	,603
	Within Groups	98,162	104	,944		
	Total	100,752	108			
PPO3	Between Groups	8,460	4	2,115	2,323	,061
	Within Groups	94,677	104	,910		
	Total	103,138	108			
PPO4	Between Groups	8,676	4	2,169	1,587	,183
	Within Groups	142,131	104	1,367		
	Total	150,807	108			

Source: Author

There are significant differences among the residents of the different age regarding the statements 'The pension fund is full, and it guarantees secured pensions (OPenzO3)' and 'The private pension insurance is absolutely necessary (PPO3)'. There are no significant differences regarding the other statements.

Table 4. The differences in attitudes between employed and unemployed residents

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
OPenzO1	Between Groups	,014	1	,014	,009	,924
	Within Groups	159,436	107	1,490		
	Total	159,450	108			
OPenzO2	Between Groups	1,391	1	1,391	,833	,363
	Within Groups	178,646	107	1,670		
	Total	180,037	108			
OPenzO3	Between Groups	,230	1	,230	,203	,653
	Within Groups	120,798	107	1,129		
	Total	121,028	108			
OPenzO4	Between Groups	1,615	1	1,615	1,429	,235
	Within Groups	120,936	107	1,130		
	Total	122,550	108			
OPenzO5	Between Groups	1,501	1	1,501	1,829	,179
	Within Groups	87,766	107	,820		
	Total	89,266	108			
PPO1	Between Groups	2,563	1	2,563	2,535	,114
	Within Groups	108,153	107	1,011		
	Total	110,716	108			
PPO2	Between Groups	,794	1	,794	,850	,359
	Within Groups	99,959	107	,934		
	Total	100,752	108			
PPO3	Between Groups	4,302	1	4,302	4,657	,033
	Within Groups	98,836	107	,924		
	Total	103,138	108			
PPO4	Between Groups	12,869	1	12,869	9,983	,002
	Within Groups	137,938	107	1,289		
	Total	150,807	108			

Source: Author

There are significant differences among the residents of the different age population regarding the statements 'Private pension insurance is absolutely necessary (PPO3)' and 'I do not have money for private pension insurance (PPO4)'. There are no significant differences regarding the other statements.

Table 5. The differences in attitudes among the residents of the different education levels

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
OPenzO1	Between Groups	26,585	3	8,862	6,753	,000
	Within Groups	104,986	80	1,312		
	Total	131,571	83			
OPenzO2	Between Groups	11,468	3	3,823	2,195	,095
	Within Groups	139,341	80	1,742		
	Total	150,810	83			
OPenzO3	Between Groups	4,717	3	1,572	1,309	,277
	Within Groups	96,093	80	1,201		
	Total	100,810	83			
OPenzO4	Between Groups	3,103	3	1,034	,865	,463
	Within Groups	95,707	80	1,196		
	Total	98,810	83			
OPenzO5	Between Groups	,088	3	,029	,041	,989
	Within Groups	58,233	80	,728		
	Total	58,321	83			
PPO1	Between Groups	4,850	3	1,617	1,465	,230
	Within Groups	88,293	80	1,104		
	Total	93,143	83			
PPO2	Between Groups	2,574	3	,858	,839	,477
	Within Groups	81,843	80	1,023		
	Total	84,417	83			
PPO3	Between Groups	3,224	3	1,075	1,086	,360
	Within Groups	79,193	80	,990		
	Total	82,417	83			
PPO4	Between Groups	8,064	3	2,688	2,272	,086
	Within Groups	94,638	80	1,183		
	Total	102,702	83			

Source: Author

There are significant differences among the residents of different education level regarding the statements 'Compulsory pension insurance is excellent (OPenzO1)', 'I expect a good pension which will allow me to live a good life (OPenzO2)', and 'I do not have money for private pension insurance (PPO4)'. There are no significant differences regarding the other statements.

3 CONSLUSION

H0 hypothesis has been confirmed: Residents are not satisfied with the existent state of the pension insurance system; they believe that the pension fund is empty and that it does not guarantee secured pensions. This means reforms implemented so far were not enough and that they need to be continued.

There are significant differences between the male and female population regarding the statements 'Compulsory pension insurance is excellent', 'I expect a good pension which will allow me to live a good life', and 'The pension fund is full, and it guarantees secured pensions'.

There are significant differences among the residents of the different age regarding the statements 'The pension fund is full, and it guarantees secured pensions' and 'The private pension insurance is absolutely necessary'.

There are significant differences among the residents of different education level regarding the statements 'Compulsory pension insurance is excellent', 'I expect a good pension which will allow me to live a good life', and 'I do not have money for private pension insurance'.

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CREATING AND INTRODUCING NEW PRODUCTS AS A STRATEGY FOR POSITIONING THE INSURANCE COMPANY

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ABSTRACT

The need to build and select an appropriate marketing strategy for introducing new products arises as a result of the insurer's endeavor to position itself well in the market while ensuring survival and development.

Before proceeding with the implementation of the insurance company's new product introduction strategy, appropriate organizational preparations need to be made.

The insurance company's orientation towards creating new products and placing them on the market enables the company to expand its market and business environment, which may result in company growth (development of new markets) or diversification of operations (development of new forms of business).

Keywords: Innovation, new product, marketing strategy, strategy for positioning, insurance company

1 INTRODUCTION

The environment in which insurance companies exist is turbulent as a result of the rapid pace of technological, market, economic and social change as a whole. It affects the shortening of the life cycle of the products (insurance services) offered by insurance companies. Increasingly aggressive competition behavior and the ability to quickly and easily copy a new product that has just appeared on the market, as well as rapidly changing consumer needs and requirements, are encouraging insurers to constantly stream ideas for new products and services.

All these factors impose a need for continuous innovation in insurance services that the insurance company markets as its product (a combination of these). Innovation should be developed into a strategic framework, which will achieve long-term effects. Innovation and new product development are imperative and essential for any insurance company seeking to successfully position themselves in the market while achieving long-term market and competitive success.

The importance of the innovation process and the strategic approach to that process is also emphasized by the risk factor driving the new product. Given the relationship between innovation and the risks it carries, there is a need to consider certain critical factors in managing this process. This will contribute as many as possible to anticipate the risks and reduce the likelihood of market failure of the new product.

Twiss states that in every successful innovation there are seven basic critical factors: [1]

- Market orientation
- The importance of innovation to the business goals of the company
- Sources of creative ideas
- Competency in project selection and evaluation system
- Project management efficiency (stressed control)
- A positive reaction from the innovation company
- Responsibilities and responsibilities of one or more individuals.

These critical factors point to key areas in managing the innovation process. Besides, the absence of one or more of these factors may cause the failure of the market or competitive innovation.

2 PHASES OF THE NEW PRODUCT DEVELOPMENT PROCESS

To insurance companies successfully positioned on the selected market, they must develop new products, invest in quality planning of new products and establish a systematic process for new product development by discovering and encouraging new ideas about products. To create a successful new product, a company must research, analyze and understand its customers, markets, and competition and develop a product that delivers superior value to consumers. This systematic process of new product development goes through the following eight stages: [2]

- Generation of ideas,
- Choosing ideas,
- Concept of development and testing,
- Developing a marketing strategy,
- Business (business) analysis,
- Product development,
- Market research (test marketing),
- Commercialization.

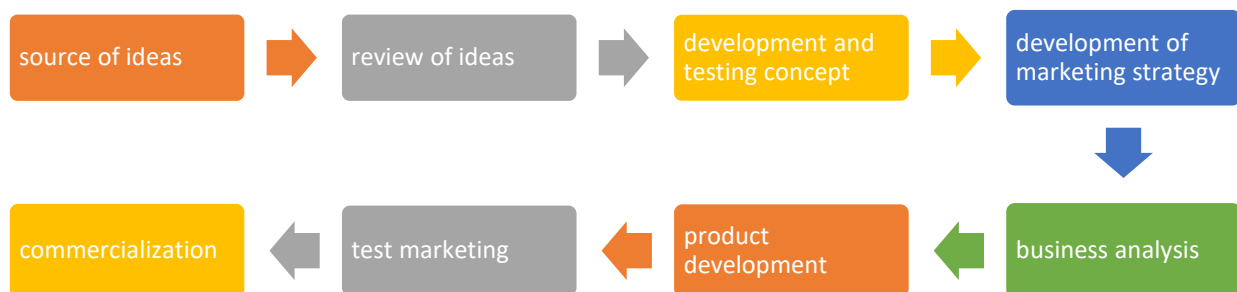


Fig. 1 New Product Development Phases [3]

Figure 1 shows the stages of a new product development process, from the source of ideas for a new product to the commercialization of an already finished product.

The innovative process begins with **idea creation** - the systematic exploration of new product ideas. Insurance companies must generate more ideas to find the best. Internal sources (company employees) and external sources (customers, customers, competitors, distributors and others) are the sources for the new product. More recently, some creative techniques have been used, such as lateral thinking, fostering an exchange of views, harmonizing attitudes, a synergistic method, a brainstorming method, and the like.

By using internal resources, a company can come up with new ideas by exploring ideas about **human resources** within the company and encouraging the development of those ideas. The company can gather opinions from its managers, professional advisers hired by the company, sales agents for police officers, brokers and the like. All employees in the company can contribute to the development of ideas for a new product. In a tumultuous environment and fierce competition, it's time to come up with a new way to innovate and bring new and good ideas to everyone in the company. [4]

Brokers and intermediaries for sales policy as distributors of insurance products are high contributors to a good idea of a new product. They are direct contact with clients and customers with a live and offline insurance service that has problems with client management at insurance companies, but there are suggestions and how to overcome these shortcomings. Every other page, opportunities and new terms of insurance offered with a new product can be over-priced.

Good ideas for a new product can also come from **consumer-buyers**. An insurance company can analyze customer questions and complaints to find new products that better meet customer requirements. The company can also conduct focus group research and analysis to find out about consumer needs and wants.

Customers often create new products, and insurance companies can benefit from discovering these products by including them in their market offering. Customers can also be a good source of ideas for a new product (insurance service) that can expand into the market and extend the life of current products.

Given that the most successful new products are actually the ones that are different from the competition and best meet the demands of consumers or customers, [5] new product development should focus on creating a positive experience for them.

Competition is another important source of ideas for a new product. Companies analyzed promotional advertising and other communication activities to gain insight into their new products. They analyze new competition products, their sales, and decide whether to bring in a new product of their own or to create a new combination of multiple insurance services.

Exploring new product ideas should be more systematic than accidental. After collecting a multitude of ideas, a preliminary evaluation of the ideas is required to reduce the ideas to a reasonable number or to select the best ideas. It is very important at this stage to determine the criteria and the value expression of the relative importance of each factor in ranking ideas.

The purpose of creating an idea is to generate a large number of ideas, and in subsequent stages that number should be reduced. The first phase of brainstorming is to examine the idea to notice good ideas and to get rid of the worst ones as quickly as possible. Product development costs increase significantly at a later stage, so the company only needs to move on with product ideas that will turn it into profitable products.

Many companies analyze the idea of a new product while conducting the appropriate analysis for both the target market and the competition. Market size estimates, product prices, development times, costs, and profit margins are estimated according to a set of general criteria.

The ideas that have passed the previous stages are moving to the next phase - **development and testing the concept**. At this stage, a concept is being developed, which is an elaborate version of the idea presented. Concepts that are created for ideas that are considered to be the strongest for the company are further tested and this testing is usually performed by the customers - consumers for which the product is intended. Concepts can be presented to consumers symbolically or physically. For some concept tests, just a word or a picture description is enough. But a more concrete and physical presentation of the concept will increase the reliability of the concept test. Specifically, some insurance company employees are finding innovative ways to make product concepts be more realistic for consumers. This preliminary testing aims to determine which of the products would have the greatest market success.

Once concepts are introduced to consumers, they can also be consulted on how to respond to specific product features. Many companies routinely test new product concepts with consumers before attempting to turn them into current new products.

The next stage is the preparation of a **preliminary marketing strategy** for the launch of a new product. This strategy involves setting of the preliminary marketing goals, determining the target markets, the way of positioning the product on the target market, planning marketing instruments, and finally, developing a preliminary sales plan and plan of the costs that will accrue in that sales volume. The marketing strategy consists of three sections. The first section describes the target market, positioning of the planned product and sales, market share, and profit goals in the first few years. The second section of the marketing strategy deals with the product price, distribution and marketing budget for the first year, and the third part analyzes the long-term planned sales, profit goals and marketing strategy.

After the management of the insurance company decides on the product concept and marketing strategy, it conducts a **business analysis**, that is, the management team can evaluate the business attractiveness of the proposal. Business analysis includes a review of sales, costs, and profit forecasts for a new product, in order to determine are they are meeting the company's goals. If they are really meet the company's goals, the product can go into the product development phase. In order to evaluate the sales, the company investigates the sales of similar products and surveys the consumer opinions on the similar products. Having in mind the need to calculate the risk range, the minimum and maximum sales for a given product have to be estimated. When sales forecasts have been made, management can estimate the expected costs and profits for the product, including marketing, R&D and financing costs. The company will then use sales and costs results, to analyze the financial attractiveness of the new product.

If a product concept passes the business test, it moves on to **product development**. The R&D department develops and tests one or more versions of the product concept in order to select the one that best suits the wishes and requirements of the customers.

The next step is to **test marketing**, stage where the product and marketing program are introduced into more realistic market parameters. Marketing testing gives agents the experience of selling a product before moving on in a stage of enormous spending which arise during full introduction. This phase allows the company to test the product and overall marketing program - strategy for positioning, advertising, distribution, pricing, brands and budget level.

The number of marketing tests required varies with each new product. The costs of marketing testing can be high, and take time, which can allow the competition to gain benefits. When the costs of developing and presenting a product are low or when management is already convinced of a new product, the company may not even perform marketing testing. When introducing a new product requires great investments or when management is unsure of a product or marketing program, the company invests more in a marketing testing. The costs of marketing testing can be high, but they are often small compared to the cost of making big mistakes.

The marketing test provides management with the information they need to make the final decision on whether to launch a new product or not to do that. If a company continues to commercialize - bringing a new product to the market, the company will be faced by huge costs. The company launching the new product must first decide on the time and place when and where it will launch its new product. Companies that have the capital and capacity to launch new products across national and international distribution will develop the planned market over time. Small companies can penetrate attractive cities and regions one by one, while large companies can quickly introduce new models in several regions or throughout the whole domestic market. Companies with international distribution systems can introduce new products across the global space.

When a company prepares a detailed version of a particular idea for a new product, then the company prepares **to commercialize the product**. All product advantages over competitor product characteristics were reviewed and a new product will be tested. The task of the company is to develop the new product into an alternative product concept, to investigate how attractive the concept is for the consumers, and to choose the best concept.

3 ORGANIZATION OF NEW PRODUCT DEVELOPMENT PROCESS

Many companies organize the process of developing a new product in the correct order, starting with the idea and ending with commercialization. According to this successive approach to product development, one department in a company works individually to complete the stages of the process before transferring a new product to the next department and phase. This sequential step-by-step process can help control complex and risky projects. But it can be more dangerous. With rapid changes in highly competitive markets, such slow but reliable product development can result in product shortages, loss of sales and profits and market downturns.

In order to get new products to the market quickly, many companies bring a fast, team-oriented approach called simultaneous (or team-based) product development. [6] According to this approach, the departments of the company work together, switching the steps in the development process to save time and increase efficiency. Instead of handing the new product from department to department, the company organize a team of people from different sectors, and the team work with the new product from the starting point to the finishing phase. Such teams typically involve more experts from a variety of departments within the insurance company, for example from marketing, finance, legal department, customer relations, human resources department etc.

The main corporate management gives the team for product development general strategic directions, but not quite clear ideas about the product and business plan. In the subsequent process, a one-phase blockade can seriously slow down the entire project. In the simultaneous approach, if one functional area encounters an obstacle, it tries to resolve them, as the team goes on.

Simultaneous approach has certain limitations [6]. Super rapid product development can be more dangerous and expensive than slower, regular and consistent approach. However, it often creates increased organizational tension and confusion. The company must also take care about that rushing in a process of introduction of some product to the market can have a negative effects on quality - the goal is not just to create products faster, but to create them faster and with a better quality. Despite these shortcomings, in fast-changing industries that face with increased product life cycles, the reward for development of fast and flexible products transcends risks. Companies that get new and improved products faster than their competitors often get a dramatic advantage over their competitors. They can respond more quickly to new consumer demands and charge higher prices.

Each of the stages of the innovation process must be carefully approached and well elaborated. In fact, this is the basic intent of the strategic approach of this process, which is very important for every company.

4 CONCLUSION

Innovation can be risky. Therefore, prior to the development and testing of a new product, some preparation and research must be undertaken to facilitate the stages of new product development. While the idea of a new product may be good, the company can still have some misjudge about the market (for example: the size can be overstated). The new product also can be not properly designed or may not be properly marketed, highly regarded, or poorly advertised. Sometimes the cost of developing a product may be higher than expected, and a company in the market may face much stiffer competition than expected.

Regarding the research and development of a new product, it must be emphasized that in modern business conditions, the race for innovation becomes an imperative for any company that plans its business in the long run. It should also be stressed that an innovative process inevitably follows a high degree of risk and can lead to the failure of a company launching a new product.

Therefore, there is a need to consider all the critical factors of the innovation process and its strategic implementation. Only a systematically planned and implemented strategy for introducing new products can contribute to the continuous and uninterrupted growth and development and successful positioning of the insurance company on the market.

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ELECTRONIC BUSINESS AND INSURANCE

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ABSTRACT

The subject of this paper is the analysis of the importance of information and communication technologies for the development of business of insurance companies, and in particular the distribution of insurance products that rely on information and communication technologies, especially the Internet. Internet marketing is a special place here as the most common form of Internet usage among insurance companies.

Redesigning business processes to comply with e-commerce principles will become commonplace in the near future even with smaller businesses, and once conservative financial institutions, such as insurance companies have always been, are increasingly turning to e-Insurance, which despite the high costs for its introduction and initial problems in its functioning, much is expected in the near future, and in many countries it is becoming more and more accepted, to a greater or lesser extent.

Mobile communications bring about the biggest changes in e-commerce. Already, their widespread availability among consumers offers great opportunities for service providers. Insurance companies in our country currently offer limited services through this specific communication channel, but in the very near future we can expect a change in this field as the preconditions for such a thing already exist in Serbia today. This is supported by the information that certain insurance companies in the surrounding countries have already activated their first smartphone applications, and similar banking applications are already operating in Serbia.

Key words: insurance, marketing, distribution, e-commerce, e-insurance, internet marketing, mobile communications.

1 INTRODUCTION

The globalization trend, initiated in the late 20th century, continues in the 21st century. It is a complex, multidimensional process present in all sectors of the economy and society. [1] The paper deals with the process of selling insurance services, as the most important business area of every insurance company. This process is viewed from the point of view of marketing and distribution where the importance of e-commerce of insurance companies is emphasized, especially the possibilities of using the Internet.

Emphasis is placed on e-commerce in insurance and on potentials in electronic distribution, as well as on the implementation of new software solutions in marketing and distribution management, primarily on the implementation of CRM applications.

Finally, the present reach of domestic insurance companies in the field of Internet distribution of insurance services through "web shop" solutions is presented.

2 E-INSURANCE

Electronic insurance or e-Insurance could be broadly defined as the application of the Internet and information and communication technologies in the distribution or generation of insurance services.

e-Insurance in the narrow sense could be defined as obtaining insurance coverage in such a way that the insurance policy was requested, offered, negotiated and eventually concluded via the Internet, or as it is most commonly referred to today as "online".

Although the delivery of insurance policies, their payment, or the processing of claims, for example, can be done online today, most countries do not currently have adequate legislation or a sufficiently developed information and communication infrastructure to facilitate the rapid development of e-Insurance in those countries. But there are shifts in this area in many parts of the world, so we have a steady improvement in insurance-related legislation, and one part of that regulation is about regulating payments and delivering insurance online. [2]

To enable faster development of e-Insurance, it is necessary to:

- Provide conditions for more profitable operations of insurance companies by reducing administrative and management costs by speeding up certain business processes, improving information management and facilitating better interconnection between services within the company;
- Provide conditions to reduce the cost of insurance coverage, as companies will then be able to retain the fees they otherwise paid to agents and intermediaries, as e-Insurance enables them to conclude insurance policies directly with policyholders.

Part of the revenue generated by saving on commission and brokerage fees, insurance companies should invest in marketing and attracting clients online.

It should be noted that e-Insurance is much less developed compared to other forms and types of e-business, such as e-Commerce, e-banking or e-marketing. The reasons for such a situation should be sought in the following facts:

- The nature and complexity of most insurance services is such that, with a few exceptions, they are not particularly suitable for mass non-mass distribution such as online sales,
- the way premiums are calculated in most of these services is not sufficiently standardized and has its own specifics,
- it is necessary to exchange confidential information and make payments online through the Internet, which is still widely viewed by a large number of people,
- insufficiently clear legal regulations, and in particular by-laws, which would protect consumers who purchase goods and services over the Internet, although there is some progress in this area, but with insufficient speed,
- the majority of Internet users belong to the younger generation of residents, who do not otherwise belong to the largest group of insurance service users,
- a small number of types of insurance are suitable for distribution via the Internet, which are primarily non-personal or have a simpler and more standardized method of calculating the premium, such as compulsory motor third party liability insurance, household insurance or travel health insurance. [3]

On the other hand, we have insurance types where the calculation of premiums is based on the nature of the person being insured, which requires an individual approach to each insurance contract as is the case with life insurance, or we have insurance types where we have to appreciate a number of factors that affect premium calculation as is the case with industry property insurance. [4]

In both cases, these are types of insurance that are not suitable for distribution over the Internet, at least at this level of development of insurance services and the level of Internet usage culture as we know it today. The solution to this situation should be sought in setting up accurate databases, standardizing the calculation of premiums and streamlining insurance programs and the manner in which insurance contracts are concluded.

2.1. Models of Electronic Insurance Business

Increasing competition is pointing to the need to seek new channels of sales of insurance services, but also to the need to improve the services offered by all participants in the insurance market. Therefore, the use of electronic business as a modern form of business organization, which involves the application of information technology and especially Internet technology, is a prerequisite for better management of business processes of insurers.

A narrower term than e-business is e-commerce, which refers to the exchange of goods and services between buyers, intermediaries and sellers. Despite the specifics of the insurance business, whose primary function is a quality risk assessment before underwriting, and fair and timely compensation for damage if it occurs, the marketing and sales aspects of insurance business most often influence the choice of e-business model, which thus boils down to e-commerce.

The analysis of the impact of e-business on insurance business has shown that this technology can lead to a rapid increase in the number of policyholders, a significant reduction in the cost of purchasing insurance, the improvement of the service offered and, consequently, an increase in customer satisfaction. E-commerce in insurance, separated from the entirety of e-business, cannot independently satisfy all the above requirements. Therefore, insurers must have a quality information system that, while supporting day-to-day business, guarantees content that enhances relationships with the customers of their products, but also with business partners. The organizational aspect of introducing the Internet into business application is especially important. With the increase in the number of Internet users, the number of potential users of e-business insurers is growing, which most often requires a new internal organization of

business. Selling insurance online is expected to increase premiums, but also opens up the possibility of expanding beyond the territory of our country.

The so-called. hybrid insurance organizations that, in addition to physical infrastructure and human potential, conduct a segment of the business over the Internet. These organizations are most often created by the purchase of an Internet insurance organization by a classic or classic insurance organization only developing their business and on the Internet. [5]

The e-business models applicable in the field of insurance are:

- websites of insurance companies,
- windows for insurance services and
- electronic self-service.

Today there is probably no longer an insurance company in the world that does not own a website. The content of the website relates to basic information about the insurance organization, the services that make up the offer package, as well as details about the method of contact. Most insurance organizations use the Internet in its simplest form - to display the information provided and to receive e-mails, while communication with this means is quite underdeveloped, which implies the possibility of concluding insurance. [6]

In order to create an optimal website for insurance companies, it is necessary to establish certain strategic goals (eg improving communication with existing and potential policyholders, attracting new policyholders, etc.), ensure easy access and loading, determine the accuracy of written content, create quality content supported high level of graphic design, establish the appropriate form of marketing incentive for the purpose of interaction, constantly innovate the site and quantify the results.

One of the weaknesses of online sales is the electronic turmoil or chaos that prevails in the electronic markets, as a large number of websites and information are offered, and potential policyholders can get into a state of frustration and confusion with significant time consuming.

This produces an invisibility of many places or insufficient retention of potential policyholders. In order to remedy these weaknesses, there is a possibility to establish a recognizable window in which visitors can find all the necessary information related to insurance business. This attracts the attention of potential policyholders, who are familiar with certain types of insurance services and increases the likelihood of insurance coverage.

Electronic self-services are places where independent brokers provide prospective policyholders with insights into the amounts of insurance premiums by type of service of different insurance organizations, to allow price comparisons. In addition to information of a quantitative nature, information may be found on these sites that more fully describes the insurance services offered. [6]

2.2. CRM in insurance companies

CRM provides insurers and decision makers with the purchase of insurance services information from all business areas and creates a virtual space where agents, policyholders and insurance organizations work together. This enables interaction with policyholders through any business channel, while providing the tools and data necessary to evaluate the value of each contract.

It may be that the same user will use different channels depending on the situation. The CRM solution in the case of insurance organizations is designed so that all the functions required by policyholders and prospective policyholders can be performed using an existing communication channel (Call Centers, Internet, Agents, Affiliates).

The Customer Interaction Center also provides insurance companies with good technical support for e-mail, fax and letters, as in the traditional way of communicating by phone. This means that customers can be offered a contact center that has all the necessary up-to-date information, allowing for optimal service delivery. CRM enables full management of insurance premium amounts and insured claims, which is designed so that all channels for contacting policyholders can be used. In other words, not only is it possible to contact the agents at the Call Center or the field insurance agents with the insured, but there is also the possibility of establishing mutual contact between the insured through the Internet. An application created in this way can be put directly into the work process, or sent for further processing.

If proper adjustments are made and sufficient input is provided, it is possible to directly send a request to the policy maker for the policy making, thus completing the complete procedure at the point of sale. [6]

2.3. Implementation of CRM solution

In many existing CRM applications, sorting is a time-consuming process, and it can be even harder to determine the best deployment solutions. The CRM environment changes almost daily, as various types of merger and acquisition activities take place on a daily basis. However, this market is expected to consolidate in the sense that CRM application vendors will extend the functionality of these products in terms of improving personalization and content management at the customer's disposal.

At the same time, implementing CRM does not mean gaining benefits not only from the use of advanced technology, but also because of the strategic infrastructure built for successful e-business. Therefore, CRM software will continue to evolve from specialist ebusiness support solutions.

As a result, e-commerce software vendors have already expanded their software platforms by incorporating CRM capabilities into them. These capabilities are still modest and require knowledge of the use of many different systems to realize them.

Paying attention to the CRM tools needed to deploy customer service in insurance organizations becomes crucial as they seek to fully understand the client's business needs. Do you simply want to keep contact information from the client and find out his or her area of interest when using one of the multiple communication channels? If the communication channel used is prioritized for this reason, most CRM products can be managed. Such an approach limits the company's ability to pay more attention to its customers during their access to content and self-service.

Often, insurance organizations are asked for even more advanced features, such as content publishing, personalized presentations, and the ability to allow users to self-access an archive where they can find all the documentation they need in chronological order. Today, most CRM applications do not propose a sophisticated way of offering leading content management products. This is understandable when CRM marketers are more focused on supporting new communication channels, such as wireless, than managing content. [8]

As insurers are focused on providing the best possible customer service, they should create an image of developing their strategic e-business in this direction. Implementing such a CRM application is just one of many applications where the same content and data can be crucial to meeting a client's needs. Therefore, many insurance organizations do not yet place their customer service in the same context with their overall e-business strategy, and they should. [9]

If an insurance organization is serious about integrating customer service into its e-business strategy, it should be prepared to integrate various technologies with its CRM solution. For example, e-business systems contain enterprise application management and integration (EAI) systems, which are all important parts of an e-business architecture, while CRM packages do not provide this range of capabilities, but many perform better in their fields. In the coming period, there will be an increase in supply in the e-business technology market, and thus the supply in the CRM product market will improve.

3 THE INTERNET DISTRIBUTION OF INSURANCE IN PRACTICE

The Internet, as a distribution channel in insurance, has a bright future and great potential for further development, but is currently underdeveloped in most countries, and especially in the insurance market in Serbia.

There are many reasons for this, and the most important are:

Monopoly on the electronic payment market and the privileged contract of the only electronic payment service in Serbia and one insurance company, as well as the high price of this service:

- Insufficient availability of quality (broadband and mobile) Internet access,
- Poor solvency of the younger population, who is more inclined to use electronic services,
- Technical limitations on how most insurance services are charged and contracted,
- Insufficient investment by insurance companies in this distribution channel.

The results so far in the distribution of insurance over the Internet in Serbia are modest, but are constantly growing. With the improvement of the overall economic situation in the country, one can expect increased interest in this channel of distribution both on the insurer's side and on the insured's side. This will certainly be aided by the development and deployment of many Internet services that do not have direct security touch points, such as eGovernment and the various services and services being introduced:

- filing taxes online;
- ordering personal documents,
- scheduling meetings in different state administration bodies,
- scheduling medical examinations, etc.

The popularization of various Internet services in different areas of life will inevitably lead to the requirements of potential policyholders for contracting various insurance services through the Internet, and it is certain that insurance companies will compete with each other to fully meet such needs.

So far we are in Serbia at the beginning of introducing such services, so the demand for services via the Internet is very modest. The fact that the three insurance companies offered such a service is more a matter of prestige and marketing appearance, than real needs in the market and economically justified investment.

It should be noted that not all insurance services are suitable for contracting and selling online, such as traditional property or life insurance, but there is no reason why you should not offer accident insurance or auto liability insurance to the Serbian market, which is already common in some other markets in the region, such as in Slovenia or more recently in Croatia.

Due to the change in the way of contracting auto liability insurance and the introduction of a central database at the Association of Insurers of Serbia, we can expect the distribution of these policies online in the near future. This would be a very significant step for the popularization of the Internet as an insurance distribution channel in Serbia.

3.1. The Internet as a Communication Channel in CRM

In addition to selling insurance services, the Internet can also be used to exchange claims related information. Clever and proactive claims management reduces costs and improves the process of providing services to policyholders, while providing the insurance officer with direct access to various services (eg for repair and maintenance of machines and cars), thereby providing insurance organizations and their partners with a broad opportunity to offer assistance to their clients.

The Internet is not just a new means of product distribution. It is thought that the Internet will do for the service sector what the product lines have done for the industry. The claim that the Internet is the final solution for the distribution of insurance products is far from true. It is true that the Internet is the answer for expanding the distribution channel of insurance products, but still only for the simplest type of product for which no further explanation is required from insurance agents or financial advisers. The role of these professions must by no means be neglected. The fact is that consumers will always choose their own distribution channels depending on their personal affinities and needs. In the world of the Internet, no one can own a consumer, because today they have an enviable level of awareness and awareness of what they want. The good side of the Internet is that it provides the driving force to build complex business models that integrate all distribution methods, thus facilitating direct processing in the administration of insurance policies and claims management and thus greatly reducing business costs. All leading global insurance companies are investing billions of dollars on e-commerce strategies. The most successful companies will be those that make the most of these investments and direct them in the most efficient and effective way. For now, it has emerged that the Internet should be used to reengineer business processes, to scale up and leverage existing distribution channels, and then to create new distribution models.

3.2. Selling insurance through Web Shop in Serbia

Web Shop is an online store. It is essentially an Internet application that allows any person with Internet access to order and then purchase, ie. pay for the goods or services ordered, which will then be delivered to the desired address.

Due to its nature (intangibility), selling services through the Web Shop is much more gratifying than selling the goods. This is also an advantage of insurance services, but not all of them, but only those that meet certain criteria, such as those that are not overly individualized. Several types of insurance meet these criteria:

- Travel health insurance,
- Home and apartment insurance,
- Travel assistance,
- Boat insurance,
- Accident insurance (accident),
- Liability insurance.

4 CONCLUSION

Considering the current level of development of the insurance industry in Serbia, it is quite realistic to expect a drastic increase in the volume of business in the future. This will require some changes in the performance of insurance companies in almost all areas, and the biggest change will require a relationship with clients, potential policyholders. This change in customer relationship will go in two directions: individualizing insurance services and adapting to their individual needs on the one hand, and mass distribution of high standardized insurance services through electronic distribution channels on the other. In both cases, the distribution of insurance plays a key role in the development of the overall business, but also of the insurance companies themselves.

For this reason, direct insurance sales channels, the most important of which are bank insurance, agents and intermediaries, will remain an irreplaceable distribution channel, and electronic channels will never completely replace them for individualized insurance services. On the other hand, we have electronic distribution channels, and the Internet as the most important and promising among them, much to be expected as they can offer high coverage and low distribution costs, although the costs of their introduction and initial exploitation period are significant.

The touch point of these two diametrically opposite ways of distributing insurance is CRM (Customer Relationship Management), which should give direct sales channels greater coverage, while adding electronic channels to the dimension of individualization when interacting with policyholders. Quality and comprehensive CRM systems are not over-represented in insurance companies in Serbia, primarily because of their high cost and long-term implementation, but the benefit of using them is obvious, so their introduction is inevitable.

We have already said that the Internet as an insurance distribution channel has great potential, but it is hardly used at all by domestic insurers, primarily due to economic (number of paying customers belonging to a specific segment) and technical reasons (widespread Internet access), but there are positive changes from year to year. For this reason, only certain insurance companies (Delta Generali, Danube and Uniqa) have allowed their clients to purchase insurance online. The sales results of these distribution channels are modest and it is unlikely that they have justified the investment so far, but their introduction was certainly a matter of prestige, so we can partly view them as an investment in marketing and promotion.

The introduction of electronic distribution channels in insurance, especially the Internet, reduces the distinction between "small" and "large" insurers, but also between "small" and "large" clients, so competition among Internet insurers can be expected to lead to genuine trade war, in a positive sense for policyholders, but we will probably wait for some time to develop such a situation in the Serbian insurance market.

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THE IMPACT OF PEER TO PEER ECONOMY ON TOURIST DESTINATION MANAGEMENT

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ABSTRACT

The name of the article is "The Impact of Peer to Peer Economy on Tourist Destination Management" the topic was chosen by author because of two important reasons, the first of them is the fact that peer to peer economy is standing on invisible border between the shadow economy and the one that is officially declared. The second fact is the importance of travel industry for the development of national and mainly regional economy, bringing taxes, employment and development. For some tourist destination the role of tourism is indisputable, but in some phases of life cycle of a tourist destination the number of tourist could bring more negatives impacts than the positives ones. Especially peer to peer economy appearing in accommodation services it means accommodations services offered by platforms like Airbnb could increase the range of accommodation options that are already unbearable within the tourist destination and unacceptable to the indigenous peoples, which can lead to a reduction in the attractiveness of this tourist destination for other visitors with the other result of tax cuts, loss of competitiveness and tension in respective industry.

The aim of the article is to make analysis of the impact and possible limits of development and usage of peer to peer economy (sharing economy) in travel industry.

Keywords: Airbnb, Legislative background, Peer to peer economy, Tourist destination management.

1 INTRODUCTION

Without any doubt, tourism is an important part of the regional development of many regions of the world, and in many cases it is a significant part of the total gross domestic product (GDP) in many countries. History of modern tourism – mass tourism begins in 60's of the last century and has passed an incredible development which was favoured by increasing economy – it means the increasing purchase power of consumers in most countries of the world and the spreading out of aviation transport and all the services that are needed for the development of tourism and they are mentioned in realization factors. Increased interest in travel was reflected in the growth of various tourist destinations, where most of them managed to maintain a high attendance rate from 60 to the present. With the development of low-cost forms of transport and, above all, digital platforms, which make it very easy to obtain the additional element necessary for the realization of the holiday, and that is accommodation. However, the uncontrolled expansion of the range of accommodation services over the past 3 years through digital platforms such as Airbnb is beginning to bring many negative impacts, whether in the form of money leaks, unequal competition between traditional accommodation providers and providers through digital platforms, but above all causing an uncontrolled influx of tourists to the destination tourism is in many cases no longer acceptable in terms of sustainable tourism development.

2 THE IMPACT OF PEER TO PEER ECONOMY ON TOURIST DESTINATION MANAGEMENT

This chapter will specify the theoretical background necessary to understand peer-to-peer economy, tourism, tourism destinations and sustainable development

2.1. Definition of tourism

Tourism is the human activity which is based on the move of people and spending their leisure time far away from the place they normally live with the aim to relax, visit interesting places, make shopping, visit some cultural or sport event etc. (Ryglóvá, 2011).

For the development of tourism some factors must be kept for the sustainable development of tourism activities in the area. These factors can be divided in 3 main groups:

- selective factors (security of the place, image of the destination, etc.)
- localization factors (are telling us why to travel there, what can be seen there, etc.)
- realization factors (the possibility to eat, sleep in the destination how to get there as for transport and how to move within the destination). [1]

2.2. Tourist destination

The concept of destination can be understood in general terms as routing, destination, place visited by a traveler. From the point of view of tourism, we can understand the destination in the narrower sense as a target area in a given region, a typical significant offer of tourist attractions and tourism infrastructure. In a broader sense, these are countries, regions, human settlements and other areas that are characterized by high concentration of attractiveness, developed services and other tourism infrastructure, resulting in a long-term concentration of visitors. For international visitors, the destination is either the entire country visited, or its region, or city. In some countries, the territory is divided into tourist, historical or administrative compact destinations. [2]

The tourist destination's attractiveness is largely influenced by the fact that tourism is an open system, see Figure 1. The tourism system, which is characterized by a high level of competition. In addition to external influences (political, economic, natural), the level of attractiveness of a travel destination is limited by the level of fulfillment of the prerequisites for the development of tourism (localization, implementation and material technical prerequisites for development) and well-implemented destination management and the resulting marketing presentation of a tourist destination for potential visitors.

As mentioned above, one of the preconditions for the successful development of a tourism destination is the well-established destination management. Destination management can be seen as a management and organization system in a destination (city, region, region) based on collaboration between service providers, ie commercial entities, non-profit organizations, and public institutions. The basis of destination management is communication and marketing management. In the city, destination management can be applied to two specific target groups either tourists or investors. [3]

Destination management oriented on tourism and tourist is implemented by cities or regions that have the prerequisites and internal resources for the development of a particular type of tourism, such as urban knowledge, cultural cognitive tourism, recreational tourism, sport tourism, congress tourism, health oriented tourism, educational tourism, rural tourism, incentive tourism, religious tourism, etc. According to the profile of the city and its offer, the strategy of tourism destination is created - cities with a comprehensive attractive offer of tourism products and services focus on external communication policy (promotion) cities with the prerequisites for tourism development, but with underdeveloped or inadequate supply, do business support in tourism or create specific products or product packages.

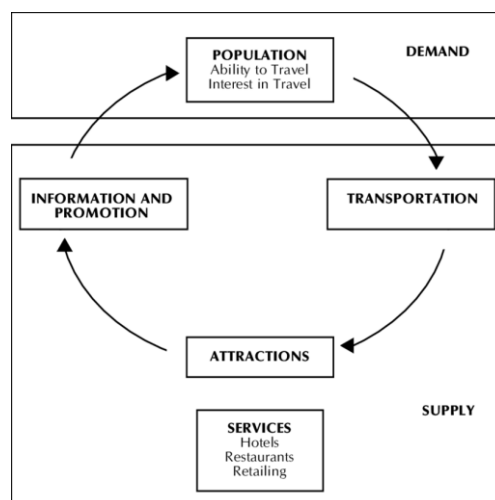


Fig. 1. Tourism system (Stacy &Crompton, 2019)

2.3. Sustainable development of tourism destination

Sustainable tourism can simply be defined as a Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities. But considering the topic of sustainable development complex issues the conceptual definitiv should be mentined.

Conceptual definition consist in sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability. It's a must to:

- Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
- Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary.

Sustainable tourism should also maintain a high level of not only tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them [4].

Without proper management of tourist destination development respecting sustainable development and lifecycle of destination (Figure 2 Lifecycle of Tourism Destination) the uncontrollable achievement of critical range of elements of capacity could cause significant problems like reducing the attractiveness of a tourist destination for potential visitors, but also the aversion of the locals to the visitors of the destination.

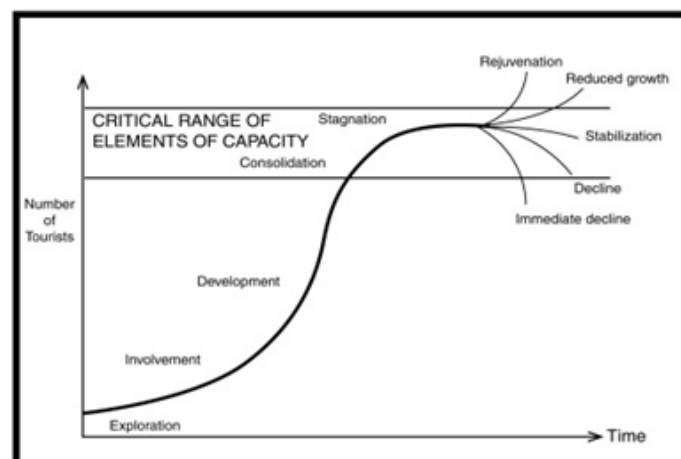


Fig. 2. Lifecycle of Tourism destination (Butler, 2006)

2.4. Peer to peer economy and its impact on tourism destination

The concept of peer to peer economy, in very simple words, is based on the fact that the consumer is preferring to share long lasting services or goods that he/she needs via digital platforms than to buy them and be owner of them. [5]

The activities of peer to peer economy can be seen in many different areas of productin but especially in the sector of services like:

- accomodation servicies,
- transport servicies,
- financial servicies,

- musical industry
- education
- human labour etc.

Like in other areas of human activities there are some advantages on consumers' part like on the part of the provider of services. In peer to peer economy a very often mentioned advantage for consumer is low price. This low price is the result of the basic principle of sharing economy and it's based on the two big advantages on providers part like the tax freedom and easy way to start operating on the market of sharing economy.

If the activities of providers are meeting and respecting the whole concept of sharing economy it means me as a provider " I am offering services and goods that I buy for myself but in the time when I do not use them I decide to offer them to other people without charging them" it means that my activity is legal and both provider and customer are having benefits from this. But the problem of the sharing economy is that many providers are breaking the rules and the principles of sharing economy and they are buying goods and offering services with the aim to make profit for themselves. In this case they are making their business in the area of grey economy, because they do not pay the taxes and do not meet requirements that are given by laws of the country. [5]

3. OBJECTIVES OF PAPER, RESEARCH METHODOLOGY

The main objective of the presented paper is to analyse the impact of activities of peer to peer economy on tourism sector especially on tourism destination and its sustainable development. The objective of the paper is to present basic knowledge of selected impacts of peer to peer economy on tourist destinations and their sustainable development. During the process of writing this article the different methodology was used. First of all the analysis of literature sources were made to elaborate the brief theoretical background. To reach the aim of this article in the final chapter the methods of analysis of secondary data and field research were made.

4 CONCLUSION

The impact of peer to peer economy on tourism destination can be seen from very different point of view. The author will take in consideration the money leak for town authorities caused by the presence of digital platforms offering services in tourism sector, disruption of the destination's life cycle, local people's aversion to the uncontrollable influx of tourists.

A. MONEY LEAK FOR TOWN AUTHORITIES

As for fighting the illegal accommodations' providers- as a necessary consequence of the expansion of digital platforms offering accommodation - two different attitudes are shown on example of two cities that are considered as highly visited in Europe – Prague and Barcelona.

As for the Czech Republic including the Prague there is one actual problem that the providers of AirBnB services have to face in the Czech republic – the electronic revenue records. This fact is complicated little bit the situation with offering and providing accommodation services, but the truth is that the most of electronic revenue records will not eliminate the problem of not paying local taxes and it doesn't solve the problem of offering the accommodation out of the rules for peer-to-peer economy. But the change is about to come with the new law. The law will extend the obligation to pay local fees to all accommodation units used for housing. It's one of the possible solution but the question is if it's enough, considering the fact that with better control, which is possible thanks to digital trace of every booking. The estimated money leaks (taxes, fees) is estimated to 12,5 mld Euro. [5]

The situation in Barcelona is totally different. From 2015 all accommodation providers including those having its offer on AirBnB must have license. The city has stopped issuing licences and many existing licences in the most heavily touristed areas such as Ciutat Vella (the old city) will not be renewed when they expire. After a hotline for reporting illegal flats opened the number of calls from the public rose from 39 in 2015 to 2,784 a year later. [6]

Even so, its rapid growth has aggravated city authorities who slapped a 600,000-euro (\$644,160) fine on Airbnb in November for advertising what they deemed to be illegal room rentals. Barcelona accused the company of posting 3,812 unlicensed rentals, a practice the city's Mayor Ada Colau described as intolerable. Airbnb said it would appeal the fine (Burgen, 2017).

The city has doubled from 20 to 40 the team of inspectors who roam the streets seeking out illegal rentals, armed with apps that reveal at a click whether properties are legal or not. By next year their number will have risen to more than 100. Cross-referencing licences with property advertised online, they identify rogue apartments which are then ordered to close down. Owners – when they can be found – face fines of up to €60,000. [6]

B. DISRUPTION OF THE DESTINATION'S LIFE CYCLE

Each tourist destination undergoes a natural evolution that is reflected in the different stages of the tourist destination's life cycle as periods of growth and decline over time in continuous cycle of exploitation, involvement, development, consolidation, decline, and rejuvenation. The individual phases reflect the attractiveness of the tourist destination, which is expressed by the number of visitors, the number of visitors is then naturally regulated by the amount and level of tourism services offered, such as transport, catering and accommodation services. In advanced tourist destinations, the conditions for the further development of a tourist destination with respect to the sustainable development of the destination are strictly monitored. The supervision of the tourist destinations authorities also aims to control and regulate the number of offered bed capacities in the tourist destination. However, with the advent of digital platforms offering accommodation services, regulation and oversight of the number of bed capacities offered is difficult, because not all accommodation offered through digital platforms can be considered legal and therefore the actual number of tourists is difficult to estimate. Larger, in many cases, an unbearable number of tourists leads to the saturation of the travel destination and to the emergence of local people's aversion to visitors.

C. 'TOURISM-PHOBIA' - LOCAL PEOPLE'S AVERSION TO THE UNCONTROLLABLE INFLUX OF TOURISTS

Tourism-phobia is the fear, aversion or social rejection that the local residents feel in a destination towards the tourists generally due to the bad planning of tourism policies or the loss of control over the amount of tourists whose exploitation causes the destruction of the social fabric and tends to lead to a decrease in the local quality of life.

The tourism-phobia can be seen in Barcelona, Rome, Venice, Palma de Mallorca, Berlin or some areas of Southeast Asia where citizen rebel against tourist. The reason for their rebellion is simple in their point of view tourism is a multi-million euro industry, however the high volume of tourists can sometimes result in problems of coexistence, causing a rise in the price of rent, destroying the "local fabric" [7]. The clear example of exaggerated tourism is Spain. This country received more than 82,8 million tourists in 2018, with growth exceeding 35% in the last 5 years [8]. Touristification refers to the impact of the dense influx of tourists on the commercial and social fabric of certain neighborhoods. There is a lack of a more humane type of tourism which could explain the collapse in daily life as a reset of the tourism industry.

One, but not the only one negative impact of such tourist interest is an expulsion of the local population due to the pressure of the tourists. A tourist rental can be up to 4 times more profitable than a conventional one. This increases daily living costs. Degradation of the ecosystem and natural areas, prostitution, traffic, excess noise. Low, seasonal and unstable wages, acculturation, loss of calm and tranquility. Crowds of tourists descending from cruises and completely filling the center of cities in which they spend only a few hours. The "neighborhood irritability indexes" (BBC, 2016) are raised, making the phenomenon one of the main local concerns. Those indexes can be divided in 5 stages euphoria, apathy, annoyance, antagonism and surrender) of irritation of the local population experiencing the tourist influx. The tourists' answer varies from graffiti saying „Go home tourists“ (The Independent, 2017) through neighborhood protests to acts of sabotage.

The solution to reduce the negative impact of a shared economy on tourist destinations and their sustainable development is primarily a matter of dialogue between all stakeholders - government, tourism development authorities, tourism service providers as well as tourists. Digital platforms and their functioning within the economy is another necessary development phase of the world economy, a great challenge and a challenge for all stakeholders will be to find a way to bring digital tourism services platforms under the control necessary to maintain equal competition in the market tourism, but also to provide the basic preconditions for sustainable tourism development and, above all, to prevent tourism-phobia from growing by the locals towards tourists.

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VISITORS HANDICRAFT BUYING PATTERNS THROUGHOUT THE SARAWAK REGATTA

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ABSTRACT

This research is about the handicraft buying patterns of visitors throughout the Sarawak Regatta. The research was carried out by focusing on three objectives which is to identify visitors' perceptions of handicrafts; to study the factors that influence visitors' making decisions when buying handicrafts; and to analyze visitors' perceptions of handicraft sold throughout the Sarawak Regatta. The research method used for this study is quantitative, where questionnaires were distributed to visitors at Waterfront, Kuching. Results from data collected and analyzed have shown that the handicrafts' motifs or patterns sold during the Sarawak Regatta attracted visitors to buy them. In conclusion, this study will help handicraft entrepreneurs and future researchers as their reference.

1 INTRODUCTION

Sarawak Regatta is an annual event held at Kuching Waterfront. Such big events had always been main attractions for tourists and visitors to come and for this, handicraft entrepreneurs will seize the opportunity to sell their product as tourists from overseas are interested in buying them.

It is important to observe visitors' buying patterns towards handicraft which is different according to their needs and preferences. Their buying pattern is widely affected by their financial spending on other needs which include accommodation, transportation, food and beverage, recreation and shopping. According to [1], shopping is considered as a must when visiting a place as to some people, they find shopping as an interesting activity. Therefore, handicraft entrepreneurs should ensure the longevity of their business life to satisfy customers' needs and expectations.

2 LITERATURE REVIEW

[2], states that a study on actual purchases is considered complicated as buyers have different patterns and buying attitude that differs, based on its segmentation. They further explained that the buying attitude of a consumer is determined by the intention to behave as such, while intention is determined by action. However, measured intention is not a good predictor to behavior because intention takes time before the action is taken.

[3], visitor refersto the number of consumers or visitors. The number of visitors will affect the amount of cashflow going out which is available in visitor analysis. There are a lot of challenges whichdepends on the annual budget estimated basedonarea visited. Visitors will usually go on holiday in their place of intereststhat provide them with tourism resources such as development products, marketing, services and delivery services.

[4], states that handicraft is the making of products that utilizes hand and product-making skills, either with or without the use of mobile equipment.

[5], define handicrafts as any artistic product that has traditional cultural and artistic attraction.

3 RESEARCH METHODOLOGY

The methodology for this research is quantitative where questionnaires are distributed to collect data. The questionnaires were distributed among the visitors throughout the Sarawak Regatta at Waterfront, Kuching. As the regatta was a week-long activity, the data collection was arranged during the evening time where most of the regatta activities were scheduled in order to get reliable respondents. Sarawak Regatta could be accessed from different areas as there are no specific entrance. This means that the data collection was undertaken along the waterfront and was directed to the visitors that visited the handicraft stalls. 450 questionnaires were distributed within 7 days. Enumerators were selected and trained to assist the respondents on the survey forms. However, only 386 could be used by the researchers to understand their behaviour in selecting handicrafts. The rest of the questionnaires were either lost, not sent back to the enumerators and some did not answer all the questions given on the survey form. These 386 forms were then inserted into SPSS and calculated to provide specific information needed for this article.

4. RESEARCH FINDINGS AND DISCUSSIONS

Based on the table above, it is shown that 32% of respondents, which is a majority of female respondents, favoured beads accessories. The second most favoured handicrafts by female respondents is woven items with 22%. While for men, they are more interested in buying wooden handicrafts that makes up 49% of the male respondents.

Table 1. Cross-tabulation of sex and type of respondents' choice of handicraft

	Which type of handicraft is your choice						Total
	Bead accessories	Wood carvings	Rattan handicraft	Woven fabrics	Ceramics	Pearls	
Sex Male	8	63	13	8	30	6	128
Female	83	32	32	57	27	27	258
Total	91	95	45	65	57	33	386

The least favoured handicrafts by male respondents are pearl handicrafts with 4% of them. Based on the results, it can be concluded that beads, wood carvings and woven fabrics are handicrafts that attract respondents the most. Therefore, handicraft entrepreneurs should produce handicrafts with a variety of choices to get more products sold.

Table 2. Cross-tabulation of sex and value when buying a handicraft

	What do you value when buying a handicraft?					Total
	Motifs/Patterns	Shape	Colours	Materials used	Fine craftsmanship	
Sex Male	36	36	11	22	23	128
Female	73	46	57	27	55	258
Total	109	82	68	49	78	386

From the table shown above, 28% out of 386 respondents stated they value motifs and patterns when buying handicraft. In average, 28% of female respondents have a high consideration for motifs or patterns when buying handicraft. For male respondents, only 9% out of total value colour when buying handicraft. 28% of male respondents also include motifs and shapes in their preferences when choosing handicraft. In conclusion, respondents have a high value for motifs or patterns when buying handicrafts. Therefore, handicraft entrepreneurs must further develop their creativity when producing motifs or patterns that are capable in meeting the needs of buyers.

Table 3. Cross-tabulation of sex and for home decor factor

	For home decor		Total			
	Disagree	Neutral	Agree	Strongly agree		
Sex Male		14	29	51	34	128
Female		5	48	107	98	258
Total		19	77	158	132	386

Based on the table above, majority of respondents respond positively to the factors for home décor with 75% out of the total of respondents, while 25% responded negatively. For female respondents, 79% responded positively while 21% responded negatively. Male respondents who responded positively were 66% out of 128 respondents while 34% responded negatively. The average female respondents gave a positive response because handicrafts such as tablecloths and sewed products are very useful for home decorations. As a conclusion, not only respondents buy handicrafts for souvenirs, they also buy them for home decoration. Therefore, handicraft entrepreneurs should produce handicraft products that have multiple purposes uses for buyers.

Table 4. Cross-tabulation of age and having traditional features factor

	Having traditional features			Total
	Neutral	Agree	Strongly Agree	
Age 17-20 years	0	16	19	35
21-25 years	14	71	69	154
26-30 years	8	22	29	59
31-35 years	8	16	28	52
36-40 years	9	13	12	34
41 years and above	4	16	32	52
Total	43	154	189	386

The table above shows an analysis of cross-tabulation of age with having traditional features factor. In average, 89% respondents gave positive response, while only 11% gave a negative response. Respondents from the age of 21 to 25 gave the highest positive response which is 91%.

Table 5. Cross-tabulation of age and location adjacent to visitor attractions

	Location adjacent to visitor attractions			Total
	Neutral	Agree	Strongly agree	
Age 17-20 years	8	19	8	35
21-25 years	30	62	62	154
26-30 years	16	35	8	59
31-35 years	8	28	16	52
36-40 years	0	21	13	34
41 years and above	0	25	27	52
Total	62	190	134	386

For the negative response, respondents aged 41 and above gave a negative response of 8%. In conclusion, people aged 21-25 and 41 years old are concerned about handicrafts that have traditional features. Therefore, handicraft entrepreneurs need to enhance and focus on traditional features in their handicraft products as those of the 41 years old and above are especially fond of something antique.

The table above shows an analysis of the cross-tabulation with locations adjacent to visitor attractions. The 84% of respondents gave a positive response while 16% of respondents gave a negative response. 62% respondents in the age group of 21-25 respond positively. Respondents in this group of age may be consisted of students.

The Waterfront is a strategic location and is easy to reach especially during the weekend where visitors will come to the Waterfront for a walk. 8 respondents from the age group of 17-20 and 31-35 years old gave negative response. From the results, it can be concluded that an average of the respondents felt that In conclusion, the average respondents felt that the location was strategic to visitors' attractions. Therefore, the organizers should maintain the location for handicraft festival.

Table 6. Cross-tabulation of sex and high quality of handicraft

	High quality of handicraft				Total
	Disagree	Neutral	Agree	Strongly agree	
Sex Male	6	5	53	64	128
Female	5	2	114	137	258
Total	11	7	167	201	386

Based on the above table, 95% of respondents gave a positive response. While 5% of the respondents responded negatively. For female respondents, 97% gave positive response while only 3% responded negatively. For male respondents, 91% gave positive response and the remaining 9% gave negative response. In conclusion, the majority of respondents considers handicrafts sold throughout the Sarawak Regatta are high quality products. Therefore, handicraft entrepreneurs need to maintain the quality of existing handicraft, at the same time improving the quality of new handicraft so that buyers are satisfied.

5 CONCLUSIONS AND RECOMMENDATIONS

The findings show that there is a strong correlation between visitors' perceptions with respondents' demographic data. Furthermore, the results of the research have also proved that it is very important to identify the consumer purchase pattern. Results from this research have also shown the importance of knowing what are the driving factors that attracts visitors for handicraft entrepreneurs.

Handicraft entrepreneurs should always improve the quality of their handicraft to attract handicraft enthusiast. Handicraft improvements can be made on quality during the manufacturing process, which can be achieved by adding delicateness. They should also highlight aesthetic values of the handicraft. Handicraft entrepreneurs can also target buyers based on age or gender to increase the sale of handicrafts, by producing high quality handicrafts at high prices but symbolic for the old aged of people.

Handicrafts entrepreneurs also need to set up marketing and promotional strategies to increase the potential of handicraft purchases. From this study, it shows that visitors are more attracted to traditional motifs and features. It is best for handicraft entrepreneurs to emphasize quality such as design and uniqueness to increase sales volume. Handicraft entrepreneurs can also work together with certain agencies to assist them in the aspects of crafting and promoting their work in social media. Handicraft entrepreneurs can also hold promotions such as "buy more than RM50 will get free one handicraft".

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THE INFLUENCE OF PRODUCT TURNOVER ON THE MARKET AS A PART OF THE DISTRIBUTION CHANNEL OF AGRICULTURAL PRODUCTS TO INCREASE COMPETITIVENESS

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ABSTRACT

Where, or at which place a particular product can be sold is one of the manifest questions that must be considered when it comes to agricultural products. Distribution, and within it the physical distribution and distribution channels as its basic elements, gives an answer to the question. At the same time, the connection that distribution has with other elements of the marketing mix largely determines market competitiveness and success. Within distribution channels, particular attention should be paid to the turnover of a products on the market, whether it is made directly or indirectly. In line with the foregoing, the aim of this paper is to analyze the impact of product turnover on the market, as part of the distribution channel, and on increasing competitiveness in the field of agricultural products. In order to achieve the objective of the paper, a survey of agricultural holdings from the territory of the Republic of Serbia was conducted.

Keywords: distribution, distribution channels, agricultural products, competitiveness

1 INTRODUCTION

As an element of the marketing mix, distribution represents "the process of transporting products from a manufacturer, storing them, and selling them to different stores and customers" [1]. The way in which agricultural products will be distributed depends on the potentially achievable competitiveness of the agricultural product. Order processing, commodity (goods) handling, warehousing, inventory management (supply management), transportation, product turnover on the market and contact with costumers, or their more detailed analysis, are the starting points in considering the overall effects of distribution activities on the competitiveness of agricultural products (Figure 1).

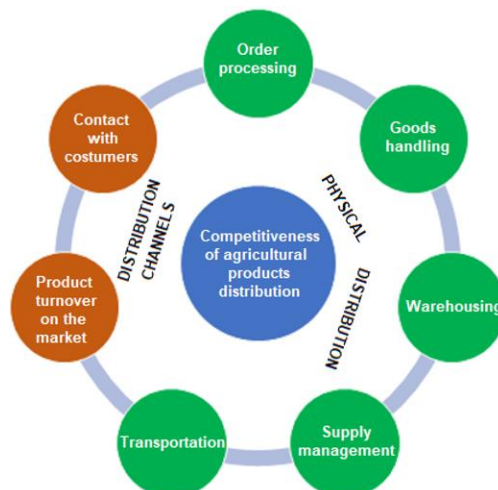


Fig. 1 - Elements of impact on the competitiveness of agricultural products

Source: Authors

Accordingly, the following section will give an overview of the characteristics of the aforementioned elements affecting the competitiveness of agricultural products, in particular:

- Physical distribution and
- Distribution channels.

Thus, physical distribution and distribution channels are the two main elements of the distribution process. Within the distribution channels, special attention is given to “product turnover”, which is the subject of analysis in this paper. The **subject of this paper** is the connection between the turnover of products on the market (as part of the distribution channel of agricultural products) and the competitiveness of the distribution system of agricultural products.

The **aim of this paper** is to determine the impact of product turnover on the market on the competitiveness of the agricultural distribution system.

The object and purpose of this paper produces the **hypothesis** that the level of product turnover on the market influences the level of competitiveness of the agricultural product distribution system.

In order to achieve the object and purpose of the work, as well as to verify the hypothesis, an appropriate research was conducted regarding the marketing of products on the market of agricultural products in the Republic of Serbia. The analysis of some 12 product turnover assertions related to the competitiveness of the agricultural product distribution system was carried out. The following section provides an overview of the distribution channels (direct and indirect) of agricultural products as a factor in the competitiveness of the distribution system, with a particular focus on the turnover of agricultural products.

2 AGRICULTURAL DISTRIBUTION CHANNELS AS A FACTOR IN THE COMPETITIVENESS OF THE DISTRIBUTION SYSTEM

Distribution channels are “the various methods of obtaining products from where they are manufactured or stored, to the consumer or end-user. From farm gate to dinner plate, so to speak. Methods include wholesaling, retailing, direct marketing and mail order” [2]. According to [3] organic food distribution channels can be divided into direct distribution channels, indirect distribution channels and, in addition, emerging distribution channels, i.e. new distribution channels. This categorization cannot be limited to organic products only, so in the continuation of the paper, distribution channels (and especially the turnover of products) as a factor of competitiveness of the agricultural product distribution system should be considered as the following:

- direct and
- indirect.

As in other sectors, there should be a constant focus on changing business activities in terms of implementing innovations in the field of agriculture. According to [4], the “proclivity for open innovation in the agri-food sector in the researched sample of companies in the agri-food sector in Serbia is 27.62%”. The tendency towards open innovations is more prevalent in all the elements analyzed in food companies compared to agricultural companies, with the exception of the willingness to sell intellectual property [4]. This shows that there is a lot of room for improvement of activities in the agricultural sector and therefore in the field of agricultural product distribution (authors’ opinion).

2.1. Direct distribution channels for agricultural products

Direct distribution channels include “on-farm sales/farm-gate, box schemes, open air market/farmers market, fair sales and sales in stores owned by organic producers, that is, family farms” [5]. Direct distribution rests primarily on direct marketing postulates, i.e. the relationship between the producer (seller) and the buyer (consumer) in which both parties are directed towards each other. In this situation, there is no mediator. Direct distribution, together with promotions that are inextricably linked in this case, can be carried out in the following ways: from home (the farm), in other manufacturers’ facilities, on the open air market, at consumer location, via the Internet, etc.

According to [6], “the benefits of direct sales are the following: it assists local job creation as well as a growing ability to keep population in rural areas, it increases the added value to products, it differentiates and increases the supply of products, helps farmers’ marketing orientation, improves the farmers’ bargaining position, increases consumer trust and influences public opinion about food production and supply as a whole, augments farmers’ income and reduces claims for social benefits in rural areas, heightens the market share of rural areas in the food chain and services, meets environmental and animal welfare requirements, promotes the development of rural tourism, and it can reduce the need for and the cost of transportation.”

[7] conducted a survey in 2012 of 230 organic farmers in Poland (Masovian Voivodeship), which showed that when it comes to cereals and vegetables (except for self-use which takes up the first position: cereals 54.2%, vegetables 48.5%) most farmers use the sales channels directly to reach the consumer (cereals 35.4%, vegetables 48.5%). When it comes to animal raw materials, the position directly to consumer sales channel is even better (first place - 75.0%).

The market is a traditional place where supply and demand meet, especially for agricultural products. In this case, direct contact is made only if the producer or member of the agricultural holding is a seller on the market. In that case, the position of the so-called counter, the products, the way they are displayed, as well as the seller's behavior play an important role in attracting potential buyers. On the other hand, loyalty based on trust and often long-standing cooperation is what most characterizes the buyer-seller relationship in the market exchange process.

According to [8], markets have undergone several stages of development: (1) street markets, (2) outdoor markets, (3) covered markets, (4) contemporary markets, and (5) wholesale markets/wholesale markets.

The latter (wholesale markets) provide direct contact with buyers/consumers in the field of wholesale agricultural products.

[9] conducted a survey on the role of direct marketing of agricultural products in the Republic of Serbia on a total number of 60 respondents (30 sellers and 30 buyers; 15-65 years of age; random selection) at two green markets in Belgrade as "the largest consumer center in Serbia" (the Zeleni Venac Market and the New Belgrade Market in Block 45). "Most sellers agreed that there were not enough buyers on the markets, that the products had low sales prices and that there was a lot of competition. Regarding rental prices, they partly agreed that prices are high. Interestingly, sellers found that the paperwork required for direct sales was not complicated" [9]. [9] also concluded that "pricing on the market depends first on the prices set by the large retail chains and then on the prices of the competitors". Within (direct) marketing channels, there was an absolute dominance of the market (77%) if viewed independently, and it occurred in combination at home and in the market (20%), while it had a very small percentage at home and in shops (3%), and the combination of at home, in shops and markets had no replies [9]. According to [9], "buyers believe that proximity to the point of sale and low prices are not important for the purchase decision," and "the most important reason for the purchase is the quality of the product and the confidence that the buyer has in the products that the seller recommends" [9]. "Most respondents consider the seller's kindness to be only partially important" [9]. It should be noted that "two-thirds of the respondents buy from the markets one to two times a week," and "two-thirds of the respondents give preference to shopping in retail" [9].

2.2. Indirect distribution channels for agricultural products

In the case of indirect distribution channels, it is necessary to mention wholesale and retail. In the case that they exist as such, wholesalers are intermediaries between agrarian producers and retailers (or other organizations - hotels, restaurants, etc.), who on the other hand also have a mediating role in distributing the product to the end user - the consumer. To take organic products as an example, "organic food retailing includes sales in different retail formats: traditional retail supermarkets, organic supermarkets, organic convenience stores, organic discounters, and various specialized retailers, such as organic retail shops, health food stores, organic wine shop, organic tea shops, organic spice and herb stores, organic butchers and organic bakeries" [10]. Of course, these forms exist in the domain of non-organic agrarian products.

3 RESEARCH DESCRIPTION

The survey was conducted on 126 respondents from the territory of the Republic of Serbia through a questionnaire that was distributed electronically. The questionnaire contained 12 assertions, namely:

- PTM1. Producer-consumer connection flows are diverse.
- PTM2. Mass production conditions a specific characteristic of the distribution channel.
- PTM3. The abundance of agricultural producers determines the specific characteristic of the distribution channel.
- PTM4. The possibility of using agricultural products at various stages of processing determines the specific characteristic of the distribution channel.
- PTM5. The nature of customer needs determines the specific characteristic of the distribution channel.
- PTM6. The characteristics of individual agricultural products determine the turnover of products on the market.
- PTM7. Markets are significant for the marketing of agricultural products.
- PTM8. Retail trade is significant for agricultural products.
- PTM9. Wholesale trade is significant for the marketing of agricultural products.

- PTM10. The buy-back prices received by producers from buy-out firms are relatively low relative to the retail price level of these products.
- PTM11. Individual manufacturers appear as sellers of their own products.
- PTM12. A wide range of products allows to satisfy the needs of different categories of consumers.

The answers are based on a Likert scale with the following options: 1 - strongly disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree and 5 - strongly agree.

4 RESULTS OF THE SURVEY

The results of the research will be presented in the order of the analyzed claims (PTM1-PTM12) regarding the impact of product turnover on the distribution of agricultural products.

Assertion 1 (PTM1 - Producer-consumer connectivity flows are diverse) has a mean score of 3.484127 and a standard deviation of 0.969405 (Table 1). The frequencies of attitudinal representation are shown in the chart. The most represented grade is 4 (I agree) - 66 out of 126 respondents (52.38%).

Assertion 2 (PTM2 - Production mass conditions the specific characteristic of the distribution channel) has a mean score of 3.6190476 and a standard deviation of 1.1513967 (Table 1). The frequencies of attitudinal representation are shown in the chart. The most represented grade is 4 (I agree) - 44 out of 126 respondents (34.92%).

Assertion 3 (PTM3 – The number of agricultural producers condition specific distribution channel characteristic) has a mean score of 3.5238095 and a standard deviation of 0.9774603 (Table 1). The frequencies of attitudinal representation are shown in the chart. The highest score is 3 (neither agree nor disagree) or 50 out of 126 respondents (39.68%).

Assertion 4 (PTM4 - The ability to use agricultural products at various stages of processing conditions the specific characteristic of the distribution channel) has a mean score of 3.6111111 and a standard deviation of 1.1864045 (Table 1). The frequencies of attitudinal representation are shown in the chart. The highest score is 4 (agree) or 44 out of 126 (34.92%).

Assertion 5 (PTM5 - The nature of customer needs determines the specific characteristic of the distribution channel) has a mean score of 3.7698413 and a standard deviation of 1.2274376 (Table 1). The frequencies of attitudinal representation are shown in the chart. The highest score is 5 (strongly agree) or 43 out of 126 respondents (34.12%).

Assertion 6 (PTM6 - The characteristics of certain agricultural products determine the turnover of products on the market) has a mean score of 4.1111111 and a standard deviation of 1.1258577 (Table 1). The frequencies of attitudinal representation are shown in the chart. The highest score is 5 (strongly agree) or 63 out of 126 (50.00%).

Assertion 7 (PTM7 - Markets are significant for agricultural products turnover) has a mean score of 3.9444444 and a standard deviation of 1.0143416 (Table 2). The frequencies of attitudinal representation are shown in the chart. The highest score is 4 (I agree) or 63 out of 126 respondents (50.00%).

Assertion 8 (PTM8 - Retail stores are significant for agricultural product turnover) has a mean score of 3.9206349 and a standard deviation of 1.2303052 (Table 2). The frequencies of attitudinal representation are shown in the chart. The highest score is 5 (strongly agree) or 53 out of 126 (42.06%).

Assertion 9 (PTM9 - Wholesale trade is significant for the marketing of agricultural products) has a mean score of 4.0 and a standard deviation of 1.1454257 (Table 2). The frequencies of attitudinal representation are shown in the chart. The highest rating is 4 and 5 (I agree and strongly agree) or 50 out of 126 respondents (39.68%).

Assertion 10 (PTM10 – The purchase prices received by producers from purchase companies are relatively low relative to the price level of those products in retail) has a mean score of 4.1428571 and a standard deviation of 1.1150913 (Table 2). The frequencies of attitudinal representation are shown in the chart. The highest score is 5 (strongly agree) or 64 out of 126 respondents (50.79%).

Assertion 11 (PTM11 - Individual manufacturers appear as sellers of their own products) has a mean score of 4.1984127 and a standard deviation of 1.1028678 (Table 2). The frequencies of attitudinal representation are shown in the chart. The highest rating is 5 (strongly agree) or 66 out of 126 respondents (52.38%).

Assertion12 (PTM12 - Wide range of products to meet the needs of different consumer categories) has a mean score of 4.222222 and a standard deviation of 1.1019175 (Table 2). The frequencies of attitudinal representation are shown in the chart. The highest rating is 5 (strongly agree) or 69 out of 126 respondents (46.03%).

Table 1 provides the descriptive statistics for the first six analyzed assertions (PTM1-PTM6).

Table 1. Descriptive statistics for PTM1-PTM6 assertions

	PTM1	PTM2	PTM3	PTM4	PTM5	PTM6
Mean	3.484127	3.6190476	3.5238095	3.6111111	3.7698413	4.1111111
Std Dev	0.969405	1.1513967	0.9774603	1.1864045	1.2274376	1.1258577
Std Err Mean	0.0863615	0.1025746	0.0870791	0.1056933	0.1093488	0.1002994
Upper 95% Mean	3.655047	3.8220554	3.6961498	3.8202913	3.9862562	4.309616
Lower 95% Mean	3.3132069	3.4160398	3.3514692	3.4019309	3.5534264	3.9126062
N	126	126	126	126	126	126

Source: Authors' research

Table 2 provides the descriptive statistics for the other six analyzed assertions (PTM7-PTM12).

Table 2. Descriptive statistics for the PTM7-PTM12 assertions

	PTM7	PTM8	PTM9	PTM10	PTM11	PTM12
Mean	3.9444444	3.9206349	4	4.1428571	4.1984127	4.2222222
Std Dev	1.0143416	1.2303052	1.1454257	1.1150913	1.1028678	1.1019175
Std Err Mean	0.0903647	0.1096043	0.1020426	0.0993402	0.0982513	0.0981666
Upper 95% Mean	4.1232875	4.1375554	4.201955	4.3394638	4.3928642	4.4165061
Lower 95% Mean	3.7656014	3.7037144	3.798045	3.9462505	4.0039612	4.0279383
N	126	126	126	126	126	126

Source: Authors' research

Chart 1 presents the frequency of representation of the opinions on the analyzed assertions (PTM1-PTM12).



Chart 1. Frequency of representations of opinions on the PTM1-PTM12 assertions

Source: Authors' research

As can be deduced from Table 1 and Table 2, according to the average of the answers, the order of significance of the twelve analyzed assertions is as follows: PTM12 (4.2222222), PTM11 (4.1984127), PTM10 (4.1428571), PTM6 (4.1111111), PTM9 (4), PTM7 (9.9444444), PTM8 (3.9206349), PTM5 (3.7698413), PTM2 (3.6190476), PTM4 (3.6111111), PTM3 (3.5238095) and PTM1 (3.484127).

Based on the data given in Table 1, Table 2 and Chart 1, the hypothesis of the paper "the level of product turnover on the market influences the level of competitiveness of the agricultural distribution system" is confirmed.

5 CONCLUSION

The aspiration of every market economy entity is to achieve competitiveness, and one of the ways in which competitiveness can be achieved is to emphasize product distribution. Agricultural product turnover is, as shown in the paper, an important element of the distribution channel within the entire distribution process. Through the study of the relationship between the independent variable "product turnover" and the dependent variable "competitiveness of the agricultural distribution system," the object and aim of this paper have been achieved. The highest average response rate (≥ 4) is found in the following five assertions: PTM12 - Wide range of products to meet the needs of different categories of consumer categories (4.2222222), PTM11 - Individual manufacturers appear as sellers of their own products (4.1984127), PTM10 - The purchase prices received by producers from the buying companies are relatively low relative to the price level of these products in retail trade (4.1428571), PTM6 - The characteristics of certain agricultural products determine the turnover of products on the market (4.1111111) and PTM9 - Wholesale trade is significant for the marketing of agricultural products (4). On the other hand, the lowest response average (< 3.5) is claimed by PTM1 - Producer-consumer connection flows are diverse (3.484127). Based on the conducted research, the paper also showed that the level of product turnover on the market influences the level of competitiveness of the agrarian products distribution system, which proves the paper's hypothesis.

Product turnover is, therefore, a very significant factor in influencing the competitiveness of agricultural products and thus the overall distribution process. Accordingly, special attention should be paid in the future to this segment of marketing activities in order to achieve, maintain and constantly improve competitiveness in the analyzed area. Further research will focus on analyzing the impact on the competitiveness of other elements of the distribution process in order to as a whole look at the impact of agricultural distribution systems on their market competitiveness.

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THE POTENTIALS OF MARKETING PROFESSION IN SERBIA

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ABSTRACT

This paper shows and analyses some of the most interesting research data obtained by the domestic marketing community during December 2016. The research included 174 respondents-marketers living and working in Serbia. The respondents were surveyed by using a questionnaire consisting of questions that referred to years spent working in marketing, marketing fields they were involved in, markets and companies they worked for, types of work activities and the amount of their net salary. Based on the size of the sample and the quality of the questionnaire structure, the obtained data and results can be taken as relevant and representative.

Keywords: marketing, marketing profession, employment

1 INTRODUCTION

Marketing activities in their basic form have existed since ancient times, but the marketing concept is a young and modern scientific and managerial discipline. In the scientific literature, there are various different definitions of marketing which emphasize the multi-layered significance of this complex phenomenon which, in the past few decades, has evolved and become a dominant business function. In the core of marketing concept are consumers as the most important company stakeholders – their needs and preferences are what marketing revolves around. In marketing-oriented companies, all business activities begin and end with consumers. Marketing has a unifying function since it joins production and consumption. Crucial marketing goals are enabling long-term loyalty of consumers and achieving product recognition on the market, which all together lead to building a unique brand.

Globalization, market opening and growing competition in all economic branches have forced companies to invest plenty of money in marketing in order to achieve market recognitions and create their own brand. For example, data obtained by *Forbes* show that Coca-Cola invested 5.8 billion dollars in marketing in 2018, which is 18.3% of their total profit for the same year.

If we observe marketing as the most important business function that enables companies to respond to market requests in the best possible way, then marketing experts can be seen as the crucial company resources whose knowledge should enable success on the market. In the last few decades, marketing profession has gained drastic significance and has been considered a highly up-and-coming occupation having great potential to further evolve. This especially refers to digital marketing that stands out as the fastest developing marketing branch. In our modern age, business mostly happens on the Internet in a virtual working environment in which completely new marketing techniques came to being. Digital marketing experts are highly valued on the market and can quickly and easily find well-paid jobs.

So as to show what people making careers in marketing can expect in Serbia, some of the most interesting data obtained by the domestic marketing community in December 2016 shall be showed and analysed further on in the text. Data were taken from the www.startit.rs portal. A total of 174 respondents-marketers were included in the research. The questionnaire contains questions referring to years spent working in marketing, areas of marketing respondents were involved in, market and companies for which they worked, types of marketing jobs and the amount of their net salary. Based on the size of the sample and the quality of the questionnaire structure, data can be taken as relevant and representative.

2 MARKETING AS A PROFESSION

Keeping up with the development of the concept of marketing, marketing profession has gone through a massive expansion in the last few decades. Fierce competition and more sophisticated consumer demands are making it more difficult to sell products and create a base of loyal consumers which every company needs in order to have stable incomes, money flow and, in the long run, the creation of brand. Solving these crucial business problems is the key task of marketing experts.

To be professionally involved in marketing is not an easy job. Marketing profession has low barriers to entry, methods for assessing performance are not set precisely enough and vary from one company to another (usually, the profit made in sales is taken as the marketing success indicator, but bear in mind that sales and profit are not the sole marketing goals). It often happens that companies in the same industrial branch apply completely different marketing approaches or even define different segments within the same market which can be in mutual collision. This all makes the job of a marketer very difficult [1]. One of the biggest problems and challenges for marketers lies in the fact that marketing has evolved and become an interdisciplinary field which calls for knowledge in management, psychology (knowing consumer behaviour, perception, emotional branding, etc.), information technologies (a modern marketer needs to understand and be able to use marketing techniques on the Internet), etc. Surely, marketing experts are specialised in different marketing fields, but they need to have broad horizons and the understanding of different marketing aspects. Hunt noticed that the main barrier in reaching professionalism in marketing was the inability of academics to start from a coherent, well-grounded conceptualization of the nature of the marketing discipline. [2]

To a lesser extent, the concept of marketing is defined by easily determined factors, while to a greater extent it is actually the result of skills and creativity of marketing experts, so the problem of defining final solutions of the marketing organization (as well as procedures and methods of its control) is a complex process [3]. In practice, the role of marketing is not clearly defined in many companies. Gronroos believes that marketing functions most efficiently and effectively when it is organized as a separate department [4]. In accordance with previously said, many companies have developed a practice of treating marketing as a department and the centre of costs by ignoring the value marketing would bring to the company if treated as an investment. [5]

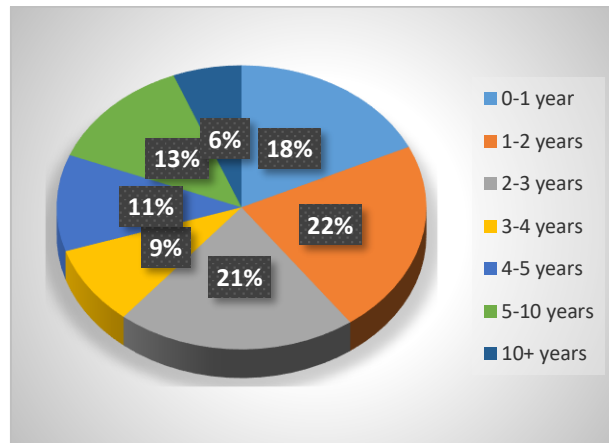
In order to recognize true effects of marketing, it is necessary to permanently apply marketing metrics. The role of marketing metrics is to monitor and control corporate performances in the dimensions most critical for the strategy chosen to achieve competitive advantage. [6] When forming marketing strategies and combining the instruments of marketing mix, one element is often neglected – the people. This does not only refer to respecting consumer needs and demands, but also to providing the necessary service. [7] If we simplify this, sometimes all that marketing needs to do (primarily advertising) is develop logics and create a persuasive message and in that way express why a certain brand is best for meeting certain types of needs. [8] It needs to be emphasized here that branding needs to exist at all company levels, not only at the level of marketing management – branding is a holistic activity included in all business levels. [9]

3 RESEARCHING THE POTENTIALS OF MARKETING PROFESSION IN SERBIA

Like we said in the previous part, marketing profession has been dynamically developing and it has a massive influence in modern business. For these reasons, it represents an up-and-coming profession, hence it is interesting to many individuals starting their careers in business. In order to create a clear picture about the potential of marketing profession in Serbia, it is necessary to have relevant data and information. Further on in this paper, some of the most interesting data obtained by the domestic marketing community in December 2016 will be presented and analysed. The research included 174 respondents-marketers living and working in Serbia. The questionnaire contains questions referring to years spent working in marketing, areas of marketing respondents were involved in, market and companies for which they worked, types of marketing jobs and the amount of their net salary. Based on the size of the sample and the quality of the questionnaire structure, the data and results can be taken as relevant and representative. The most interesting questions (in the opinion of the authors of this paper) were singled out from the questionnaire and presented in the form of subheadings further on in the text.

3.1. Experience gained in marketing

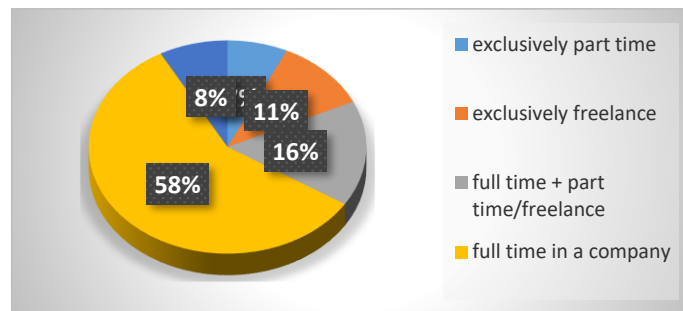
Most of the surveyed marketers have no more than three years of work experience in marketing (61%). Significantly lower percent of marketers have three to five years of work experience (20%), while the seniors (over 5 years of work experience) make up for 19% of the sample. The obtained data are presented in Graph 1.



Graph 1. Apportionment as per years of work experience in marketing
 Source: Domestic marketing community, taken from www.startit.rs

3.2.Types of employment

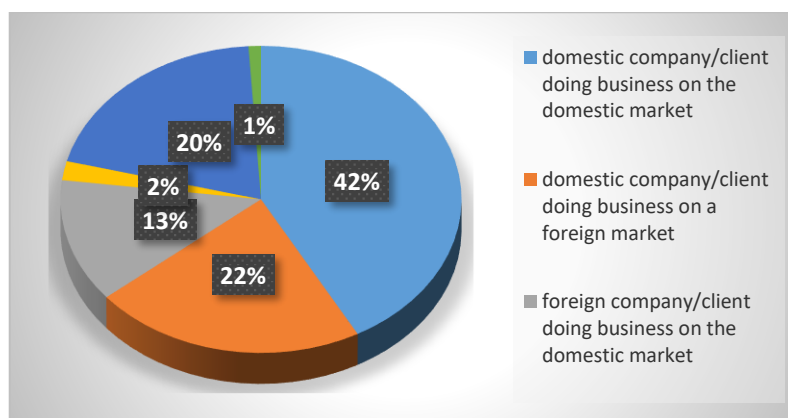
In the sample structure, the majority of respondents (58%) are employed full-time in a certain company. The second place goes to marketers combining full-time and part time/freelance (16%). There are 11% of exclusively freelance marketers, 7% of exclusively part time, while company owners participate with 8% in the research sample.



Graph 2. Apportionment as per type of engagement
 Source: Domestic marketing community, taken from www.startit.rs

3.3.Company/market respondents work for

Marketers working in domestic companies doing business on the domestic market are the basis of the sample structure (42%). Second place goes to marketers working for a domestic company doing business on a foreign market (22%). Respondents working for a foreign company doing business on a foreign market participate with 20%, and respondents working for a foreign company doing business on the domestic market with 13%.

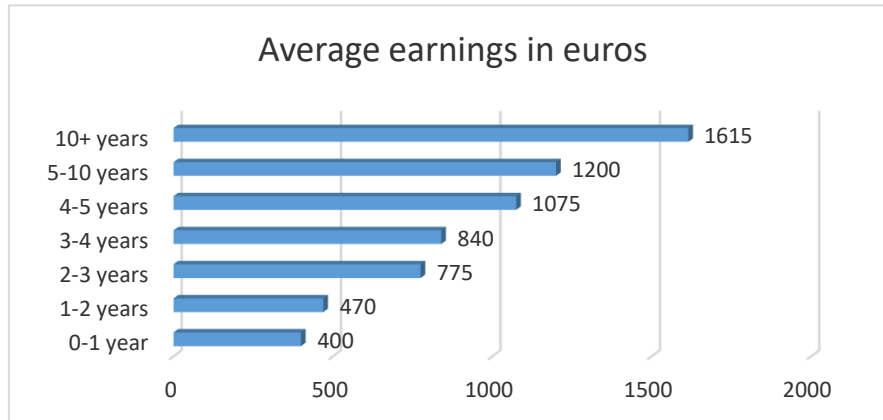


Graph 3. The apportionment as per the market/company respondents work for
 Source: Domestic marketing community, taken from www.startit.rs

3.4. Earnings

When it comes to earnings, the questions took three directions: average earnings as per years of work experience in marketing, average earnings as per marketing fields respondents work in and average earnings as per type of employment. The results are presented in Graphs 4, 5 and 6.

3.5. Average earnings as per years of work experience in marketing



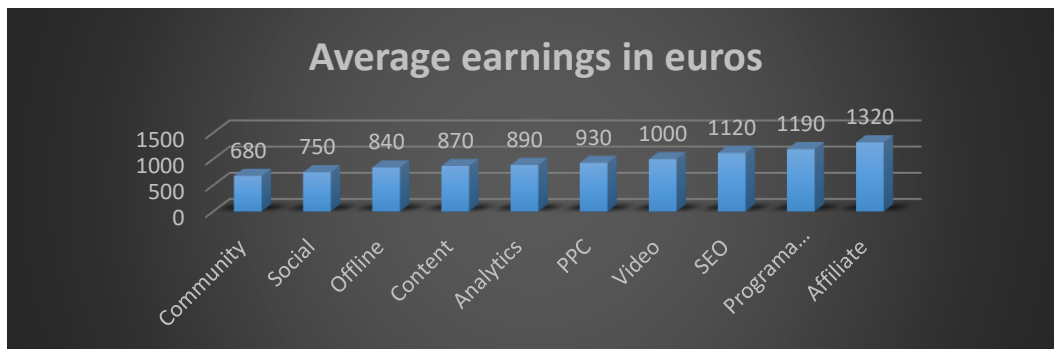
Graph 4. Average earnings as per years of work experience in marketing

Source: Domestic marketing community, taken from www.startit.rs

The research results show that the highest increase in earnings appears when shifting from juniors to medium level employees, which can be seen in Graph 4.

3.6. Average earnings as per marketing field

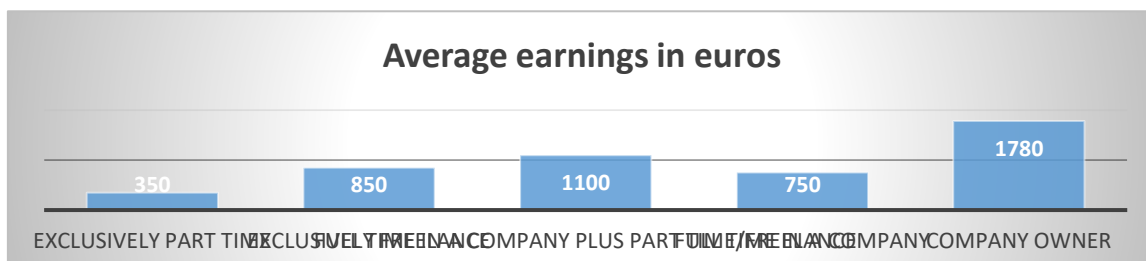
The research has shown that marketer earnings vary depending on the marketing field they work in. The highest average earnings are in *Affiliate marketing* (1,320 euros), but note that the average work experience of interviewed respondents in affiliate marketing is close to 4 years.



Graph 5. Average earnings as per marketing field

Source: Domestic marketing community, taken from www.startit.rs

3.7. Average earnings as per type of employment



Graph 6. Average earnings as per type of employment

Source: Domestic marketing community, taken from www.startit.rs

When it comes to average earnings as per type of employment, the highest average earnings are in the hands of company owners (1,780 euros), which can be seen in Graph 6.

4 DISCUSSION AND CONCLUSION

The research carried out by the domestic marketing community has provided us with a series of useful data concerning the marketing profession in Serbia. For example, a piece of data that respondents with only 2 to 3 years of work experience have average earnings of 775 euros (far above the average in Serbia) proves that jobs in marketing are highly prosperous. The research has also shown that out of 10 marketing fields included in the survey, the highest average earnings are in affiliate marketing (1,320 euros), but bear in mind that the average work experience of interviewed respondents in affiliate marketing is close to 4 years which is not that much considering the salary. As far as type of employment is concerned, the highest average earnings are in the hands of respondents who are company owners (1,780 euros). Behind them are respondents combining full-time in a certain company and part time/freelance (1,100 euros). An interesting piece of data is that freelance marketers have higher average earnings (850 euros) than full-time marketers (750 euros). In addition, it is important to mention that the majority of respondents work full-time for a domestic company doing business on the domestic market and that the opportunity for employing future marketers is exactly there.

Based on the research carried out by the domestic marketing community, it can be concluded that marketing profession in Serbia has massive potential and that it deserves special attention.

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THE IMPORTANCE OF MEASURING MAIN PERFORMANCES OF THE COMPANY TO MAKE BASIC DECISIONS IN MARKETING

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ABSTRACT

Changes itself require constant monitoring and adjustment of the company's business processes and strategies. They create a whole new business environment, in which only companies whose top management is able to spot opportunities in the environment promptly, generate the adaptation strategy, and proactively influence the environment whenever possible, are capable to survive. Top management takes the role of initiating adjusting activities and formulating new business philosophy. These activities include actions which improve business effectiveness and efficiency and enterprise flexibility and the implementation of appropriate performance measurement systems. Performance measurement involves implementing a wide range of measures and instruments which enable achieving the highest quality of the economy by influencing the investment-output relationship. Those are the main goals of company marketing, at the same time. The purpose of performance measurement is to empower top management to see its own business clearly and to identify perspectives in order to make appropriate strategic decisions, especially bearing in mind that booth, survival and growth and development of the business entity, are based on marketing decisions.

Keywords: changes, business effectiveness and efficiency, quality of economy

1 INTRODUCTION

Measuring the company's performance is an important part of control and management activity, as its strength, potential and efficiency are determined throughout the measurement process. The purpose of this measurement is to influence the relationship between reproduction results (physical production volume, production value, total income, and profit) and investments to achieve those results (consumption of production factors and capital involvement) to maximize the quality of the economy. The relationship between reproduction results and the investment to achieve them quantitatively determines economic success as the quality of the economy. Therefore, the performance measurement process enables the company to identify the economic resources at its disposal, to identify key factors affecting its performance and to find the most profitable course of action.

A large number of marketing actions, related to increased investment in research and development, new product development, career development, training and employee development, on the one hand, expands the market potential, and on the other hand creates significant value for the present and makes the company attractive for potential shareholders in a long run.

Financial indicators generally provide information to control investments and expenditures, and effects to a lesser extent, and require a deeper analysis of a large number of items that need to be evaluated.

2 THE NEED TO CREATE A COMPREHENSIVE SYSTEM FOR MEASURING THE COMPANY'S PERFORMANCES

The concept of performance measurement has emerged as the need to improve financial performance, as a traditional way of measuring business success, with measures that will show whether the company accomplishes the mission it has opted for, in three dimensions [1]:

1. Consumers,
2. Internal business processes,
3. Learning and growth.

Traditional performance measures have been, and still are, a very important tool in evaluating the performance and control of the company operations. This refers to the following indicators [2]:

- Sales and market share,
- Return on investment and return on assets,
- Net profit, and
- Yield per share.

The application of these traditional, financial performance measures over a longer period of time has shown some shortcomings and limitations, which primarily relate to non-compliance with consumer demands, lack of strategic focus, lack of clarity between the measures and the activities of the strategic objectives, as well as a number of other effects, which are often characterized as very exhausting for the company and its top management. [3] The problem with traditional measures based on financial indicators is that they do not take into account the intangible value embedded in knowledge, which can greatly increase the market value of the company, as well as the fact that excessive focus on profit, as the sole measure of success, puts top management in a position of continuous struggle to increase earnings. [4]

3 CHANGES IN THE GLOBAL ECONOMY AND IMPLICATIONS ON THE ECONOMY OF ENTERPRISES

Globalization of the world economy and the so-called IT era brings with it a host of innovations and changes. An industrial economy characterized by physically tangible assets is being replaced by a new economy where the most valuable resource becomes intangible assets that manifest in relations with consumers, employees' knowledge and skills, information technology and organizational culture fruitful for innovation, problem-solving and overall organizational improvement. Under these circumstances, the development and implementation of some new, more modern methods of performance measurement are imposed as an imperative for top management of the company. [5]

Starting with fact that the overall development and well-being of the society are a multidimensional phenomenon and that the company's performances cannot be measured solely based on financial indicators, new measurement concepts rest on the assumption of the multitude of specific indicators and need to measure through the priority list of indicators. Modern measurement systems retain financial performance measurement, but also include company's performance measurement related to consumers, company's performance measurement in driving internal business processes, and performance measurement related to innovating and acquiring new knowledge. Performance measurement in today's businesses enables more balanced perspectives, instead of just one (financial). In other words, the complexity of business processes has influenced management to develop performance measurement system, while new information technology was the factor that enabled a "measurement revolution", that is, real-time performance measurement. [6]

Modern companies, in the process of performance measurement, use indicators that are based on the accounting concept of results and conventional yield criteria, but also indicators that are based on cash flow and economic concept of results. The difference between the accounting and economic concept appears due to a simple reason that it is impossible to know from the financial statements what is the cost of equity, and that the company has some discretion over the reported result in the income statement (BU) [7]. The starting point of indicators based on the economic concept of results is that capital is not free of good, that is, it has its price.

Dimensions of marketing (new markets, strategies, decrease in profitability, new technologies, business process redesign) and focus on the so-called „3C model“ (customers, competitors and change) conditioned the development of new measurement systems, such as: Economic Value Added (EVA), Balanced Scorecard (BSC model of Norton and Kaplan), Framework for measuring business performance of the European Federation for Quality Management (EFQM), Business Excellence Model (BEM), Baldrige - American National Quality Award (Malcolm Baldrige Framework). The combination of some of these models [2] yields hybrid performance measurement models such as the model that is created by integrating the BSC and EVA models, or a dynamic multidimensional performance measurement framework resulting from the combination of BSC and the performance dimension model. The essence of all the above models is to assist top management in creating and maintaining financially sound and competitive businesses that are capable to survive in the face of on-going turbulence and market changes. [8]

4 CONTEMPORARY MODELS OF THE COMPANY PERFORMANCE MEASUREMENT

The BSC model was once declared the most innovative management model by the Harvard Business Review. The BSC model is a form of strategic planning and system management in profit and non-profit sectors, intending to align the vision and strategy of the organization, improving external and internal communication, as well as monitoring the performance of strategic goals.

The Balanced Scorecard [2] has been introduced as a proven and effective tool in trying to identify, describe and transfer intangible into real values for all company stakeholders and to be used as a process that enables the company to implement its business strategy. It is a set of measures, which offers an extensive snapshot of the business to the highest level of managers efficiently and rapidly. Financial indicators are complemented with measures of customer satisfaction, the efficiency of internal processes, as well as activities in the field of organizational improvements and innovations. The focus is on future financial performance. The point of using this method as a managerial tool is not to adopt a particular set of measures by cloning or mapping the metric from some already existing list. The idea is to analyze each of the components (relationships and management perspectives) and consider how they can relate to the strategy as well as their own linking to support significant and continuous improvement and assessment initiatives. In doing so, short-term actions and strategic goals must be aligned. The Balanced Scorecard is a business guide, with the purpose to advance the priorities identified in the strategic planning process. Hence, it has root in the process view at the organization of the company; it can quickly and easily provide control from the corporate level, throughout the process pyramid, to the teams and individuals in charge of implementing the strategy.

The BSC is described as a set of measures that gives top managers a quick but comprehensive view of the business. The BSC model is based on the combination of traditional financial measures with non-financial measures through investing in customers, suppliers, employees, innovation, and technology. This concept is a strategic management system that provides vision identification, strategy creation and its implementation into action. Top management is tasked with stimulating new ideas and approaches and directing all available resources towards strategy implementation.

The BSC model became the manager's favorite tool, as it enables a realistic assessment of the company's strength and value. The model itself has undergone significant changes during its popularization in the 90s. Initially conceived as a performance measurement system, it has evolved into a strategic management system. The BSC model allows for a balance between financial and non-financial performance measures using [9].

- The balance between external measurements for shareholders and consumers and internal measurements for internal business processes and learning and development,
- The balances between performance measures and future performance measures, and
- The balance between objective (quantitative) benchmarks and subjective (qualitative) benchmarks.

The Balanced Scorecard model directs people's knowledge, ability, and energy toward achieving strategic goals. In doing so, successful implementation of the strategy involves:

- Defining strategy and assignment of tasks. The role of top management boils down not only to defining a clear strategic vision, but also to bringing it closer to all employees and allocating responsibilities and authorizations regarding its realization.
- Defining measurable and achievable goals. What cannot be measured cannot be managed.
- Optimizing internal processes to successfully support the strategy.
- Ensuring continuous improvement of strategic operations. Using feedback on the results of strategy implementation, top management can adjust the strategy execution or even change the strategy itself.

BSC model indicators form the core of the organization's vision and strategy, which are considered to represent the foundations of the organization. They define why the organization exists and what it wants to become. This concept of balanced indicators contributes to establishing a business system that enables the company's top management to continuously improve its results, thus becoming the nerve center of the company. The BSC model defines the set of business perspectives, within which key questions are answered [10]:

1. Consumer Perspective. Question: In order to achieve the vision of our own, how should we appear in front of to consumers?

2. Internal processes perspective. Question: In order to meet the demands of our owners and consumers, what business processes should we treat as the key ones?
3. Financial perspective. Question: In order to achieve financial success, what attitude should be taken towards shareholders?
4. Learning and development perspective. Question: In order to achieve our vision, how should we maintain the capacity for improvement and change?

The Balanced Scorecard constructed like this was the basis for formulating the strategy map - a framework for defining strategy and implementation into concrete results. During the time, the BSC model has been constantly evolving and upgrading, thus becoming a powerful tool for implementing corporate strategy. A strategy map is a way of presenting company strategy, its elements and their cause-and-effect relationships, respectively it is a tool for strategy implementation. The map shows how the company plans to transfer its own initiatives and resources into concrete results. The strategy map is characterized by the top-down approach. Top management primarily considers the mission.

The most important goal of top management is the financial success of the company. That is why the development of the strategy maps actually begins with the development of the financial perspective that should provide complete information about the financial position of the company. The most commonly used financial performance indicators are EVA (Economic Value Added), ROI (Return on Investment), and CFROI (Cash Flow Return on Investment).

The primary goal of a business strategy is to create value for owners. In order to increase economic value, two economy methods need to be applied, namely revenue growth and productivity growth. Revenue growth is achieved through launching new products, conquering new markets or acquiring new customers. On the other hand, increase in revenue can also be achieved through increasing value for customers by the expansion of supply. Increasing productivity is achieved by changing the cost structure that is, by reducing direct and indirect costs, and by better utilization of existing assets throughout reducing the fixed capital and working capital needed to provide the existing level of business.

A revenue growth strategy produces better results in the long run. Therefore, one of the main tasks of the strategy map is to identify opportunities to improve financial indicators through revenue growth, not just by reducing costs and better utilization of assets. The financial perspective can be observed not only from the business owner point of view but rather it can also be extended to a set of general business performance indicators with which company's top management is in charge [11].

Customer care is an essential prerequisite for successful business positioning in the market. Customer perspective provides the answer to a question: How do the customers perceive companies? The essence of this perspective is to propose values that will be delivered to the customer, that is, the mix of products and services that will retain existing customers and attract new, potential customers. The value proposition is based on choosing one of the three possible strategies: operational efficiency, customer-friendly or product leadership. [11]

Companies that choose operational efficiency strategy must have competitive prices, quality products, as well as the efficient realization of orders and delivery. A customer-friendly approach requires an exceptional level of services and comprehensive product supply to provide top quality relationships with customers. Finally, if a product leadership strategy is chosen, the company will focus on quality, functionality and other essential features of products and services.

The ultimate goal of customer perspective is to establish customer relationship that involves treating the customer as a business associate with whom we need to actively communicate throughout the distribution process, for both, existing and new products. The internal business processes perspective is focused on active and critical processes that will provide productivity and the delivery of expected values. It encompasses short-term and long-term goals as innovative processes to improve business development. Kaplan and Norton classify all business processes into four categories:

- Innovation processes (invention, product development, market delivery speed),
- Customer management processes (solution development, customer service, customer relationship management, consulting services),
- Operational processes (supply chain management, production efficiency: cost reduction, quality improvement, reduction of production cycle time, better capacity utilization), and
- Processes related to regulatory and the environment (health, safety, ecology, and society).

All of the above processes are the key to company growth and development. Operational processes are the result of implementing the operational efficiency strategy, customer-friendly strategy encourages the

implementation of customer management processes, while the product leadership strategy is based on innovation processes [12]. The goal of all these strategies and the implementation of resulted processes is to create appropriate values for customers.

Often the BSC model is compared to the airplane and its dashboard. In this case, the company is an airplane and the BSC model is a dashboard. Would you board an airplane with an experienced pilot possessing only the speedometer? No, for sure. However, a lot of managers board the company managed solely by financial indicators. What final outcome is expected here? The answer is clear. To avoid this, we should "ride" with the most modern and safest airplanes, meaning to use the BSC model, which is the best control instrument for successful flights (business operations).

5 THE APPLICATION OF PERFORMANCE MEASUREMENT MODELS - PRACTICE AND PERSPECTIVES

The BSC model is used by numerous global corporations, such as Hilton Hotels, AT&T (Telecommunications), Mobil (Oil Industry), Siemens and Ericsson (Electronic Industry), as well as numerous commercial and national banks. Interestingly, the Continental multinational company (Tires and Electricity) has prescribed the use of BSC model in all of its 200 companies worldwide, intending to optimize the decision-making in light of maintaining a stable competitive position. The BSC model can often be modified to accommodate a specific situation. An example of this is the company "ABB SWEDEN", which uses a five-perspective BSC model called "EVITA". The BSC, in this case, encompasses the following perspectives: financial, customer, process and supplier perspective, innovation and development perspective and employee perspective.

BSC models find application in public sector organizations and non-profit organizations. Examples include the city of Charlotte (US), the Department of Defence (US), the Department of Energy (US), the Canadian Police, the University of California in San Diego, Duke Children's Hospital, Montefiore Hospital, etc. Also in these cases, modification and adjusting the BSC model was needed. Understandably, the use of the BSC model is most prevalent where it was originated. Nevertheless, there is an evident expansion in its implementation in other parts of the world and countries in transition.

When it comes to the premises of the former Yugoslavia [13], in Croatia, 10% of companies have started applying the BSC methodology. Among the first to begin its implementation are the companies "Podravka", "Erickson - Nikola Tesla", "Auto Zubak", "Coca Cola", "Pliva". In 2002, "Pliva" Zagreb received an award called "Hall of Fame", which is assigned to the company with the best BSC concept implementation. Thanks to the application of this model, this company has been able to improve new products selling and to increase its participation in the international market. The BSC model is also implemented by Telecom Slovenia.

As for Serbia [14], the application of BSC methodology involves the preliminary preparation of the field, which is about abandoning the old system of thinking and doing business, the process of transforming old systems and incorporating them into the system of a new, market-oriented economy that is globally competitive. The pioneers in implementing this concept of balanced indicators are the companies "Hemofarm", "Tigar Piro", and "ComTrade". By using this model, "Hemofarm" was able to secure a strong and stable position based on implementing a new strategy on a global level. "Tigar Piro" has implemented the BSC model to raise the level of business control and risk protection and thus create better conditions for the strategic planning and decision-making process in the company. The BSC model is applicable in the Holding and companies Tigar footwear, Tigar chemical products, Tigar trade, and Tigar technical rubber. The application of the BSC model has enabled this company to achieve satisfied customers, employees, and shareholders, as well as a good position in the international market. The main goal of applying the BSC model in "ComTrade" is the ability to strategically master a group of twenty companies.

6 CONCLUSION

An effective performance measurement system is a system that presents a set of financial and non-financial measures that will enable managers to cope with a large number of complex activities in the business process and to focus on key factors of business success in a timely and proper manner.

Traditional financial performance indicators provide information about past performance but are not well-suited to predict future performance, that is, to implement and control the company's strategic plan. By studying perspectives, managers can organize the company more efficiently and effectively and provide adequate performance measurement process. Therefore, the Balanced Scorecard is a key tool used by

top managers in the strategic management process and the basis for effective business control. Namely, a balanced model implies a "balance" between:

- short-term and long-term goals,
- financial and non-financial measures,
- relationship between different indicators,
- internal and external efficiency performances.

Linking the contribution of managers with the achieved performances of the company actualizes the problem of performance measurement, which plays a key role in developing a quality incentive system. Generally, annual bonuses as a short-term compensations are based on traditional performance measures, such as profit, yield rate, earnings per share, etc., while modern performance measures, such as BCS, EVA, total shareholder returns and more, are conceptually set to motivate managers to behave more strongly in interests of owners, and used to create short and long term incentives.

Determining the company performances requires the financial situation analysis, along with determining the degree of satisfying interests of stakeholders in a broader sense, including clients, employees, and shareholders. It is important to understand the idea that different stakeholders' interests can be interrelated, and employee satisfaction leads to customer satisfaction, which generates greater financial* results and satisfaction of shareholders, owners, public system and more. Successful marketing, as is a prerequisite for the success of the company is based exactly on these postulates.

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A FUZZY AHP APPROACH FOR ENERGY MANAGEMENT STRATEGY

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ABSTRACT

In the world, energy stability and security have become one of the more important issues in almost every country. This issue has very important because the economic and social development of each country depends on energy security and stability. The energy management is extremely important in urban areas. Our research is based on the development and improvement of the concept of energy platform in smart cities. A new model approach covers a range of influencing factors and makes a series of complex decisions. An integral approach based on mathematical method fuzzy AHP has been used to classify the whole system into different criteria/sub-criteria by experts. The aim of the paper is to point out the importance of multi-criteria analysis used at the moment of making complex and important decisions in the field of energy management. The energy platform should be developed the urban environment, in order to give opportunities and means to provide the energy efficiency infrastructure and sustainable development in the cities of Serbia.

Keywords: Fuzzy AHP, Energy, Indicators, Serbia

1 INTRODUCTION

In order to increase sustainability, enable energy security and stability in Serbia, we point to the need to creating an energy platform based on an assessment of the current situation, and towards creating urban infrastructure. Buildings are the largest potentiality for savings of energy. The latest technology, which follows the standards of using the minimum energy, should be used to design new buildings in developing cities. However, what is more, challenging is the question of modernizing the existing buildings in already established cities [1, 2].

These goals can be achieved using renewable energy sources. If one takes into consideration the fact that renewables have cost competitive in comparison with conventional power sources, it has concluded that they offer the lowest cost supply of power, without any financial support. Therefore, solutions, which have based on renewable energy sources, can change and are changing lives, communities, and economies in a growing number of places. Thus, new jobs and economic activities will create, energy sources will democratize, and energy independence will ensure for a wide range of countries and economies [3]. There is a growing concern about the environmental cost and limited supply of fossil energy sources, and therefore, the careful management of energy resources appears to be a significant factor. Also, the development and implementation of renewable energy resources such as wind turbines, geothermal heat pumps, and photovoltaic systems are becoming increasingly significant. Energy supplies in electricity and gas networks, which have organized in a traditional top-down way, have had to cope with the decentralized renewable energy production. Since predictions of energy consumption are possible on the macro level, on the basis of such predictions, large power plants proposed new electricity generation [4]. Renewable energy that has used for power generation (excluding hydropower) represents less than 1% of the electricity supply in Serbia [5, 6]. Thus, one may say that renewable energy is in its early days of development in Serbia. However, the substantial potential for renewable energy has recognized, and there are expectations that capacities will significantly increase in the future [7]. What remains a challenge is the financing of renewable energy and projects regarding energy efficiency in the region.

Transition to renewable energy sources is slow. The need for moving from coal to renewable energy is necessary, but it is equally significant to re-examine which sources are really available, renewable, and based on energy efficiency. By 2030 the projected energy use should be reduced by means of energy efficiency. We took into account a large number of indicators in the process of creating multi-criteria decision making for the creation of an energy platform, taking into account other multi-criteria strategies in the concept of a smart city [8-12]. The aim of the paper is to underline the importance of multi-criteria analysis in the situation of making complex and important decisions in the field of energy management. The research is based on the ranking of the alternatives using the mathematical method of Fuzzy analytic hierarchy process (FAHP).

2 METHODOLOGY - MULTI-CRITERIA DECISION MAKING

As a practical and popular methodology for dealing with fuzziness and uncertainty in multiple criteria decision-making (MCDM), fuzzy analytic hierarchy process (AHP) has found large applications in recent years. In fuzzy AHP, linguistic terms such as equally important, slightly more important, moderately more important, strongly more important, etc. are used to express the pairwise comparisons. The linguistic terms are represented by the membership functions, most often of triangular or trapezoidal shape. In the paper, synthetic triangular fuzzy numbers (STFN) will be applied [13-15]. Theoretical analysis has revealed that this methodology can produce a unique optimal priority vector for any fuzzy pairwise comparison matrix. The mathematical basis for the fuzzy AHP method consists of matrix theory and fuzzy arithmetic. A fuzzy number is a special fuzzy set $F = \{(x, \mu_F(x)), x \in \mathbb{R}\}$, where $x \in (-\infty, +\infty)$, and $\mu_F(x): (-\infty, +\infty) \rightarrow [0,1]$ is a continuous function. A triangular fuzzy number has denoted as $M = (l, m, u)$ and the membership function is:

$$\eta_F(x) = \begin{cases} \frac{x-l}{m-l}, & x \in \{l, m\} \\ \frac{u-x}{u-m}, & x \in \{m, u\} \\ 0, & \text{otherwise,} \end{cases} \tag{1}$$

where $l \leq m \leq u$, l and u stand for the lower and upper value of the support of M respectively, and m is the modal value. When $l = m = u$, it is a 'normal' crisp number. The main operations for two triangular fuzzy numbers M_1 and M_2 are:

$$M_1 \oplus M_2 = (l_1, m_1, u_1) \oplus (l_2, m_2, u_2) = (l_1 + l_2, m_1 + m_2, u_1 + u_2) \tag{2}$$

$$\lambda \cdot M_1 = \lambda \cdot (l_1, m_1, u_1) = (\lambda \cdot l_1, \lambda \cdot m_1, \lambda \cdot u_1), \forall \lambda > 0 \tag{3}$$

$$M_1 \otimes M_2 = (l_1, m_1, u_1) \otimes (l_2, m_2, u_2) = (l_1 \cdot l_2, m_1 \cdot m_2, u_1 \cdot u_2), l_1, l_2 > 0, \tag{4}$$

$$M_1^{-1} = (l_1, m_1, u_1)^{-1} = \left(\frac{1}{u_1}, \frac{1}{m_1}, \frac{1}{l_1}\right). \tag{5}$$

The value of the fuzzy synthetic extent, according to Chang's extent analysis method [16], is defined as:

$$S_i = \sum_{j=1}^m M_{g_i}^j \otimes \left[\sum_{i=1}^n \sum_{j=1}^m M_{g_i}^j \right]^{-1}, i = 1, 2, \dots, n, \tag{6}$$

where $M_{g_i}^j, j=1, \dots, m$ are triangular fuzzy numbers representing the extent analysis value for decision element i for m goals and \otimes is the fuzzy multiplication operator. Triangular fuzzy numbers have ranked by applying several methods. The total integral value method, presented in [17], is used in this paper. For the given triangular fuzzy number $M = (l, m, u)$, the total integral value is defined as follows:

$$I_\lambda(M) = 0.5(\lambda u + m + (1 - \lambda)l), \lambda \in [0,1], \tag{7}$$

where λ represents an optimism index. It describes the decision maker's attitude toward risk: the smaller value of λ indicates a higher degree of risk (a lower degree of optimism). Values 0, 0.5 and 1 are used to represent the pessimistic, moderate, and optimistic views of the decision-maker respectively.

if $I_T(M_1) < I_T^\lambda(M_2)$ $I_\lambda(M_1) < I_\lambda(M_2)$, then $M_1 < M_2$;

if $I_T^\lambda(M_1) < I_T^\lambda(M_2)$ $I_\lambda(M_1) = I_\lambda(M_2)$, then $M_1 \approx M_2$;

if $I_T^\lambda(M_1) < I_T^\lambda(M_2)$ $I_\lambda(M_1) > I_\lambda(M_2)$, then $M_1 > M_2$.

Basic requirements, on which the concept is based, are identified as criteria and sub-criteria. Key indicators of the concept are determined by expert assessment using the fuzzy sets that characterized each criterion and sub-criteria. The highest rank goes to the factor that, in the opinion of the expert, is the most significant, and the lowest rank to the least significant factor. The fuzzy AHP was developed to solve hierarchical fuzzy problems. In order to rank key indicators for the concept, it is important to define the hierarchical structure, which has the levels: the first (top) level represents the ranking of key indicators; the second level considers relevant criteria; the third level defines sub-criteria. Pairs of elements at each level are compared according to their relative contribution to the elements at the hierarchical level above theirs. The decision-maker or expert group estimates the relative contribution of each pair using the 1-9 comparison scale, as shown in Table 1. The fuzzified scale for pairwise comparisons is defined by means of fuzzy distance δ , which has values $0.5 \leq \delta \leq 2$. In this paper, fuzzification is implemented by triangular fuzzy numbers, and the value of the fuzzy distance of as recommended in [18], where the most consistent results were obtained. Crisp and fuzzified Saaty's scale for pairwise comparisons:

Table 1.

Crisp values (x)	Description	Fuzzy values
1	Equal importance	(1, 1, 1+ δ)
3	Weak dominance	(3- δ , 3, 3+ δ)
5	Strong dominance	(5- δ , 5, 5+ δ)
7	Demonstrated dominance	(7- δ , 7, 7+ δ)
9	Absolute dominance	(9- δ , 9, 9)
2, 4, 6, 8	Intermediate values	(x-1, x, x+1)

Source: Adopted by Satty [18]

Pairwise comparisons at each level, starting from the top of the hierarchy, are presented in the square matrix form $A = [\tilde{a}_{ij}]_{i,j=1,\dots,n}$, where \tilde{a}_{ij} is the fuzzy value about the relative importance of the alternative i over alternative j , $\tilde{a}_{ij} = (1,1,1)$ for $i=j$ and $\tilde{a}_{ij} = (\tilde{a}_{ji})^{-1}$ for $i \neq j$. The corresponding weights of criteria/sub-criteria, with respect to (6), are determined as a synthetic triangular fuzzy numbers STF

$$S_i = \sum_{j=1}^n \tilde{a}_{ij} \otimes \left[\sum_{i=1}^n \sum_{j=1}^n \tilde{a}_{ij} \right]^{-1}, i = 1, 2, \dots, n, \quad (8)$$

The fuzzy AHP method is applied to the ranking of performances for the conceptualization of energy platform, as presented below in Fig 1.

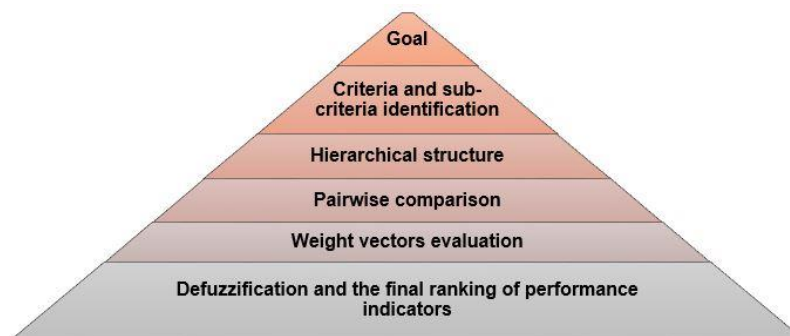


Fig. 1. Ranking of indicators for energy management strategy

Source: Authors

According to this procedure, the authors have developed a corresponding software, which has been used to solve problems of the ranking of indicators in the conceptualization of energy platform.

3 RESULTS - INDICATORS FOR ENERGY MANAGEMENT PLATFORM

The research is based on criteria ranking: E - Energy management, C - Community issues, M - Mobility, B - Buildings, heating, and cooling, W - Water and waste system. The criteria of energy management involve E1 - enabling the recording and analysis of the current and previous consumption, E2 - assessing the potential for new energy services and tariffs, E3 - system of automatic adaptation to consumption, E4 - support for decision making on network extensions. The criteria of community issues involve C1 - faster access to real-time information on consumption, C2 - raising awareness of energy and the environment, C3 - efficient care for the environment and energy consumption, C4 - accelerated behaviour change, C5 - public engagement. The criteria of mobility involve: M1 - wireless broadband Internet access, M2 - smart traffic management M3 - promote pedestrian and bicycle movement and create infrastructure for it, M4 - replacement of vehicles with fossil fuels by electric vehicle. The criteria of buildings, heating, and cooling involve B1 - smart energy management in buildings, B2 - increase in the share of heating from heating plants and cogeneration, B3- solar heating, B4 - heat storage networks. The criteria of water and waste system involve W1 - Monitoring, and analysing water pumping system, W2 - improving services for drinking water and billing, W3- Involving the smart pipe system, W4 - generating energy from waste. Defined indicators for the energy platform of the urban infrastructure through five sets of criteria and twenty-two

sub-criteria have presented in Fig 2. The fuzzy numbers are used to evaluate the energy platform through performance indicator. Ranking of fuzzy numbers has a significant role in decision making. Experts have agreed on the obtained estimation and a comparison between these fuzzy numbers. All matching matrices meet the requirement of consistency and may be accepted. Table 2. - Table 7. represent the matrices of the comparison of the criteria and sub-criteria of Prioritizing indicators for energy strategy. All matching matrices meet the requirement of consistency.

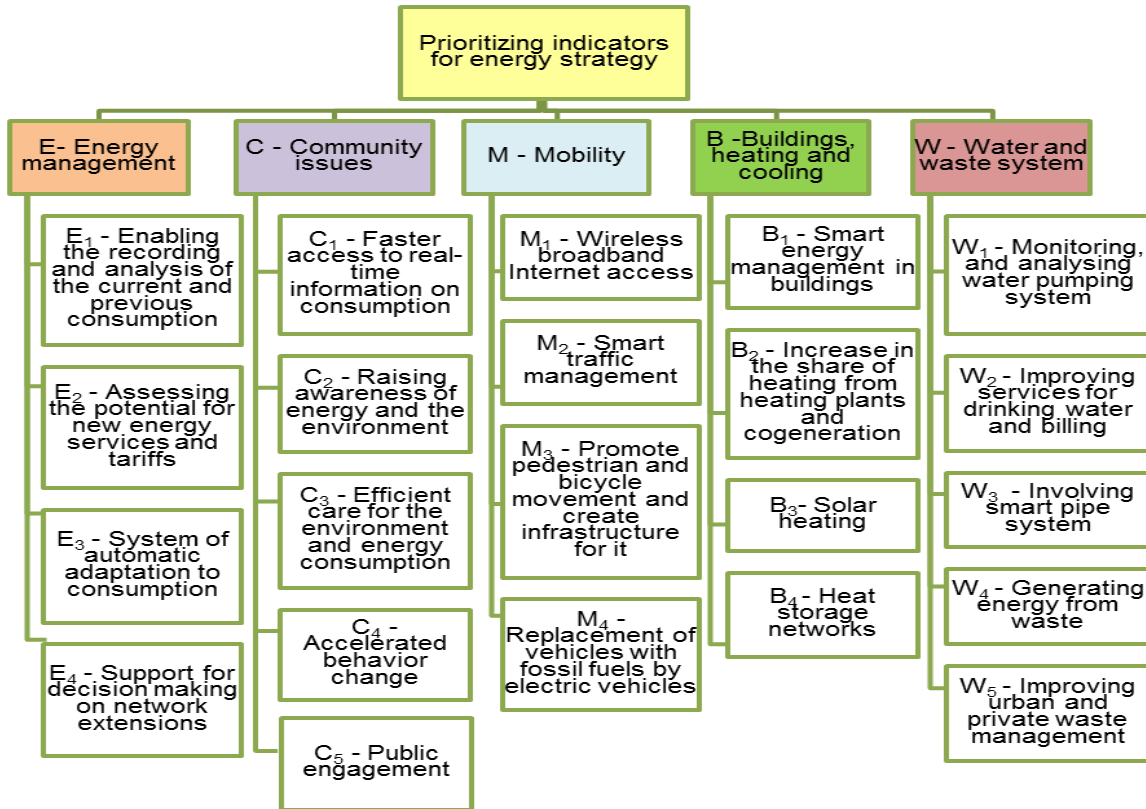


Fig. 2. A hierarchical structure that connects criteria and sub-criteria for the energy platform

Source: Authors

Table 2. The pairwise comparison matrix of criteria in relation to the energy management platform: G, B, S, N, W, fuzzy numbers and weights

	E	C	M	B	W	CI=0.008278, CR=0.007391 STFN	Weight		
							$\lambda = 0$	$\lambda = 0.5$	$\lambda = 1$
E	$\tilde{1}$	$\tilde{2}$	$\tilde{2}$	$\tilde{3}$	$\tilde{4}$	(0.133758,0.355556,0.858586)	0.355001	0.339236	0.333272
C	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	(0.0828025,0.222222,0.656566)	0.221298	0.235752	0.24122
M	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	(0.0700637,0.222222,0.555556)	0.212056	0.213099	0.213494
B	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	(0.0547771,0.128395,0.353535)	0.132893	0.132453	0.132286
W	$\tilde{4}^{-1}$	$\tilde{3}^{-1}$	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	(0.036942,0.0716049,0.2188)	0.0787522	0.0794608	0.079729

Source: Authors

Table 3. The pairwise comparison matrix of sub-criteria in relation to the Energy E, fuzzy numbers and weights

	E1	E2	E3	E4	CI=0.003454, CR=0.0038 STFN	Weight		
						$\lambda = 0$	$\lambda = 0.5$	$\lambda = 1$
E1	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	$\tilde{3}$	(0.125,0.446281,1.19318)	0.41801	0.433995	0.43985
E2	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{2}$	(0.104167,0.272727,0.68182)	0.275776	0.261377	0.25609
E3	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	(0.079167,0.140496,0.51136)	0.160729	0.17109	0.17488
E4	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	(0.058333,0.140496,0.34091)	0.145485	0.133538	0.12915

Source: Authors

Table 4. The pairwise comparison matrix of sub-criteria in relation to the M - Mobility, fuzzy numbers and weights

	M1	M2	M3	M4	CI=0.00687, CR=0.007637 STFN	Weight		
						$\lambda = 0$	$\lambda = 0.5$	$\lambda = 1$
M1	$\tilde{1}$	$\tilde{2}$	$\tilde{2}$	$\tilde{4}$	(0.18,0.410646,0.882353)	0.419493	0.387663	0.374676
M2	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	$\tilde{3}$	(0.1,0.250951,0.735294)	0.249255	0.275201	0.285787
M3	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	$\tilde{3}$	(0.08,0.250951,0.588235)	0.23505	0.240819	0.243173
M4	$\tilde{4}^{-1}$	$\tilde{3}^{-1}$	$\tilde{3}^{-1}$	$\tilde{1}$	(0.048,0.0874525,0.245098)	0.096202	0.0963171	0.0963641

Source: Authors

Table 5. The pairwise comparison matrix of sub-criteria in relation to the B - Buildings, heating, and cooling, fuzzy numbers, and weights

	B1	B2	B3	B4	CI=0.01033, CR=0.011475 STFN	Weight		
						$\lambda = 0$	$\lambda = 0.5$	$\lambda = 1$
B1	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	$\tilde{4}$	(0.18,0.446097,1.02941)	0.444671	0.43252	0.427562
B2	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	(0.1,0.289963,0.735294)	0.276962	0.291259	0.297092
B3	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	(0.076,0.17100,0.441176)	0.175429	0.176824	0.177393
B4	$\tilde{4}^{-1}$	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	(0.052,0.0929368,0.2451)	0.102938	0.099398	0.097953

Source: Authors

Table 6. The pairwise comparison matrix of sub-criteria in relation to the C - Community issues fuzzy numbers and weights

	C1	C2	C3	C4	C5	CI=0.009089, CR=0.0081153 STFN	Weight		
							$\lambda = 0$	$\lambda = 0.5$	$\lambda = 1$
C1	$\tilde{1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	$\tilde{4}$	(0.130435,0.30986,0.78461)	0.313661	0.31446	0.314783
C2	$\tilde{1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	$\tilde{4}$	(0.118012,0.30986,0.69231)	0.304811	0.293002	0.288234
C3	$\tilde{2}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	(0.06832,0.19718,0.507692)	0.189144	0.198822	0.20273
C4	$\tilde{3}^{-1}$	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	(0.050932,0.11737,0.32308)	0.119897	0.124727	0.126677
C5	$\tilde{4}^{-1}$	$\tilde{4}^{-1}$	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	(0.036025,0.06573,0.16923)	0.072487	0.068989	0.067577

Source: Authors

Table 7. The pairwise comparison matrix of sub-criteria in relation to the Water and Waste W, fuzzy numbers and weights

	W1	W2	W3	W4	W5	CI=0.0082785, CR= 0.0073915 STFN	Weight		
							$\lambda = 0$	$\lambda = 0.5$	$\lambda = 1$
W1	$\tilde{1}$	$\tilde{2}$	$\tilde{2}$	$\tilde{3}$	$\tilde{4}$	(0.133758,0.355556,0.858586)	0.355001	0.339236	0.333272
W2	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	(0.0828025,0.222222,0.656566)	0.221298	0.235752	0.24122
W3	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{1}$	$\tilde{2}$	$\tilde{3}$	(0.0700637,0.222222,0.555556)	0.212056	0.213099	0.213494
W4	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	$\tilde{2}$	(0.0547771,0.128395,0.353535)	0.132893	0.132453	0.132286
W5	$\tilde{4}^{-1}$	$\tilde{3}^{-1}$	$\tilde{3}^{-1}$	$\tilde{2}^{-1}$	$\tilde{1}$	(0.0369427,0.0716049,0.218855)	0.0787522	0.0794608	0.0797289

Source: Authors

We have followed the factors that influence the development of the energy management platform, and the ranking effect is in Tables 8, 9.

Table 8. Ranking of indicators for energy strategy

Ranking indicators	$\lambda = 0$			$\lambda = 0.5$			$\lambda = 1$		
	$I_T(\tilde{M}_1)$	$I_T(\tilde{M}_2)$	$I_T(\tilde{M})$	$I_T(\tilde{M}_1)$	$I_T(\tilde{M}_2)$	$I_T(\tilde{M})$	$I_T(\tilde{M}_1)$	$I_T(\tilde{M}_2)$	$I_T(\tilde{M})$
E1	0.3550	0.4180	0.1484	0.3392	0.4340	0.1472	0.3333	0.4399	0.1466
B3	0.2121	0.4447	0.0943	0.2131	0.4325	0.0922	0.2135	0.4276	0.0913
M1	0.2213	0.4195	0.0928	0.2358	0.3877	0.0914	0.2412	0.3747	0.0904
E4	0.3550	0.2758	0.0979	0.3392	0.2614	0.0887	0.3333	0.2561	0.0854
M2	0.2213	0.2493	0.0552	0.2358	0.2752	0.0649	0.2412	0.2858	0.0689
B4	0.2121	0.2770	0.0587	0.2131	0.2913	0.0621	0.2135	0.2971	0.0634
M4	0.2213	0.2351	0.0520	0.2358	0.2408	0.0568	0.2412	0.2432	0.0587

E2	0.3550	0.1607	0.0571	0.3392	0.1711	0.0580	0.3333	0.1749	0.0583
E3	0.3550	0.1455	0.0516	0.3392	0.1335	0.0453	0.3333	0.1292	0.0430
P1	0.1329	0.3137	0.0417	0.1325	0.3145	0.0417	0.1323	0.3148	0.0416
P2	0.1329	0.3048	0.0405	0.1325	.02930	0.0388	0.1323	0.2882	0.0381
B1	0.2121	0.1754	0.0372	0.2131	0.1768	0.0377	0.2135	0.1774	0.0379
P5	0.1329	0.1891	0.0251	0.1325	0.1988	0.0263	0.1323	0.2027	0.0268
W4	0.0788	0.3550	0.0280	0.0795	0.3392	0.0270	0.0797	0.3333	0.0266
M3	0.2213	0.0962	0.0213	0.2358	0.0963	0.0227	0.2412	0.0964	0.0232
B2	0.2121	0.1029	0.0218	0.2131	0.0994	0.0212	0.2135	0.0980	0.0209
W2	0.0788	0.2213	0.0174	0.0795	0.2358	0.0187	0.0797	0.2412	0.0192
W3	0.0788	0.2121	0.0167	0.0795	0.2131	0.0169	0.0797	0.2135	0.0170
P4	0.1329	0.1199	0.0159	0.1325	0.1247	0.0165	0.1323	0.1267	0.0168
W1	0.0788	0.1329	0.0105	0.0795	0.1325	0.0105	0.0797	0.1323	0.0105
P3	0.1329	0.0725	0.0096	0.1325	0.0690	0.0091	0.1323	0.0676	0.0089
W5	0.0788	0.0788	0.0062	0.0795	0.0795	0.0063	0.0797	0.0797	0.0064

Source: Authors

Table 9. Final Priority Ranking

Indicators
E1 – Enabling the recording and analysis of the current and previous consumption
B3 – Solar heating
M1 - Wireless broadband Internet access
E4 - Support for decision making on network extensions
M2 - Smart traffic management
B4 - Heat storage networks
M4 - Replacement of vehicles with fossil fuels by electric vehicles
E2 - Assessing the potential for new energy services and tariffs
E3 - System of automatic adaptation to consumption
C1 - Faster access to real-time information on consumption
C2 - Raising awareness of energy and the environment
B1 - Smart energy management in buildings

Source: Authors

The results of the monitoring energy consumption data enable to return at the start of the audit cycle and potentially trigger more analysis, implementation, and monitoring. The recording and analysis of the current and previous consumption is the major part of development for an energy platform that quantifies a relationship between consumption and the applicable independent variables, and the feedback on energy conservation, as shown in Fig 3.

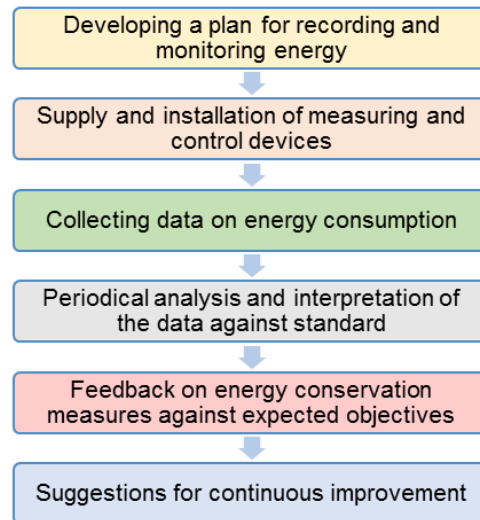


Fig. 3. Continuous monitoring and analysis of consumption data

Source: Authors

The next criterion emphasizes the potential of solar energy in Serbia. As the house is a fundamental building block, which uses or includes multiple types of infrastructure systems, just in houses one needs to start with the implementation of the solar systems. Energy efficiency is one of the basic postulates of nowadays sustainable development, and the minimization of energy consumption required for heating and cooling one of the primary goals of society. The availability of appropriate forms of energy represents an essential factor in achieving sustainable development of one environment. Using renewable energy sources within cities in Serbia is a complex issue. The presentation of solar radiation in the cities in Serbia, counted over 100,000 inhabitants, may help in finding out the sense for using this kind of renewable energy sources. Average solar radiation in Serbia is about 40% higher than the European average, but besides, the use of solar energy for power generation far lags behind the European Union. Whether developed or developing, the cities are keen on smart city development to enhance their energy saving and create an environment for sustainable development. There are more than 250 days of sunshine per year in most parts of Serbia. Therefore, an essential potential has seen in using solar energy from domestic rooftop photovoltaic panels and water heaters. The use of solar energy, an energy potential in Serbia, leads to the reduction of reliance on fossil and nuclear reserves. What is important for the economy and the preservation of the natural environment in Serbia is creating conditions for the development of a sustainable solar system market.

We need the energy functional house, as shown in Fig 4.

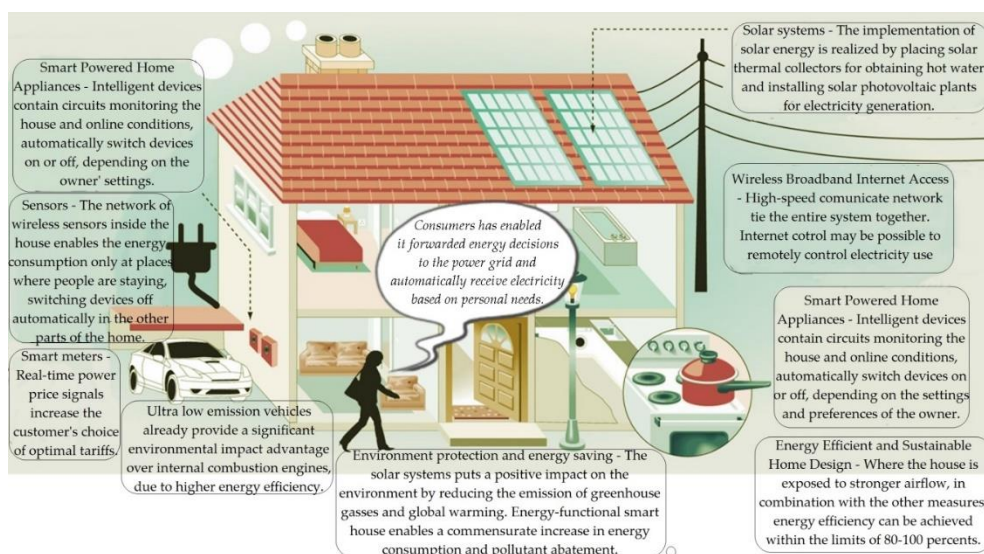


Fig. 4. Energy functional house with solar systems

Source: Authors

4 CONCLUSION

Within cities, energy consumption is enormous. A large share of consumption affects all the dimensions of a city: public authority, social and human capital, quality of life, economy, environment, and mobility. Energy governance is responsible for program implementation at the local, regional, and national levels. In this paper, we have explored the indicators for creating an energy platform.

Ranking leads to the dominant role of collecting and analysing current and previous consumption and the role of solar heating. Next indicator in the ranking is wireless broadband Internet access. Additional, support for decision making on network extensions is a significant factor in creating an energy platform. The proposed method can be successfully applied in decision making in different segments of energy policy creation.

A strategic approach to energy implies that the processes in the economy and the state, as well as in the life of citizens, take place with lower economic costs and a higher degree of social and ecological sustainability - a higher standard of the population with reduced pollution and better protection of nature. Managing the impacts of a changing climate will require developing local strategies. In that sense, from the implementation of the Law on Energy and the Energy Development Strategy of Serbia, appropriate energy policy should arise, will lead to a sustainable energy system, a more efficient economy with sustainable balances of natural resources and the lower levels of pollution. The present study focused on fuzzy AHP method has implemented through criteria and sub-criteria for the energy management platform. In this way, we have indicated the approach for improving the performances of the house and identified some alternative, sustainable designs for the case study house in terms of energy savings. In predicting the energy potential of the urban system through energy and environment, we have considered a priority of using solar energy resources.

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RANKING METHODS OF SINGLE VALUED NEUTROSOPHIC NUMBERS AND ITS APPLICATIONS TO MULTIPLE CRITERIA DECISION MAKING

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ABSTRACT

Decision making is a very important and actual process. It is exactly as such the most important to managers to whom it is a primary task. Taking into account the more possibilities of the action lines that can be implemented, the outcome of the decision-making process must be the solution of this situation, i.e., defining the directions for further action. The rapid development of the field of multiple-criteria decision making (MCDM), as one of the extremely important areas of operational research, has contributed to the development of many multiple-criteria decision-making methods. Therefore, the main objective of this article is to point out the usability of single-valued neutrosophic sets in solving multiple criteria decision-making problems. Three approaches for ranking of single-valued neutrosophic numbers are presented in the article, and its usability is demonstrated in numerical illustration.

Keywords: neutrosophy, neutrosophic set, single-valued neutrosophic numbers, decision-making.

1 INTRODUCTION

Multiple Criteria Decision Making (MCDM) has become very important and fastest growing subfields of operations research and management science. As modern MCDM started to emerge about 50 years ago, and until now it is used for solving a number of different decision-making problems in different fields [1-3]. Multiple Criteria Decision Making can be defined as making choices in the presence of multiple conflicting criteria. More precise MCDM models usually leads to increasing number or evaluation criteria or use of more complex criteria that are later decomposed into sub-criteria. However, an increase in the number of criteria, as well as sub-criterion, can be less desirable in cases where data should be collected by the survey [4-7].

Hwang & Yoon [8] emphasize that MCDM can be divided into two basic categories: multi-attribute decision making which is mainly applied to selection problems and is always linked to a limited number of alternatives and ranking preferences, and multi-objective decision making which is usually applied to planning, i.e. to problems where the number of alternatives is infinite.

Having in mind the extremely dynamic development of the MCDM area, a number of methods of multiple-criteria decision-making have been developed over time, of which the most applied are: SAW, ELECTRE, MOORA, MULTIMOORA, TOPSIS, AHP, PROMETHEE, VIKOR, WASPAS and so on [9-10].

Significant progress in using the MCDM methods for solving complex decision-making problems was made after Zadeh [11-12], when he first proposed fuzzy sets, on which basis Bellman and Zadeh [13], somewhat later have proposed fuzzy MCDM. Since then, some extensions of fuzzy sets theory have been developed, such as: interval valued fuzzy sets [14], intuitionistic fuzzy sets [15] and interval-valued intuitionistic fuzzy sets [16].

In 1999, Smarandache [17] introduced the concept of neutrosophic sets, as generalization of the fuzzy sets theory and their extensions.

Fuzzy sets theory introduces partial membership to a set, expressed by membership function $\mu(x)$, where membership function can have different forms, such as: bell-shaped, triangular, trapezoidal and singleton. Neutrosophic sets theory introduces three parameter that can be used to describe belonging to a set, that is; truth membership, indeterminacy membership, falsity membership. That is why neutrosophic sets could be more suitable for evaluating complex phenomena and events.

Therefore, the applicability of neutrosophic sets in the MCDM model is considered in the rest of this article. The remainder of article is organized as follows: In Section 2 basic elements of neutrosophic sets and

single valued neutrosophic numbers are considered. In Section 3 approaches for ranking single valued neutrosophic numbers are considered, and in Section 4 a multiple-criteria decision-making approach based on single valued neutrosophic numbers is presented. In Section 5 a numerical illustration is given in order to demonstrate proposed approach. Finally, conclusions are given.

2 BASIC ELEMENTS OF NEUTROSOPHIC SETS AND SINGLE VALUED NEUTROSOPHIC NUMBERS

Definition 1. Let X be a nonempty set, with a generic element in X denoted by x . Then, the Neutrosophic Set (NS) A in X is as follows [17-18]:

$$A = \left\{ \langle x, T_A(x), I_A(x), F_A(x) \rangle \mid x \in X \right\}, \quad (1)$$

with: $T_A : X \rightarrow]^{-}0, 1^{+}[$; $I_A : X \rightarrow]^{-}0, 1^{+}[$; $F_A : X \rightarrow]^{-}0, 1^{+}[$ and $^{-}0 \leq T_A(x) + I_A(x) + F_A(x) \leq 3^{+}$

where: $T_A(x)$, $I_A(x)$ and $F_A(x)$ are the truth-membership function, the indeterminacy-membership function and the falsity-membership function, respectively.

Definition 2. Let X be a nonempty set. The Single Valued Neutrosophic Set (SVNS) A in X is as follows [17-19]:

$$A = \left\{ \langle x, T_A(x), I_A(x), F_A(x) \rangle \mid x \in X \right\}, \quad (2)$$

with: $T_A : X \rightarrow [0,1]$; $I_A : X \rightarrow [0,1]$; $F_A : X \rightarrow [0,1]$ and $0 \leq T_A(x) + I_A(x) + F_A(x) \leq 3$.

Definition 3. For an SVNS A in X , the triple $\langle t_A, i_A, f_A \rangle$ is called the Single Valued Neutrosophic Number (SVNN) [17-18].

Definition 4. Let $x_1 = \langle t_1, i_1, f_1 \rangle$ and $x_2 = \langle t_2, i_2, f_2 \rangle$ be two SVNNs and $\lambda > 0$; then the basic operations are defined as follows:

$$x_1 + x_2 = \langle t_1 + t_2 - t_1 t_2, i_1 i_2, f_1 f_2 \rangle, \quad (3)$$

$$x_1 \cdot x_2 = \langle t_1 t_2, i_1 + i_2 - i_1 i_2, f_1 + f_2 - f_1 f_2 \rangle. \quad (4)$$

$$\lambda x_1 = \langle 1 - (1 - t_1)^\lambda, i_1^\lambda, f_1^\lambda \rangle. \quad (5)$$

$$x_1^\lambda = \langle t_1^\lambda, i_1^\lambda, 1 - (1 - f_1)^\lambda \rangle. \quad (6)$$

Definition 5. Let $x = \langle t, i, f \rangle$ be an SVNN; then a score function $s_{(x)}$ of x can be as follows [20]:

$$s_{(x)} = \frac{1 + t_x - 2i_x - f_x}{2}. \quad (7)$$

Definition 6. Let $x = \langle t, i, f \rangle$ be a SVNN; then a cosine similarity measure $c_{(x)}$ between SVNN x and the ideal alternative (point) $\langle 1, 0, 0 \rangle$ is as follows [20]:

$$c_{(x)} = \frac{t}{\sqrt{t^2 + i^2 + f^2}}. \quad (8)$$

Definition 7. Let $x = \langle t, i, f \rangle$ a SVNN; then the Hamming distance $h_{(x)}$ between SVNN x and the ideal alternative (point) $\langle 1, 0, 0 \rangle$ is as follows:

$$h_{(x)} = \frac{1}{3} \left(|1 - t| + |i - 0| + |f - 0| \right) = \frac{1}{3} (1 - t + i + f). \quad (9)$$

Definition 8. Let $x = \langle t, i, f \rangle$ a SVNN; then the Hamming distance $h(x)$ between SVNN x and the ideal alternative (point) $\langle 1, 0, 0 \rangle$ is as follows:

$$h(x) = \left(\frac{1}{3} (|1-t|^2 + |i-0|^2 + |f-0|^2) \right)^{\frac{1}{2}} = \left(\frac{1}{3} ((1-t)^2 + i^2 + f^2) \right)^{\frac{1}{2}}. \quad (10)$$

Definition 9. Let $A_j = \langle t_j, i_j, f_j \rangle$ be a collection of SVNNS and $w = (w_1, w_2, \dots, w_n)^T$ be an associated weighting vector. Then the Single Valued Neutrosophic Weighted Average (SVNWA) operator of A_j is as follows [20]:

$$SVNWA(A_1, A_2, \dots, A_n) = \sum_{j=1}^n w_j A_j = \left(1 - \prod_{j=1}^n (1-t_j)^{w_j}, \prod_{j=1}^n (i_j)^{w_j}, \prod_{j=1}^n (f_j)^{w_j} \right). \quad (11)$$

where: w_j is the element j of the weighting vector, $w_j \in [0, 1]$ and $\sum_{j=1}^n w_j = 1$.

3 RANKING OF SINGLE VALUED NEUTROSOPHIC NUMBERS

There are several approaches for ranking SVNNS. An approach based on the Score function is commonly used.

Definition 10. Let x_1 and x_2 be two SVNNS. Then, the ranking method based on the score function is as follows:

$$\text{If } s_{(x_1)} > s_{(x_2)}, \text{ then } x_1 > x_2. \quad (12)$$

The next approach is based on the cosine similarity measure.

Definition 11. Let x_1 and x_2 be two SVNNS. Then, the ranking method based on the cosine similarity measure is as follows:

$$\text{If } c_{(x_1)} > c_{(x_2)}, \text{ then } x_1 > x_2. \quad (13)$$

SVNNS can also be ranked on the basis of their distances from an ideal point.

Definition 12. Let x_1 and x_2 be two SVNNS. Then, the ranking method based on the Hamming distance is as follows:

$$\text{If } h_{(x_1)} > h_{(x_2)}, \text{ then } x_1 < x_2. \quad (14)$$

4 A MULTIPLE CRITERIA DECISION MAKING APPROACH BASED ON SINGLE VALUED NEUTROSOPHIC NUMBERS

The procedure for solving multiple criteria decision-making problem that contain m alternatives that are evaluated based on n criteria by K experts can precisely be expressed by the following algorithm:

- Step 1. Define a goal of evaluation and identify available alternatives.
- Step 2. Define a set of evaluation criteria and determine their significance, i.e. criteria weights.
- Step 3. Form a group of experts who will perform evaluation and perform evaluation.
- Step 4. Construct a group decision-making matrix using Eq. (11).
- Step 5. Calculate overall ratings using Eq. (11).
- Step 6. Rank alternatives and select the best one using an approach presented in Section 3.

5 NUMERICAL ILLUSTRATION

In order to briefly demonstrate the usability of the SVNNS for solving MCDM problems, an example of supplier selection is presented in this section.

Assume that one company have to consider engaging of a new supplier. Therefore, a team of three experts if formed with the aim to select the most appropriate supplier from four alternatives on the basis on the following criteria:

- C_1 – Delivery,
- C_2 – Quality,
- C_3 – Flexibility,
- C_4 – Service, and
- C_5 – Price.

The ratings obtained from three experts are shown in Tables 1, 2 and 3.

Table 1. The ratings obtained from the first of three experts

	C_1	C_2	C_3	C_4	C_5
A_1	<0.8, 0.00, 0.10>	<0.7, 0.0, 0.3>	<0.6, 0.0, 0.4>	<0.7, 0.0, 0.3>	<0.5, 0.0, 0.5>
A_2	<0.7, 0.00, 0.20>	<0.8, 0.0, 0.2>	<0.8, 0.0, 0.2>	<0.8, 0.0, 0.2>	<0.8, 0.0, 0.2>
A_3	<0.5, 0.00, 0.20>	<0.5, 0.0, 0.5>	<0.6, 0.0, 0.4>	<0.6, 0.0, 0.4>	<0.7, 0.0, 0.3>
A_4	<0.7, 0.00, 0.30>	<0.6, 0.0, 0.4>	<0.7, 0.0, 0.3>	<0.5, 0.0, 0.5>	<0.5, 0.0, 0.5>

Table 2. The ratings obtained from the second of three experts

	C_1	C_2	C_3	C_4	C_5
A_1	<0.6, 0.00, 0.40>	<0.7, 0.0, 0.3>	<0.6, 0.0, 0.4>	<0.5, 0.0, 0.0>	<0.6, 0.0, 0.0>
A_2	<0.8, 0.00, 0.20>	<0.6, 0.0, 0.4>	<0.7, 0.0, 0.3>	<0.8, 0.0, 0.2>	<0.6, 0.0, 0.0>
A_3	<0.7, 0.00, 0.30>	<0.8, 0.0, 0.2>	<0.7, 0.0, 0.3>	<0.6, 0.0, 0.4>	<0.7, 0.0, 0.3>
A_4	<0.6, 0.00, 0.40>	<0.7, 0.0, 0.3>	<0.6, 0.0, 0.4>	<0.6, 0.0, 0.4>	<0.5, 0.0, 0.5>

Table 3. The ratings obtained from the third of three experts

	C_1	C_2	C_3	C_4	C_5
A_1	<0.8, 0.00, 0.20>	<0.6, 0.0, 0.4>	<0.5, 0.0, 0.5>	<0.6, 0.0, 0.4>	<0.8, 0.0, 0.2>
A_2	<0.6, 0.00, 0.10>	<0.6, 0.0, 0.4>	<0.8, 0.0, 0.2>	<0.5, 0.0, 0.5>	<0.7, 0.0, 0.3>
A_3	<0.6, 0.00, 0.40>	<0.7, 0.0, 0.3>	<0.6, 0.0, 0.2>	<0.6, 0.0, 0.4>	<0.5, 0.0, 0.5>
A_4	<0.7, 0.00, 0.30>	<0.8, 0.0, 0.2>	<0.7, 0.0, 0.3>	<0.6, 0.0, 0.4>	<0.6, 0.0, 0.1>

The group decision-making matrix, constructed using Eq. (11), are shown in Table 4. In this calculation all three experts had the same significance, that is $w_j=0.333$; $j=1, 2$ and 3 .

Table 4. The group decision-making matrix

	C_1	C_2	C_3	C_4	C_5
A_1	<0.75, 0.0, 0.24>	<0.67, 0.0, 0.33>	<0.57, 0.0, 0.44>	<0.61, 0.0, 0.25>	<0.66, 0.0, 0.26>
A_2	<0.71, 0.0, 0.17>	<0.68, 0.0, 0.34>	<0.77, 0.0, 0.23>	<0.73, 0.0, 0.32>	<0.71, 0.0, 0.18>
A_3	<0.61, 0.0, 0.30>	<0.69, 0.0, 0.35>	<0.64, 0.0, 0.30>	<0.60, 0.0, 0.40>	<0.64, 0.0, 0.37>
A_4	<0.75, 0.0, 0.24>	<0.67, 0.0, 0.33>	<0.57, 0.0, 0.44>	<0.61, 0.0, 0.25>	<0.66, 0.0, 0.26>

In the next step overall ratings was calculated using Eq. (11) and the following weights $w_j = \{0.18, 0.21, 0.20, 0.18, 0.23\}$. The overall ratings are shown in Table 5.

Table 5. The overall ratings obtained from the third of three experts

Overall ratings	
A_1	$\langle 0.65, 0.00, 0.30 \rangle$
A_2	$\langle 0.72, 0.00, 0.24 \rangle$
A_3	$\langle 0.64, 0.00, 0.34 \rangle$
A_4	$\langle 0.65, 0.00, 0.30 \rangle$

Finally, the ranking results obtained using three approaches, considered in Section 4, are encountered for in Table 6.

Table 6. The ranking results obtained using three approaches

	I		II		III	
	$s_{(j)}$	Rank	$c_{(j)}$	Rank	$h_{(j)}$	Rank
A_1	0.678	2	0.910	2	0.215	2
A_2	0.743	1	0.951	1	0.171	1
A_3	0.647	3	0.880	3	0.235	3
A_4	0.639	4	0.872	4	0.240	4

6 CONCLUSION

All current problems can be observed from a multiple-criteria decision-making perspective, because the problems are mainly related to the fulfillment of the objectives related to the larger number, usually conflicting criteria, which is a great approximation to the real tasks in the decision-making processes.

Taking into account previously stated, main objective of this manuscript is to emphasize the usability of single-valued neutrosophic sets in solving complex multiple-criteria decision-making problems. Therefore, in this manuscript three approaches for ranking of single-valued neutrosophic numbers are proposed. Usability and applicability of the approaches is demonstrated in conducted numerical example. Ranking results of the alternatives based on all of the three approaches are the same, alternative denoted as A_2 is the best in terms of evaluated criteria.

Neutrosophic sets theory introduces three parameters that can be used to describe belonging to a set, that is; truth membership, indeterminacy membership, falsity membership. That is why neutrosophic sets could be more suitable for evaluating complex phenomena and events. Thus, it is logical to expect greater application of neutrosophic sets in the area of MCDM, especially when it is necessary to solve complex problems.

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PARTICULARITIES OF MAKING DECISION IN THE UNCERTAINTY OF FUTURE RESULTS

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ABSTRACT

The rationale for investment and financial decisions for business development in the real sector of the economy at risk is based on the development of their theoretical foundations. Particular attention is paid to the peculiarities of the business risk assessment in the real economy compared to the risk in the financial sphere. To this end, we analyze the risk factors in different sectors of the economy that determine the opportunities for diversion of future business outcomes and also the specificity of the main risk management methods. In this respect, key risk measures for the different activities and the theoretical criteria for assessing the risk decisions used in the decision-making process in the financial markets take the cornerstone.

Keywords: decisions, risk, financial sphere, real economy, development.

1 INTRODUCTION

The rationale for investment and financial decisions for business development in the real sector of the economy at risk is based on the development of their theoretical foundations. Particular attention is paid to the peculiarities of the business risk assessment in the real economy compared to the risk in the financial sphere. To this end, we analyze the risk factors in different sectors of the economy that determine the opportunities for diversion of future business outcomes and also the specificity of the main risk management methods. In this respect, key risk measures for the different activities and the theoretical criteria for assessing the risk decisions used in the decision-making process in the financial markets take the cornerstone.

In today's economy, a significant part of the business decisions are characterized by the fact that future income and costs can not be identified unambiguously. Businessmen and managers are constantly confronted with unspecified, unambiguous future outcomes of their actions in justifying their decisions. The main factors behind this are related to the specificity of the market relations, in which the future results depend, on the one hand, on the own efforts of the entrepreneur or the manager and the factors on which they can influence and on the other hand - external factors determined primarily by the market situation on which they can not have a significant impact.

The business outcomes, the so-called non-economic factors, which do not always lend themselves to accurate estimation and forecasting (for example, natural and climatic conditions, political and social factors), also affect the course and the development of the economy as a whole. These factors influence in a different way the results of the particular business and, depending on this, require, to a greater or lesser degree, to take account of the uncertainty and the risk in justifying any decision.

2 FACTORS AFFECTING BUSINESS DEVELOPMENT

The impact of external factors on business performance has begun to grow substantially in the second half of the 20th century, prompting the need to take account of fluctuations in the future results of entrepreneurial decisions. This leads to the development of risk theory and methods in individual, above all financial, and later in the real economy, both to exploit these opportunities to increase incomes that may arise in the realization of risk solutions and to prevent undesirable income fluctuations in the implementation of these solutions, taking into account internal and external risk factors.

2.1.Risk Management Theory

The development of risk management theory began in the second half of the 20th century with the classical theory of financial portfolio choices that set the beginning of risk management in financial instruments in the process of substantiating relevant decisions. The further development of risk management with financial instruments is linked to the use of one- and multi-factor models for returns from risky assets. Later, special methods for financial risk management are proposed based on the market conditions of the term contracts - the options. At the initial stage, risk management for investment projects was linked to the process of justifying investment projects. Later, in practice, methods for operational risk management are being implemented in the process of project implementation. At the current stage in the world, wide spread are given the risk management methods based on the individual terms of the term contracts - the real options. This method pays great attention to modern economic literature and business practice. It is also used to assess the value of risk investments and, in the broader sense, the real economy.

2.2.Risk management

In the process of managing risks and assessing risk decisions, taking into account the nature and content of risk, depending on the sphere of economic activity, the specificity and the particularities of the adoption of risk decisions, is of great importance. In this important place lies both the fundamental analysis of the relationship between the notions of risk and uncertainty and the specifics and particularities of the theory and the methods of risk management that are formed depending on the economic sector.

2.3.Factors for future business development

Every human activity is aimed at achieving results in the future. People acquire knowledge in the education process, assuming that in the future they will allow them to receive an acceptable wage or to set up their own businesses to ensure a certain standard of living. All this depends to a great extent on their activity in the current period of time but depends on the future conditions and factors that may appear different and lead to both successful or favorable and to unsuccessful or unfavorable future results. For example, future business incomes are heavily dependent on the labor market situation and the needs of some or other occupations or specialties. Therefore, future results are a prerequisite and are determined by the current activity of the subject, but the final form, type and specific significance of these future results depends on factors and conditions, the influence of which (often the factors themselves) is unknown at the time of the decision or performing the current business.

2.4.State policy to stimulate business

On the volume of the realization of the goods and the amount of the earned income, the state policy, which can stimulate the development in the direction of the national production but also create attractive conditions for the foreign investors, reinforcing the internal competition, is also significant. The state can pursue a policy aimed at reducing inflation, changing or, conversely, fixing exchange rates, changes to the principles of budgetary or tax law, and so on.

In the course of their business, each business is always under the influence of external factors and conditions that determine its prospects. At the current stage in the development of the processes of globalization, such factors are repeatedly reinforced and influenced not only by individual countries, but also by whole regions and the world as a whole. An example of this is the global economic and financial crisis of 2008 that originally originated in US mortgage lending but has spread throughout the world through the system of global interdependence and has had a negative impact on the economic development of most countries. At the same time, it helped individual countries, such as China, to strengthen their positions in the global arena and create conditions for economic growth. It is worth noting that no one even until 2007. could not imagine or justify conditions or forms for the development of the crisis, as well as its influence on one or another business.

2.5.Factors influencing business and their future development

The development of future factors may allow successful business results. In the middle of the last decade, Sony controls nearly half of the world's TV market by selling televisions from the famous Sony Trinitron brand, but it does not pass on to liquid crystal and plasma televisions in time. That's what South Korean LG Samsung has benefited from. Using the developments in this area that had to be made to the point where world consumer demand switched to this type of television, these companies managed to capture a significant part of the global TV market, and later and the market for computer monitors. The research and development decision was taken much earlier than the market demand for the televisions concerned. In world business practice, up to 90% of research and development costs are not profitable, as they are

often completely unknown as the final decision at the time of decision making and capital injection into relevant developments, and whether they will at all benefit from market demand form for a future useful result.

An investor operating on a stock market with ordinary shares faces the fact that the future results of such operations are determined by the terms of that market. These conditions are materially dependent on the actions or behavior of other participants or agents on this market, which is conditioned by their reaction to some or other events occurring in the economy and their expectations regarding their impact on the development of the market situation. This is the announcement by the joint-stock company of the dividends paid or the launching of a new product, political decision-making or the occurrence of natural and climatic problems, etc. For example, the expectations of the European Union's decision to save the euro and prevent the bankruptcy of Greece at the expense of economic aid led to changes in the return on European stock markets in the spring and summer of 2011, and after the adoption of the final decision on this question the stock markets reacted with an increase in yields. At the time of the formation of the equity investment portfolio, such events or decisions were unknown and, by deciding on the structure of the portfolio, each investor and all other market participants did not have a full picture of the future development of the events and of the results, who will bring this portfolio to him after a certain period of time.

1. *Uncertainty of future business results*

An important aspect of such business or private business decisions is the uncertainty about the future results of these actions or decisions. This uncertainty is predetermined by the fact that in the future:

- first, it is possible that the events that have a significant effect on business performance are accidentally developed;
- secondly, the conditions and factors that have been identified in the decision-making or justification process may in the future result in unexpectedly complex impact on future results, which is impossible to predict and unambiguously assess;
- Thirdly, new conditions and factors may occur in the future that affect the results obtained but are unknown at the time of the decision.

All this is conditioned by the need to study and analyze methods of analysis, risk assessment and management in business, and the problems and difficulties in justifying risk decisions.

2. *Uncertainty factors for future business results*

The uncertainty of future results is generally determined by four main groups of factors:

- first, the lack of information that could be provided, but this requires either spending money or substantial effort and time wastage;
- second, the actions or counter-actions of competitors and other contractors, the analysis of which also requires substantial efforts, costs, etc .;
- Thirdly, it is possible to distinguish the random realization of factors, the list of which is known at the time of the decision making, but it is not known how and in what form they will work;
- Fourthly, factors that are unknown at the time of decision may occur in the future, which can not be known in advance.

3. *Types of uncertainty of future business results*

Looking at the uncertainty of future business results, two variants can be distinguished.

First, a removable uncertainty that can either be overcome using the existing database and some accessible information, as well as applying one or other statistical methods, economic forecasting methods, or other methods of processing the information, taking into account one or other objective data. This may impose additional costs for obtaining the necessary information, the appropriateness of which is determined by the ability to increase reliability in predicting future outcomes and improving the quality of decision making.

Second, account should also be taken of the so-called indeterminable uncertainty, the existence of which is largely determined by the coincidence in the realization of known factors or by the possibility of emerging new conditions and factors that may be unknown at the time of taking decisions and can not be judged on the basis of any objective data, observations or other forms of outgoing information in the current period.

The presence of both a clear (but unresolved at the time of decision making uncertainty) and a practically indeterminate uncertainty about future results formally leads to the fact that decisions in the different spheres of human activity need to be taken in conditions when unknown future result.

4. *Decision-Making in Uncertainty of Future Business Results*

In modern times, the need for decision-making in uncertain terms of future results requires solving three major problems, both theoretical and practical.

First, can an approximate idea of the possible development of events that give an assessment of the beneficial results under conditions of indeterminate uncertainty be constructed? It is obvious that in this case it is necessary to use opinions and judgments of decision-makers or experts in the field.

Secondly, in constructing a model for the distribution of future results in uncertainty, it is a choice of one of the two main forms of its presentation: a) stochastic uncertainty; and b) non-static uncertainty. In the former case, similar forms of modeling uncertainty results are used in the analysis of returns and prices for different financial instruments (for example, ordinary shares in financial markets). In the latter case, a small number of future outputs and events are subjected to an unknown subjective form, which is formed taking into account the opinions and judgments of decision-makers about the possible business development and its expected outcomes.

Thirdly, the peculiarity of both the one and the other form of modeling of the useful results is that both are subjective in character and in principle are unverifiable.

It follows that subjective opinions and judgments will always give solutions that are deliberately inconsistent with the real development of economic processes. In the financial markets investors take decisions to form securities portfolios, taking into account their expectations, formed by the influence of the information signals from the dividends paid and the behavior of the big players on the market to the macroeconomic assessments and the decisions of the government bodies and international organizations. Under the influence of these subjective factors different prices for financial instruments are formed, market valuations of shares and other parameters of financial instruments arise, which, under the conditions of uncertain indefiniteness for future results (eg share earnings), are already objective, independent of individual market participants. The reason for this is to a large extent the fact that the purchase and sale of financial instruments is of a mass nature, and they themselves are a fully standardized commodity.

2.6. Risk and role in decision-making in business

The main distinction of the risk of uncertainty lies in the fact that uncertainty arises from objective factors, both external to the given business and its internal problems. They are the basis for generating risk and determining impact factors on business outcomes.

In this sense, risk is a definite subjective approximation of future results. Quantified estimates are often referred to simply as risk, although more accurately speaking, different forms of expression or risk dimensions with different quantitative estimates.

The choice of the risk criteria used is determined by the specificities of each business, as well as by the specifics of the tasks that the decision-maker decides. This approach implies distinguishing several risk features.

First, risk is a multifaceted concept that implies a specific description of the results or the future state of the environment. Risk dimensions may vary depending on the business specificity, the solved tasks and the solutions considered, the characteristics of the production produced and other conditions. More attention is paid to the unfavorable outcome, losses, and so on in the literature.

Secondly, insofar as risk assessments are determined on the basis of the subjective distribution of useful outcomes that are approximate, conclusions and assessments based on business risk analysis taking into account risk may not be consistent with those results that will be actually received in the process of implementing the chosen decisions. This discrepancy is conditioned both by the presence of objectively irreducible uncertainty and by taking into account subjective opinions and judgments by decision-makers. Therefore, the important role in making and justifying risk decisions lies not in the fact that they can obtain more reliable estimates of future results, but is determined by the possibility of examining and analyzing the consequences of the decisions taken and the ways of transforming the business depending on the future conditions of the entrepreneur environment.

Thirdly, as uncertainty business in modeling future results uses opinions and expectations of risk decision makers, it is also necessary to take into account the attitudes of these individuals to the decisions made and the distribution of future results. This leads to the fact that choosing a risk decision depends not so much on the specific forecasts of future results but also on the attitude of the manager, investor or other person. The subjective criteria for choosing risk decisions are based on some psychophysical properties and qualities of the decision-makers.

Fourthly, an important feature of risk analysis and risk assessment and risk taking is that the risk assessments are impossible to verify in practice.

3 CONCLUSION

The specificities of risk assessment and the justification of risk decisions over time carry the center of gravity in the analysis and justification of some or other measures against risk to the development of business management at risk. The term "risk management" appears in the literature. Thus, risk management is generally directed at redistributing future results in such a way that, taking into account the expectations and opinions of decision-makers as well as the predicted development of market conditions, make the business more suited to the future market conjuncture in order to ensure its survival and development.

In conclusion, it can be concluded that the choice of risk management method is determined by the opportunities available to managers. An important role is played by their expectations or their perception of the development of the future market situation, the specifics of the given business, the strategy of its development, which choose the managers or the owners of the capital in the process of justifying the main directions of their actions and decisions.

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INFORMATION MANAGEMENT AS A FACTOR OF SUCCESS WITHIN ORGANIZATIONS

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ABSTRACT

In this paper we tried to point out the importance of information as a communication form of knowledge transfer and on rapid changes in the development of information technologies.

Information is becoming the starting point, the way to understand and solve business problems, the way to find the possibilities for the promotion or innovation of business activities. In conditions of quick changes on the global market, companies need to make quick decisions in order to be flexible and dynamic, which is not possible without reliable information. This implies the need for a bigger number of information, contacts and transactions with the environment, which calls for the existence of a large quantity of data and information that need to be collected, analysed and implemented.

Successful are those who are able, with the help of knowledge, to materialize information as a factor of innovation and business efficiency.

Key words: information, communication, education, business intelligence

1 INTRODUCTION

This paper points out to the information management process as one of the most significant resource in modern business conditions. Likewise, it shows results of the research on the possibilities and limitations of information management in business processes.

The paper expresses the significance of information management in the process of a faster, more efficient, economical and effective acquisition of knowledge, skills and habits in business processes – from the traditional data processing in which the emphasis is still on the domination of mechanical reproduction of information to modern and sophisticated processes and digital software for information management.

We focused our attention on business communication as one of the most important segment of modern business systems. Ultimately, the process of business communication is focused on the creation of the primary business goal of every market-oriented business system – making higher profits.

We need information to understand and solve business problems, as well as to help us when making decisions and considering possibilities for the promotion and innovation of businesses. In the conditions of quick changes on the global market, companies need to be flexible and dynamic. This imposes the need for a bigger number of contacts and transactions with the surroundings which, on the other hand, implies the existence of a large quantity of data and information which need to be collected and analysed.

In the scientific literature and media there are various labels for the society we live in today – information society, digital society, knowledge society, learning society, etc. Today is evident that information, information technologies and knowledge are the most current resources. All other resources, especially the quality of products and services, are dependant of these information-oriented resources.

In an information society as we have it today, education in all its forms takes a prominent place. If knowledge is what determines a learning society, certain questions arise – how to, in the most efficient way, obtain certain knowledge, how to implement it and transfer it to others and use it in the most functional way.

The road to knowledge is via information. Information are like the rain that never stops. Due to the overflow of information, people are forced to try and handle the sea of information in front of them. People need to be skilled and equipped to successfully manage information.

2 INFORMATION MANAGEMENT

Today's and tomorrow's man will need to be very skilled in managing information. Numerous sets of information are during time transformed into knowledge.

There are many interpretations of what a piece of information is. By emphasizing there is no generally accepted definition of information, its primary characteristics will be presented further on in this paper [1]:

- Contains new data;
- Provokes reactions to its content;
- Through information, individuals expand their fund of cognitive facts;

A larger fund of cognitive facts, i.e. individuals' greater knowledge contributes to a faster development of their personality.

By analysing numerous definitions of information, the most acceptable definition is that a piece of information is a conscious or targeted organization of data.

Information with its data and content can be perceived in the form of a text, picture, object, sound, smell, taste, animation and such.

A logical question is whether we can manage information and what information management actually is. Information management is oriented towards understanding social processes related to conscious human activity focused on certain goals. By reading about management throughout history, the value of information and the emphasis on how information management in today's society has become a science can be noticed [2].

Information and communication have found their place in numerous sciences. The field of expertise of these sciences covers practically several studies, but also the "studies of information systems and information access systems, documented or non-documented, computerized or non-computerized [3]."

3 INFORMATION SOURCES

Today, children and adults are using computers to a great extent, especially the Internet which they use to find and search information and information sources.

In the digital world (the Internet), finding and searching information are made easier through the application of the so-called "world wide web" or WWW. In the basis of WWW are "hypermedia systems which enable information access in accordance with individual interests which, in education, represents a special value." The use of general and specialized services for finding information available on the Internet or Intranet is also very significant for education. The most popular are AltaVista, Yahoo, HotBot, MetaCrawler, Direct Hit, Google, etc. Popular specialized information services for finding information are: MathGuide, MetaChem, OMNI, GeoGuide, EEVL, GERHARD and such.

We can search, send, receive, post information in the function of public announcements, process them, etc. When digitally managing information, the speed of managing them is highly important. Therefore, the speed of searching, sending, accepting, posting and processing information is very important. There are numerous WEB technologies for these activities.

The six components making the infrastructure of these technologies are: searching (searching for crucial information and documents), authoring (creating new knowledge via information exchange), tags (categorizing information and documents), extensions (automatization of the information and documentation categorization) and signals (notifying users on new information). The most popular representatives of each of these categories are: a blog, Wiki, RSS and Mashup, social bookmarking, podcasting, document management (Zoho, Google Docs), e-learning, social networks (Facebook and such), mind maps, e-portfolio, etc.

Modern education has already recognized the possibilities of information management. What is especially important in the development of education is to learn how to make information management faster, simpler, more apparent, of a better quality, safer and cheaper.

4 EDUCATION AND INFORMATION MANAGEMENT

Information management is closely connected to knowledge management. The road to knowledge usually goes through data followed by information. Information management implies knowledge management. Today's society is characterized as a society that is learning, i.e. a knowledge society. Knowledge is today becoming a resource more important than other physical resources. In that sense, education, i.e. the process of acquiring knowledge, skills and habits in a learning society is taking different forms.

Education is being shifted towards self-education; we are learning in every possible situation, at every place and in every period of our lives.

Learning should give credit to new achievements that make the process of learning faster and easier. In order to learn quickly, we need to obtain information quickly. Modern information technologies are making the process of learning easier in the so-called e-environment. It is very important to apply the concept of e-communication in today's education to a greater extent. "If we would not use all the potentials of fast electronic communication in education, it would be the same as our ancestors not having used the system of writing, or having refused to print books or made fire by using two sticks." [4]

For education to fill its purpose in a learning society, it needs to insist on developing the following types of knowledge, abilities and skills:

- professional knowledge and skills,
- entrepreneurial skills,
- communication skills (information literacy) and
- social skills

When acquiring certain knowledge and skills, we need numerous information. Every knowledge implies the accumulation of various information.

The concept of the modern understanding of information management is highly significant for the development of the learning society. Learning society is at the same time an information society. Learning society is maintained by life-long learning implying life-long information management.

The EU member states defined their development as a "knowledge society". The leading countries of the knowledge society according to the World Bank indexes are: Sweden, Denmark, Finland and Great Britain. The crucial indicators or critical pillars placing one country in a knowledge society are: economy, knowledge, education, ICT, regulative and innovations. From the list of critical pillars we can clearly see the position and significance of information management via modern technologies, as well as the importance of education in a learning society. Fast and efficient information management is an indicator of efficient education.

5 INFORMATION AND COMMUNICATION TECHNOLOGY DEVELOPMENT

The development of information and communication technologies has caused some radical changes in the performance of business activities. Thanks to sophisticated technologies for creating communication ads and new media, there came new forms of communication that have made it more efficient. Efficacy is a consequence of faster movements of information through communication channels, elimination of many channels, costs and losses of information. Technological development has influenced changes in the communication process in various ways: knowledge multiplication, directing of communication, message personalization, increase in reliability, communication improvements, cost reduction, increase in target public control. Changes that caused the development of integrated business communication are numerous. Likewise, the development of business communication affects the adjustment of these technologies to business practice needs. The following changes are the most important:

- development of multimedia technologies;
- disintegration of existing and creation of new industries;
- development of social networks as a response to the need for more efficient information;
- appearance of virtual corporations;
- need for company differentiation as a basis for creating and maintaining competitive advantage;

- orientation towards small and flexible managerial structures;
- creation of new cultures and societies and cyberspace;
- massive challenges in the field of copyright and privacy;
- lifestyle changes and a more expressed need for continual learning;
- big changes in the field of education, entertainment industry and tourism, medicine and health;
- increasingly bigger gap between rich and poor countries;
- more sophisticated demands for sustainable businesses and responsibility at different levels, etc.

Success of every organization will depend on the successfulness of the adjustment of communication strategies to technological changes. Modern information and communication technologies contribute to the transformation of business communication systems. Business communication elements can be appropriate, but if a company does not choose efficient communication channels and the right strategy, the desired effect will not be achieved. Channels are also very important because they cause a significant portion of the communication costs. In the practice of a large number of organizations, more attention is paid to creating a communication message than to making it reach the target auditorium. However, the decision about using new technologies is not an easy one to make since there are numerous choices. Different types of communication technologies are difficult to be compared with one another due to numerous differences in their characteristics. Hence, the adjustment of the communication strategy to the technological development and market situation is becoming an imperative of success. For example, in the aim of redefining the strategy of communicating with students in order to improve the level of their satisfaction, create a positive image and enhance business activities of the Faculty of Business Economics and Entrepreneurship from Belgrade and the College of Vocational Studies "Prof. Dr Radomir Bojkovic from Krusevac, a research was carried out. The research explored communication methods students mostly use and which should be applied in the aim of improving the successfulness of these two schools. The research results show that students prefer telephone calls and e-mails, but that they also use Viber, WhatsApp, Skype and Messenger in formal communication, as well as text messages (SMS) and social networks [5].

The beginning of the 21st century is characterized by an incredibly quick technological development. The power and influence of certain media are being reallocated causing changes in business communication strategies. New media are emerging – the Internet, tablet computers, the so-called smart phones, social networks, etc. Media market is so divided that it is making the directing of content to target markets very difficult.

Media fragmentation has led to a shift of the target consumers' attention which affects the reduced efficacy of business communication. It is common for people today to focus their attention to several media at the same time. This can be noticed on digital media, social media especially, where conversation and personalization of content are becoming more important, and the audience fragmented across numerous social networks, blogs and forums.

New interactive media are based on the development and affirmation of the Internet. The Internet has enabled both sides to simultaneously send and receive new information by increasing speed, efficacy and efficiency of communication.

Bigger possibilities of two-way communication have been created by establishing backlinks between the sender and the recipient of the message resulting in a better understanding of the message and its acceptance.

Global affirmation of the Internet and the possibilities indirectly offered by its services have directed operative activities of companies. Organization speaking to the public via new media need to adapt their way of placing goods and services and the content of information they are sharing.

The need for a dialog between organizations (profit and non-profit) and their target markets is becoming more and more important.

An effective business communication is a result of a well thought out process defining not only the activities that need to be realized, but also the order of their announcement. Those activities are:

- Researching the public,
- Identifying target groups;
- Defining communication goals and budget;
- Creating the message;
- Choosing communication channels;
- Controlling and assessing communication effects.

6 BUSINESS COMMUNICATION ELEMENTS

In order to achieve business communication goals, an organization needs to establish the level of communication with the environment and choose the form consistent with other elements of the communication mix. As a rule, an organization needs a combination or a mix of certain forms of communication that will make a consistent unit. The range and way of communicating should be adapted to the needs for information demanded by certain users. Information from different sources find their way to buyers and they cannot all be controlled.

There is an accordance in literature about the forms of promotional, i.e. communication mix. Kotler states the six forms of the company's communication mix.

- Propaganda – every form of financed non-personal presentation and promotion of ideas, products or services;
- Sales promotion – a series of short-term initiatives aimed at encouraging the trying or buying of goods and services;
- Events and experiences – activities and programs sponsored by the company designed in the aim of creating daily or special interaction concerning a product;
- Public relation and publicity – a series of programs designed in the aim of promoting or protecting company's image or its individual products;
- Direct marketing – using written communication, telephones, fax machine, e-mail or the Internet in the aim of establishing direct communication with certain or potential buyers, as well as obtaining their answers or starting a dialog;
- Personal selling – face-to-face interaction with one or more potential buyers in the aim of presenting, giving answers and obtaining orders.

All in all, every form of business communication or the combination of forms are good if the costs of use are lower than the effects made by their realization on the market. Likewise, each form can be looked at depending on the communication possibilities (message personalization possibility, reaching target groups, interaction level), message credibility, costs (total and per contact) and the level of control.

In accordance with the development of business concepts (production, sales and marketing concepts), the content and models of informing and communicating, which developed starting from an organization, through propaganda agencies and media to consumers/users, have changed.

Changes in business communication kept track of the intense progress of new technologies and the occurrence of interactive media.

Numerous and significant changes and trends have created the need for the integration of marketing and corporate communication.

Table 1. The causes of integrated business communication

Causes	Characteristics
Organization-based causes	<ul style="list-style-type: none"> • Striving to promote efficacy; • The need for a more productive use of work hours; • The need for a greater level of responsibility for consumers; • Enabling employee loyalty; • Changing organizational structure.
Market-based causes	<ul style="list-style-type: none"> • Media and auditorium fragmentation; • Higher level of the auditorium's communication abilities; • Increasing media costs; • Stakeholders' need for more information; • Intense competition and a low level of brand differentiation; • The need for a more consistent brand image; • The need for making a clearer identity and brand reputation; • Shifting from transactional to relational marketing; • The development of business networks and alliances.
Technology-based causes	<ul style="list-style-type: none"> • Technological progress (the Internet, databases); • Media fragmentation; • Media integration.

Source: Stankovic, Lj., Djukic, S., (2009) Marketing, Ekonomski fakultet Nis, p. 244.

The implementation of the integrated communication concept demands certain fundamental changes. Important are the following:

- Establishing corporate culture that enables greater focus on high-level target communication;
- Strengthening the power and authority of managers;
- Coordinating business function inside the organization;
- Flexibility;
- Greater demands aimed at specialized agencies.

It is difficult to say how the future of communicating will look like in this century. The communication industry has become aware of its vulnerability to the outside world. The influence of demographic factors on shaping communication strategies is becoming increasingly relevant.

7 DISCUSSION

With this paper, we have just stepped into an insufficiently explored field of information and information technology, which can be a significant starting point for further research, as previous research and practice have shown that the possibilities of technological development and possible information are still unknown to the end.

Modern research has shown that knowledge and information are prerequisites for survival and development. However, we must point out that knowledge ahead of information leads to success, and information ahead of knowledge can be a great obstacle in making the quality decisions necessary for success. We are exposed to a great number of information and parallel information every day.

This primarily because modern market economy trends have shown that education and information are at the top of the priorities of global national strategies of developed countries and policies of social, economic and technological progress.

8 CONCLUSION

Modern business conditions are characterized by intense technological changes, global competition, the generating of new needs, integration processes between the participants in the creation of value for consumers. Knowledge and information are becoming the most valuable resource. The role of employees in the implementation of new business models is crucial. It is especially important to integrate them in the process of forming goals and assessing performances as the basis of motivation and rewarding. Employees in organizations are demanding more complete information about the mission, goals, strategies and programs for their realization. New lines of communication are being created by using innovative methods. The role and significance of innovations in all areas and the development of organizational culture and climate that stimulates creativity and learning are being realized as immensely important.

In a turbulent and competitive environment, reliable information represent the crucial factor of the organization's business success. By exchanging information, it communicates with the environment. In order to fulfil the demands put in front of them, every organization needs to adapt and change their business communication in modern market conditions. The biggest changes in business communication refer to a differentiated approach to certain social groups. Mass communication has, in the right time, contributed to the creation and maintenance of competitive advantage. However, with changes being more prominent, it is necessary to, in addition to mass communication, develop personalized communication. Modern business communication is building relationships that generate the loyalty of customers and other stakeholders.

Shift towards an integrated business communication reflects the adjustment of managers to changes occurring in customer behaviour, the organization itself and technology. In the basis of the integrated business communication process is the integration of forms and means of communicating while the environment gets harmonized sets of information. This means that all forms and media of communicating need to be consistent with other marketing instruments. The common goal is a unique and efficient communication which contributes to the creation of superior business performances of every organization.

The future of business communication is difficult to predict. Globalization of the communication industry, demographic changes, demands of the social environment and the need for greater creativity and

profitability are the most important changes that will determine communication models. Surely, a very important link in the education of our "knowledge society" is the application of modern information and communication technologies in the function of an efficient information management on one hand and an efficient creation and use of knowledge, skills and habits on the other hand. Enhancing our abilities concerning the information management is the first task.

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SUPPLY CHAIN – PRINCIPLES OF CONTEMPORARY ORGANIZATION AND BUSINESS MANAGEMENT

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ABSTRACT

The supply chain concept for each company provides many possibilities for configuring and organizing business. In this sense, each supply chain is always specific, such as the specific and differentiating strategies of the company's competitiveness. What, on the contrary, can be the same for every supply chain these are the principles of the formation and organization of the supply chain, as well as the prerequisites necessary for the formation of the supply chain. This is not contradictory: the company's competitiveness strategy and the supply chain strategy are always specific because their set of strategic values should differentiate the company and the supply chain from others in the market, and make them competitive; the configuration of the supply chain is in this sense the answer to the strategic conditions in the environment, and the form of implementation of the company's competitiveness strategy. The principles and assumptions of the organization of the supply chain are, on the contrary, common (same) in the contemporary globalized environment, and in the conditions of global competition. They derive from the basic and unmistakable strategic focus of the same for all companies and any supply chain - with their product offer and associated services, create and efficiently deliver the values that customers appreciate, and achieve the competitiveness and satisfaction of customers and consumers. In this sense, the formation and organization of the supply chain can and must be conceptualized by strategic thinking and approach and linked to the strategic context: in order to preserve the strategic approach, which comes from the basic strategic focus on customers, the principles and (principal) assumptions of the formation and organization of the supply chain are necessary.

Keywords: Supply chain, principles and assumptions of formation, supply chain organization, management principles.

1 INTRODUCTION

The basic characteristic of the modern business environment is the dynamics of changing business conditions. Under the new conditions, the strategic focus and method of competition, the system of business organization and the way of management have changed. The modern context of business and competition any enterprise that wants success, leads to connectivity with other companies. Competition today, definitely, no longer occurs between isolated enterprises, but between their supply chains.

The concept of a supply chain for businesses provides a number of options for configuring the operating system and organizing business in order to satisfy demand. In this sense, each supply chain is always specific, because the supply chain strategy is created on the basis of specific strategies of competitiveness and strategic values of the enterprise. The essence and goal of reconfiguring the company's activities and processes through the supply chain is to achieve the integration of the overall operational process in order to achieve the best performance of service market and specific demand. In this way, the operating system becomes the fruit of strategic thinking and turns into an operational strategy, which, through its execution, achieves competitiveness.

Positive differentiation is one of the basic tasks of the strategy of competitiveness. What can be the same for every supply chain, **these are the principles of the formation and organization of the supply chain: the principles of the organization derive from the same, basic and unmistakable strategic focus - achieve the competitiveness and satisfaction of customers and consumers, by offering products and services, create and efficiently deliver the values that customers appreciate. Such, unique focus, produces and unique organization principles.**

1.1 Modern business conditions

The main characteristic of the contemporary business and social environment is the dynamism of change and global competition. The most significant factors in intensifying competition are the features of the modern business environment, which are:

- (1) substantial internationalization (globalization) of business,
- (2) tailoring the product to the needs of increasingly narrow customer segments,
- (3) continuous product innovation and thereby shortening the product life cycle,

- (4) developing specific and effective forms of partnership and cooperation,
- (5) the application of new models, management methods and techniques,
- (6) dramatic development of information and communication technologies.

The most visible change is the essential internationalization (globalization) of business. Globalization and internationalization of business has also influenced the way business is organized, the way it is managed and how it competes. Global business means global branding, global sources of supply, global production, global inventory and information management. A special feature is its involvement in global logistics processes and systems. With the rise in standards, in the middle of the last century, consumers have become more selective and demanding, and the offer is growing, in global terms. This also required and all the narrower market segmentation. These are either brand-new products initially for narrow segments, or the specifics of the offer are developed from a single basis (generic) product, that is, from a basic idea and technology from which a range of specific models can be developed [1], when it comes to elements of mass customization, whereby specific services can be added. At the operational level, the concepts of new models and methods are being created and applied in managing new strategic alliances, which reduce complexity, support performance efficiency and the achievement of common business goals. One of the most important factors of accelerated globalization in the economic sphere is the development of information and communication technologies.

2 CONCEPT OF THE SUPPLY CHAIN – FORM, CONTENTS AND PURPOSE

The development of the concept of the supply chain (and the concept of its management) took place in several phases. Between 1960 and 1970, firms began to understand the need to jointly serve customers, and this period is characterized by joint logistics management of materials. This is an integrated purchasing and distribution function, in order to better serve customers and reduce operational costs and improve other performance [2]. Other features, such as product development and marketing, were not integrated.

The most agile companies in the world, the 1970s and the '80s, clearly recognized that optimizing operations within an enterprise is not enough to achieve business excellence and competitiveness, because it is necessary first to understand the requirements of customers. Also, the management of many companies understands that the involvement of suppliers is critical to improving the quality of the process and product quality, that is, the use of supplier resources in the right way is an important source of competitiveness. In the operating system it was necessary to integrate the management of order execution with internal processes in the lower chain flows. These ideas were the basis for creating a completely new model of business planning and control, an Integrated Supply Chain Management (SCM).

In the 1990s, SCM definitely evolved from the aspect of product value in production, to the service aspect of the supply chain. Value chain management has been extended to the entire supply chain, from the furthest supplier to the end customer (consumer), but also to supportive activities and utility companies. The process approach and the concept in organizing the supply chain business becomes the most important tool in achieving goals and improving the organization.

Supply chain is, by the form, interorganizational and inter-functional, the process structure, and represents the flow of materials, intermediate products and finished products through the processes of procurement, production, storage, distribution, delivery and return. The supply chain also contains information, ownership, and cash flow (Fig.1). The concept of supply chain constitutes: organizational aspect (supply chain form), content (value chain) and its purpose (achieving competitiveness).

2.1. An organizational aspect of the supply chain concept – supply chain form

Martin Christopher (1992) defined the supply chain as a network of organizations involved in downstream and upstream connections and flows of processes and activities that produce products or services for the end-consumer. [4]. The supply chain is jointly formed by enterprises (and/or SBU, product lines) that find a long-term interest to cooperate in creating and delivering value to customers. It is necessary to jointly manage information flows in order to enable integrated management of the entire business process in the supply chain, as well as the enterprise's operations through the supply chain.

The supply chain can be a very complex structure, so it is necessary to solve numerous problems in this regard. That is why the organizational principles are essential in order to maintain the consistency of all aspects of the supply chain concept.

In the process of transforming materials, products and information, the specific areas (segments) of the supply chain are [3]: production, stock, location, transport and information. The structure of the supply chain process can be defined in the following way: the structure of the supply chain consists of five groups of macroactivities

or processes that are executed synchronized along the integrated total flow of the value chain process. These processes are: 1) procurement, 2) production, 3) material movement, 4) storage and 5) sale [5].

The organization of the supply chain takes place through several stages: 1) development of a supply chain strategy based on conceptual values from the enterprise's competitiveness strategies and a common platform, 2) development partnership relations and alliance creation, 3) organizing, creating an organization in line with the planned supply chain performance, 4) developing a measurement system.

In developing the strategy and organization of the supply chain, enterprises focus on customers, operational efficiency and quality of services, i.e. to the following elements: services that customers are looking for, production design and distribution locations, inventory management, outsourcing¹, overall organizational design and relevant performance measures [6]. In essence, the supply chain is organized in accordance with the target delivery performance defined by customers.

The supply chain, as a process-organized system, is a purposeful set of activities where each phase sets out its requirements according to the previous stage, thus creating a "supply demand" to the beginning of the supply chain. The flow of value delivery has the opposite flow, in which each subsequent phase expects quality from the previous phase, where each activity, sub-process or process adds a value. There is also an information flow, ownership flow and cash flow in the supply chain. Demand information shared by supply chain participants allows you to create value chain performance. Other information shared by stakeholders in the supply chain is necessary in order to be able to coordinate the activities of the process. These are primarily information about plans, capacities, order status, inventory. In order to eliminate the "bullwhip effect" due to changes in demand, communication and operational exchange of information must be developed throughout the supply chain, not just the next phase. This will accomplish a "build-to-order" [20] or "pull" system of the organization. It can also be talked about the course of change of ownership, which goes through the exchange points. The flow of money is the consequence of the purpose of business activity changing ownership and earning money.

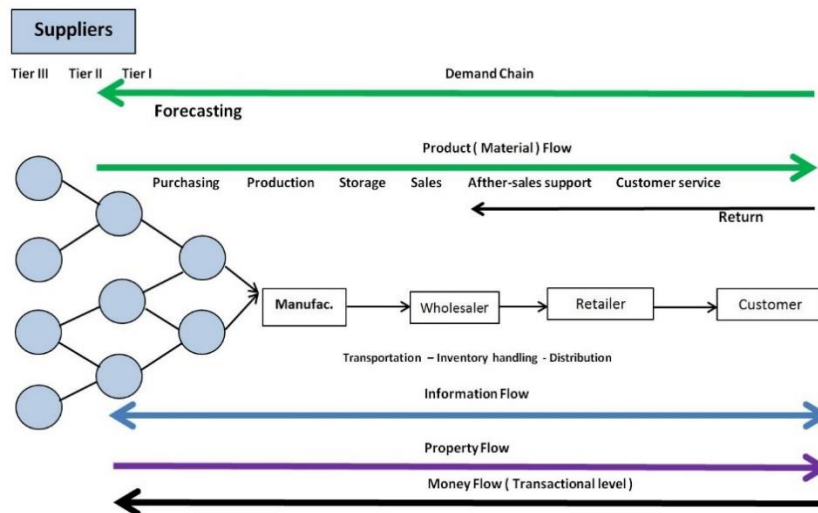


Fig. 1. Supply chain flows

What allows the supply chain to be a market winner is not always visible and concerns tactical and operational spheres, that is, teams of people who manage systematically and who are able to make changes and innovations in time, which are always customer-oriented.

2.2. Value chain as the basic content of the supply chain concept

The value chain theory, by its appearance in 1985, caused major changes in economic theory and in the management approach. Martin Christopher, 2005, emphasizes the idea of a professor at Harvard Business School, M. Porter, on the "value chain", as one of the most significant in economic theory in the past 20 years [8]. It could be said that it was a quiet revolution, which is still going on. His key contributions to economic theory are, at the macro level, "Competitive Strategy" (1982), and at the micro level of "Competitive Advantage" (1985).

¹ Outsourcing - external source of activities. Outsourcing companies are outside of the supply chain management system. These are close partnership relationships, mainly at the transaction level.

Value chains represent an associated (linked) set of activities in the supply chain that actively adds value to the final product, or support the flow of values. It is a combination of a set of discrete primary and supporting activities in a particular combination in order to achieve the final value that customers are willing to pay. It is completely different from the role of activity in a functional organization, where the focus is much more on the economy of functions than on operational efficiency.

In the 1980s, in the conditions of classical corporate governance, author M. Porter created the theory based on the context of the company (enterprise), but the concept of management radically focused on customers, competitiveness, to the process system, and according to the activity as a unit of measure of everything. "*Strategic and operational issues are best understood at the level of activity... The value theory is the theory of a firm*" [9]. With this, the concept of value chain theory has been created as the source of strategic thinking.

Porter's generic value chain model based on internal value creation capabilities has provided many management capabilities. The Value Chain Theory was a new strategic focus and provided new opportunities for finding strategies that could create superior value in order to achieve competitiveness and market success. The concept and methodology of the value chain theory disaggregates the company to strategically important activities in order to understand the behavior of costs (and value added) or find existing and potential opportunities for product differentiation on the market. Through the analysis of activities, can be investigated and controlled strategic and operational sustainability, competitiveness, efficiency, effectiveness, profitability. The Value Chain defines the value in accordance with the perception of the customer and defines the necessary (key) related activities that add value. Businesses provide the necessary organization of activities, resources, management and other infrastructure. "The configuration of activities determines the way in which the activity will be performed, including the profile of employees and the type of physical property, as well as the appropriate organizational arrangement. Then competencies become a set of specifically organized activities, not a set of abstract resources unrelated to the cost and value of the customer" [9].

Creating a value chain starts from the perception of customers through a demand chain. Based on the upstream flow of the demand chain, defines the downstream flow of a value chain - as a map of the activity of delivering value. The supply chain and value chain together make up a value creation segment. In order to achieve the effectiveness and objectives of the value chain, it is necessary to adjust the supply chain and align it with the needs of the value chain. Value derives from customer requirements for products and services, while supply chain, as an operational response, starts from product requirements for resources and activities, and then operational conditions: the need for integration and synchronization to achieve process efficiency and low costs, as well as quality in line with performance.

How it will be done, after feasibility analysis, it may be that the costs will be reduced at each step, that the target cost system will be used, and the like, or that it will meet all the requirements of customers, to offer more than customer expect, it is actually the choice of organization. The configuration of the selected activities, processes and resources, and the necessary organization, are realized on the basis of strategic and target values determined by the customer and the value chain. In this way, through the analysis of activities, the value chain became the key content of the supply chain concept and the basis of strategic thinking, synthesis, conceptualization and differentiation on any basis, but also the basis of creating a system of control and performance measurement.

2.3. Acquiring and maintaining competitive advantage as the purpose of forming a supply chain

The enterprise's competitiveness strategy in the supply chain defines where and with what values can be the best (what to do), then the marketing principles and the relation to technology and environment. It is primarily determined by the characteristics of the demand (profile) and the performance of the product needed.

The supply chain strategy defines the way to achieve competitiveness and enterprise's competitiveness strategies. The supply chain strategy determines market access methodologies, relationships with customers and suppliers and other partners, and performance efficiency, flexibility and organization of the overall system. Such strategic commitments and orientations of both strategies are followed by an appropriate performance measurement system.

M. Porter's "Competitiveness Strategy" was published for the first time in 1980 and is equally acute today. Porter defines the characteristics and structure of the branch through the five key competitiveness forces, which the company must analyze and synthesize the conclusions in order to define the enterprise's competitiveness strategy. These key competences are [9, Porter, 1985, p. 6]: 1) competition level in the branch, 2) the power (power) of the supplier, 3) the power of customers, 4) threat of a substitute, 5) danger

of entering new competitors. The five forces of competitiveness determine the profitability of the industry, affecting the prices, costs and necessary investments of companies in the industry, on the elements of the return on investment.

M. Porter defines three generic business, competitive strategies: low cost strategy, product differentiation strategies, and focus strategies to one of these two competing goals. He speaks about the competitiveness of the company (firm) through the market and industrial structure and through the relationship of forces in which competition takes place on two levels - with competitors in the share market, and with its own suppliers and customers for a share in costs and profits.

In today's changed market structure and with the development of the supply chain concept, the power of customers and suppliers has turned into the strength of the supply chain. Customers and suppliers of this concept are no longer rivals, but cooperative partners. Customers often cooperate continuously and in the long run by identifying their specific needs, adapting to both distribution and delivery, and suppliers often participate in improving quality, but also in improving process and cost reduction. Even direct competitors can also collaborate and can be partners in raising the level of attractiveness of its industry, such as the example of mobile phone manufacturers working together to standardize the technical platform of mobile phones. The biggest and most important competitors today can compete correctly, even predictably. True unpredictable threats to the marketplace today are new competitors and product substitutes.

The competitive advantage in the product market, as a measure of the company's success or strategic business unit in the supply chain, usually exists:

- 1) if the enterprise, with its supply chain, has lower costs for the same value offered to customers, or
- 2) if the enterprise offers greater benefits or additional services at the same price.

In the first case, the price of the product can be reduced and a portion of the additional value transferred to customers; In the latter case, prices can increase, and thus the profit of the company, without compromising the competitive position. In essence, products are the source of competitiveness. Processes and activities create costs that can compromise competitiveness, but they can also be a source of competitiveness if they create a relatively higher value or if costs are below the average of the branch per unit of product.

In the supply chain strategy and performance system are involved key competitiveness factors for a particular market segment. In this way, the integrated supply chain represents the strategic assets of the company and the context for defining and achieving the enterprise competitive strategy. The supply chain strategy thus connects and combines technologies and core competencies and the structure of the supply chain process with environmental and market conditions.

3 PRINCIPLES AND ASSUMPTIONS OF FORMATION AND ORGANIZATION OF THE SUPPLY CHAIN

Through the supply chain, today, it manages the achievement of the highest strategic values of the enterprise, organizational-tactical elements and operational processes, and it seeks to establish the absolute conformity of strategic and operational elements. The assumptions of forming the organization of the supply chain give the basic level of organization of the supply chain, the principles of formation support the strategic values and performance of the value chain, and the principles of the organization concrete solutions based on the basic purpose of the organization - achieving competitiveness.

3.1. The assumptions for the formation of the supply chain

Supply chain formation assumptions are based on the core values of a strategic business idea that is realized among partners by creating a supply chain. Strategic business ideas initiate the basic elements of an organization's form. The basic assumptions of forming a supply chain are:

- 1) a common platform on cooperation and exchange of material and information resources,
- 2) defining key, strategic operations and their target performance,
- 3) creating a common information basis and developing the opportunities of information exchange, and
- 4) defining a common system of exchange relations and joint control.

1) The common platform should include: structure (supply chain members and their connections), the goals of long-term cooperation as the main purpose of creating a supply chain, supply chain model (common processes, process links, locations and capacities and other resources are needed), a future business practice that will be standardized - a way of planning, a way of doing business and asset management that will be used in process connections, and regulation of mutual relations and responsibilities, distribution of risks and rewards and making the most important decisions and documents of the organization.

2) Enterprises should define key strategic operations and their role as part of responsibility, as well as the points of shared responsibility for their successful conduct. In this sense, the supply chain companies should also agree on the following issues [12]: the joint effective use of tangible and intangible enterprise-owned resources, investing in knowledge and non-replicable processes, aligning internal relationships and cultures to create a unique supply chain environment, then aligning with key goals such as values that will create for customers, pricing policy, level of profitability. Decisions are also made on the exchange of information, on the technologies needed, on the common business policy, etc.

3) Creating a common information system is not just a technical matter. The information system must contain elements of support to the type of organization and integrated supply chain management, to mutual information, joint planning, decision making, execution and control.

4) A harmonized control system in the supply chain can remove a large number of sources of risk. It is necessary to define the control procedures and the system of measures for the operating system. By analyzing and synthesizing the conclusions, improvements can be made, as well as the movement towards the strategic and aggregate goals, values and performances.

3.2. Principles of supply chain formation

Sustainable supply chain in practice focuses on the requirements and needs of customers or the market segment, and the operational solutions of the value delivery system. In line with these premises, the supply chain is formed on the basis of the following principles, which are supportive both to the planning and executive aspect of the hierarchical management levels:

1) The principle of a coordinated (harmonized) strategic focus among members, or the principle of directing effectiveness, in accordance with: a) a cost-leadership strategy, or b) the strategy of product differentiation, or c) with a third strategy.

2) The principle of functional linking of the complementary core competencies of enterprises necessary for constituting strategic operations.

3) The principle of restructuring the disaggregated functional activities of the enterprise and their integration into supply chain processes.

4) The principle of supply chain optimization at a harmonized level of supply chain efficiency, and at a harmonized level of service in the market servicing.

5) The principle of coordination and joint management of the harmonized supply chain performance.

6) The principle of joint control and performance measurement through a harmonized system of measures in order to: a) maintaining and/or improving performance, and b) in order to prevent risks and risk sharing to the level of defined factors and risk criteria.

1) A harmonized strategic focus is the first and the general condition for creating a supply chain between future (key) members of the association. This implies defining (determining) key competitiveness factors based on competitiveness strategies - cost drivers or differentiation and on the performance of the value chain of the chosen strategy. It also defines the attitude towards competitors.

2) With the breakdown of traditional vertical conglomerates and functionally organized systems, and the creation of new strategic alliances and network structures, one can speak of the distinctive abilities of an enterprise or SBU that relate to supply chains with other enterprises and their complementary, distinctive abilities. Thus, through the organizational context, the key competencies of the supply chain for a particular market, which can not be imitated, are realized.

3) Applying the principle of enterprise restructuring (disaggregation) of the internal processes and integrating activities into supply chain processes is evidence of agreed strategic values, as a critical factor, and confirmation of the formation of the supply chain. The essence of this principle is to deliver the right products at the right place, at the right time in the right quality.

4) The supply chain optimization principle at a *harmonized level of efficiency* is the principle that definitely conducts the management concept from the management system for an isolated enterprise and

establishes a supply SCM system. Harmonized efficiency is a measure of SC optimality that accepts and recognizes the costs of an enterprise's supply chain activity, for a given level of achievement of the target performance of results – effectiveness. In harmonizing the level of efficiency, it starts from the levels and conditions of competitiveness on the market. This principle implies sub-principles: harmonized material and financial flows, harmonized procedures, harmonized system of targeted performance, information sharing, harmonized system of measures. A harmonized level of efficiency means, first of all, the definition of a performance system for organizational conditions, as well as their performance measures.

5) Opportunities (and capabilities) of joint management are crucial for the creation and functioning of the supply chain. Partnership and collaborative planning in the SC is a synchronization of plans and goals.

6) The principle of joint control and measurement of performance of activities and processes is the final principle that controls the purposefulness of activities, the level of efficiency and the possibility of survival and development of the supply chain. In doing so, "the system of measures must enable managers to relate planned operational performance to financial results. [7] Some discrepancies may be accepted as objective, and all irrationalities - excess capacity, excess activity in businesses, and the like, will not be accepted by the supply chain (and the market).

3.3.Principles of supply chain organization

Jeff Bezos, one of the richest people in the world, discovered the "secret" of success (Amazon) in his business: "Focus on things (values) that don't change ... Let's say ours trade, I know customers love low prices. That won't change in ten years from now. They also want fast delivery, lots of choices ... It doesn't guarantee success on its own, but it does give us a good foundation for a stable future." (https://www.b92.net/biz/vesti/svet.php?yyyy=2017&mm=11&dd=09&nav_id=1323350 09.03.2019)

Strategic things and values do not change so easily; organization changes - tactical and operational level.

The process of creating a supply chain organization and a new value chain in the supply chain is the process of transforming (disaggregating) an enterprise and reintegrating it into a supply chain system. It is a map of translating strategic values and current or anticipated demand into tactical and operational solutions to the overall value delivery system that focuses primarily on efficiency. Understanding demand and managing demand satisfaction is one of the key determinants of the organization.

The principles of creating a company's organization in the supply chain, unlike the traditional organization, are as follows [partly according to: [11,13]:

1. from the functional, to the process organization,
2. from transaction and sales relations, to partnership,
3. from profit, to satisfaction performance and operational priorities,
4. from the reduction of the company's costs, in creating the flow of the value of the supply chain,
5. from supplying the market, to customer service,
6. from quantitative and financial, to measures of organizational and operational,
7. from mass production, to massive customization (caste) and personalization,
8. from the „push“ of the organization of internal factors, in the “pull“ of demand initiatives [according to14], and JIT supplies,
9. from stock, to information,
10. from the cost efficiency and productivity of the enterprise, to the operational strategy of the SC.

The organization of the supply chain begins with the defined type and quality of products that customers require and the required level of service, and then define the necessary activities, processes and resources, their performance and organization to deliver the products continuously.

1. With the transition from functional to process organization, the structure of the corporation has changed. The so-called. "divisional organizations". It is a response to the existence of multiple programs within the company, with each program requiring specific managerial attention. A more favorable term, instead of a division, is today a "strategic business unit" (SBU), which can be an enterprise or identifies with a product line that can identify its own supply chain. As special, strategic business units can have their own business and strategic goals, business (competitive) strategy.

2. The basis of supply chain partnerships are the core competencies of different enterprises and SBUs that are complementary and which are associated in a unified organization of the structure. This enables

the creation of a model of strategic operations and key competencies of the supply chain organization that can achieve competitiveness. Each of the partners, in such an integrated and harmonized organization, deals with the job that best knows to work. In such an organization, businesses are expected to achieve their goals and, in doing so, achieve significant synergistic effects.

3. Principle „from profit, to performance“ is very illustrative and indicative of the process approach. Enterprise profit is a goal and a measure of business success that is aggregate and does not show the context and why the result is exactly the same. Enterprise profit is one of the goals that will not be achieved without operational and organizational skills. Performance in the SC has the greatest significance for the purpose of customer satisfaction and the performance of operational priorities.

4. The insistence on reducing functional costs in supply chain companies, from a supply chain standpoint, is inappropriate: cost reduction will be done through the right choice of activities to create value flow through the supply chain. Therefore, it is a particular challenge for supply chain companies to jointly recognize value-added, and non-value-added activities in order to be removed from the process. Identifying the flow of values identifies all the necessary sequences and activities in the supply chain process. This maps the flow of values, while defining the time components, and supports the simplification and visibility of the process and the elimination of excess inventory.

5. Traditional production for the storage facility in focus has productivity, low production costs per unit, and reduced functional costs of departments. SC, on the contrary, as a process system, supports the strategic goals of competitiveness and therefore the focus of the organization is market servicing.

6. Traditional financial and quantitative measures in the company (or enterprise) do not provide proactive management capabilities because they are aggregate and always ex-post. A well-designed SC measurement system is linked to strategies, goals, and organizational and operational performance, with customers satisfaction, and in particular with the performance of the system's integrity and flexibility.

7. Customization is one of the determinants of the organization. Today, it is important to offer different variations of products and services, to achieve the satisfaction of all the smaller segments, and even individual customers. Customization can be accomplished through modular design, through delayed assembly (postponement) or custom-made installation (assembly-to order). The essence of customization as the principle of the organization is that customers are involved in creating a value chain and that they are thus included in the supply chain management.

8. Traditional supply of products to the market is inherently "push" organization, that is, the system of "pushing" the product to the market, on whose basis is the production plan, and not the demand. Opposite this system is a "pull" organization based on demand. In this sense, "the order execution process is not a simple logistical function. Order execution is a cross-functional coordination of key suppliers and key customers." [17]

9. By synchronizing the process, it seeks to jointly align the timing of all activities and align the flow of materials, products and information between the partners in the chain, to eliminate unnecessary and duplicated activities, to maximally reduce the time of stock retention and inventory levels, at any stage, and to achieve a high level of services.

10. With the concept of the SC, operational management got a strategic significance. Operational strategy defines the way of achieving strategic goals - how will the production, warehouse, order execution and how the information system will be organized, that is, how the satisfaction and loyalty of customers will be best achieved. The operational strategy implements the company's competitiveness strategy through processes and systems, and "maps" the way to compete through the SC.

4 INSTEAD OF CONCLUSION – THE PRINCIPLES OF SUPPLY CHAIN MANAGEMENT

Changing the philosophy management to the forefront has put the effective direction of the supply chain in order to improve customer service, eliminate inventory surpluses and reduce costs. This change is due, above all, to competitive pressure and aspirations for the introduction of as cheap as possible, but quality products and additional services, that is, connected with the improvement of the value chain. The supply chain activities are configured from a standpoint of a unique and integrated supply chain process. They are "displaced" from the context of the enterprise and are managed as supply chain activities. Through the organization of the supply chain implements the strategy of competitiveness, harmonizes performance and directs business, synchronizes processes, exchanges information and realizes the coordination of activities. This can support agility, adaptability, and ultimately the effectiveness of the SC and enterprises in it. The strategic, tactical and operational unity of the SC organizational is based on:

- a) linking the strategic values and strategies of enterprises that make up the supply chain with the help of a harmonized supply chain performance system,
- b) integrating enterprise business processes into a single operational SC process,
- c) on accomplished planning and joint measurement and control, i
- d) on continuous joint improvement of the efficiency of activities and processes across the SC.

The strategic level contains the elements and values of the competitiveness strategy, implemented through the supply chain strategy and through aggregate performance. The performance of the strategic, lasting values, determines and directs the overall performance system, to the operational level, which is controlled through reporting and measurements in execution. They are the basis for creating a system of performance measures in SC.

The key things in the supply chain are at the tactical - organizational level. The tactical level allows connecting and achieving strategic and operational performance. It is the partial performance of business segments that in a given organizational arrangement enable the system's efficiency in terms of effectiveness of the enterprise's distinctive capabilities - through the creation and delivery of products that the market seeks. These partial performances (tactical level) in the supply chain can be treated as:

- *performance relationships with suppliers, structural performance,*
- *the performance of the supply chain process and activities, and*
- *performance of customer relations (distributors - wholesale, retail, customers and consumers), i.e.*
- *performance levels of customer service and satisfaction.*

From operational performance, one can distinguish those that are essential to support the strategic performance of competitiveness and which can be considered operational priorities. It can be performance of time and *time cycles, cost performance, quality performance, flexibility performance,* and others. For the economy and quality of the supply chain, the most important is the total time (through the continuity of delivery), because it reduces inventory levels and accelerates cash flows.

A model that can include the management of all hierarchical levels of the supply chain (as an indicator) contains several key stages that are continuously or cyclically repeated:

- a) **creating the organization of the supply chain**, configuration and business model through the supply chain, based on lasting values and a common platform on cooperation,
- b) **planning the target levels of the value chain performance** for the given conditions, by mapping the flow of value and supply chain performance, in the processes of procurement, production, distribution and execution of orders,
- c) **coordination of activities through execution** (using operational models or ad hoc communication,
- d) **measurement**, identification of differences and unsatisfactory performance in execution,
- e) **analysis of the information** obtained through the measurement, understanding of the problem and extent of deviation from the target performance levels, synthesis of conclusions and reporting,
- f) **planning actions and programs for improvement performance of the supply chain processes,**
- g) **implementation of improvements** and verification of operational and tactical values in the next cycle,
- h) **reengineering** (based on strategic analysis), new configuration of the supply chain, and checking the operational, tactical and strategic values of the organization over a longer period.

The supply chain does not produce anything. Through its management, it manages the activities, capabilities and competencies, and other enterprise resources that are designated as necessary for supply chain processes, for the purpose of hacking and delivering value to customers. "In other words, a professional who does any of the broader range of jobs in the supply chain, does not make a product. It orders, moves, delivers, distributes and, most importantly, manages SC processes with marketing, sales, engineering, manufacturing, finance and information technology" [15].

The most visible principles of supply chain management are:

1. It is not managed by the enterprise, but by the performance of the SC activities and processes;
2. It does not manage the costs, but the activities that consume resources, creating costs;
3. it does not manage financial effects, but business relationships that, through operational and business activities, produce financial effects;
4. It is not managed by productivity and capacity utilization, it is managed by creating and satisfying demand for supply chain products.

5. the core of the enterprise's competitiveness strategies are creates products and services; the core of the SC strategy are activities, processes and operations, and an organization which needs to define demand, to organize the necessary production and delivery of products and services, in accordance with the target value chain performance.

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THE INFLUENCE OF KNOWLEDGE MANAGEMENT ON THE ORGANIZATIONAL DESIGN

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ABSTRACT

One of the problems of a transitioning economy that, to a great extent, conditions poor market performances of the companies doing business on the global market, is an inadequate use of knowledge, primarily focused on knowledge necessary for an efficient corporate management. The purpose of this paper is to emphasize the importance and significance of the knowledge management on the organizational design of corporations, hence emphasize the importance of information and communication technologies in the process of managing knowledge. One of the characteristics of today's information-based era is the co-dependency of scientific, technological and economic development of all countries in the world, hence the authors of this paper used EUROSTAT statistical data and analysed the following: research and development expenses, with comparative analysis for 2006 and 2016, by countries, hence the distribution of resources for research and development for 2017 and e-technologies (some of the tools used in the process of managing knowledge) in small, medium and large enterprises in the EU. The main focus of this paper is to simultaneously observe the influence of information and communication technologies in the process of managing knowledge and finding their application in the aim of creating the good-quality business process designs. The objective of this paper is to show primary characteristics of the knowledge management technology due to the clear vision of how knowledge can be used in the best possible way, to nurture open communication and trust, to nurture the culture of learning and to enhance and motivate the employees.

Keywords: knowledge management, organizational design, information and communication technologies

1 INTRODUCTION

Modern companies, in order to improve their business and create competitive advantage, are trying in various ways to adapt themselves to how business is done on the global market. The problem of organizing modern-based business (private property, corporations, public companies) and choosing the best forms of management and decision-making in these organizations, impose the understanding that these are the most important issues in the process of shaping the organization.

The design of the organization determines, to a greater extent, the success of the organization, because in the conditions of extremely dynamic business environment changing rapidly, the survival and functioning of the business system is conditioned by the design of the organization [1]. This is why complex environmental conditions translate into organizational solutions, creating complex organizational structures that are often put into practice to enable companies to adapt quickly to market-driven business conditions.

Early theories concerning the notion of the organization generally made organizational design and organizational structure equal, which is not surprising given the time when these theories arose. Namely, the search for a universal organizational structure applicable in all conditions was almost acceptable in a stable environment. As changes in the environment are reflected in the increasing influence of ICT on the performance of enterprise activities, it has become clear to modern business managers that they must formulate and implement sophisticated strategies to harness all the potential of ICT, but they also must have the appropriate enterprise design to support the realization of the strategy [2]. The success of applying the management concept to organizational design is reflected in the harmonious functioning of the organization through the application of information technology that leads to the emergence of a new field of management, better known as knowledge management.

The aim of this paper is to show the importance of applying the knowledge management technology in organizational design as an innovative activity of the company through studying contemporary literature, analysing statistics and drawing conclusions, and to point out the connection between the characteristics of organizational design and the ability of the company to manage knowledge through innovative behaviour.

The subject of this paper is to show that organizational design made by the technology of management knowledge becomes a factor of success of the company, as well as to find the connection and influence of knowledge management on design, i.e. organization design.

Considering the area and purpose of the research, the methods to be used in the paper are: Inductive and deductive method, as well as the basic logical method, which allows us to draw certain conclusions about the subject of the research, and comparative method, in the process of mutual comparison of the obtained information.

2 PROGRAM CHANGES AND ORGANIZATIONAL DESIGN

Change in the organization is not the goal itself, but a means of adapting to the new conditions of external or internal environment. Change management is a systematically planned and programmed effort to embrace new ideas, innovations and changes, and a global approach to implementing change in all areas of enterprise operations, in order to improve enterprise efficiency and effectiveness. Rapid response to change, adaptation to change, mastering inertia and resistance to change, and creating a positive atmosphere for the realization of change, are the basis for successful enterprise management.

An essential feature of introducing change is that they directly or indirectly affect the work and behaviour of people in social and business systems. The concept of change management means to look at and analyse all the changes in the environment that the company expects and, accordingly, makes changes in its organization, strategy, business policy, use of resources, etc. in order to best adapt to the changes and direct them to positively influence the business. The desire to create a unique knowledge would certainly differentiate the company from others, but recognizing both accurate and explicit knowledge and establishing the appropriate organizational infrastructure are equally important aspects. The concept of knowledge management, recognized as one of the most important management tools, is widespread, although new technologies and a changing business environment require constant adjustments [3].

The most common causes that occur may be changes in age and size of the organization, changes in who organization leaders are, changes in ownership structure, changes in development and business strategy, and changes in technology.

Changing technology and automating business processes also requires changes in organizational structure. The general classification of internal causes of change, according to a number of authors, can be reduced to changes in structure, technology and people, so structural, technological and behavioural approaches to organizational development have been created.

Tisen, Andrisen and Depre believe that organizations are in constant changes, but now that a new management paradigm has emerged, as we transition from an industrial to a knowledge economy, we see that it is no longer just a matter of fine and quiet adjustment. It is simply a new game and all the companies are back on the start line [4]. Modern business must begin from the consumer or the user. All business processes in an organization should focus on enhancing the value based on products and services realized.

Continuous business improvement is the basis for achieving business excellence. The process of continuous improvement is based on a factual approach to decision making. In this respect, it is essential to collect the data that needs to be analysed in order to form information which is included as input in the next stage of the planning process in the organization management cycle. The continuous improvement model also includes performance measurement. The stages of continuous improvement are: problem identification, problem diagnosis, improvement plan, implementation of the plan, monitoring process. This model takes into account the specifics of the domestic business environment, which involves defining directions for overcoming obstacles domestic companies are faced with when trying to achieving competitiveness, as well as the development of those elements that allow for the improvement of competitiveness.

According to some, "smart companies" are winning [4]." Being a smart company means having the smartest people, that is, people who are constantly improving or never stopping to learn. This rule involves managing smart processes of knowledge creation within a smart organization because it is a way to beat the competition.

The concept of reengineering is particularly interesting for being applied in enterprises doing business in transition countries, as it is based on the complete redefinition of all business processes in the enterprise in order to create competitive ability and create conditions for growth and development of enterprises. The redesign of an organization must be based on market, organizational, technological and proprietary transformation, whereby ownership transformation of domestic enterprises is the basis for successful realization of an integral concept.

3 THE ROLE OF INFORMATION TECHNOLOGIES IN THE ORGANIZATIONAL CHANGES AND THE CREATION OF KNOWLEDGE MANAGEMENT

In recent years, the biggest changes in enterprises have been caused by the application of information and communication technologies (ICT) and the creation of knowledge management. Companies invest heavily in knowledge development, but insufficient attention is paid to determining the contributions that knowledge makes in terms of future competitive advantage [5]. Until a few years ago, directors were able to ignore decisions about the introduction and implementation of ICT, while today that is impossible [6]. Therefore, much attention has been paid to the impact that ICT has on business processes [7]. Unlike the approach in which processes were first designed and then simplified by applying technology, businesses are simultaneously observing the relationship between technology and processes and are looking for ways to apply technology with the aim of optimizing business process design. ICT is considered a key driver of the process of business redesigning as it makes information and knowledge available at all levels in the enterprise. [8] Proper knowledge management is unthinkable without the right technology. Managers need information systems to help them find, track, and build collective organizational knowledge. [9].

The impact of information technology on the knowledge management program is large, which is why this element of the knowledge management concept deserves great attention in this paper. Information technology, in addition to people and processes, is a core element of the concept of knowledge management. In order to understand its nature and essence, it is necessary to always look at it as the unity of these three elements. Apart from the fact that in the successful implementation of the knowledge management program, it is necessary to start from the social nature of knowledge. It is indisputable that the important and irreplaceable role in the dissemination and sharing of knowledge, its improvement, and organization of existing and gathering of new ones belongs to information technologies.

Also worth mentioning is the opinion of the author whose name is most often associated with knowledge management, Karl Erik Sveiby, [10] who expressed his view on the importance of information technology but still favours the role of people in the process of knowledge creation. More and more people are realizing that efficiency through information technology is not enough. Real value for companies and the society is only formed by creating an environment that will enable people to create and share knowledge [10]. This means that technology, as a means of facilitating knowledge management, has its place in knowledge management, only if one considers the ability of a person to create and share knowledge and to create additional value for the organization through these processes. Therefore, Knowledge Management cannot be identified with technology, but it can ensure the success of knowledge management programs.

Accordingly, [11] how much one company uses information technology should correspond to the organizational goals, the mission of the enterprise, the structure and capacity of the enterprise, as well as to the role of the enterprise in communication and coordination with other enterprises. All this indicates that the implementation of information technology needs to be approached in an optimal way.

Some of the tools used in the knowledge management process are: Knowledge management portals, Internet, Intranet, video conferencing, document management systems, bulletin boards, databases, email systems, artificial intelligence, knowledge folders, etc. These tools are a platform used by employees that serves to summarize, share and reuse knowledge in an organization. New technologies offer a much more effective collaboration model that enables interaction, regardless of the temporal and spatial dimensions we call asynchronous communication. The forms of asynchronous communication that will be presented in this paper, and which the authors analysed, because they considered them very important and indispensable in providing competitive advantages and various business opportunities are: *Internet technologies, web portals, Enterprise Resource Planning technologies, Customer Relationship Management technologies, Supply chain management and Radio frequency identification technology.*

Knowledge gaps can be identified and enhanced with the help of these tools, which also help employees become involved in creating knowledge so as to achieve continuity in the work and operations of organizations.

3.1 Analysis of the expenses for the research and development of the crucial knowledge management technologies

The characteristic of today's information period is the interdependence of scientific, technological and economic development of all countries in the world. If the cycle of social and techno-economic development is on the ascendant, the diffusion of innovation is present. An enterprise may appreciate and encourage innovative activities, but failure to do so may have consequences for both economic performance and technical and technological development of the enterprise.

Chart 1 represents Gross R&D expenditure with 2006 and 2016 comparative analysis. Among the EU Member States, the highest R&D intensities in 2016 were recorded in Sweden (3.25%) and Austria (3.09%). These were the only two Member States whose R&D intensity was above 3.00% in 2016.

In the survey, nine Member States reported R&D expenditure below 1.00% of their GDP in 2016, each of which is a Member State that joined the EU in 2004 or more recently. The lowest R&D intensity was recorded in Cyprus (0.50%), Romania (0.48%) and Latvia (0.44%).

Most EU Member States reported a higher R&D intensity in 2016 compared to 2006: with the exception of five countries, including two Member States - Finland (-0.59 percentage points) and Sweden (-0.25 points), while the other three Member States recorded R&D intensities below the EU-28 average: Luxembourg (-0.43 points), Latvia (-0.21 points) and Ireland (where there were almost no changes, -0.02 points). At the other end of the range, the largest increases in R&D intensity (in percentages) between 2006 and 2016 were observed in Austria (0.73 points), Belgium (0.68 points), Germany (0.48 points), Denmark, Slovenia (0.47 points), Czech Republic and Greece (0.45 points).

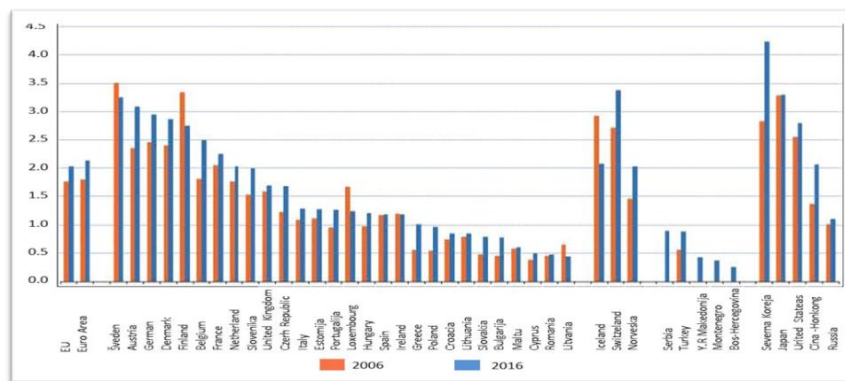


Fig. 1. Gross domestic R&D expenditures, 2006 and 2016 [12]

Source: Eurostat (ec.europa.eu/eurostat/2017. G. – adjusted: the authors

Picture 2 shows the distribution of R&D funds in 2017 in the countries expanding the European Union (EU), i.e. the candidate countries – Northern Macedonia, Serbia and Turkey, while Bosnia and Herzegovina is a potential candidate. In the EU and Turkey, most funds were distributed to the business sector, while Montenegro, Northern Macedonia and Serbia allocated the most to the government sector. Bosnia and Herzegovina allocated the highest amount of resources to the education sector.

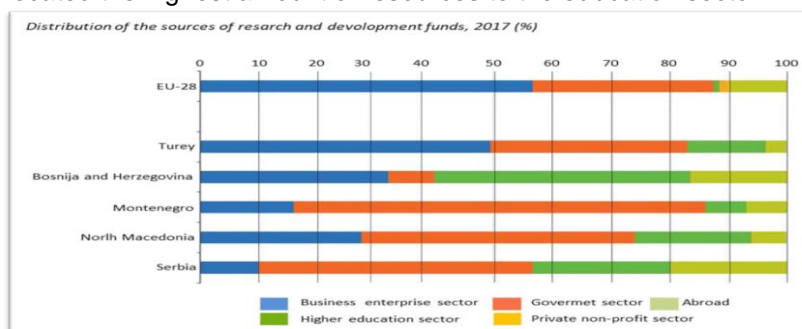


Fig. 2. The allocation of R&D resources for 2017 in the EU enlargement countries

Source: Eurostat (ec.europa.eu/eurostat/2017. G. [12] – adjusted: authors

Picture 3 analyses e-technologies (some of the tools used in the knowledge management process) used by small, medium and large enterprises in the EU. The results of the analysis by type of technology are:

Business presence on the Internet

Web site usage is still slightly increasing. Businesses consider it important to be visible on the Internet. As a result, business websites are offering various functionalities, such as online ordering, product catalogues and information, social media links, etc. About 77% of companies said they had a website. An increase compared to 2014 (+3 percentage points) can be observed.

The gap between small and large businesses is much larger for those using more advanced ICT applications than for those who have a website. The percentage of businesses with a website ranged from 74% for small businesses to 94% for large companies, but from 28% to 76% for those using Enterprise Resource Planning (ERP).

Enterprise Resource Planning (ERP)

More than one in three businesses use software applications to design enterprise resources. Internal integration of e-business in enterprises refers to the electronic and automatic exchange of information between different business functions within the enterprise, as opposed to external integration, including other business partners. Internal integration potentially simplifies and increases the efficiency of the company. Integration takes many forms. One is to connect data between different software applications, using a common database.

ERP software applications aim to facilitate information flow and the potential to integrate internal and external management information across several business functions. The ERP feature is delivered in 'modules' that typically integrate processes relevant to planning, purchasing, marketing, sales, customer relations, finance and human resources.

The percentage of EU companies using ERP software applications reached 34% in 2017, a slight increase of 3 percentage points compared to 2014. The small increase occurred mainly due to the poor adoption of ERP software applications by medium and especially small businesses.

The comparison between 2014 and 2017 shows different trends among countries in the use of ERP. This can be explained by a different understanding of ERP as a "company information management system" due to specific implementations in the country and the adaptation of the ERP package that can develop differently during time.

Customer Relationship Management (CRM)

Almost every third company uses operational customer relationship management. Businesses direct their marketing efforts and direct their customers to maximize their business potential. To this end, they use customer relationship management software applications – the Client Relationship Management (CRM) application.

In 2017, around 21% of EU companies used CRM for highly sophisticated analysis. Compared to 2014, the use of CRM has increased for analytical and operational CRM regardless of the size of the company.

Supply Chain Management

Supply chain management encompasses all activities related to the exchange of information between an enterprise and its suppliers and customers. The use of software applications aims to effectively coordinate the availability and delivery of products to end users and it actively involves all resources - business functions.

Radio frequency identification (RFID)

More than ten companies use radio frequency identification technologies. Radio frequency identification technologies use electromagnetic fields to automatically detect and track object-related tags. In 2017, around 12% of EU companies used these technologies. RFID tags can be used for a variety of purposes, such as facilitating manual access control, or tracking or identifying products during or after the manufacturing process. RFID is mainly used for person identification or access control (10%), which applies to all sectors of the economy.

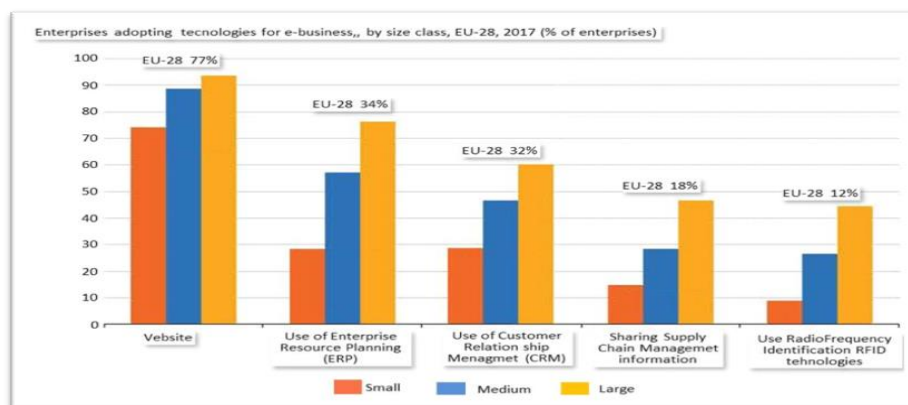


Fig. 3. Companies adopting e-technologies by size class, EU – 28

Source: Eurostat (ec.europa.eu/eurostat/ 2017. G. [12] – adjusted: authors

4 THE IMPORTANCE OF KNOWLEDGE MANAGEMENT FOR THE ORGANIZATIONAL DESIGN

A prerequisite for the successful use of knowledge as a resource is the implementation of knowledge management that requires a redesigning of the organization, i.e. changes in the organizational design in order to create organizations that are prepared to acquire new knowledge and leverage the resources to grow their business and gain competitive advantage.

Knowledge management emphasizes the importance of organizational culture, teamwork, learning and sharing of knowledge, skills and experiences. There are different opinions about the concept of knowledge management, but there is a consensus among theorists, scientists and practitioners that knowledge management is a unity joining people, processes and technology.

There are multiple organization design approaches and strategies. Designing an organization [1] is a fundamental process, not a one-time fix, which means that it is a continuous process of deciding on a number of issues related to the form, overall system and characteristics of an organization.

Nowadays, the roles of knowledge and knowledge management are becoming more and more important and are the key formula for the success of a company.

Knowledge is the most significant source of competitive advantage for businesses because it is "stored" in the minds of individuals. Every business should strive to turn hidden - tacit knowledge into explicit, codified, i.e. materialized knowledge that becomes the property of the enterprise and is transformed into structural capital.

The organizational design component referring to the introduction of new or improved knowledge management techniques for the sake of enhancing or sharing information within the enterprise has a great influence on the innovative behaviour of the enterprise. Previous research on this topic (research of innovation activities in the ICT sector in Serbia in the period 2002-2004) has shown that companies with innovations are more informed about technology and have more qualified staff, which again indicates a high educational structure of personnel in innovative enterprises [13], [14]. When choosing tools that will be integrated into the business knowledge management system, it is necessary to consider their purpose and capabilities. [15]

5 CONCLUSION

The theme of this paper is to explore the role and explain the technology of knowledge management that has a strong influence on organizational design and innovative behaviour of businesses. Accordingly, the aim of the paper is to highlight the importance of individual components of knowledge management technology and their impact on organizational design as an innovation activity of the company through the study of contemporary literature, as well as on the basis of analysis of EUROSTAT statistics for 2016 and 2017 and to point out the link between organizational design features and the ability of businesses to adopt new technologies.

If technological changes are not accompanied by organizational changes, they can bring only limited profits. However, if changes in organizational structure are accompanied by training, enhancement of knowledge and skills, where organizational learning plays an important role, changes can significantly contribute to increasing enterprise profits. Only if technological and organizational changes are acknowledged as a single interdependence system can they have an impact on enhancing the enterprise's business performance. The organizational component should not only be seen as a consequence of technological change, but also as an incentive for innovative business behaviour. According to the latest report (2016-17), investing in innovation is just as important as infrastructure, skills and market efficiency. [16]

In order for an enterprise to adapt and survive in a highly complex and changing environment and to continue its operations effectively, change management is necessary. The point of change management is to enable the company to retain and improve its position in new circumstances. It is a kind of process of renewing and capitalizing on the learning of an enterprise, that is, its management. The changes ensure survival and create growth and development of the company.

The most successful companies have developed knowledge management practices. Knowledge management in corporations creates employee motivation, leads to greater availability of expert knowledge and quicker and better quality solutions to consumer demands. Managers should have a greater sense of the invisible and intangible assets of people, contained in the minds and experiences of workers. Without these assets, companies are not equipped with the vision and the ability to predict the future. The concept of the knowledge economy is increasingly being developed in the practice and theory of management.

The design of the organizational structure stems from the need of organizations to cope with the complexity of doing business in the global marketplace, addressing problems encountered along the way, and due to constraints such as the application of new knowledge and skills.

The newly established organizational structure realized by applying the concept of knowledge management technology should be a means of achieving business goals, i.e. it should be in the service of business.

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THE FOURTH INDUSTRIAL REVOLUTION – SYNERGY OF TECHNOLOGY AND HUMAN RESOURCES

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ABSTRACT

There is great uncertainty about the development and adoption of new technologies. It is not yet known how the transformations that arise from this industrial revolution will take place. Their complexity and interdependence mean that all actors of society – governments, businesses, academia, and civil society – have the responsibility to work together to better understand and adequately respond to emerging trends. Interpersonal understanding is necessary if we want to shape a collective future that is consistent with common values and goals. There must be a comprehensive and global common view of how technology is changing our lives and those of future generations, and it is already doing so. The changes are so profound that, from the perspective of human history (because the transformation of the economic, social and cultural context in which we live), there has never been a time of greater imbalance, between possible prosperity or potential danger.

Keywords: industrial revolution, automation, digitization of production, robotics, artificial intelligence

1 INTRODUCTION

When the founder and CEO of the World Economic Forum, Klaus Schwab, hosted the Davos summit in 1971 for the first time, computers were the size of xerox machines, and globalization, according to the magazine "Time," was the theory discussed by students of economics. Forty-eight years later, 2.5 billion people carry supercomputers in their pockets, Klaus Schwab talks about "Globalization 4.0", the Fourth Industrial Revolution and its social consequences at this year's gathering of the world's political and business elite in Davos [1]. Technology, says Schwab, plays an important role in improving most areas of our everyday life, creating a global village, involving billions of people in the global economy, allowing people to learn, enjoy, consume and gain new ways. Technologies not only change what we do, but also affect our habits, but also the notion of ownership, and even identity and privacy.

The Fourth industrial revolution is marked by the rise of digital technologies: cloud, big data, Internet of things, analytics, machine learning, etc. As such, it drastically changes the mode of operation, and especially the relationship between technology and man (technology is no longer just support, but also replacement for manual work). Industry 4.0 includes process automation, which accelerates product development and enables the creation of new business models. Automation uses an environment tailored to all business processes – from the idea, through design, development, marketing and sales. For all of this, Industry 4.0 is a chance for companies to accelerate, simplify and improve processes, while saving time and resources. At the same time, this concept also creates a kind of "technological Darwinism" – companies that fail to adapt to change and transform the way they develop products will not survive on the market, which will be attributed to "the most digitized."

To be competitive, you have to master modern production technologies, because the basis of competitiveness is not cheap labor, as we most often think, but knowledge and ability to develop and implement new production technologies. These are industrial robotics, manufacturing mechatronics, artificial intelligence, and a new generation of industrial automation, globalized communications and related technologies, based on the factory roof, are based on it – Industry 4.0 [2].

A number of new expressions have emerged in this area: Smart Factory, Cyber Physical Systems, Industrial Internet of Things. The characteristics of these systems and their subsystems are mentioned: Visualization, Digitalization, Real time analysis, Identification, Realtime Location, Collaboration, Decentralization, Autonomy, Agile systems, Big data, Sensors, Cloud computing, Virtual network, etc. System descriptions with such characteristics are different, and one common clear picture for all of them is a condition for the harmonious work of the group that wants to make a smart factory.

In Germany, the first new jobs are called CDO (Chief Digital Officer), Project Manager 4.0 (or IIoT, digitization, etc.), Architect Industries 4.0, Industrial Engineer 4.0, Industry Advisor 4.0, etc. In engineering

schools, new subjects and study directions for the area of Industry 4.0 are appearing, lecturers are recruited, teachers for the subject Industry 4.0, research projects in the field of Industry 4.0 are carried out, etc. Therefore, the new interdisciplinary science Industry 4.0 was created as an upgrade of the current production automation, and in fact it is a synthesis of mechanical engineering, electrical engineering and informatics. In addition to the production automation of the 3rd Industrial Revolution, the production-logistic information ERP system, also already formed in the 3rd Industrial Revolution, is also integrated-synthesized. The new Smart Factory system is a smart synthesis factory of the 3rd revolution system: work, server, assembly, logistic, control, machines, tools, products, persons, PLM-CAx systems, ERP, MES, SCADA, process systems, technology, quality, maintenance, logistics, planning, informatics, into a synthesized whole. The systems of the 3rd Revolution are elements of the sister of the 4th Revolution. Many companies already have all these systems, but they are still only individual components for the time being. Their synthesis in a smart factory needs to be done. This means that almost every current system needs to be upgraded or replaced, and it is necessary to build many more connecting systems that are missing now, so that all systems together make a homogeneous whole - Smart factory.

2 ACCELERATION AND NEW GLOBAL PLAYERS

We live in the wings of smartphones, smart fridges, chips for health diagnosis. Facebook follows what you are doing and what advertising is relevant to you. Traders see your consumer history and what you can offer. The smartphone answers where you're going. Networked "smart cities" are managed by computer algorithms. Dublin in Ireland, Oslo in Norway and Chattanooga in Tennessee in the United States have introduced smart street signaling which, thanks to the sensors, has been affected depending on the time and traffic flow. In London, Beijing, Sao Paulo, Toronto, the sensing system regulates the flow of city traffic.

In order for the phone to accept 100 million people, it took 75 years, and for Pokemon Go in 2016, less than a month. In order to sell 50 million cars, it took six decades, computers and mobile phones for 14 and 12 years, and WeChat just one year to reach that level. Three US IT conglomerates (Alphabet, Facebook, Microsoft) and one Chinese (Tencent) have a billion or more users.

While conventional wisdom says globalization is stalled, since the cross-border flows of capital have fallen sharply since 2008, according to the Global Institute McKinsey Global Institute (MGI), the amount of cross-border flows of information, searches, communications, videos, transactions and traffic has increased to 45 times since 2005. [3]

Tens of millions of small and medium-sized enterprises around the world are turning to exporters by joining e-commerce markets, such as Alibaba, Amazon, eBay, Flipkart and Rakuten. Approximately 12 percent of global trade in goods is done through international e-commerce. Even 86 percent of the startups of the companies surveyed by the MGI consulting company report a kind of cross-border activity [3]. About 900 million people have international connections through social media, and 360 million are involved in some cross-border e-commerce. Digital platforms for traditional employment and freelance arrangements are beginning to create a global labor market.

In less than 25 years, Amazon has grown into another retailer in the world that has launched a revolution in retail, the use of remote cloud computing, web services, and drones. Chinese Alibaba has also become a global conglomerate. Just a decade after launching the iPhone, Apple in 2018 crossed the \$ 1 billion borders.

Airbnb, WeWork, and Uber are expanding globally without having the physical assets on which their services rely. These companies have grown beyond the boundaries of traditional business and have disrupted social patterns, which is a great news for those with access to technology.

Titans of previous industrial revolutions, such as rail companies, ExxonMobil or IBM, have also benefited from such dynamics, but have reached their natural limits.

3 INNOVATION, INNOVATION, INNOVATION

The industrialized West has, in earlier stages of globalization, shifted most of its manufacturing jobs to low-income developing countries. Judging by the Davos stories about Industry 4.0, the current investor's guideline is not a search for cheap labor, but "innovation, innovation, innovation". After all, according to the report of the World Economic Forum on Global Risks for 2017 [4], today industrial robots can be seen in the Philippines, Vietnam, and Bangladesh, replacing trained tailors.

The focus is on artificial intelligence, autonomous vehicles, Internet of Things, IoT. It is about the era of rapid innovation, automation, artificial intelligence, the reduction of the gap between digital, physical and biological spheres. It invests in the development of robots, in machines that control machines and when not networked, they enable self-optimization, self-adjustment, and even artificial intelligence. It is about the development of "smart factories" that in real time self-regulate the rhythm of their production dependent, say, from the speed of the tanker's movements with "raw materials" in the storm on the Indian Ocean. The research in the 5G infrastructure is stimulated to facilitate the rapid transfer of huge datasets. The Cold War is being renewed around primates in that area. That's why he yelled at Huawei.

According to the OECD [5], in the development of the "Internet of Things," Britain and the United States invested \$ 110 million a year in 2014 and previous years, and in 2015, the United States increased this amount to 440 million. France invests 55 million euros in digital technology development. The German government has invested more than 500 million euros in the program "Industries 4.0", which was launched in 2013. Consulting company PwC estimates that the market for components for industry 4.0 will cost about 4 trillion dollars in 2020, Internet stuff is 3.7 trillion. [6]

The European Patent Office (EPO) study shows that the number of patents related to the Fourth industrial revolution has increased by 54 percent over the past three years [7]. In Canada, \$ 127 million a year is invested in automation research, especially in Toronto, Montreal and Edmonton. The Canadian province of Ontario is launching a new pilot program for testing automobiles without drivers on their roads [8]. Australia has launched a similar research and development program [9]. According to the McKinsey & Company [10], the number of newly-turned smart car companies has grown globally since 2010 at a rate of 60 percent a year.

China shows its ambition to take over the dominant position in the artificial intelligence field by 2030, and 850,000 professionals are engaged in robotics [11]. The US is seeking to strengthen its leadership by linking private and public resources. In the development of artificial intelligence, \$ 10 billion is invested, especially in Amazon, Google, Microsoft, Facebook, and IBM [12]. Russia plans to use 30% of military equipment by 2025 using robots [13]. In Japan, a historic leader in robotics, 71 percent of the industrial manufacturing sector is automated, and in the US 60 percent. [14]

4 ROBOTS

The number of robots per 10,000 employees increased from 66 in 2015 to 74 in 2018 (in Europe 99, in both America 84, and in Asia 63).

The most robotized countries are South Korea (which with 631 robots per 10,000 employees exceeds the world average by eight times, and since 2010 holds the world record), Singapore (488 robots per 10,000 employees in 2016 mainly in the electronics industry), Germany (309), Denmark (211), USA (189), Italy (185), Belgium (303), Japan (303, with the fact that it covers 41 percent of all installed robots in Europe) Spain (160) Taiwan, Canada (145), France (132), Switzerland (128).

Interestingly, according to the data of the International Federation of Robotics (IFR), in the group of industrial nations in robotics, the cradle of the first industrial revolution of Great Britain (71) is significantly behind. From the eastern European countries, the most robotized is the industry of Slovenia (137). Followed by Slovakia (135) and Czech Republic (101). [14]

There are no data on the number of robots in Serbia, but it is known that 400 Italian COMAU robots were installed in the car factory in Kragujevac in 2012 for the production of the FIAT 500L. That is, say some sources, more than half of the total number of robots in Serbia. The factory "Lola" in Železnik was the first robot to produce in 1981, and one of the robots installed in Kragujevac in 1987 for the production of "Yugo". The factory "Lola" was liquidated in 2001, and so the development of the so-called "Belgrade School of Robotics", which began in the late 1960s at the Institute "Mihajlo Pupin" and its robotics group, founded by academician Miomir Vukobratovic.

5 LOSERS OF INDUSTRIALIZATION

In the world, otherwise, about 600 million people live on small farms without access to any kind of machinery, they were not touched by the first industrial revolution, the one that began in Britain in 1760, which brought steam locomotives, steamers and industrialization of weaving and mining and the 19th century Britain from the farms reoriented to the factory production.

Approximately one third of the world's population (2.4 billion) does not have clean drinking water, about sixths (1.2 billion) have no electricity, the fruit of the Second Industrial Revolution – which began in the mid-19th century to the Great War with steel, oil, and culminated with the early electrification of the factories, and then for most of the world, introduced the assembly line and brought an electric bulb, a phone, an internal combustion engine, a car and an airplane.

More than 3 billion people now have access to the Internet, at the same time it says that more than 4 billion of them are excluded from the Third Industrial Revolution, the so-called digital, which in the 1950s until the late 1970s marked the semiconductor, transistor, personal computer and early digitization.

Robots and "smart machines" are increasingly confusing people. Former industrial giants no longer require hundreds of thousands of employees. Those who are lucky enough to be employed today are either highly educated and well paid, or unskilled and very low paid. Old industries disappear. As the Time magazine writes, industrial automation only deleted about 8 million jobs in the United States in the first 10 years of this century.

The extent of change is potentially epochal. At the beginning of the 20th century about 38 percent of the US population worked in agriculture, and in factories 25 percent. Today, only 1.5 percent of the population works in agriculture and 7.9 percent in factories. Losses have been compensated by the increase in employment in other sectors of the economy. In 1900 there were 24 million jobs, and today there are about 150 million. Most new types of work simply did not exist at the beginning of the last century.

Based on the research [15], now 71 percent of the total number of hours worked in all industries is made by people, and 29 percent are machines or algorithms. By 2022, 58 percent of the work hours are expected to be made by people, and 42 percent by machines or algorithms. About 62 percent of data processing, search and transmission of information will be done by machines. By 2022, globally, from 16 percent to 27 percent of the total number of employees in large companies will increase the number of employees in today's new occupations (data analysts, software and development experts, technology and its enhancements, then for e-commerce and social media).

6 UPGRADING AND RETRAINING

By 2022, the skills needed to perform most jobs will be significantly changed. It is expected that 58 percent of the basic skills needed to perform a job will remain the same, and that 42 percent of new skills in the workplace will be required. Employees (but also managers) in companies that adopt new technologies between 2018 and 2022 will on average need 101 days for retraining and upgrading.

Depending on industry and geography, between half and two thirds of companies are likely to turn to outside contractors, temporary staff, and freelance professions, as their employees will not have the skills required by the new technology.

Jordan Morrow, head of the digital literacy department at Qlik's analytical firm, told that everyone should not be a scientist, but everyone should be digitally literate [16]. "Time" states that people need education that prepares them for a lifelong process of training and retraining [17]. They will have, more than anything else, to learn how to learn. At the same time, a social protection network is needed that focuses on career support, and not just simple unemployment benefits. In prominent positions, analytical thinking and active learning, design ability and different forms of technological competences will be required. Employers will appreciate creativity, originality, initiative, critical thinking, negotiating and persuasive skills, the ability to comprehend the whole, concentration on details, resilience, flexibility, etc. Emotional intelligence, leadership and social impact will also be important. It is expected that the role of the customer service, sales and marketing experts, training and development of people, organizational development experts, and innovation managers will continue to grow.

Klaus Schwab [1] warns that technological changes have brought more winners in the past 25-30 years, but that it's time to look at the losers, those that are not available in the Fourth Industrial Revolution or Industry 4.0.

The richest man in the world, Jeff Bezos has got to do with this topic. He is the owner of Amazon and he increased his fortune to \$ 112 billion. It is mentioned in the report of the British charity Oxfam [18], which shows that in the ten years after the financial crisis in 2008, the number of billionaires almost doubled, that between 2017 and 2018 every second day a new billionaire was created, with only one percent of wealth equal to the entire health budget of Ethiopia, a country of 105 million people.

Florian Bieber [19] states that inequality promotes the growth of populists and nationalists who do not believe in institutions at all, do not trust their governments, leaders, judges, media and technology. In an

article in the magazine "Foreign Affairs" [20], Klaus Schwab writes that artificial intelligence can in itself bring a lot of good, but also a lot of evil, and it is necessary to be carefully regulated.

The same applies to financial systems. Crypto currencies such as bitcoin have already proven their advantages over traditional money, but are not immune to the exploitation of speculators and criminals. The US, China and other countries that are fighting for leadership should agree on what is and what is not allowed in these and other technologies, such as, for example, genetic.

7 SERBIA AND INDUSTRY 4.0

In Industry 4.0, all forces are directed towards one goal – complete digitization of production, logistics and business processes. Mass digitization enables rapid reaction of the production system to market demands and individual customer needs, reconfigurable production and business system, productivity tracking, and efficiency. Also, excellent ecological compatibility and efficient management of the complete products life – from creation to recycling.

European countries are actively encouraging the development of this concept, and some of them have adopted specific strategies and established stimulus funds. How important this race is, is shown by the fact that in the European Union they are planning to invest as much as 1.350 billion EUR in Industry 4.0 in 2030. Experiences from the European Union are very inspiring, and should be encouraging for our country, especially considering that Industry 4.0 and countries with less developed economies can find their place under the sun. Benefits are equally expected by large and small companies, but projects of industry 4.0 are introduced faster and less costly in smaller companies.

The digitization process in leading countries, such as Germany and Switzerland, has noticeably accelerated. One survey conducted on a representative sample of 954 companies in Germany with at least 100 employees showed that companies invest 4.9% of their revenues in digital projects, which is 0.3 percentage points more than in the previous year [21]. Their willingness to invest so much shows that they are aware of how much digitization is an important part of the business.

Many companies also see the great potential of digitization in upgrading customer service and assisting in the acquisition of new customers. In third place is faster internationalization of operations. Companies also see great potential in the development of new products and services. On the other hand, the percentage of companies that see potential in developing new business models is lower than expected, although 44% see the effect of digitization on their own business models, as well as major changes that have taken place in the digital economy over the last two decades, is largely the result of new business models. Looking at sectors, it can be said that telecommunications, banking and insurance, as well as energy, are leading this process. At company level, large companies from different industries are often also leaders in digitization.

The industry today is confronted with a new generation of fully digitized factories, and the transition from "classical" to Industry 4.0 ensures survival and development in contemporary conditions. The concept of Industry 4.0 implies the complete digitization of all production processes and the application of digital technologies when creating an idea about a product, product engineering, production organization, production realization, process control and industrial service delivery.

In the European Union, as in most of the world, the process of transition to Industry 4.0 is in progress, and if we do not want to disappear from the industrial map of the world, Serbia should not lose a step. With all these advantages, Industry 4.0 is especially interesting for us, because the implementation of this concept can be used to revitalize the domestic devastated industry.

Industry 4.0 has a "horizontal character" – equally important for all industrial sectors. Also, it is very important to point out that it does not imply unilateral development only in the domain of information technology. It is a very complex concept based on the symbiosis of knowledge from a wide corpus of production technologies and digital processing and transmission technology, with the final outcome of creating cybernetic-physical systems as a radically new technological entity. Concept Industry 4.0 must be viewed holistically.

There are no favorites, total digitalization of production processes is valid for all, regardless of what they are dealing with, as it is a generic transformative technology. That is why we must understand that entering this space is not an issue of choice, but imperative. Along with the construction of new factories, Serbia has to introduce robots into them. If we act differently, the process of industrialization cannot be successful.

Industry 4.0, is equally important to everyone in the production chain, from large international companies to small suppliers. Digitalization today is completely changing the way companies produce and evolve, increases productivity and, consequently, competitiveness in the global market.

There are no favorites, total digitalization of production processes is valid for all, regardless of what they are dealing with, as it is a generic transformative technology. That is why we must understand that entering this space is not an issue of choice, but imperative. Along with the construction of new factories, Serbia has to introduce robots into them. If we act differently, the process of industrialization cannot be successful.

It is only necessary that an agreement between the state, science and business is necessary. That is why the transition to the development of a smart specialization strategy with the goal of discovering what the real needs of development-oriented companies are, will be designed so that the Ministry of Economy of Serbia will devise a new industrial policy. And it should be a real, feasible and sustainable plan.

It is precisely without this realistic and sustainable future plan through the development of industry 4.0, which, in fact, has already begun, Serbia seeks an answer to the main challenge of not including workers in it as a cheap labor force in the concept of perfidious European production, but rather within the European concept choices to be a niche in which top-notch technologies are preserved. Serbia is not just ahead of life choice, but it does not exist at this time of elections, which underlines the essential change of the paradigm: innovate, amortize, digitize, connect or disappear. In this imperative, which is both a chance and a threat, those who are able to use the newly planned free-good "mobility" will succeed.

On the planet there are 8.5 billion devices connected with the exchange of digital data and tasks – from mobile phones, smart home appliances to factory machines. Whoever did not jump into the train of the 4.0 industrial revolution, will disappear from the scene. After 2008, the year of the great economic crisis, things have changed drastically because the neoliberal model is overcome, and Serbia has to accept it. With industry 4.0 we get a quantum leap of possibilities. New technologies have brought applications that integrate the main features of traditional IT tools, and in addition, we must bear in mind the predictions that in 2050, 80 percent of the world's population will live in 80 megalopolises.

While it is true that Industry 4.0 leaders plan to invest tens of billions of euros in digital transformation by 2020, Serbia has not yet defined a strategy in this area. However, according to Carsten Vollrath, general manager of the IPG Group from Switzerland, the countries that today's global leaders in this field have the biggest advantage of having started early – some 10 years ago. And nothing else. Their models are different, but it is certain that for the digitization of industry, a close alliance of science, economy, politics, associations, business industrial unions are necessary. It is common and important for everyone to develop competencies, skills and business models – because technology does not end up with people. Serbia must first determine the areas of action; to identify an industrial partner and a key group of small and medium-sized enterprises, a technology partner, and to network them with universities, business associations, experts and consultants through the digital laboratories. Through these laboratories, a demonstration model of digital transformation will be developed in 6 to 9 months, with joint work and connection with international partners. Serbia should not copy, but look for its path", said Carsten Vollrath.

8 CONCLUSION

Industry 4.0 uses cyber-physical systems consisting of smart machines, storage systems and production facilities that are able to independently share information, start activities and control each other. It represents a new way of performing production processes and controlling the end product, in other words, smart products, services and solutions. New technologies have the potential to make factories more efficient and productive, while creating less waste, to create innovative and smart products and services in order to improve the company's business models to a completely new, revolutionary, digital level. Industry 4.0 companies offer great opportunities to position themselves at the high-end level, to market products and services with high added value and increase revenue and profit.

Leaders in digital transformation started their initiatives in 2011, which is not so long ago. However, for several key reasons, such a thing is hardly accessible to a developing country like Serbia.

First, the basis for digitization was much tougher in more developed countries. They had previously successfully implemented transformations within Industry 2.0 and 3.0, so their industries were optimized in terms of restructuring companies, expertise, business excellence and good business models.

Second, the developed economies have recognized the high potential of digital transformation and have put a strong focus on the initiative in this direction.

Third, networked businesses, business associations, academic institutions, companies and other actors have already successfully collaborated earlier in the case of developed economies. In less developed countries, there is a big gap between different actors, and there is their inability and lack of willingness to cooperate, which significantly slows down the implementation of the transformation.

However, with Industry 4.0 there are always certain challenges. In the case of Serbia, the challenge is even greater, because in many places there is no fully developed expertise for Industries 2.0 and 3.0, which means that more work will be needed in the developed industries. In order to overcome initial hesitation with regard to Industry 4.0 and to catch up with developed industries that are already heavily focused on digitization, Serbia needs to build a solid, but also a thorough implementation plan, given the above stagnation.

Serbia has already put a strong focus on Industry 4.0, but now it has to prepare a thorough plan for initiatives and a list of implementation activities on a broad plan in a short period of time, as it is in a big lag. As such, however, Serbia can see examples of successful implementation and good practices from other economies that have already implemented digitization initiatives. Serbia, however, cannot simply copy these examples, but to learn from them and follow its path.

Taking into account the transformation towards Industry 4.0 (as well as previous transformations), the strategy for new industrialization in Serbia should focus on the interdependence and synergy of technology and human resources in order to maintain a balance in total production. The fact is that traditional jobs that involve repetitive actions will become unnecessary in the age of automated (mass) production. Therefore, the main competences of human resources will be those related to effectiveness, creativity and innovation potential, as well as digital skills, in contrast to a strong focus on efficiency.

It should be noted that, if it wants to take a step with developed countries and achieve industrial maturity at an accelerated pace, Serbia has to implement the so-called top-down access. It implies a general digitization initiative that originates from the state itself, and it is characterized by a strong strategic focus. In other words, the state should allow its main economic associations, such as the Serbian Chamber of Commerce, to play a leading role within the digitization initiative and to be the drivers of overall implementation.

However, the establishment of such a key body that would allow implementation is just part of a wider approach, which involves the use of a comprehensive "digital network". In order to make the initiative more efficient and effective, the "digital network" must comprise five additional pillars of interconnected partners, including government, academic community, science and technology community, companies and expert partners in the form of experts and consultants.

The "digital network" is stronger, the whole Serbian economy, as well as every single actor within it, will have more benefits. Although such an approach is rarely seen in developing countries, the key to the success of an initiative is to encourage participants to contribute to the network rather than measure their individual contributions. Measuring your own contributions can mislead the entire "digital network" and jeopardize the whole concept of a balance between contributions and results, where all individually, and the network as a whole, should be on the winning side.

In order to promote development in the right direction in the era of Industry 4.0, countries and their industries must transform their educational systems and thus create the foundation for establishing balance and synergies between technologies and human resources. Although among the most developed societies, Switzerland, Germany and Austria lack human resources, which could slow down their further growth. These countries are much dependent on "importing" professional people who possess the necessary skills.

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ON THE FUTURE OF FINANCIAL FUNCTION IN THE DIGITAL ERA

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ABSTRACT

This paper addresses the future of finance in the digital era. Finance is a pivotal function in organizations. In order to maintain this status, it must be digitized. Investing in digital technology is a necessary, but not sufficient condition for the transformation of the finance function. The challenges facing organizations are complex and require changes in multiple directions. First of all, organization leaders have to build a new vision of the financial function. That vision means extending the mandate of the financial function towards creating and preserving value for the organization. It is not possible to extend the mandate without the introduction of digital technologies. They foster efficiency and contribute to the formation of "augmented intelligence" of financial professionals. Organizational changes are also necessary. The traditional organizational structure in the form of a hierarchical triangle, should give way to a more flexible structure. Such a structure will facilitate the integration of accounting and financial operations, on the one hand, with the production of management information, on the other. Finally, changes should capture the competencies and mindsets of financial professionals. Organizations are looking for financial professionals with technical, business, personal and leadership skills, as well as a specific growth mentality.

Keywords: finance, digitization, organizational change, augmented intelligence

1 INTRODUCTION

Contemporary literature agrees that the future of the financial function lies in its digitization. Digitization is not the only driver of change in the global economy, but it is certainly one of the most important. It is not evenly distributed across organizations, sectors and industries. The pace of digital adoption is also different, so there are innovators, or early adopters, and organizations that are late. Digital technologies are diverse and "disruptive". They have the potential to create fundamental innovations that have strategic implications for organizations and their ecosystems. Consequently, the digitalization of the financial function imposes great challenges on organizations, in terms of potential opportunities and risks.

The hypothesis in this paper is that digitizing a financial function requires much deeper change than simply investing in digital technologies. The paper deals with the changes that are necessary to make a financial function in organizations effective and sustainable in the digital age. Several qualitative methods are used to test the hypothesis, namely: descriptive, to describe the most important trends in the development of financial function and digital technologies; analysis and synthesis for separate research of changes which are not related only to the investment and to the digital environment; finally, an inductive method for drawing general conclusions based on specific and individual views and conclusions.

In addition to the introduction, the work consists of five parts. The first part discusses the new vision of financial function in organizations. The second part deals with the impact of digital technologies on financial function. The third part is devoted to the evolution of the organizational form of financial function. The fourth part highlights the importance of the competences and mindsets of financial experts for the sustaining development of the finance function. The fifth part is the conclusion. The aim of the paper is to highlight the need to extend the mandate of the financial function in the digital era. This means changing the status of a financial function, from an isolated cost center in organizations to the creating of innovative customer services and value for organizations.

2 TOWARDS A NEW VISION OF FINANCIAL FUNCTION

The vision describes what the organization wants to achieve in the long term, usually in the period in five to ten years, or even longer. Vision defines guidelines for the formulation and implementation of the strategy of the organization. To be of high quality, the vision does not have to be overly ambitious. It needs to be forward-looking and act motivating and inspiring to employees. In addition, the vision should reflect the culture and core values of the organization and to be focused towards creating benefits for owners and other stakeholders. [1]

In a world where change is becoming the new normal, organizational leaders need to look for a new vision of financial function. Such an attitude is increasingly emphasized in contemporary literature. [2] The bottom line is that the financial function extends its existing mandate. Instead of the organizational unit, or cost center that produces products in the form of reports, budgets, plans, etc., finance should provide innovative services to its customers and to create value for the organization. In doing so, it is imperative that finance be linked with external stakeholders and build new relationships within the organization's ecosystem. The ultimate goal is that finance has a significant impact on redefining existing ones or creating new business models.

Changing the mandate does not mean that traditional activities and roles of financial professionals should be discarded. On the contrary, they will continue to be the core of the financial function. The introduction of digital technologies will enable the financial function to evaluate a much wider range of information and thus become a more influential player in the organization.

The arguments for changing the mandate of a financial function are very strong. This function is uniquely positioned in organizations, because it gives a comprehensive insight into the business. This is because every activity within the organization has its financial implications. In addition, financial and accounting information is reliable and verifiable, thanks to an audit. Finance and accounting provide credible support to decision-making, inter alia because they are a rational and measurable economic disciplines. Their information is based on material evidence and professional objectivity, which is important for measuring the performance of an organization.

After all that has been said, a new vision of the financial function can be represented by the value matrix in Figure 1.

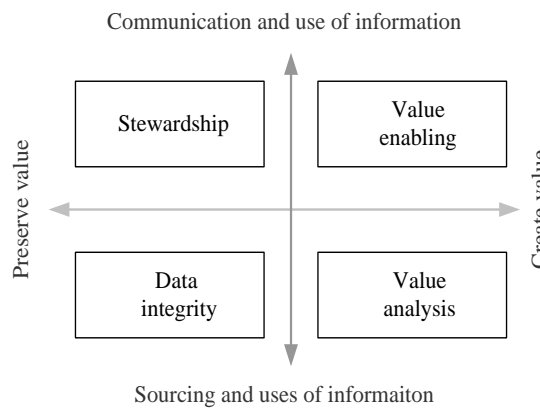


Fig. 1. The finance function value matrix

Source: [2; p.5]

Figure 1 describes a matrix with four general role of the financial function, that create and protect value for organizations. In this sense, finance, as a reliable source of management information, ensures data integrity. Integrity indicates the credibility of the data and includes: accuracy, relevance, precision, timeliness and completeness. [3]

For the sake of their unique position in the organization, finance can deal with value-driven analysis. Thanks to the extended mandate, the finance creates partnerships with external stakeholders and influence the choice of a business model that will create value for the organization. Finally, in the role of decision support, finance is actively involved in developing strategic plans and goals for the organization, to create and preserve value.

How far are today's finances from a previously defined vision? Empirical research shows that about two-thirds of financial activities are currently focused on the collection and analysis of business data. The descriptive and diagnostic methods are generally used, as shown in Figure 2.

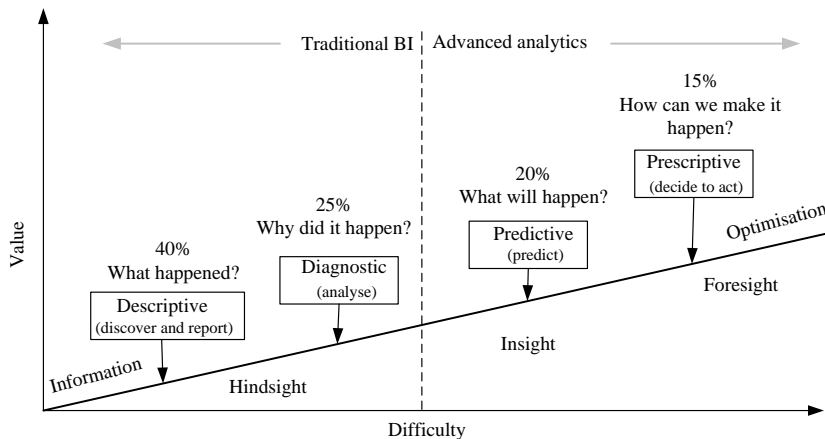


Fig. 2. The Gartner Analytic Ascendancy Model and Finance function reporting focus

Source: [4, p.18]

Advanced analytics relies on techniques for forecasting and proposing concrete business solutions, that brings more value to organizations. The problem with these techniques is that they are used by just over one-third of the organizations surveyed. Researchers estimate that this trend will accelerate over the next three to five years, which is encouraging. The main requirement for using advanced analytical tools is to invest in digital technologies. [4]. This issue is discussed below.

3 IMPACT OF DIGITAL TECHNOLOGIES ON FINANCIAL FUNCTION

Digital technologies are rapidly spreading their influence in the global economy. The direction of this impact is from the drivers of operational efficiency to fundamental innovations that have strategic implications for organizations, their ecosystems and society as a whole. Many organizations need to rethink and reform many areas of their business, if they want to be digitized. The World Economic Forum points to three key areas: digital business models (what an organization wants to do); digital operating models (how the organization can do this) and digital talents and skills (with whom they should cooperate in order to succeed).

These three areas present a great challenge for organizations. This is because there are many types of digital business models and related revenue models. Depending on the strategic choice of a specific business model and revenue model, the introduction of a digital operating model in the organization depends. This is logical, given that the operating model should reflect the main relationships between business functions, processes and structures for the organization to accomplish its mission. The operating model describes how individuals, teams and organizational units interact.

Providing digital talents and skills is no less a challenge for organizations. The big question is how organizations can attract, retain and develop the right talents by improving organizational culture and system of motivation? How to provide leadership in implementing digital transformation? Finally, how do organizations need to adapt to new ways of working, including robotics, etc.? [5]

The effects of digitalization have both chances and risks for individuals, organizations and the wider environment. Therefore, there is still controversy in the scientific and professional public. There is considerable debate within the European Union on the impact of digital technologies on the labor market. [6]

Digital technologies are the most important, but not the only driver of change in the global economy. Table 1 supports this:

Table 1. The drivers of change in a digital world

Institutional and systemic	Social	Market	Technology
<ul style="list-style-type: none"> > Globalisation > Geopolitics > Regulation 	<ul style="list-style-type: none"> > Demography 	<ul style="list-style-type: none"> > Consumer empowerment 	<ul style="list-style-type: none"> > Digital technology > Automation

Source: [4, p. 8].

In Table 1, all drivers of change: institutional and systemic, social, market and technological, do not act independently of one another. On the contrary, they are interwoven into a "spider web", with technology at its core. Digital technologies, in particular, belong to the so-called "disruptive technologies". Such technologies can radically change entire economic sectors, enable new ways of working, producing and consuming, and drive wider social change. [7]. In an increasingly complex environment, organizations and individuals who fail to keep up with these changes, risk becoming irrelevant in the business world.

Digital technologies are not evenly distributed across organizations, sectors and across industries. This also applies to the financial function in these entities. The 2016 Deloitte survey highlights seven technologies that modern financial functions in organizations need to have on their "radar". These technologies can be divided into two broad groups: 'core modernization' and 'exponents'. The core modernization technologies serve to update the financial systems and existing (digital) capabilities of organizations. The technologies covered by the term exponents include tools for delivering new competencies to organizations. The structure of these two groups of technologies is as follows:

Modernization of the core	=	Mainstream
<ul style="list-style-type: none"> • Cloud computing • Process Robotics • Visualization 		
Exponents	=	Early adopters
<ul style="list-style-type: none"> • Advanced Analytics • Cognitive computing • In-memory computing • Blockchain 		

That list could be expanded for another technology, the Internet of Things (IoT). The combined use of these technologies enhances the efficiency of the financial function and the quality of customer relationships. Digital technologies have a particularly significant impact on augmenting human intelligence. Specifically, in the financial function of the future, the technical capabilities of robotics and algorithms are combined with the empathy and creativity of financial professionals. As a result, financial experts will become faster, more efficient and more productive.

Many organizations begin the digital transformation process with the automation of certain types of financial activities. Automation carries with it the risk of eliminating some jobs. This refers mostly to repetitive tasks such as collecting and processing data. Automation, on the other hand, frees up time that financial experts can use to create and preserve value for the organization. The potential for automating financial activities depends on a number of factors, such as: technical feasibility; the cost of developing and implementing the solution; labor market situation; projected benefits; regulatory and social acceptance, etc.

Organizations behave differently when it comes to adopting digital technologies. In this regard, the general view is that "the future of finance is already here, just not evenly distributed". Research shows that organizations are divided on the so-called innovators, or early adopters, and those who fall behind. Innovators or early adopters include: multinational companies; specific sectors such as financial services, telecommunications, etc.; private FinTech companies; start-ups run by young entrepreneurs and the like. Organizations are aware of the risk of early adopters of new technologies, as well as their delayed use. [8]

4 CHANGES IN THE ORGANIZATION OF FINANCIAL FUNCTION

Changing mandates, digital technologies and new data sources are factors that influence the creation of a new organizational forms of finance in organizations. The traditional organizational form of financial function is hierarchical, in the form of a triangle. The flow of information and responsibility is bottom-up. A wider range of employees located at the base of the triangle forward information, reports, analyzes, etc. toward narrower groups of managers located at higher hierarchical levels. Key decisions are made by the top management, located at the top of the triangle. [9].

Over the last two decades, the traditional organization of financial function has evolved into a hierarchical triangle that is horizontally segregated. Reasons for this can be sought in globalization and advancement in information and communication technologies. Many routine financial businesses have "migrated" to the bottom of the segregated triangle, where the so-called shared service centers are placed. These centers are usually geographically located in lower income countries. In this way, significant savings in labor costs are achieved. It is a classic *outsourcing* of financial activities. More complex and better value added financial transactions are located in the upper part of the segregated triangle, within the parent company.

Recently, the organizational form of financial function has evolved into a hexagonal form, as shown in Figure 3:

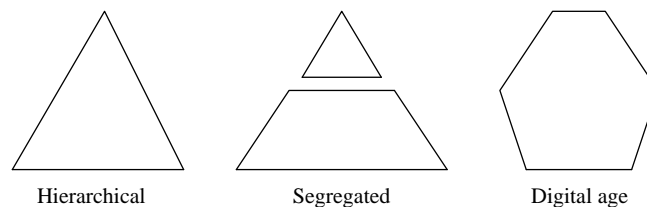


Fig. 3. The evolution of finance function shape

Source: [9, p 3]

The hexagonal shape allows financial professionals to create higher value services within the so-called centers of excellence, or multidisciplinary teams that share different technical and so-called soft skills. Technical skills are necessary because software tools are constantly being implemented by companies. In this respect, particularly significant skills are: *Data Mining*; extraction and faster interpretation of Big Data; statistical modeling and data analysis; financial planning and analysis; budgeting and forecasting etc. Soft skills include: communication skills; ability to analyze and present data, etc. [10]

International surveys show that about 60 percent of organizations believe that their financial function is currently organized in the form of a hierarchical triangle. When asked what form of financial function they expect in the future, 30 percent of organizations said they did not expect any change. On the other hand, almost the same percentage of organizations has expressed confidence that their finance function would evolve into a hexagonal shape. [4]

The organization of a financial function in the digital era is a hexagonal structure consisting of four levels, as in Figure 4:

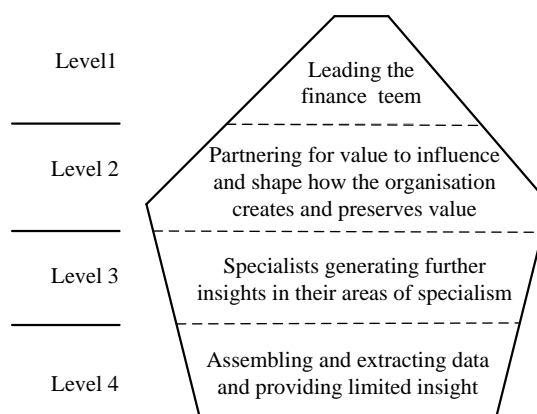


Fig. 4. The shape of the finance function in the digital age

Source: [4; p.23]

Each level in this hexagonal structure has its own responsibilities, which are described below.

Level 4 consists of professionals and teams that use operating systems and technologies for collecting, recording and data extraction. They use accounting rules, policies and standards for these purposes. The data and information generated at this level becomes the basis of the work of higher level financial professionals.

Level three brings together specialists who are tasked with creating insights into different financial areas, based on information from lower organizational levels and different types of financial analysis. The results of those analyzes are communicated in the form of periodic and *ad hoc* reports. They make the building blocks to create value for the organization. Specialists make the essential meaning and interpretation of information that are generated at a lower level.

Level 2 brings together financial professionals who play the role of strategic partners in the organization. They make contacts with internal and external stakeholders. They are tasked with interpreting and using lower-level financial statements, as well as other available information, to influence decision making and value creation for organization.

Level 1 is reserved for financial leaders who use their expert skills to formulate an organization's strategy, including financial strategy. The flat top of a hexagonal structure symbolizes the transition to a collaborative approach to financial leadership.

The organization of financial function in the digital age makes it easier to combine accounting and financial activities, on the one hand, with the production of management information, on the other hand. In the foreseeable future, such integration should strengthen the status of finance as a function of decision support and performance management in organizations.

5 CHANGING THE COMPETENCIES AND MINDSETS OF FINANCIAL PROFESSIONALS

A competency is a set of related abilities, obligations, knowledge and skills that enable an individual, or organization to function effectively in a job, or situation. Competence reflects the sufficient level of knowledge and skills that are required for operation in a wide variety of situations. Because each level of responsibility has its own requirements, competence can occur at any time in a person's life, or at any stage in his or her career. [11]. Organisations are particularly interested in the development of competencies of employees in leadership positions. [12]

Until recently, competency has been assumed to be a key factor affecting the performance of individuals, or organizations. More recent research, however, points to the growing importance of mindset in performing a financial function. Practitioners describe mindset as the ability to change the status quo, the skill of adjusting, and influencing others during the adjustment process. Although competencies remain important for the development of financial professionals, it is the specific mindset of individuals that is the factor that "makes the difference" in work environments.

Caroll Dweck, a professor of psychology at Stanford University, distinguishes between two types of mindsets. These are fixed mindset and growth mindset. In a fixed mindset, intelligence is considered static and the qualities of individuals are "carved in stone". Individuals with fixed mindset are likely to avoid challenges, give up easily when faced with problems and ignore the positive feedbacks. In contrast, growth mindset allows intelligence to evolve. Individuals with such a mindset have a desire to learn. They are open to receiving and giving feedback and are able to overcome obstacles.

From the perspective of an organization and its financial function, adopting a certain type of mindset can significantly affect the motivation and performance of employees. The good news for organizations is that digital technology has a positive impact on both the competencies and the mindset of financial professionals. Digital technology expands the intelligence of individuals, linking both the technical capabilities of robotics and algorithms with the creativity and empathy of financial professionals. The digital economy provides fast and inexpensive answers in huge quantities. The problem is no longer in the search for answers, but the setting the right questions.

The competencies and skills of financial professionals are increasingly shifting from gathering and generating knowledge, to interpreting the meanings and selecting information that comes from software solutions. Financial function gradually passes from the regime of working in isolation, to the operation with

others in the organization and beyond. In Figure 5, the most important financial roles designated by the umbrella terms: "reporting"; "examination"; "solution development" and "solution implementation", move from left to right. The same direction of movement have the skills that financial professionals need to possess in order to perform these roles.

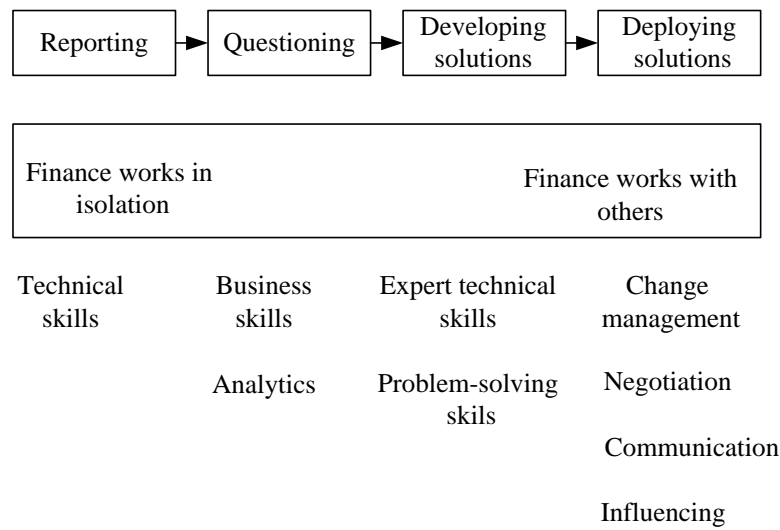


Fig. 5. Competencies and skills under pinning the broad finance roles

Source: [13; p.3].

The digitally driven process of "augmenting intelligence" requires financial experts to adopt a pattern of behavior that reads: learn, unlearn and relearn. Skills and knowledge that are highly valued today, have a short lifespan and are subject to the risk of obsolescence within a few years. Most of these skills and knowledge will be replaced, either by those we do not currently see, or do not exist still. A key trend in organizations is that "expertise" is increasingly shifting towards "agility", ie, continuing vocational education and training for employees. In this sense, the system of adaptive e-learning can be of great importance. It is a system that offers a vision of dynamically created courses, tailored to the specific needs of individuals, their prior knowledge, computing environment, connectivity and communication benefits. [14]. The implicit assumption for this is that employed by the organization adopt growth mindset.

What, specifically, do organizations expect from their financial experts in the future? The answer to this question is provided by the so-called. competence framework in Figure 6:

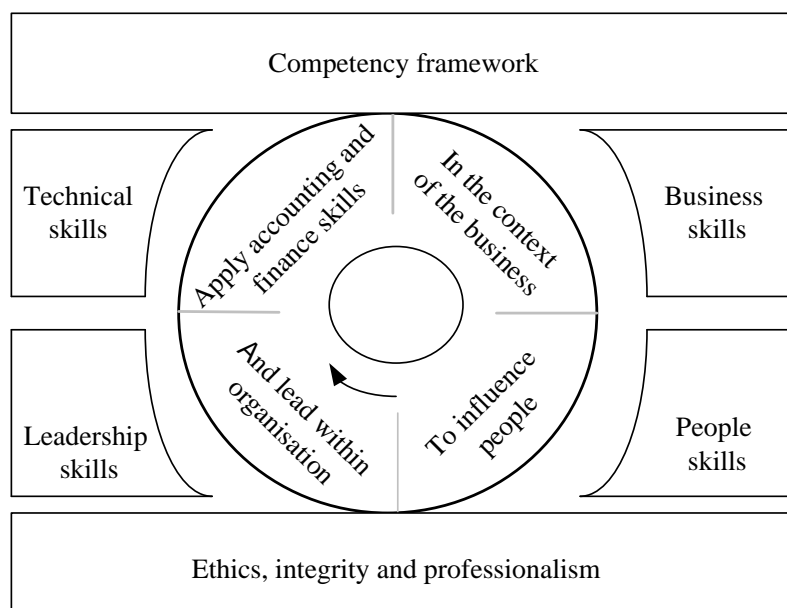


Fig. 6. The 2015 CGMA Competency Framework

Source:[13; p.5].

Financial and accounting professionals are expected to apply their knowledge and skills within the context of the organizations where they work. They should influence the decisions, actions and behaviors of their colleagues in and outside the organization and provide leadership at all levels of management. To do this, financial and accounting professionals need to master technical and business skills, as well as personal and leadership skills.

Regarding technical and business skills, these have been discussed in the previous sections of this paper. Personal skills include building empathy and good relationships with stakeholders. These skills are much less amenable to automation, unlike technical and business skills. Leadership skills concentrate on team building, coaching and mentoring, performance management, change management and the ability to motivate employees. Of all other skills, leadership skills are at least susceptible to automation. The competency framework in Figure 6 is based on the ethical behavior and integrity of employees, their objectivity and professionalism resulting from the continuous innovation of knowledge and skills. [13].

6 CONCLUSION

The future of financial function in the digital era is necessarily linked to the creation of a new vision. That new vision involves extending the mandate of the financial function. It can no longer be just an ordinary responsibility center in an organization, the success of which is measured by the amount of expenses required to operate it. Its focus should shift to creating innovative products for customers as well as values for the organization. Extending the mandate of a financial function involves coming out of decades of isolation within organizations, connecting with external stakeholders and building new relationships in a changing ecosystem.

Digital technologies are crucial to creating a new vision for the financial function of organizations. They encourage efficiency and the formation of "augmented intelligence", by combining technical possibilities of robotics and algorithms with empathy and creativity of financial experts. Organizations should keep digital technologies on the radar and be early adopters in the transformation phase of the financial function.

Digital technologies are also changing the organizational pattern of financial function. The traditional hierarchical triangle is increasingly giving way to a hexagonal organizational structure, with clearly shared roles and responsibilities. Such a structure will facilitate the integration of accounting and financial operations, on the one hand, with the production of management information, on the other. Finance will thus strengthen its status as a decision support and measuring the performance function of the organization.

Competence and mindset are of great importance for the sustainability of the vision of financial function in the digital era. The competencies that employees possess in the areas of technical, business, personal and leadership skills are particularly appreciated. Growth mindset takes precedence over a fixed mindset. Organizations expect financial professionals to use their competencies and mindsets within specific work environments. Above all, financial professionals need to be leaders of changes in the digital age.

Organizations cannot cope with the challenges of the digital age alone. Many players should be involved in this process, such as: economic policy makers, regulatory bodies, professional associations of accounting and financial experts, the academic public and others.

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THE ROLE AND THE IMPORTANCE OF EDUCATION AND WORKING ENGAGEMENT OF THE CONVICTS DURING THE EXECUTION OF THE SENTENCE: THE SITUATION AND CHALLENGES IN SERBIA

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ABSTRACT

In this work the role and importance of education, professional training and work during the execution of the prison sentence is pointed out, with the aim to highlight the fact that these activities can be important factors in achieving positive changes in behavior of convicts and reducing the risk of recidivism. Concerning this, special attention is given to problems in the realization of educational and working activities that occur in practice as well as challenges that these people face when trying to find a job after leaving prison. In the conclusion we pointed out the need for improvement of spatial, personnel and material conditions in penitentiary institutions, introducing innovative programs and training which can be very important for acquiring the skills required in the labor market and in particular to promote the need to reduce the stigma of society regarding former convicts, all this with the aim to show that persons deprived of their liberty have the right to education and work and that not only the persons deprived of their liberty, but the whole society as well can have the benefit from the exercise of these rights.

Keywords: education, professional training, labor, convicts, rehabilitation, Serbia

1 INTRODUCTION

In criminal law, sentence is a measure of protecting society from crime in order to prevent an offender from committing criminal offenses in the future. With penalties, offenders are deprived of or limited in certain rights, but only to the extent that it corresponds to the nature and content of a particular sentence, and in the execution of a sentence, their personality and human dignity must be respected. If we have in mind, that punishing is done not only to prevent from committing a crime again, but due to the fact that a criminal offense has been committed, and because the offender deserves it. Punishment as a repressive measure is necessary knowing how important function in society it has by protecting the most important human goods and suppressing crime as a generally dangerous social phenomenon. However, this does not mean that the penalty itself is the goal and that it is reduced to naked repression. Namely, it is often forgotten that even in prison is a human being, a man who, after the expiry of a prison sentence (except in exceptional cases), re-occupies his place in the world of free people [1]. On the one hand, retaliation is sought, and on the other hand, it is required that the same man changes himself in prison conditions. The above necessarily imposes the question of whether it is possible simultaneously to make a fair retaliation and achieve socially useful goals by punishment. The only goal that is certainly achieved when punishing is the isolation of the offender from crime, and fact that while being in prison, he cannot jeopardize society. Everything else is questionable.

Criminal sanctions represent the field of large, and often unrealistic expectations, and raise the question of the possible range of criminal penalties in the prevention of criminal behavior. If it is taken into account that the basic measure of the effectiveness of penalty is the recidivism rate, given that it shows how many convicted persons after the sentenced sentence is again convicted, it can be concluded that in this part there are no exaggerated reasons for optimism [2]. The rate of recidivism of the prison population in Serbia has been alarmingly high for decades. This points to the fact that the sentence of imprisonment itself is not sufficient to prevent from committing the crime again. Therefore, experts who deal with penology and criminology agree that not only the deprivation of liberty and the closure of perpetrators of criminal acts is necessary, but also that rehabilitation procedures, which mostly affect the reduction of relapse and the reintegration of prisoners into society, are necessary. It is about changing certain deviant behavior into positive behavior, ie changing those convicted habits and values that are considered to have led them to commit a criminal offense and their training for a socially acceptable way of life (for example, acquiring professional qualifications). Bearing in mind the above, we consider that education, vocational training and work represent a very important part of the prison system and that these activities have a powerful effect in achieving positive changes in the conduct of prisoners and the reduction of recidivism, or social reintegration of prisoners after their release from prison.

2 ROLE AND IMPORTANCE OF EDUCATION AND WORK ENGAGEMENT OF CONVICTS

The Law on the Execution of Criminal Sanctions [3] relates primarily to the prevention of recidivism and prescribes that the purpose of executing the sentence of imprisonment is that the convicted person in the execution of the sentence, by applying appropriate treatment programs, adopt socially acceptable values in order to facilitate his inclusion in the life after the execution and in order not to commit crimes in the future. It is therefore very important that the time spent by the individual in prison is used as one of the important segments of successful reintegration into society after the execution of the sentence and as one of the key factors in preventing the recidivism of convicts, especially if one takes into account that a large number of convicts are returnees. Therefore, there was a need to find a way of dealing with convicts which would contribute to the basic tendency - not committing crimes again. One of the attempts to achieve this aspiration is the introduction of education and working engagement of prisoners during the execution of the prison sentence

At first, the education of prisoners represented a need to be literate in order to be able to read the Bible and seek salvation. It was believed that the convict would thus be able to recognize his sins, seek forgiveness from God, and achieve salvation [4]. By the mid-1940s, the field of corrective education began to expand through a more comprehensive plan and program, including history, astronomy, geography, psychology and physical education. It has become a regular practice that certain prisoners are included in educational and professional programs as part of a prison sentence.

The basic goal of implementing educational programs in prison is acquiring basic knowledge, developing and improving working skills and habits of convicts, and obtaining professional qualifications. They are trained for certain occupations, which compensates for what was missed in earlier regular schooling [5]. Likewise, from education is expected to help prisoners with easier integration into the society, improves relationships and communication with people, increase employability, and in this way prevents committing new crimes. Prisoners who acquire education in the institution, especially faculty education, are more easily employed after leaving the institution, and the community is more willing to accept such persons, because they have done something useful during the execution of the sentence.

When it comes to our country, in the seventies and eighties of the 20th century, correctional institutions had educational centers - primary and secondary schools for adult prisoners, which were connected with the corresponding schools in the city center, and hundreds of prisoners were enrolled annually They finished primary and secondary education. Until the mid-eighties, about 30% of the prisoners were involved in some form of education. However, after that, interest in education in prisons is declining, and there is a growing suspicion of the power of education as a form of treatment in the resocialisation of prisoners, and there is a lack of interest in the administration of the institute for the organization of education [6].

Conversely, the work of prisoners was initially means of coercion and punishment, and it was linked to hard physical work. At the beginning of the 20th century the work became a method of treatment in the function of redeeming convicts. Namely, today the work of convicts is considered as one of the primary methods of re-education and the conditions for their involvement in life at large. Work during execution of a prison sentence positively influences the re-socialization of offenders, it is not just acquiring material resources, but helps with self-knowledge of the individual as well. In addition, it builds social relationships and gain knowledge and skills. Despite the fact, that it can not be said with certainty that there is a direct link between education in prison, employment and reduction of recidivism, it is undisputed that participation in any educational and work program within the prison is useful for the rehabilitation of convicted persons and the reduction of recidivism.

3 EDUCATION AND WORK ENGAGEMENT OF CONVICTS: SITUATION AND CHALLENGES IN SERBIA

Although education, training, qualifications, retraining and work, play an important role in the treatment of the enforcement of criminal sanctions, prison administrations and staff are faced with numerous problems and challenges in the implementation of these programs, because spatial, personnel and material conditions in prisons are unsatisfactory. First of all, we are referring to the problem of overpopulation of penitentiary institutions, the lack of material and spatial conditions, as well as insufficient number of qualified staff in the treatment and training service (compared to the number of convicted persons).

Education is one of the basic human rights and needs, promoted by the Constitution of the Republic of Serbia [7]. Article 71 states that everyone has the right to education. All citizens have, under equal conditions, access to higher education. The Law on the Execution of Criminal Sanctions in Article 122

prescribes that the convicted person has the right to primary and secondary education, which, according to general regulations, is organized at the institution, and the institution organizes other forms of education as well. Also, if the convict is being educated, the institution, according to its possibilities and within the program of treatment, provides appropriate conditions and time for learning. So, this right is prescribed, but practice shows that it is given insufficient attention. In order to achieve the desired goals by educating it must be carefully designed and tailored to the needs and abilities of convicts. This is due to the reason it is well known that education programs, as well as in general vocational training and work engagement, can not be equally effective for all convicts.

On the other hand, the data about the educational structure of the convicts we have at disposal indicate that there is a large number without any qualifications, meaning they only completed elementary school, incomplete primary school, or they are completely illiterate. From this we can conclude that it is necessary to organize literacy programs for illiterate convicts, which could also include literate convicts who would have the role of educators or assistants, which would certainly contribute to their sense of usefulness. The fact that a high percentage of prisoners with different educational needs is on the execution of a sentence indicates the necessity and importance of implementing educational content at all levels. Also, the educational process in prison must be adjusted to changing subcultural norms and behaviors, and this process should primarily affect social and moral values. Noting the importance of education in the re-socialization of prisoners, some authors well note that education is not the only way to recover and protect dignity in prison, but it is the most powerful. "It's a sign that what people do in jail has weight in the outside world" [8].

Still, there are bright examples in 2018 two male prisoners and one female, graduated from the faculty while serving their sentence. What is especially important for easier integration of these persons into society is the fact that on the diploma or acquired certificate is not stated that it was obtained in one of the institutions. This is very important if we bear in mind fact that conviction often represents an obstacle to finding employment after leaving the prison, and that persons who were in prison in society are often labeled or "marked" as a former prisoner or criminal, which worsens their position for social reintegration of these persons.

Besides, the lack of qualified staff in the treatment service from one side and too many prisoners, from the other side, we should point out to one more problem, which is the impunity of prisoners for inclusion in the educational process and other socialization programs. Namely, some believe that they are old and that education is needed for young people. Those convicted of short-term prison sentences consider that they do not have enough time to get involved in an educated process, and those convicted of long-term punishments emphasize that there is no reason to engage themselves in this process, precisely because of the length of their imprisonment and the fact that after leaving prison they will be too old and education will not mean anything to them [9]. Likewise, another factor influences the impunity of prisoners for participation in educational programs, and that is the lack of material gain that exists when they are included in work programs. This necessarily imposes the need to undertake activities that would increase the motivation of convicts. In light of the above, it is considered that the motivation of prisoners, the quality and efficiency of prison education and training can be improved in several ways: by increasing cooperation in the prison itself between different subjects; by increasing cooperation between prisons and local communities (with the aim of providing support for education and training to be implemented at a prison institution and possibly proceeding after the prisoners leave prison); innovative methods of learning, in which the change in unwanted attitudes towards adult education in prisons is not only a remedial opportunity for convicts, but also an opportunity for societies and institutions to correct their failures, which are largely responsible for committed crime [10].

Besides the education, work of the convict, is an integral part of the program of treatment. The work of the convicted person during the execution of the prison sentence is more closely regulated by the Ordinance on the work of the convicted person [11]. According to Article 2 of the Rulebook, the purpose of the work is to convince the convicts to gain, maintain and increase their working abilities, work habits and professional knowledge in order to have better conditions for successful reintegration. Article 9 of the relevant Rulebook stipulates that convicts may be employed in the following areas of work:

- 1) Production work - for industrial, agricultural and craft production;
- 2) Services - catering, trade, craft, intellectual and technical, and
- 3) Physical (other) occasional jobs.

The work of the convicted person does not count in the seniority. The convict has the right to a remuneration for work, which is paid once a month and amounts to at least 20% of the lowest labor cost in the Republic of Serbia, while 50% is increased for full time work. The prisoner is not able to dispose of his earnings, but he has 70% of the reimbursement and remuneration for his work, while the rest is left for savings that can be used after the expiration of the sentence, or earlier, if there is a need for that, and upon

approval of a director. At the same time, the director of the institution can reward the convict for his successful work. During their work convicts have safety at work in accordance with regulations governing occupational health and safety.

In article 23 of the Law on the Execution of Criminal Sanctions is stated the organization of a training and employment service, which is competent to train convicts for work, organize their work and perform other duties determined by law and in accordance with the program of treatment towards the convicted person. The training and employment service consists of instructors of production, who also appear as teachers in practical lessons. The work of the training and employment service is carried out within the scope of the law of the authorized activities and in accordance with the regulations governing the performance of each particular activity.

Nevertheless, generally speaking, the possibility of hiring prisoners is reduced to a minimum due to inadequate exploitation of production capacities, lack of working resources and poor working conditions. The technology of work is obsolete and the machines are mostly depreciated, and there is lack of material resources for procurement of raw materials and intermediate goods. Therefore there are few possibilities for training, additional qualification and retraining. This is worrying if it is known that most of the prison population consists of people with working age between 21 to 50. Also, most of the unemployed persons are placed in closed areas, which significantly limits their opportunities for promotion in treatment - the extension of rights and benefits.

Trainings organized in institutions are usually organized according to the available resources in each institution, so it often happens that they do not meet the real needs of the labor market. Although it can not be denied that machines and work technologies are better today than in the previous decades, they are still far from modern. In this regard, we assume that the convicts would be more motivated both for education and for work, if they were offered more modern and quality teaching content and work responsibilities. This is also indicated by the fact that convicts are very interested in attending a computer course. In any case, the complexity of the problem of professional training of prisoners suggests that its resolution can not be expected only from the staff of the institution, but requires the cooperation of competent ministries as well as the wider community.

The Constitution of the Republic of Serbia in Article 60 guarantees the right to work, in accordance with the law. Everyone has the right to work. All working positions, under equal conditions, are available to everyone. This means that a person who comes out of the penitentiary institution, ie he / she is serving a sanction to which he was convicted, he/she should be equal to all other citizens regarding the right to work and in terms of equal conditions for establishing a working relationship. However, the practice shows that the largest number of prisoners did not have a job before going to prison, which is why it is realistic to expect that conviction will be an additional obstacles in finding job after leaving the prison. Experiences of returnees show that even when they find employment, they lose it quickly once the employer finds out about conviction.

Former prisoners are not explicitly identified as a sensitive group in the labor market in the National Employment Strategy, although by wider interpretation of the provisions, individuals may be subject to one of the categories mentioned above. However, their systemic recognition as heavily employable categories of population is not strategically predicted [12]. In the records of the National Employment Service for the period from January 1 to September 30, 2016, a total of 802 persons declared themselves on the status of former convicts, of whom 57 were women. From total number of persons who have declared themselves as former convicts, 665 is actively seeking the job, 48 of them are women. It would therefore be useful to undertake activities that will stimulate employers to employ this category of persons through financial incentives and subsidies to employers, as they are given for the employment of other working groups that are not easily employed. For example, in the framework of active employment policy measures in Croatia, the measure of employment subsidies is also intended for persons who have decided to employ former convict. This measure is targeted at a private sector employer who employs a former convict by granting a certain employer amount of 50% of the annual gross salary of that person. Also, the model of social entrepreneurship can serve as an innovative way of finding long-term solutions for people who have been excluded from the labor market for a long time.

In conclusion, it is necessary to invest in prison education, and in individualized programs focused on job search preparation, which can also be organized during the serving of imprisonment, in cooperation with relevant institutions such as the National Employment Service. However, it is obvious that it is necessary to work on the education of the entire society in order to reduce the negative attitude towards this category of persons. According to Mrvić-Petrović: "The attempt to make the prisoner in prison conditions" well behaved "and professionally trained so that, after leaving the prison, he could" get involved in life in a fair manner ", is prevented by the unwillingness of the same society to give the convicted persons a chance by employing them "[13].

4 CONCLUSION

Modern perspectives about the purpose of punishment generally derive from a functional unity of general and special prevention in order to achieve the objectives of punishment. Based on the method of legal regulation of the sentence of deprivation of liberty, as well as the organization of the prison system as a whole, we can conclude what kind of penal policy a state has, and whether it is more directed towards a traditional retributive system, or a greater advantage of rehabilitation or resocialization of convicts. Bearing in mind that the characteristic of our legislation is to tighten by the law prescribed repression, we can say that it is more difficult to achieve general preventive effects. Yet, the preventive effect of prescribed penalties for certain crimes is certainly diminished by social circumstances or individual circumstances on the part of the perpetrator, such as poor living conditions, drug addiction, alcoholism, educational neglect, poor family circumstances, low levels of education, certain mental disorders, etc. Namely, no man is born as a criminal, but individuals become one in certain socio-political and economic conditions.

Bearing in mind the above, we should not forget that the problem of criminality and the problems that exist in the penitentiary system are the result of numerous factors, but also the fact that we do not deal with these problems sufficiently. A look at the situation in our penitentiary system shows the fact that our society deals primarily with the consequences of the crimes committed, while neglecting the conditions and causes that have led the individual into the prison, that our society still does not have adequate solutions and answers to many social problems and challenges, and that there is a need to deal with these issues more seriously in terms of changing the situation in society [14].

People who have grossly violated the rules of the society should certainly be punished, but in such a way, that at the same time they go through the process of education and resocialization and then be able to fully integrate themselves back into society [15]. Changing the behavior of persons deprived of their liberty requires changing the way in which treatment is carried out, including education, training, as well as to change or establish a relationship with prison staff in a way that will contribute to achieving the stated goals.

It should be kept in mind that no prisoner can be trained to live in the community if he does not have all the activities that he / she cannot do without while functioning in the community (educational, working, recreational and cultural, etc.). Investing in treatment programs and contents gives long-term positive effects both in terms of reduced rates of recidivism and the protection of society. And the staff themselves expresses the need for the treatment of special categories of prisoners (drug addicts, sexual offenders, etc.), which are on the rise. Therefore, further measures should be directed precisely to the elimination of the mentioned shortcomings of the prison system.

In order to achieve the purpose of serving the sentence, besides improving the treatment of convicted persons during their imprisonment, appropriate post-penal acceptance should be provided after the execution of the prison sentence, involving various social institutions, humanitarian organizations, associations and individuals who can help the integration of prisoners in the society. In particular, the high rate of recidivism of the convicted population is especially indicative of this need.

The right to education as well as the right to work are basic human rights and by the depriving individual of a his liberty, state has no right to deprive him of the above mentioned rights. On the other hand, although it is difficult to expect that citizens, faced with the concern for their social and economic rights and other problems, have an understanding of the rights and needs of persons deprived of their liberty, it is necessary to undertake activities to raise awareness among all citizens that even persons deprived of their freedom have the right to education and work and that not only prisoners, but also the whole society can benefit from the exercise of these rights.

As many problems as the prisoner encountered with when arriving at the execution of the sentence, the same number of problems he also encounters with at the return to freedom, with only difference that they are of different nature. For this reason, the process of re-socialization does not end with prison treatment, but on the contrary, through post-oppression, it continues. Often the fact that this is a person who once committed the crime can not be ignored, especially if it is a serious criminal offense. And that's quiet understandable. However, this leads to the fact that the convicted person is doomed to fail before even trying to integrate into society as a person who has served his sentence, changed his behavior and shows the desire to be useful to himself, his family and the community. Therefore, the society should appreciate the prisoner, first of all, on the basis of his behavior after the sentenced sentence. "Fact that it is not enough just to gain freedom, it is more important to become worthy of freedom", is one of the contemporary lessons and messages that Ivo Andric, wrote in Travnik's chronicle [16].

Having been conscious of the fact that ahead of us are many challenges and actions about both raising the awareness of the environment as well as the need to provide support and a second chance to these individuals, we have tried with this work to make this issue more visible and give our contribution to this goal.

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DETERMINATION OF THE RELATIVE IMPORTANCE OF FACTORS INFLUENCING THE E-LEARNING CONTENT QUALITY

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ABSTRACT

E-learning courses have become quite popular nowadays. A very important question is whether the content quality of such a course is on the satisfying level. In this paper, the relative importance of the factors that affect on the e-learning content quality is determined by using the Pivot Pairwise RElative Criteria Importance Assessment – PIPRECIA method. The determination of the influential factors is based on the literature examination and five experts are involved in the assessment process. The main goal is to emphasize the usability of the PIPRECIA method in the group decision-making environment as well as to points out the most important factors on which the quality of the e-learning content depends.

Keywords: MCDM, PIPRECIA method, group decision-making, e-learning, content, quality

1 INTRODUCTION

The development of information technologies and the Internet bring change in the way of learning. The previous determinant of learning considers that the student and teacher must be present and make direct contact. Information technologies have changed that and make learning more available to interested groups. Now, the student could start studying a lesson any time on his computer or smartphone. The traditional face-to-face learning has transformed in the new form that is conducted in the virtual classroom and completely fulfils the motto “anytime, anywhere and anyone” [1].

Besides e-learning become very attractive to the students, the success of some online course and effectiveness of learning does not depend only on the Internet and used technologies. This process is affected by many factors that determine the quality of an online course [2]. Assessment of the e-learning effectiveness is a very delicate issue that requires a careful analysis of every aspect important for consumers as well as for suppliers of such a service. Until now, many research studies have been conducted with a goal of systematization of the factors important for the e-learning effectiveness evaluation [3]. Course content represents one of the determinants that certainly have a serious impact on the effectiveness of e-learning.

Incorporating a course content in an e-learning format is a very complicated task and many factors influence it. Many standards are predicted for the content evaluation but every criterion is connected to a certain field [4]. Also, different authors proposed different sets of criteria for the assessment of the e-learning content quality as well as different evaluation methods [5]-[10]. The proposed models differentiate the learner's or developer's point of view. Also, in some cases, the quality of content represents one of the perspectives that determine the overall quality of an e-learning platform. But, in this case, we give full attention to the content quality because it represents the base for the educational process.

The primary goal of this paper is to determine the relative importance of the factors that affect the quality of e-learning content. The set of factors are determined based on the literature observation and five respondents are involved in the assessment procedure. PIPRECIA method proposed by Stanujkic et al. is used for the determination of the relative importance of the considered factors [11]. The paper is organized as follows. In Section 2, we explain the PIPRECIA method. Section 3 is inclusive of the case study which is followed by a Conclusion.

2 THE PIPRECIA METHOD

Stanujkic et al. introduced the PIPRECIA method [11] which relies on the previously proposed SWARA method [12]. This method retains all the good features of the SWARA method and the main improvement relative to it represents its convenience for applying in the group decision-making environment. The utilization of the proposed method in group decision-making could be demonstrated through the following series of steps.

Step 1. Form a group of respondents that will be included in the decision-making process.

Step 2. Select the evaluation criteria which pre-sorting in descending order is not mandatory as is the case with SWARA method.

Step 3. Each of the involved respondents determines the relative importance of the evaluation criteria S_j^r , starting from the second criterion, as follows:

$$s_j^r = \begin{cases} > 1 & \text{when } C_j \succ C_{j-1} \\ 1 & \text{when } C_j = C_{j-1} \\ < 1 & \text{when } C_j \prec C_{j-1} \end{cases}. \quad (1)$$

Step 4. The relative weight for each respondent is calculated by using the Eqs. (2)-(4), respectively as follows:

$$k_j^r = \begin{cases} 1 & j = 1 \\ 2 - s_j^r & j > 1 \end{cases}, \quad (2)$$

$$q_j^r = \begin{cases} 1 & j = 1 \\ \frac{q_{j-1}^r}{k_j^r} & j > 1 \end{cases}, \quad (3)$$

$$w_j^r = \frac{q_j^r}{\sum_{k=1}^n q_k^r}, \quad (4)$$

where k_j^r is coefficient, q_j^r denotes the recalculated weight and w_j^r represents the weight of the criterion j , respectively, defined according to the certain respondent r .

Step 5. The group relative weights of the evaluation criteria could be calculated in the following way:

$$w_j^* = \left(\prod_{r=1}^R w_j^r \right)^{1/R}, \quad (5)$$

$$W_j = \frac{w_j^*}{\sum_{j=1}^n w_j^*}, \quad (6)$$

where w_j^* is the geometric mean of the weights of the criterion j obtained by R respondents.

3 A CASE STUDY

The given set of factors and sub-factors that are submitted to further analysis are retrieved from the paper of Al-Alwani with certain modifications [13]. From the initial list of factors is omitted the factor “*Main criteria*” because it is concretely pointed to the Kingdom of Saudi Arabia. The proposed list of the evaluation factors and sub-factors are presented in Table 1.

Table 1. Evaluation factors and sub-factors

	Factors		Sub-factors
C ₁	Level of content	C ₁₁ C ₁₂ C ₁₃ C ₁₄ C ₁₅ C ₁₆ C ₁₇ C ₁₈ C ₁₉ C ₁₁₀ C ₁₁₁	Content is suitable for the grade level Content is appropriate to the characteristics of learners The content is relevant, appropriate and clear The content is arranged in a clear, logical and orderly manner Content is free of language and grammatical errors Content uses relevant examples and cases Content is covering technical details Content raises students' interest by linking what they learn to their environment and everyday life The relevance of goals and information Good definitions of technical terms Proper use of acronyms
C ₂	Presentation methods	C ₂₁ C ₂₂ C ₂₃ C ₂₄ C ₂₅ C ₂₆ C ₂₇ C ₂₈ C ₂₉ C ₂₁₀ C ₂₁₁	Simplicity and clarity of the used text Readability of the used font Appropriate format of paragraphing on screen Choice of media concerning content Possibility of the undoing of incorrect choices and entries Display of time required to view media Ease of navigation and control tools Availability of lists' information Clarity of the selection from the lists All embedded materials are easily accessible Utilization of links to external websites
C ₃	Teaching methods	C ₃₁ C ₃₂ C ₃₃ C ₃₄ C ₃₅ C ₃₆ C ₃₇ C ₃₈ C ₃₉ C ₃₁₀ C ₃₁₁	Appropriate teaching methods used Validity, accuracy, and modernization of information An appropriate level of controlling the target group Possibility to review of pre-displayed parts Possibility of optional access to information and ideas Clarity of amendment of incorrect choices when answering Possibility of offering appropriate entries Asked questions are answered appropriately Appropriate assessment of learner's level Assessment linked to the lesson's specific objectives Appropriate evaluation at the end of each stage
C ₄	User-friendly interface	C ₄₁ C ₄₂ C ₄₃ C ₄₄ C ₄₅ C ₄₆ C ₄₇ C ₄₈ C ₄₉ C ₄₁₀ C ₄₁₁ C ₄₁₂ C ₄₁₃	Availability of directions and instructions on the screen Ease of use of the home page Attractive view of information on the home page Harmoniously designed screens Stability of interfaces Direct return to the previously visited material Possibility of exit and return to the same location while taking a lesson Variety of assessment tools Possibility of requesting to display the correct answer or solution to the problem at hand More than one attempt allowed Simplicity and un-crowded display screen Accessibility by smartphones Interactive descriptions of all learning activities, including the learning objectives
C ₅	Technical information	C ₅₁ C ₅₂ C ₅₃ C ₅₄ C ₅₅ C ₅₆ C ₅₇ C ₅₈	Operating requirements clearly stated User-guide includes a list of available options Suitable to work with an operating system (Windows, Linux) Ease of installation Ease of un-installation Clarity of update time and time needed during the update process Availability of technical support or online help Information about limitations
C ₆	Multimedia control	C ₆₁ C ₆₂ C ₆₃ C ₆₄ C ₆₅ C ₆₆	Viewable audio-readings to help the learner to pronounce the technical terms Sound control Clarity of all images and graphs Control of audio or video clips, forward, backward and stop Adjustment with final display process Optimized size for multimedia contents

As Table 1 shows, six factors involve a significant number of sub-factors. By using Eqs. (1)-(4) the relative importance of the factors and sub-factors for each of five decision-makers (hereinafter referred to as DM) is determined. Fig. 1 represents the relative importance of factors for each DM.

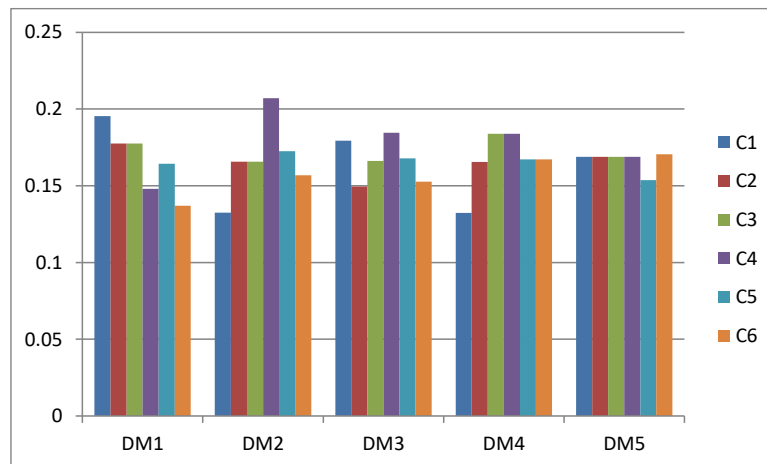


Fig. 1. Relative weights of the factors

According to the DM₁ the highest relative importance has the factor C₁ – *Level of content*. For the DM₂ the most important is factor C₄ – *User-friendly interface* as well as for DM₃. DM₄ gives the priority to the factors C₃ - *Teaching methods* and C₄ – *User-friendly interface*, while according to the DM₅ only factor C₅ - *Technical information* has slightly lower relative importance.

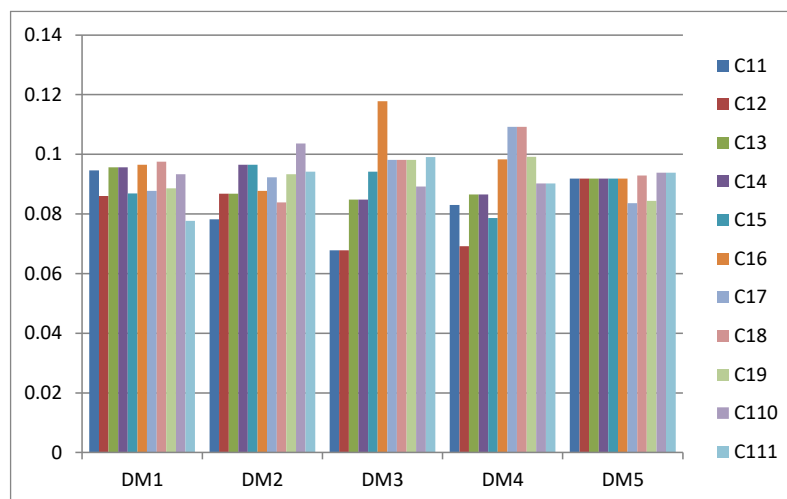


Fig. 2. Sub-factors from the group “Level of content”

Fig. 2 shows the estimation of the relative significance of the sub-factors from the group “*Level of content*”. As we can see, DM₁ and DM₅ give relatively equable importance to all sub-factors. DM₂ considered sub-factor C₁₁₀ – *Good definitions of technical terms* as most important, while the DM₃ gives the significant priority to the sub-factor C₁₆ - *Content uses relevant examples and cases*. According to the DM₄ sub-factors C₁₇ – *Content is covering technical details* and C₁₈ - *Content raises students’ interest by linking what they learn to their environment and everyday life* are equally important.

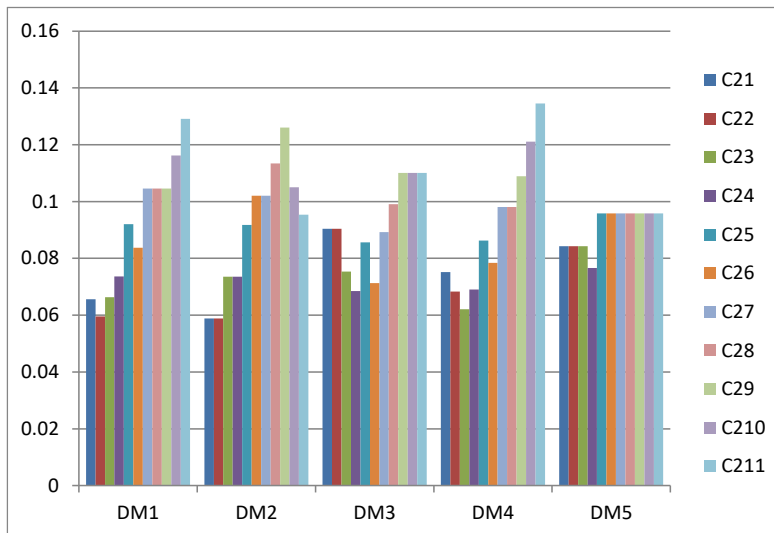


Fig. 3. Sub-factors from the group "Presentation methods"

The sub-factor from the group "Presentation methods" that has the greatest relative importance according to the DM₁ and DM₄ is sub-factor C₂₁₁ - Utilization of links to external websites. DM₂ gives the priority to the sub-factor C₂₉ - Clarity of the selection from the lists, while the DM₃ sees three sub-factors as most influential form this group and they are: C₂₉ - Clarity of the selection from the lists, C₂₁₀ - All embedded materials are easily accessible and C₂₁₁ - Utilization of links to external websites. DM₅ still gives the mainly equal importance to all considered sub-factors.

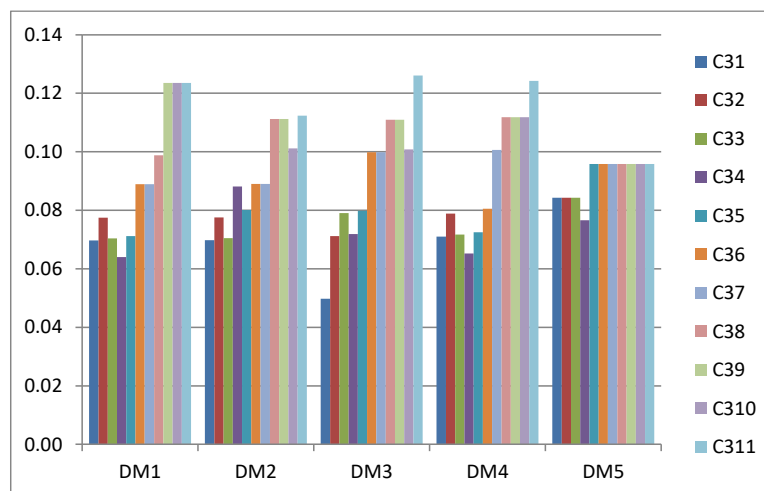


Fig. 4. Sub-factors from the group "Teaching methods"

In the case of the sub-factors from the group "Teaching methods", the DMs determine the sub-factor C₃₁₁ - Appropriate evaluation at the end of each stage as the most important. Besides, the sub-factors C₃₈ - Asked questions are answered appropriately, C₃₉ - Appropriate assessment of learner's level, C₃₁₀ - Assessment linked to the lesson's specific objectives step out as the most influential sub-factors from the considered group (Fig. 4).

Fig. 5 shows the results connected to the relative importance of the sub-factors from the group "User-friendly interface". According to the DM₁ the highest relative importance has the sub-factor C₄₁₂ - Accessibility by smartphones which is followed by sub-factors C₄₉ - Possibility of requesting to display the correct answer or solution to the problem at hand and C₄₁₀ - More than one attempt allowed. DM₂ gives priority to the sub-factor C₄₁₃ - Interactive descriptions of all learning activities, including the learning objectives, while the DM₃ considers the sub-factors C₄₁₀, C₄₁₁, and C₄₁₂ as the most influential. Sub-factor C₄₁₃ is the most important according to the DM₄. In the end, the DM₅ is moderate in his standpoint and literary divide the given sub-factors in the three groups where the sub-factors from C₄₉ to C₄₁₃ has relatively higher priority relative to the rest.

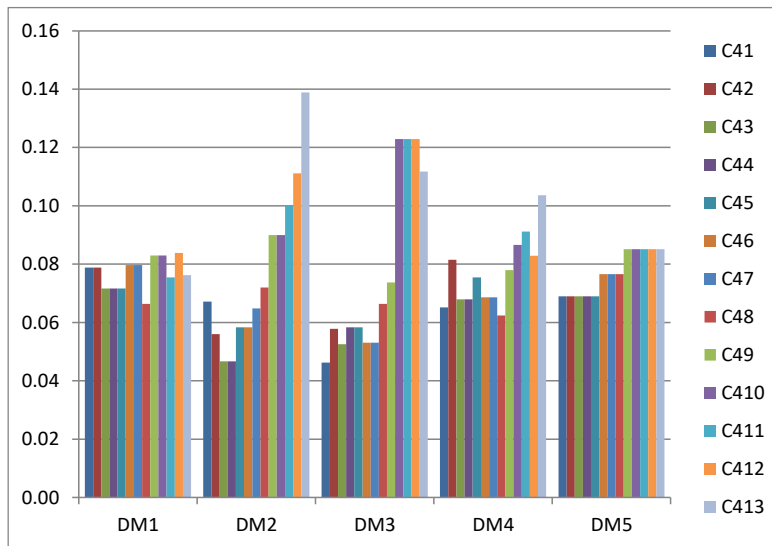


Fig. 5. Sub-factors from the group “User-friendly interface”

As in previous observations, in the case of the sub-factors from the group “Technical information”, DM₁ and DM₅ again have the least oscillations of the relative significance. DM₂, DM₃, and DM₄ consider the sub-factor C₅₃ - Suitable to work with an operating system (Windows, Linux), C₅₂ - User-guide includes a list of available options, C₅₇ - Availability of technical support or online help and C₅₈ - Information about limitations as the most influential, respectively (Fig. 6).

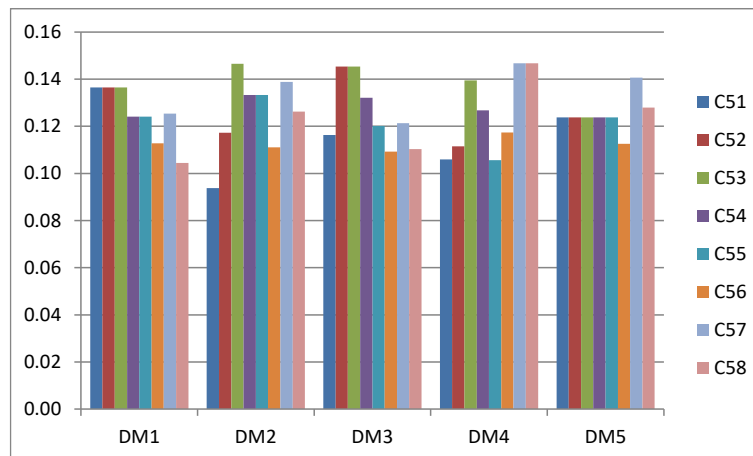


Fig. 6. Sub-factors from the group “Technical information”

Relative to the group “Multimedia control” the DMs mainly give the equal relative importance to all of them and from case to case each of the six sub-factors takes the first place (Fig. 7).

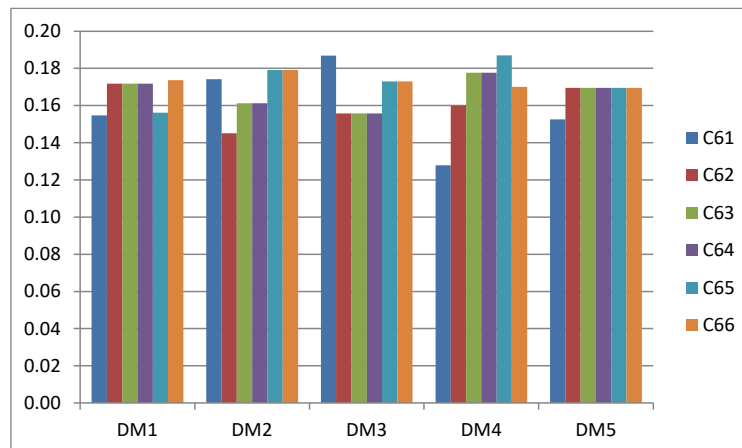


Fig. 7. Sub-factors from the group “Multimedia control”

Fig. 8 presents the global importance of the sub-factors determined by multiplying the local weights of the factors and sub-factors.

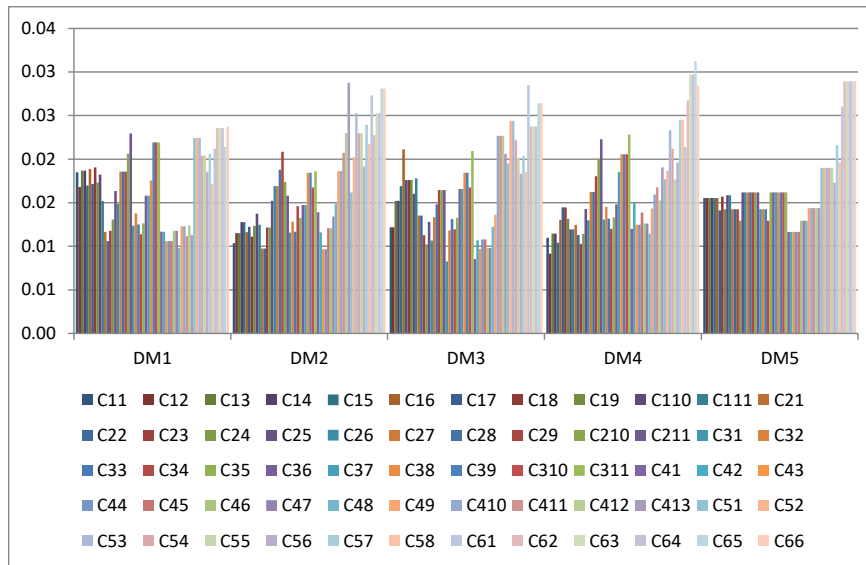


Fig. 8. Global importance of sub-factors for each DM

Finally, the overall global importance of the considered sub-factors is determined by using the Eqs. (5) and (6). The obtained results are presented in Fig. 9.

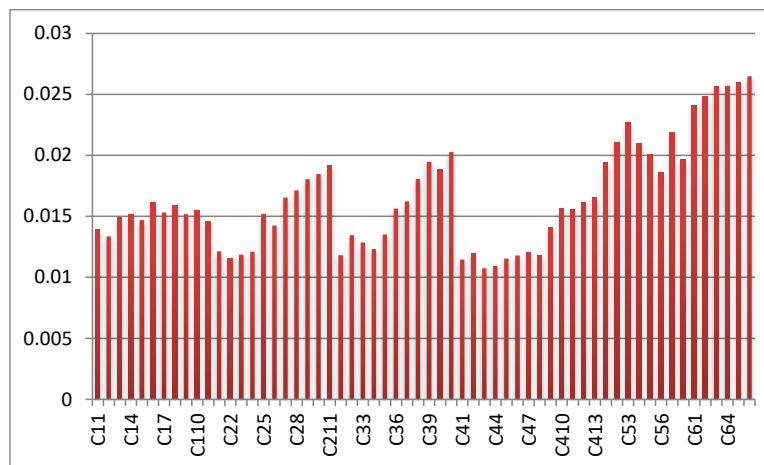


Fig. 9. Overall global importance of sub-factors

The obtained result shows that the highest relative importance has the sub-factors from the group “Multimedia control”. The reason for this kind of result could be the smallest number of sub-factors that were under assessment which results in higher weights. When we look at the gained results separately, for each group, the results are as follows. The most important sub-factor from the group “Level of content” is sub-factor C₁₆ - Content uses relevant examples and cases. The sub-factor C₂₁₁ - Utilization of links to external websites has the highest relative importance in the group “Presentation methods”, while in the group “Teaching methods” the most influential sub-factor is C₃₁₁ - Appropriate evaluation at the end of each stage. The sub-factor with the greatest relative importance from the group “User-friendly interface” is C₄₁₃ - Interactive descriptions of all learning activities, including the learning objectives and the most important sub-factor from the group “Technical information” is the sub-factor C₅₃ - Suitable to work with an operating system (Windows, Linux). At last, the sub-factor C₆₆ - Optimized size for multimedia contents is the most significant sub-factor from the group “Multimedia control”.

4 CONCLUSION

The main aim of this paper is to emphasize the importance of determining the key factors and sub-factors that influence the e-learning content quality. The list of factors, that are slightly adjusted, is adopted from the paper of Al-Alwani [13]. Five DMs were involved in the assessment procedure of the given list of factors and sub-factors which is performed by using PIPRECIA method. The crucial reason for applying the mentioned method relies on the fact that it is convenient for applying in the group decision-making environment. Besides, its procedure is very simple and understanding and obtained results are reliable and objective. The proposed method could be used for the content quality assessment from the learner's as well as from the developer's point of view.

The main deficiency of this paper reflects through neglecting of the uncertainty and vagueness. By introducing the fuzzy, grey or neutrosophic numbers this shortage will be overcome. Additionally, by involving the greater number of DMs, the results will be more realistic. Besides, by involving the students and teachers in the evaluation process the more precise knowledge about the main determinants of the e-learning content quality will be obtained.

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ENTREPRENEURSHIP EDUCATION AND MODERN TECHNOLOGY: THE ANALYSIS OF IT SUBJECTS REPRESENTATION IN THE ENTREPRENEURSHIP STUDY PROGRAMS IN THE REPUBLIC OF SERBIA

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ABSTRACT

It is often said that change is the basis of entrepreneurship, but also that entrepreneurship is the basis of change. Nowadays, the change is mainly connected to technology, and therefore the relationship between entrepreneurship and technology is extremely important. Information education observed through the application of modern technological solutions important for a number of aspects of human life along with entrepreneurial education, based on the young people training in the ability to adapt to the existing labor market characteristics in order to find a job sooner, or start their own business, represent the foundation for modern approach to education adjusted to the current social and economic trends. Introducing the subjects as well as departments directly or indirectly related to the information technologies and entrepreneurship in all levels of the educational system is important, but it is much more important to develop the entrepreneurial spirit itself. The aim of this paper is to point out the significance of entrepreneurial education (especially in the institutions of higher education) as well as the connections between information and communication technologies and entrepreneurship through the analysis of the presence of IT subjects in the entrepreneurship study programs in the Republic of Serbia.

Keywords: Entrepreneurship education, IT education, entrepreneurship, information and communication technologies (ICT), higher education.

1 INTRODUCTION

The official educational institutions are just one part of the total system of learning and knowledge acquisition. Informal education, and frequently neglected experience-based learning (based both on personal as well as other people's experiences) represent an important component in perceiving the completeness of the learning process – education in a wider sense. Modern education should be considered in two ways: (1) as permanent education, because one lives and learns throughout life; and (2) as all-present education, i. e. the education that is present everywhere.

The changes that have occurred in the previous decades are most frequently related to the Internet and similar technologies that entered all spheres of life gradually, one step at a time. Thus, the changes are not related to the technology alone because people accept the changes in the way they live and work through the acceptance of technology. Education is not only related to an individual, but to the complete society as well. "Education is not just acquiring knowledge for one profession, nor just preparing for life (by taking certain social rules), it is life itself" [1]. „Continuous (permanent) education implies education/learning throughout life. The term has two basic meanings: (1) it is a conception – a set of orientations, principles and goals of education; (2) it is a set of educational activities that are organized on the plan of human education throughout their lives.“ [1]

Within the contemporary form of education entrepreneurship can find its place in the form of so-called "entrepreneurial education". It is, therefore, the foundation of sustainable education directed towards the creation of sustainability society, in combination with modern information and communication technologies.

The subject of this paper is to determine the connection between entrepreneurship and modern information and communication technologies through the study programmes structure.

The aim of this paper is to determine the presence of subjects directly related to modern information and communication technologies in the study programmes structure directly related to entrepreneurship in the Republic of Serbia.

2 ENTREPRENEURIAL EDUCATION

Entrepreneurial education is directed to trainings for employment, but it is much more specific to say that it is training for self-employment and potentially, for the employment of other people. Entrepreneurs and entrepreneurship frequently “stand out” in the existing structure and fixed way of functioning, and therefore we cannot expect the definition of entrepreneurial education to have a strictly determined form. Maybe it will be the most exact to consider entrepreneurial education simply as “the education for life”. Therefore, “the mistakes in the policy of education result in delayed but more difficult consequences completely visible in the labor market in the form of imbalance between supply and demand in certain occupations, only to be manifested finally in general economic” [2] but social delay as well.

An entrepreneur is the key result of the entrepreneurial education, and, in a wider sense, it can be: (1) an individual, (2) an organization or (3) a society. An entrepreneur is also: (1) a natural entity performing an activity as an entrepreneur, but also (2) all other natural or legal entities with the activities based on the innovative and creative way of doing business. Entrepreneurs are not only (1) people who have just started a business venture, but also (2) people who function on the principles of the entrepreneurial way of doing business, independently of how long they exist in the market. Entrepreneurs can also be considered as (1) people who are capable of taking active part in company “life” working for someone else, (2) people who are capable of starting their own business by themselves, and (3) people who are prepared to “change the world” with their ideas and innovations.

There is often a question of whether an entrepreneur is born or made, and the answer is very flexible, as entrepreneurship itself. Lifestyle, attitude, tendency towards activism rather than passivity, tendency to innovativity and flexibility, risk assessment and acceptance are just some of the characteristics of potentially successful entrepreneur. They teach how to do business with success, but mainly how to assess your knowledge appropriately and become confident about it, about your abilities, and above all, to gain self-confidence.

3 THE IMPORTANCE OF ICT IN ENTREPRENEURIAL ACTIVITY

The orientation towards entrepreneurial education is simultaneously accompanied by increasing orientation to computer education. This link is easy to understand, especially if we consider that entrepreneurship is based on changes, and a lot of inventions and innovations as their results are linked to technology. Technology is changing and improving rapidly, in a radical way. Many companies, sectors, even entire national economies cannot fully absorb this speed; in the course of time, it leads to their economic lag. The only people by nature willing to accept non-standard and discontinuous market movements are entrepreneurs. The changes in technology can only be followed by entrepreneurial principle-based business, capable of offering an appropriate response and taking advantage of new opportunities provided by the changes. Therefore, entrepreneurs follow, but they also create ICT.

The role of modern ICT in entrepreneurship is very important, as in any other field. In the first place, it is manifested through:

- The importance of entrepreneur’s education (in formal as well as other forms of learning) – as (1) a strong tool for simpler explanation, and therefore better student understanding of the working topic (virtual reality, business modeling, audio and visual material, etc), but also through (2) increasingly better training for the usage of these technologies;
- The importance in entrepreneur’s business – (1) starting a business in ICT field – so-called technological entrepreneurship, (2) starting a business in online field – online entrepreneurship or (3) improving the existing business (for example, introducing new technologies into business activities, easier “networking” with other companies and individuals, etc).

One of the examples of the potential results of the links between entrepreneurial education and modern technologies is online freelancing, which [3] considers as “entrepreneurship and modern information technologies integration”.

On the basis of the research conducted on the sample of the student population in Serbia [4] and [5], there is the information that a half of the respondents can see the need for formal education in entrepreneurship. According to this, [6] state that “opposite to the European experience, the prime sources of technology based entrepreneurship in Serbia are research universities, rather than large companies”.

On the other hand, [7] “identified a strong positive relation between non-formal technology enhanced learning (TEL) and the entrepreneurial success ($r = .548, p < .01$)”, which is higher correlation than in “higher education ($r = .379, p < .01$)” [7] and “formal education provided by non-university institutions: ($r = .439, p < .01$)” [7] with entrepreneurial success surveying graduates from different universities in Serbia aged 25-35, registered as entrepreneurs at the Agency for Business Registers of the Republic of Serbia [7].

The attitude of the students in Serbia towards e-learning and distance learning (as still not largely accepted learning model) is best described by [8], [4] and [5] in the research where about 90% of the student respondents stated that they believe distance learning can be a good option for future young entrepreneurs, most of them would like attend a distance learning program, while according to [4] and [5] almost a half of them (48%) gives most importance to flexibility in studying in the choice of the program. According to [4], most of the student respondents do not know whether the application of “the Agent-based Intelligent System (ABIS)” could improve e-learning in Serbia in the field of entrepreneurial education.

[9] state that “the analysis of studying Entrepreneurship as an academic discipline in Serbia points to the conclusion that these studies are most developed by far within technical universities”. “The difference is particularly noticeable between technical universities and those in the field of economy and management, in favor of the technical ones” [9]. It shows an increasing importance of connecting technology, entrepreneurship and education in Serbia.

4 ENTREPRENEURSHIP IN HIGHER EDUCATION

In the Strategy for Education Development in Serbia 2020, [10] state entrepreneurship as one of the basis for the strategy formulation (“further development of the production system in the Republic of Serbia should be based, with increasing speed, on knowledge, entrepreneurship”).

Through the analysis of the Strategy on Scientific and Technological Development of the Republic of Serbia for the period 2016 – 2020 – research for innovations [11], entrepreneurship appears only three times as a term: (1) the connection with the Strategy for the Support to Development of small and medium-sized enterprises, entrepreneurship and competitiveness for the period 2015 – 2020; (2) within the incentives for encouraging the establishment of the companies based on the scientific research (spin-off) as a measure of achieving the aim of stronger connections between science, economy and society in order to encourage innovation – “incentives for these companies while they are looking for further forms of investments and development capital are advanced forms of support in technology transfer, innovative entrepreneurship and applied research and development”; (3) within “the system of management in the science and innovation system which is not effective enough, and the coordination between the relevant institutions and various interested parties is poor” as one of the key problems in the form of the Ministry work (according to the Law on Ministries) “...encouragement of techno-entrepreneurship, knowledge and technology transfer in the economy as well as innovation system improvement in the Republic of Serbia”.

[12] emphasize that “vocational schools at all levels of education (both secondary and higher education) as a primary aim, i. e. result, should have the acquisition of practical and functional knowledge and skills”, comparing the structure of unemployment with the structure of enrolment at secondary and high schools conclude that “the system of vocational secondary and higher education is not harmonized sufficiently with the requirements of the economy and demand in labor force market. It means that the above mentioned educational subsystems should be changed as soon as possible” [12].

The existence of entrepreneurship as a subject in the institutions of higher education is more than desirable, but it is more important to present the entrepreneurial way of thinking and action as an interdisciplinary competence in order to realize its existence and importance in various areas of economy and society. An educational institution should also promote entrepreneurship by its example. Only in case when all the employees at an institution of higher education, i. e. the organization as a unity leaves an impression of entrepreneurial spirit can students feel that the entrepreneurial behavior is not just a theoretical construction possibly applicable in the economy alone, but the key flow pervading all aspects of life, leading towards general progress and continuous development.

The devotion of the institutions of higher education to entrepreneurial spirit creation and development among students and potentially, other people they come in contact with, can be considered through several elements:

- The presence of entrepreneurship in other subjects in study programs (interdisciplinary competence),
- The existence of a separate subject directly related to entrepreneurship,
- Students' involvement in work and life of an institution of higher education through more or less participation in decision-making,
- The organization of additional (extra curricular) activities encouraging entrepreneurial actions in practice,
- The concept of entrepreneurial institution of higher education (including all the above mentioned) – willingness to change continuously and use innovations in work according to modern needs of

the market; willingness to change oneself as the basis for the change in others (for example, students, the sector of economy, society, etc).

On the basis of references and general postulates the higher education institutions are founded on in the region, [13] gave a definition of the entrepreneurial university model (Figure 1).

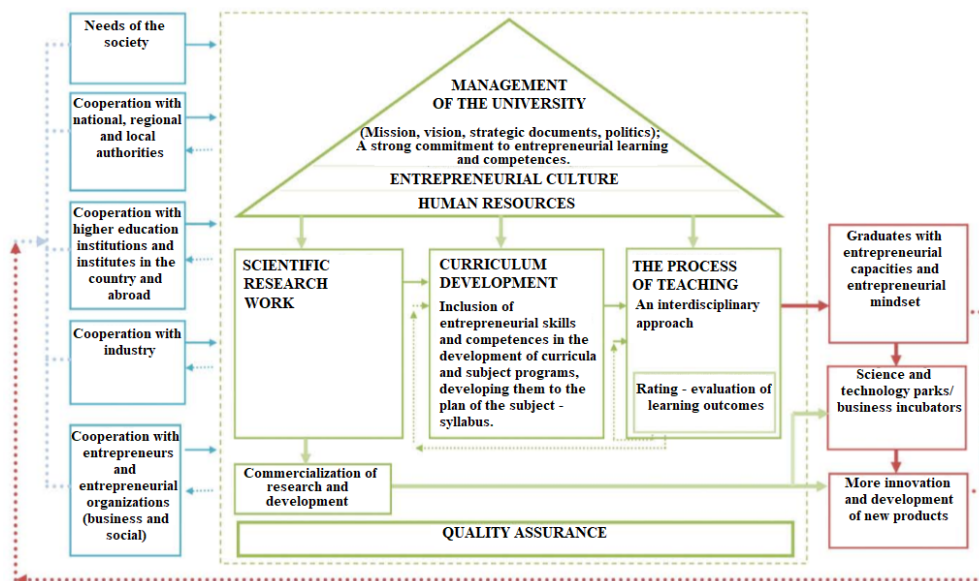


Fig. 1. Entrepreneurial University Processing model

Source: [13]

When we speak about the entrepreneurial university concept, it is necessary to establish what influences its success. The research [14] can serve as the solution to this issue, where the influence of four factors is analyzed: (1) entrepreneurship in leadership and governance, (2) institutional capacity for entrepreneurship, (3) entrepreneurship in teaching and research and (4) university-business cooperation) on entrepreneurial success. The results show that “the relationship between dependent and independent variables is statistically significant in all the cases”, but the relation ($>0,5$) is especially important, present between “institutional capacity and entrepreneurial success (0.639)”, entrepreneurship in teaching and research and entrepreneurial success (0.619) and leadership and governance and entrepreneurial success (0.516) [14]. The importance of the links between “the university, business sector and government institutions” (“Triple Helix Model”), and further development based on it is emphasized by [15], speaking of the possibilities for the existence of “entrepreneurial university” in Serbia.

At the institutions of higher education, the students should acquire knowledge in the fields that can be useful for starting their own business, but mainly they should adopt the entrepreneurial way of thinking. Students and young people in general have positive attitude towards starting their own business can be seen in [16] and [17]. [8], [4] and [5] confirm that most of the young (students) in Serbia intend to run (that is, interested in starting) their own business (as soon as they graduate).

The fact that future, young entrepreneurs lack a lot of knowledge (foreign languages in the first place, followed by professional knowledge related to management, economy, marketing, finance, accounting, etc, as well as computer literacy for a certain number of them), but also general absence of ideas and indifference – all related to entrepreneurial education in a wider sense, can be observed in [16] and [17], while the importance of education is additionally emphasized in the fact that a lot of students see the education as one of the main ways for the government to encourage the young to start their own business. The aforementioned is also confirmed in the research on entrepreneurial literacy among management and engineering students in Serbia [18], which proves that, generally considered, the best evaluated entrepreneurial literacy variable is learning orientation (Likert Scale 4.41) [18]. The analysis of the influence of five key personality traits (extroversion, agreeableness, conscientiousness, neuroticism, openness to experience) on entrepreneurial potential and individual entrepreneurial orientation of the students in Serbia, [19] show that openness to experience is best ranked, also possibly considered as a form of education (informal).

5 THE DESCRIPTION OF THE ANALYSIS OF IT SUBJECTS REPRESENTATION IN THE ENTREPRENEURSHIP STUDY PROGRAMS IN THE REPUBLIC OF SERBIA

The analysis of the study programs in the Republic of Serbia conducted on the 25th February 2019. The steps in the analysis are:

- Establish study programs and their number directly related to entrepreneurship and classify them according to the type of studies (academic: undergraduate – 180 or 240 ECTS, master 60 or 120 ECTS, integrated, specialist, PhD studies; vocational: undergraduate, specialist, master) as well as the scientific field they belong to originally;
- Establish the presence of the subjects directly linked to IT and ICT in the structure of the study programs, and establish their presence according to the type of studies and science field they belong to originally.

Nowadays, a lot of the study programs are interdisciplinary, multidisciplinary and transdisciplinary, just as the subjects, in relation to the field of entrepreneurship and modern technologies. On the other hand, it is still necessary to indicate potential shortcomings in the conducted analysis: (1) we do not analyze all study programs close to entrepreneurship, only those directly related to it by title, and (2) we do not enter detailed analysis of the contents of each subject in the study program curriculum, only the links to IT and ICT established on the basis of its title.

6 THE RESULTS OF THE ANALYSIS OF THE IT SUBJECTS REPRESENTATION IN THE ENTREPRENEURSHIP STUDY PROGRAMS IN THE REPUBLIC OF SERBIA

On the basis of the search [20], it is established that there are three educational institutions with the word “entrepreneurship” in their names (one of those without the property of a legal entity). When we speak about the number of study programs directly related to entrepreneurship, currently in use (with accreditation and enrolment in 2018/2019 academic year), there are 12, among them:

- 7 academic (58.33%) and 5 vocational (41.67%);
- 9 undergraduate studies (75%) and 3 master studies (25.00%);
- 10 classic studies (83.33%) and 2 distance learning (16.67%);
- 10 humanities and social sciences (83.33%) and technical-technological (16.67%) scientific field.

It is clear, from the above mentioned data, that there is no program of integrated, specialist and PhD studies in the Republic of Serbia related to entrepreneurship. Entrepreneurship is, therefore, more present in classical studies in the field of humanities and social sciences, in undergraduate studies, at academic level.

The representation of the subjects linked to the information and communication technologies in entrepreneurship study programs in the Republic of Serbia is presented in table 1.

Table 1. The representation of the subjects linked to the information and communication technologies in entrepreneurship study programs in the Republic of Serbia

		Number	Percentage	Average number*	Average number**
Type of studies	Academic	5	71.43%	3	4
	Vocational	4	80.00%	2	2
Level of studies	Undergraduate	8	88.89%	3	3
	Master	1	33.33%	0	1
Scientific field	Humanities and social studies	8	80.00%	2	3
	Technical-technological sciences	1	50.00%	4	7
Manner of studies	Classical studies	8	80.00%	2	3
	Distance learning	1	50.00%	2	3
TOTAL		9	75.00%	2	3

Note: *average number (round to full number) of subjects per total number of study programs; **average number (round to full number) of subjects per study programs with these subjects.

The source: the authors' research

The analysis of the data in table 1 leads to the conclusion that the subjects related to IT and ICT are present in a large majority in all entrepreneurship studies regardless of their type (a little more in vocational studies (80.00%) compared to academic (71.43%), in undergraduate studies (maximum per absolute number and percentage); convincingly better than a third of master studies – the largest difference 55.56%) more present in the field of humanities and social studies (maximum per absolute number 80.00%, a half in technical-technological field of studies) and classical type of studies (maximum per absolute number; 80.00%, a half in distance learning). A surprising fact is low presence in master studies (minimum per absolute number and percentage), but even more only a half show at least one subject from this field in technical-technological sciences (minimum per absolute number) which is nowadays a source of a great number of innovations and entrepreneurial ventures, directly related to IT and ICT, as well as in distance learning based on the usage of ICT in the educational process and thus suitable for entrepreneurial education.

Considering the average number of subjects related to IT and ICT per study program, the above stated facts confirm only the level of studies – undergraduate studies showing a strong advantage. Academic studies show a higher percentage in the number of subjects, as well as the studies in technical-technological field, while the situation in the manner of studying (classical and distance learning) is equal. We should also point out that the largest average number of subjects linked with IT and ICT in the total number of study programs and the number of study programs with the same subjects is recorded in the field of technical-technological sciences, and the number is smallest in master studies. The biggest difference is present in favor of undergraduate studies (3; if we consider all study programs), i. e. in favor of studies in technical-technological field (4; if we consider only study programs with the subjects included in the analysis).

Finally, it is important to emphasize that considering all the study programs included in the analysis, a strong majority has at least one of the subjects directly related to IT and ICT (75.00%), whereas their average number is 2 (all programs), i. e. 3 (the programs with a subject in IT and ICT field).

7 CONCLUSION

The presence of the subjects directly related to the information and communication technologies is recorded in a large number of entrepreneurship study programs, primarily in undergraduate studies, humanities and social sciences, classical type of studies. On the other hand, when it comes to the average number of subjects related to information and communication technologies, the advantage is present in undergraduate studies, in academic studies, in the field of technical-technological sciences. Regardless of the aspect we consider them from, undergraduate studies are dominant in comparison to master studies (as well as PhD studies in the field of entrepreneurship, which are non-existent) when we speak of the study programs with ICT subjects and their average number per their undergraduate studies of entrepreneurship. Studies in the field of technical-technological sciences, although not many, show a much larger average number of subjects per number of study programs with these subjects.

The links between entrepreneurship and modern information and communication technologies will definitely be the foundation for the future economic, scientific and above all, technological as well as general social progress. It is inevitable, and only a matter of whether the formal educational system is prepared to offer support to these tendencies.

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TECHNOLOGIES IN THE SYSTEM OF ELECTRONIC AND DISTANCE LEARNING - THE NEW EDUCATIONAL PARADIGM FOR THE 21ST CENTURY

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ABSTRACT

The introduction of Internet-based technologies into the educational process made distance learning one of the most accessible and popular forms of knowledge and skills acquisition. Due to the advantages of modern communication, the distance and time limitations of the classical education form are no longer relevant. World Wide Web is a unique virtual environment, which is unlimited in its scope and intensity of data, ideas and knowledge exchange. This article attempts to present some peculiarities of academic virtual communication, the manifestation of communication at universities, using the capabilities of new technologies.

Keywords: e-learning, distance learning, training information systems, digital technologies, internet, world wide web, academic virtual communication

1 INTRODUCTION

The modernization of higher education requires implementation of computer technologies and improvement of the digital technologies already used. The Information Revolution has influenced all areas of human life and activity, including higher education [1]. The issues related to the digitization of the educational process are of great importance, as traditional teaching methods are becoming more limited in terms of opportunities to reach a wider audience. The e-based teaching methods allow users to work with practically unlimited data resources and to create a massive amount of learning literature belonging to a new generation - electronic textbooks and virtual libraries. The use of state-of-the-art technologies makes it possible to abridge the distance in the process of communication between students and teachers and to create new methods for conducting academic lectures-consultations.

New generation teaching books allow the use of new information technologies in teaching and provide students with access to educational resources at any time and place. The high efficiency of applying computer technology in training gives a significant advantage of distance learning over the classical form of higher education.

2 GENERAL CHARACTERISTICS OF DISTANCE LEARNING

Distance learning is one of the forms of acquiring higher education degrees, along with the regular and non-formal forms. In recent years, it has become an object of greater interest due to the possibilities to use modern tools, methodologies and forms of teaching based on modern computer and internet technologies.

At the core of the educational process is the intensive individual work of students, who are given the opportunity to choose the most convenient time and place for learning. The possibility to manage the personal time and the freedom to draw up an individual plan is one of the greatest benefits of distance learning over the classical regular form.

In the distance form, the contact with the lecturer is usually carried out by using different communication tools, i.e. from email correspondence to online conferencing. Modern distance learning is an asynchronous, interactive process where interaction between individuals and the contact with the learning content is carried out by technical means. The spatial layout of the participants in the process is irrelevant to its conduct. The training is based on a specially developed pedagogical system whose elements, i.e. teaching material content, aims, teaching methods, training organization, access to educational content, etc., depend on the information and technical equipment.

From an economic point of view, distance learning offers the greatest advantage in the higher education system. Factors such as poverty, isolation, geographical distance and transport or accommodation costs, an objective failure to attend classes because of physical disadvantages or employment, are overcome

thanks to the natural processes of computerization and the spreading of high tech equipment into the public life and, hence, in education. Distance education is increasingly being promoted as a long-term, integrated, and learner-centered form of learning.

Distance learning is a complex system that is able to offer educational services to a wide audience. The implementation of specialized computer communication and educational environment enables the students from the country of where the university is located and foreign students to enroll in the courses[2].

The information resources built by higher education institutions offering distance learning is a complex data exchange system, guaranteed by organizational, program and methodological support, directed to the educational needs and opportunities of the students. The integration of high tech equipment into the educational process makes distance learning one of the most appropriate forms of continuous training and qualification enhancement. The modern organization of the educational process guarantees students greater autonomy and individual choice of their learning time and method. The most important feature is the spatial distance between the teacher and the audience, as well as the possibility to carry out the dialogue between the parties online or asynchronously, using the modern means of communication.

3 DISTANCE LEARNING SPECIFICS

Distance learning is distinguished by its flexibility, as training can be done asynchronously in the form of lectures, seminars and exercises. Each learner can determine the time and intensity of his/her activities necessary to acquire the knowledge in a given specialty. The distance learning system is based on the modular principle where each discipline is designed to cover as fully as possible the subject area in the most accessible way possible. This allows to attend various training courses and to form a curriculum that meets the individual expectations or the general needs of the group. Distance learning can be conducted in parallel with the trainee's employment without the necessity to interrupt work or study. The distance to the university is not an obstacle to the efficiency of the educational process.

An important advantage, guaranteed by modern technical means, is asynchrony, i.e. the contact between a lecturer and a student can be carried out independently in time, since the direct real-time contact of the participants in the process is not necessary. The technologies allow the communication to take place at a convenient time and rhythm for each of the participants.

Distance learning allows for mass participation. There is no limit to the number of students who can be taught simultaneously in a given course. There is also unlimited access to the provided learning sources, such as the various computer databases, virtual libraries and electronic textbooks. Students have at their disposal a variety of resources and opportunities for contacts with lecturers, administrators or other students[3].

Last but not least, the financial factor defining distance learning as a popular modern alternative to the traditional formal form of higher education should also be mentioned. The economic efficiency is probably one of the strongest arguments in choosing the distance form, along with the intensive use of modern technical means, the concentrated and unified content of the teaching material and the orientation towards an unlimited wide range of learners.

4 WORLD WIDE WEB IN DISTANCE LEARNING

The Internet provides an extremely wide range of opportunities for conducting an efficient distance learning process. The World Wide Web is the environment that provides the broadest and most reliable opportunities for communication, organization and distance learning. The best use has been made of the World Wide Web (WWW) as a hypertext-based system. This is one of the most flexible tools, as every query on the web can give a description of each item in a random volume through an unlimited number of linked documents, such as text, sound, graphics, video, etc. The hyperlink provides greater scope of possibilities as regards the universal interface, since each element, i.e. article, text, may contain links to other elements. For instance, in the virtual environment of a distance learning course, this means a transfer between different learning contents, discussions and hyperlinks.

The above-mentioned technical advantages of the World Wide Web system allow the creation of a wide range of data of educational content accessible in the Internet, interactive textbooks and scientific materials, as well as sitting for exams and electronic tests. The Internet environment allows to combine text, graphics, audio and video materials, while the use of Java and Javascript allows to create Internet applications that address the need for updating and software. This ensures the smooth operation of the application on different platforms without the need for corrections and source code changes. The WWW

system provides practically unlimited content creation possibilities. The documents placed on a page can be of any type, i.e. graphics, animations, text, video, audio, presentations, etc., which provides an extraordinary advantage of choosing the appropriate format for presenting the course material.

4.1 Organizational and technical models

The electronic media used in the distance learning model can be divided into the following categories, depending on their complexity and information transfer capabilities:

The single media model is characterized by simplicity, as only one means of communication and, respectively, a channel for transmitting information (eg video tutorials, audio seminars) is used. In this model the bilateral communication is generally absent.

The multimedia model includes the use of various training tools, i.e. printed learning materials, audio and video recordings, computer programs. In this way of teaching unilateral communication dominates, i.e. it is directed from a lecturer to a student. The multimedia approach does not exclude eye-to-eye contact, such as teacher consultations, practical seminars, and exams.

The hypermedia model of distance learning is based on Internet-based technologies that are built thanks to the capabilities created by modern computer communication tools and the World Wide Web (WWW). Hypermedial links are characterized by the real-time use of various modern communication media, creating a virtual environment of intense social exchange. Such means are the following: e-mail, videoconferencing, internet telephony, digital databases, etc. The future development of distance learning is directly related to the learning and effective implementation of this model in practice.

The optimal model of distance learning represents an integrated learning environment that includes diverse technical, organizational-methodological, pedagogical and academic components. When evaluating the different elements of the educational process, one should not override the others. The implementation of technical achievements in education only makes sense when considering organizational and pedagogical training requirements. On the other hand, the importance of information technologies in offering qualitatively new learning opportunities should not be underestimated. This innovative methodological framework is regarded as an invaluable tool for boosting the acquisition of knowledge and skills in various fields of study, e. g. teaching English as a foreign language[4,5]. The objectives of the electronic distance learning system are to increase the quality and accessibility of educational services by combining teaching and research with modern information technologies.

The use of modern communication technologies determines the advantages of modern distance learning, given the new capabilities, advanced features and educational services offered to students. This allows to create an extremely flexible system of education which, on the one hand, meets the requirements of all segments of the labor market and, on the other, allows for individual timetables and training that are independent of time and space frameworks[6]. This system allows classes to take place in two modes:

Online - synchronous, and therefore scheduled, lectures, seminars, exams; at some point, learners register on the site to take part in the session. The lecturer has the opportunity to communicate with the the students in real time, using audio-visual applications or a chat. He/she answers the questions asked in real time, synchronously, i.e. without delay. Conducting online sessions involves meeting certain technical requirements and reliable communication channels.

Offline - asynchronous sessions do not require any organized participation. Students enter the site at a convenient time and receive access to pre-prepared materials, i.e. electronic literature, presentations, video clips, tests, etc. The offline mode also allows questions to be addressed to the lecturer in a forum or by e-mail, while he/she answers asynchronously, i.e. with a delay.

The technologies used today in distance learning can be divided into three main categories:

- analogue (non-interactive), e.g. printed materials, audio and video media;
- electronic (interactive) means, e.g. multimedia tools, electronic textbooks, computer tests;
- real-time communication, e.g. videoconferencing, synchronous exchange of information in the online environment;

The integration of the modern means of communication and access to information in the educational activity create qualitatively new conditions and reveal new opportunities for the distance learning system.[7] The main requirements for the provision of distance learning are technical accessibility, adequate development of the telecommunication infrastructure and the information channels used[8].

5 ACADEMIC VIRTUAL COMMUNICATION

Let us introduce here the term *academic communication* that we think may include writing, reading, listening, watching, speaking, and presenting. Still the term *virtual academic communication* has not been finalized, rather we may talk about searching for a term to name the dynamic processes in higher education and the gradual updating of the categorical-conceptual apparatus, implying knowledge from different scientific fields and application of interdisciplinary approach when defining it. University lecturers actively use e-mail when conducting academic communication with students, both in full-time, distance learning or e-learning courses.

The students enrolled in courses and majors use joint e-mail addresses, with personal university e-mail addresses and mail. This can be assessed as a positive phenomenon and a tendency, since the training is optimized in an administration - students - lecturers direction. It is possible, albeit with some conditionality, to say that these joint electronic mailboxes are used both for providing scientific information and for continuous assessment. The students send their assignments to the lecturers. The lecturers send materials by mail to their students, which is a type of non-personalized virtual communication. At the same time, the students send materials to their lecturers, which is a specific type of personalized virtual communication. It may be a single phenomenon, but more and more frequently communication of this type is regarded as a continuous one, especially when not only continuous assessment of students is carried out in this way, but also when consultations are provided on writing master's degree theses, part of the academic training.

This type of communication is preferred by many students, since their attitudes and perceptions as a generation that actively uses the global network are different. Still many lecturers perceive using Skype as an informal way of academic communication and its use is still infrequent. At the same time, the electronic platforms provide different and diverse learning opportunities for the students and they are actively involved in using the resources. In addition, skills for discipline and compliance with terms and criteria are developed, as well as the creation of temporary virtual communities, i.e. it is a special kind of synchronous and asynchronous formal virtual communication.

6 TEACHER AND VIRTUAL ACADEMIC COMMUNICATION

It is possible to make a hypothesis that in distance and electronic training the participation of the university lecturer in the process of teaching is changing. It can also be said that the participation of the university lecturer is partially reduced in distance and e-learning as opposed to teaching in the halls where direct communication is used. One of the reasons for this transformation of the status is the specifics of distance learning and e-learning. When the students are present in the halls, the university lecturers provide scientific information using direct communication in an academic environment where the lecturers are perceived as the main source of knowledge and scientific information. It is also necessary to clarify that this is valid when a lecture or a presentation is used, i.e. traditional and relatively new ways of training. In all modes of teaching, the university lecturer remains a major figure that guides and directs learning not only during lectures, but also during role-playing and simulation games. The use of interactive methods does not change the lecturer's status, which incorporates providing information and directing communication. In distance learning and e-learning, however, there are transformations in the role of the lecturer in the academic environment, and these changes are determined by a number of factors. Teaching and using the Internet and, in particular, the electronic platforms requires a number of changes. Nonetheless, the functions of the lecturer as the author of teaching materials, a creator of educational resources, a consultant and an evaluator remain dominant in the process of university education and course training. The impact of the lecturer in distance learning cannot be captured and sensed in the same way it is possible to do in direct communication. The issue of the sense of belonging also remains open. It is possible to say that there is a particular alienation between lecturers and students when using e-learning platforms. The issue of the need to use more formal register when students submit their continuous assessment assignments as well as the need to formalize academic communication have not been researched yet.

In the process of training through electronic platforms, some students perceive the lecturer mainly as author of teaching materials and as an evaluator of their knowledge. Some students fail to form a clue about the personal traits of the lecturer and his/her communication skills. At the same time, the lecturer does not have the opportunity to introduce himself/herself to different student communities and to show patterns of behavior in an academic environment that may be seen in the traditional university education.

7 CONCLUSION

Information technologies, computer and software programs aim to improve and ease all areas of public communication, including knowledge sharing. Internet technologies offer the possibility to quickly and efficiently search, use, analyze, and process information. The broad possibilities of computer networks and in particular the Internet create prerequisites for the emergence of new forms of training in response to the emerging demands of the knowledge and labor markets that could not be solved through the familiar forms of education. The use of modern communication technologies and Internet applications opens new opportunities for the development of distance learning as well as the integration of modern scientific achievements into the educational process.

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DISRUPTIVE INFORMATION TECHNOLOGIES AND ACADEMIC EDUCATION

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ABSTRACT

The paper presents the influence of information technologies on the development of the economy and society, especially in the process of the digital transformation of society. The main characteristics of the digital economy and information technologies are given. The current status of the number and profile of IT staff in the US and the assessment of the development trend are analyzed. Key information technologies that are expected to mark the next decade as well as the tasks of academic institutions in the education they provide are listed. De facto standards have to be taken into account when defining curricula and work programs.

Keywords: Information technologies, Digital transformation of society, Models of academic education, Academic curricula.

1 INTRODUCTION

Information technologies, their potential, development speed and impact on the environment have propelled a large number of matters in various aspects of human life and work. It can be said that the process of globalization, started through the technologies of satellite communication and live TV broadcasts in the 1960's, made significant progress in the early 1980's with the emergence of personal computers and global satellite 24-hour news agencies, and entered the mature phase of the digital economy in the 1990's through the appearance of the global computer network, the public and commercial Internet. Today, information technologies practically envelop all aspects of life and work.

The paper analyzes the mutual and deep impact of information technology, the world economy and academic education over the last half century. Information technology has not only been a key innovative element in improving existing products and services, but also a major driver of changing the basic business paradigm, from products with explicit functional specification in industrial society to products with latent functional specification in the digital economy.

However, in addition to the positive ones, information technology also has a negative impact on economics and academic education! The paper analyzes in detail the negative impact of information technology on the academic system of education set during the dominance of the industrial paradigm in the nineteenth century and its inability to adequately respond to the growing needs of the economy and society.

The second part of the paper will present the basic characteristics of the digital economy, i.e. the subsequent process of the digital transformation of society. The third part is dedicated to information technologies as a key accelerator of change and we shall present the key information technologies and their characteristics which form the contemporary world. The fourth part of the paper is dedicated to the analysis of challenges which emerged before academic institutions over the last decades, in which the application of computers in all spheres of life and work had started. The explanation is given as to why a traditional academic education model is no longer optimal. The fifth part of the paper is dedicated to the representation of the *de facto* standards of academic education in the field of computing, i.e. information technologies. These standards are the result of two decades of hard work from experts across the academic environment, the economy and public institutions in the USA, within two professional associations, IEEE and ACM.

2 DIGITAL ECONOMY

In today's global economy, the biggest significance is given to knowledge and information, since knowledge and information emerge on the market as the most precious goods. A society with this kind of economy is often called an information society, a society marked by a high efficiency of social and economic organizations, which creates conditions for a high quality of life for its citizens. The task of contemporary society is to create conditions and mechanisms by which new knowledge will be effectively, economically and in as short a timeframe as possible go back to the production process, either as an element of means of work, an object of work or of living work. An intense application of information technologies in all aspects of life and work, known under the term *digital transformation of society*, is the framework of these processes. [1]

Applied positive feedback in the heliocoid comprised of the triad of science-technology-production, quickly and radically changes not only the method goods are produced and services are provided, but also brings new products and services which greatly influence society and the relationships within it. A particular specificity in the observed process compared to earlier periods of human development is the growing share in the total production of goods, the production and use of immaterial goods, as a result of the comprehensive and all-encompassing application of information technologies.

We shall list several significant characteristics of goods based on the application of information technologies. The first is related to the incorporation of computer components and programs in most material goods. Unlike the previous periods in which material goods in the production process, through the nature of the chosen materials and their special design, gained final and permanent traits which would provide them with the needed functionality, for example, a table, knife and fork; today, with the incorporation of computer components and programs, there is an increasing number of products on the market with hidden, latent functional characteristics. These hidden and unapparent traits are manifested *ad hoc*, i.e. come to life per the demand of the user at the time of usage. For example, instead of a mechanical typewriter, today we use a digital computer which only through the invocation of text through the processor completes the functional specification of the typewriter product.

Nowadays, there are a number of devices with latent traits on the market, known as *smart* devices. We shall list the most famous, the cell phone, a microcomputer with the latent functions of a telephone, a camera, a tape recorder, a magnetoscope, a video recorder, a television... Devices which are basically digital computers with specific peripheries can be classified into devices with an *embedded* set of latent functional traits without the possibility of *ad hoc* expansion and functionally open devices with the possibility of subsequent expansion.

Smart devices whose material configuration does not change during their lifespan, but which possess a set of latent traits with the possibility of their expansion, are dominant on the market. A class of smart devices which, at the request of their users, therefore *ad hoc*, can generate material artifacts with certain new functional traits is especially interesting. Such devices are called 3D printers. These material artifacts are independent objects, but the development of smart systems which will be able to generate material artifacts upon request, and which will have not only new functional traits, but will also be a component of the smart device is expected!

A second important characteristic of modern products is related to the ability of devices to communicate with other devices or humans, either whether they are exchanging signals as to the state in which they are in, or to send or accept commands which affect the change of the current state of the device or to exchange signals which secure the synchronized, coordinated functioning of a larger number of devices in real time. Computer network technologies have just that - the task to enable the realization of the abovementioned functions, and the most famous and widespread computer network is the Internet.

The third significant characteristic is related to the possibility of the device to *ad hoc*, without any explicit request from the user, set in motion the appropriate actions, even to bring to life certain functional characteristics of the device. If it is a matter of device activities which man has not explicitly specified in advance, *programmed*, but are the result of the independent functioning of the device by taking into account the set goals, the analysis of the current relationship between the environment and the device, the integrated knowledge, experience and rules of reasoning, then we are speaking of artificial intelligence, *AI*, which the subject device possesses. It is considered that the widespread application of artificial intelligence will be the essential feature of the next decade of life and work.

3 INFORMATION TECHNOLOGIES AND ECONOMIC DEMANDS

Information technologies have the task to enable the efficient, effective and economical processing of data in a computer-readable way. Today, when discussing information technologies, this implies processing with the help of digital computer networks. The core of every digital computer system is the processor. Processor strength is measured by the number of commands which it can process within a time unit. The revolution in processor strength occurred in the early 1970's, when processors, instead of discreet electronic components, started to be produced through the application of the integrated circuits technology, especially VLSI technology. Gordon Moore, one of the founders of the company Intel, then established the rule, Moore's law, which is still valid today, that every 18 to 24 months, the strength of microprocessors is doubled, with a significant decrease in Price [2].

The application of microprocessors and the accompanying memory and logical components in the development of computer systems enabled the mass production of computer systems with a constant decrease in price, which influenced the expansion of the number and circle of users. Today, the number of computer systems of different purposes is measured in the billions, since every new generation, with a decrease in prices and an increase in performance, enables the conquest of new applications and markets. Each new generation of microprocessors and accompanying components is concrete technology for the realization of computer systems and their place on the market, which has its own life cycle, time of appearance, time of growth, maximum sales, decline and disappearance from the market. Products realized with different technologies can be simultaneously found on the market.

It is important to note that the life cycles of information technologies, observed through profit achieved on the market, are conic curves whose neighboring peaks are distant for a certain period of time, known as the time of obsolescence [1]. Also, it should be noted that new, better technologies mark the beginning of the decline in sales on the market of products realized through previous information technology. It has already been said that in the case of computer hardware, the time of technological obsolescence of the device is around 18 months, although, of course, the technical characteristics of the device remain in line with the specifications for several years.

The report of the American Bureau of Labor Statistics from 2014 can be a good indication of the penetration of information technologies in the American economy, which has been dominating the global information technology market [3]:

Number of positions in the IT sector (US Bureau of Labor Statistics 2014)

- Computer support specialists – 766 900,
- Application programmers – 718 400,
- Computer systems analysts – 567 800,
- System software developers – 395 600,
- Network and computer systems administrators – 382 600,
- Computer programmers – 328 600,
- Web developers – 148 500,
- Computer network architects – 146 200,
- Database administrators – 120 000,
- Cyber security analysts – 82 900,
- Computer and information research scientists – 25 600.

According to the situation from five years ago, based on the number of employees, the first are computer support specialists and application programmers, which bears witness to the need for personnel who enable businessmen to introduce computer systems into the appropriate business processes, i.e. to the great need for programmers which need to code programs specific for that branch of business application. However, it has already been said that significant changes on the IT scene are ongoing. The emergence of new technologies enables new products and services, which repress the existing ones, so the required profile of employees in the IT sector is changing. Some IT professions are slowly disappearing, while new ones are emerging. Another report from the US Bureau of Labor Statistics from 2014 specifically relates to the specification of the expected need for experts from the field of IT until 2024.

Research has shown that the second aforementioned trait of modern products, the possibility of communication and exchange of data through the computer network - the Internet, is not yet fully satisfied, so the biggest growth is expected in the profile of web developer and expert from the domain of cyber security, until now rather neglected fields of information technologies, which is most apparent from the small number of employees in the IT sector.

The following shows the Report of the US Bureau of Labor Statistics on the expected growth of certain expert profiles from the domain of information technologies until 2024 [3].

Predictions of the requirement of the US Bureau of Labor Statistics for job growth until 2024

- Web developers, growth of 39%,
- Cyber security analysts, growth of 36%,
- Computer systems analysts, growth of 33%,
- Application programmers, System software developers, Computer support specialists and Network and computer systems administrators, growth of 31%,
- Database administrators, growth of 26%,
- Computer network architects and researchers, growth of 21%

However, although only three years have passed since the data was published, the fast development of information technologies and their application brings new professions and makes certain old ones obsolete! Based on the research conducted, Gartner believes that, by 2025, around 40% of all existing professions will practically be extinct, but that some new ones, at this time still unknown, will emerge.

According to Gartner, by 2021, an income growth of 30% is expected in the field of internet content search through queries with visual and voice data. Due to the emergence of innovative, “disruptive” applications by 2020, leading companies will get a chance for new leadership. By 2020, crypto currencies based on *blockchain* technologies in banking will generate businesses worth around USD 1 billion. But, by 2022, Internet users will be faced with an increase in fake news by more than 50% compared to confirmed information.

In 2020, artificial intelligence (AI) will become a positive motivator for Internet business, creating 2.3 million new jobs, but will also eliminate an existing 1.8 million jobs. Also, by 2021, Gartner believes that more than 50% of companies will be spending more annually on robot applications (bots) and the creation of *botchats* than on the traditional development of mobile applications! Gartner points to the possible misuse of the development of artificial intelligence (AI) technologies in generating false information, which will not be able to be discovered with the aid of AI applications.

By 2020, 95% more products based on IoT technologies will emerge, and by 2021, 40% of IT staff will have a versatile education, occupying multiple roles in companies, from which most will be connected to doing business and not technology. The prediction that by 2022, half of the security expenses for IoT applications will be allotted for error repair, recalls and security malfunctions and not protection bears witness to the fact that there is a lack of focus on the issue of security in communication.

Considering Gartner’s expectations regarding the major changes in the field of IT business in coming years, his observations on strategic information technologies which should be taken into consideration by academic environments during the formation and planning of their curricula are especially interesting. Strategic information technologies and academic education, according to Gartner’s report from 2019, [4] are:

1. Autonomous Things, IoT,
2. Augmented Analytics,
3. Development based on Artificial Intelligence,
4. Digital Twins Technologies,
5. Empowered Edge,
6. Immersive Technologies
7. Blockchain,
8. Smart Spaces,
9. Digital Ethics & Privacy,
10. Quantum Computing.

The list shows the importance of mobile computer networks realized through Internet technologies, which will also enable the expansion of the Internet in the domain of mobile applications, especially in the case of the widespread application of devices based on the concept of the Internet of Things, *IoT*. Predictive analytics has for some time already been in the focus of application in larger business systems, but in combination with artificial intelligence technologies, it will enable the optimization of business processes and enhance the usability and quality of help systems in decision-making (*DSS*). In that context, directional technologies, *nudges*, should emerge, which positively contribute to the acceleration of certain processes and therefore the enhancement of employee efficiency.

In academic curricula, the education of information systems experts based on technological systems which use a public or private computer cloud, i.e. their integration, should be included. The concept of 4.0 industries is practically impossible without knowledge and skill from the area of robotics, autonomous systems and virtual/augmented reality. The management of identity and *blockchain* technologies must also be found in academic curricula.

It is interesting to analyze the list of technologies for which, according to the association *Computing Technology Industry Association (CompTIA)*, buyers are interested in [5]:

1. Internet of Things,
2. Process automation,
3. Artificial Intelligence,
4. Virtual and Augmented Reality Technologies (VR/AR),
5. New generation mobile networks (5G Wireless),
6. *3D Printing*,
7. Drones (UAV, AUV, UGV Drones),
8. Biometrics,
9. Blockchain technologies,
10. Quantum computing.

4 CHALLENGES IN ACADEMIC EDUCATION

After looking into the significance of information technologies in contemporary society and its role in digital transformation, pointing out the strategic information technologies and the profiles of experts which business systems expect, the question of how to organize academic studies in order to answer the aforementioned expectations is posed.

Not much needs to be said about the statement that at the end of the 20th century, the education system, first and foremost the academic, was faced with a serious crisis. The education system at the time, mainly established in the 19th century during the strengthening of the industrial method of production, was based on the assumption that the time of obsolescence of the dominant technologies in production is primarily measured in decades, rather than years, so in that case changes of the necessary knowledge of “living” work on the production process were relatively slow. In that case, the optimal solution for the education process could have been found in a system in which a worker would for a certain time only learn, and then until the end of his working life, use what he had learned.

However, with the emergence of computer technology and its massive application, both in the automatization of the production process and in the change of the basic paradigm of the work and lives of people, from the industrial towards the information paradigm, the time of obsolescence of the ruling technologies has been significantly shortened (from decades to years!), so the education system found itself in a great crisis!

Developed societies have identified the aforementioned problem at the end of the last century and tried to find the appropriate solutions. Within the European Community, and then the European Union, it became clear that the existing education system does not only not completely meet the need for a qualified workforce (does not educate for the sought jobs or does so too late!), but is also uneconomical and is a huge expense that makes such a society non-competitive in the global economy. The average duration of a worker’s education cycle with an academic title was from 4 to 6 years, and during that time, some of the acquired knowledge would partially already become obsolete, before the worker even started working!

The Lisbon declaration in the area of higher academic education tried to solve or soften the described problems and integrate the until-then fragmented academic education system into a unique higher education system of the European Union (EHEA) with a new system of academic education. Academic education was divided into three hierarchical levels. The first level of basic academic education lasting from three to four years, the second level of academic education (master studies) lasting from one to two years and the third, highest level of doctoral studies, lasting at least three years. The total duration of the academic studies is eight years, and is known colloquially as “the Bologna process” [6].

However, time has shown that this system of academic education is also not good enough for the demands of the economy, so it was modified in practice by new models. For example, in Great Britain, the so-called “short cycle” of academic education was introduced, lasting from one to two years, and which, in its nature, is equivalent to our “academies” [6]. Also, it is the practice that during the first cycle of education, Level 1, formal academic education lasting from three years practically lasts for four years, since students take a break from their studies after the second year in order to gain practical experience at an actual company, and then come back for their third year of studies!

It is obvious that the optimal solution to the problem of the adequate model of academic education is difficult or even impossible to find only in the narrowed down framework of academic education, but that it is necessary to look for it simultaneously in the changes of the system of primary and secondary school education, but also in the changes of the way manufacturing enterprises are organized and function! Lately,

the system of dual education has been mentioned more frequently - a model of education introduced in countries with a developed economy which softens the identified problems since it penetrates the domain of secondary school education. The new education system has to be such that it enables the student not only to master the knowledge and skills needed to perform a certain job, but also to learn how to continually learn and acquire new skills and knowledge!

5 MODELS OF ACADEMIC EDUCATION IN COMPUTING

If the phenomenon of IT experts education is looked at in an academically formal way, then it is necessary to speak of the process of education for work in the field of computing, by which information technologies are only one segment of that education. The USA have been dominating in the subject area for over five decades, so the country also takes precedence in looking into the problems and the suggested solutions. Primarily, the field of computing is so diverse today, and the knowledge encyclopedic, that academic education only relates to only some segments of computing.

The most famous models and recommendations for academic curricula of formal education in order to acquire knowledge and skills from a certain area of computing, in short, expressed through an academic title, is periodically published by the ACM (Association for Computing Machinery) and IEEE (Institute of Electrical and Electronics Engineers), and which are the de facto global standards. These are models and curricula for the following subcategories of computing: Computer sciences, Computer engineering, Information systems, Software engineering and Information technologies. Schools which conduct class based on the aforementioned recommendations are usually from the technical fields.

From the temporal perspective, the oldest models of academic education in the field of computing include curricula from Computer sciences, Computer engineering and Information systems. In short, although not entirely precisely, in computer science schools, students primarily learned the theoretical basics of computing through studying disciplines which, for example, include systems and automatics theory, programming languages, operating systems, database management systems... and which trained graduated students for further research in the area of computing and, of course, for practical computer work. The latest detailed guide for forming a curriculum from the area of computer sciences, CS2013: Curriculum Guidelines for Undergraduate Degree Programs in Computer Science can be found at the address [7]: <https://www.acm.org/education/curricula-recommendations>.

In computer engineering schools, the aim of education can be described in short with the sentence "how to build a computer", but of course, also through the acquisition of knowledge needed not only for making computer systems, but also for using them, for example, in the process industry. A detailed guide for forming a curriculum from the area of computer engineering, CE 2016: Curriculum Guidelines for Undergraduate Degree Programs in Computer Engineering can be found at the address [8]: <https://www.acm.org/education/curricula-recommendations>.

Information systems schools were specific in that their focus in education was on the enabling of graduated students for the use of information systems in business systems, "how to use a computer", and the typical job of an employee was within the informatics sector of some larger business system, and software development had the traits of manufacture production for a familiar buyer, i.e. insider development. A detailed guide for forming a curriculum from the area of information systems, IS 2010: The Curriculum Guidelines for Undergraduate Degree Programs in Information Systems, can be found at the address [9]: <https://www.acm.org/education/curricula-recommendations>.

Software engineering schools were created during the last decade of the previous century, when the application of computers practically became universal and when the sales of user software from the "shelves" of stores started to dominate. Such software development is much closer to the paradigm of ready-made goods in the textile industry, instead of the until-then used "tailoring workshops", so the need for new employee knowledge and skills emerged, closer to those found in industrial production, placement and maintenance! A detailed guide for forming a curriculum from the area of software engineering, SE 2014: Curriculum Guidelines for Undergraduate Degree Programs in Software Engineering can be found at the address [10]: <https://www.acm.org/education/curricula-recommendations>.

Schools for academic titles from the area of information technologies appeared at the same time as the mass application of the Internet in the world, during the mid-2000's. In short: practice demanded people who know to work with the Internet and applications which could be bought from "the shelf". In the first version of classroom curricula from 2005, instead of "more profound and scientific" knowledge from the area of computing, employees were expected to possess knowledge and skills related to the practical use and interconnecting of the available and easily accessible hardware and program system components, the maintenance of the computer system, the "intranet", in the state of drive readiness, occasional programming,

“glue” related to the connecting of acquired system components into a whole, the occasional employee training in the “core business” of the company, as well as the constant monitoring of changes on the IT market. In practice, other functions from the field of IT were moved to other companies and used as services - “outsourcing”.

However, the strong development of computing in the last decade, which is reflected in all aspects of life and work of contemporary society, has significantly influenced the view of the role and tasks of the IT professional. The latest document related to the formation of a curriculum from the area of information technologies, IT2017 ACM, published on December 10, 2017 by the joined ACM/IEEE committee, is titled Curriculum Guidelines for Baccalaureate Degree Programs in Information Technology, and can be found at the address [11]:

<http://www.acm.org/binaries/content/assets/education/it2017.pdf>

The development of the latest IT curriculum was especially influenced by the following technological innovations:

- mobile applications,
- social Internet platforms,
- innovations in the interaction with Internet access devices,
- the Internet of Things (IoT) and work with Big Data,
- data protection and Internet communication (Cybersecurity),
- the automatization of processes and robotics.

The contemporary definition of information technology studies, according to the aforementioned source, is as follows: “Information technologies are the study of a systemic approach to the selection, development, application, integration and administration of safe computer technologies which enable users to realize their personal, organizational and social goals.”

An innovative look at the needs of the scientific field needed for educating IT professionals is given according to [11]: IT fundamentals, Programming, Networking, Human Computer Interaction, Databases, Web Systems and Information Assurance & Security.

It can be seen that the carriers of knowledge and skills of IT experts include the areas of programming, networking, knowing the principle and technologies of human computer interaction, knowing database technologies and Web systems technologies. Knowledge and skills of IT professionals from the field of information assurance are at the basis of the IT fundamentals and these carriers, in the sense of maintaining accessibility, integrity, authenticity and non-denial of the stored data, and the protection of stored data from unauthorized Access (information security). It is necessary to emphasize that there is a certain overlapping between disciplines which are studied at all five schools, which in practice enables the experts of various titles from the field of computing a relatively easy migration from one applicative domain to the other.

The key scientific areas which IT study programs should cover in 2019, primarily through elective subjects, are:

- Mobile application development (5G, blockchain, biometrics, AI ...),
- Integration of applications with social network platforms (Big Data, AI),
- Data protection and Internet communication (cybersecurity, biometrics...),
- Innovation in the approach and interaction with network applications (speech communication, immersive technologies [VR, AR, MR], AI ...),
- The Internet of Things (IoT), work with Big Data, and predictive analytics (AI),
- Automatization of the process and robotics (IoT, 5G, AI, Drones, 3D printers ...),
- Intelligent ecosystems (digital twins, IoT, 5G, AI ...).

6 CONCLUSION

Information technologies are nowadays the core technologies of contemporary society and are the framework of the process of digital transformation. Formally observed, information technologies are a part of the wider scientific field known as Computing, but in practice they practically overlap. The paper described the particularities of the application of information technologies in the process of the digital transformation of society, with a particular overview of the current needs of the economy for IT expert profiles. Also, considering the speed of changes in information technologies, the expectations in terms of new professions in the subject area in the next decade were specified. Special attention was paid to the

analysis of the academic education system and problems with which the academic system is faced due to the speed of changes of information technologies. In the last part of the paper, the de facto standard models of academic education in the field of computing, i.e. information technologies, is stated. However, it should be pointed out that the problem of the fast obsolescence of knowledge has not been fully solved.

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UNIVERSITY PRACTICES AND ENTREPRENEURIAL INTENTIONS OF STUDENT IN ALGERIA

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ABSTRACT

Algeria has adopted a policy encouraging young graduates to set up their enterprises as a privileged means of combating unemployment. This research aspires to know the professional and entrepreneurial intentions of a sample of 237 students from Oran universities thus distributed: (78) in psychology, (79) in economics and (80) in architecture. Despite the multifaceted support of the State for young people to start up their enterprises, the results remain below the expectations of the authorities. The responses showed that students prefer to work in the public service or in public enterprises than venturing in the creation of their own businesses.

Keywords: Professional intentions, entrepreneurial intentions, university practices, entrepreneurship, Algerian students.

1 INTRODUCTION

The university is considered as an indispensable means for the development of human resources, necessary for economic development.

Algeria opted for a socialist system after its independence. It experienced a profound economic crisis after the fall of the oil prices in the years 70 of the 20th century, followed by a security crisis, known to the Algerians as the "black Decade".

Faced with the failure of the State to solve economic problems and the creation of jobs for young people, Algeria experienced a political and economic changes, opening up to the multiparty and the market economy. What opened the doors to the private sector in Algeria, and the state encouraged people to invest in order to participate in job creation.

While trying to adapt to the changes and challenges of globalization, Algeria has worked to create an environment necessary to encourage young people to integrate into entrepreneurship through two actions:

- The creation of structures providing support, accompaniment, and financing for young entrepreneurs.
- The reform of the Algerian university to meet the needs of students in entrepreneurial skills.

2 FINANCING AND SUPPORT STRUCTURES FOR YOUNG ENTREPRENEURS

With an inefficient industrial sector and the arrival of thousands of young graduates who come out every year from the Algerian university, the employment of students is a seriously affected aspect. Given the inability of the State to create the necessary jobs, the only possible solution was the creation of State structures for the encouragement of the employment of young people, such as:

- The National Youth Employment Support Agency (ANSEJ).
- The National Employment Agency (ANEM).
- The National Unemployment Insurance Fund (NACC).
- The national Agency for the management of Micro-Credit (ANGEM).

A policy of encouraging young people in general, young graduates from universities in particular, as well as graduates of vocational training centres has been implemented. Encouragement was given through the financing, the support to the creation of companies as well as tax and customs exemptions during the first years of activity.

3 THE REFORM OF THE ALGERIAN UNIVERSITY

Despite the importance of the state's strategy for encouraging young academics to set up their own businesses, the latter did not show any interest in entrepreneurship, and a significant number of young entrepreneurs failed from the first years of activities.

Another cause of their failures is that the Algerian university failed to meet the needs of the labour market and the need to prepare students to become future entrepreneurs, creating jobs and wealth, because success requires the development of entrepreneurial attitudes and skills, which is paramount for the creation and management of businesses.

The Algerian university has undergone a major reform by adopting the European LMD system, but the material, socio-cultural and organizational environments in which it is evolving have made it difficult to implement this reform as it is applied in Europe. This is due to the lack of an industrial network that allows students to benefit from adequate training.

The training programs currently applied give little interest to entrepreneurship training. Modules are programmed for the teaching of entrepreneurship at the level of the Master 2, but only as an introduction, which makes it possible to familiarize students with the basic concepts of entrepreneurship, but this is not enough to provide them with the needed skills to enable them to plan and manage their businesses.

In addition to the incentive and funding structures, entrepreneurship houses have been created in each university, but the majority of them remain ineffective, and its role is limited to the organization of a few days of study or Workshops for the benefit of interested students.

Despite all these efforts, the results are below the expectations of the authorities concerned with the employment of graduated students.

The aim of this research is to focus on pedagogical practices in the Algerian university, as well as the professional and entrepreneurial intentions of Algerian students. Proposals to improve programs and academic practices are proposed to better prepare students for an entrepreneurial society.

4 LITERATURE REVIEW

The choice of a trade is linked to the personal and professional project of the individual. Training programs and teaching practices influence the professional or entrepreneurial intentions of students.

4.1 Academic competencies and entrepreneurial intentions:

In a research on entrepreneurial intention in Morocco, Koubaa and Sahibeddine, have concluded "the existence of three components of the built attitude: the motivations in terms of career and professional situation that the student wishes to have, the needs in terms of autonomy, freedom in decision making and power and finally creativity and innovation (Koubaa and Sahibeddine, 2012, 61).

Entrepreneurial intent requires knowledge, skills, culture and attitudes, which are developed through the educational path. The university plays a key role in enabling students to "develop their creativity, their capacity for autonomy and enthusiasm, and gain assurance through the taking of initiatives and teamwork to confront opinions." (Leger-Jarniou, 2008).

The action of creating businesses in a country determines the level of vitality of its citizens, the effectiveness of its training and education system, and its susceptibility to combating unemployment and poverty.

The entrepreneurial intention of the students remains at the centre of interest of the decision-makers, "because the students are the future entrepreneurs and also because they constitute a population on which it is relatively possible to act effectively through Training content (Bisen, J. P. et al. 2010, 1).

According to Ajzen's planned Behaviour Theory (1991), entrepreneurial intent is determined by three variables: attitudes, subjective norms, and perception of behaviour control.

According to Koubaa and Sahibeddine, "the intention of the students to become entrepreneurs is explained by their attitudes towards the creation of a business, their ability to carry out an entrepreneurial project and the entrepreneurial desirability Perceived. (Koubaa and Sahibeddine, 2012, 60).

4.2. Role of the University in the development of entrepreneurial skills

In a world dominated by modern technology, the university is considered as an ideal place or the techniques, technologies, skills, and know-how necessary for the creation of companies are taught.

The study period at the university can help students to draw inspiration from the ideas that can be at the root of the creation of businesses. Academic practices also influence the professional and entrepreneurial intentions of students and teach them the technical and managerial skills necessary for the creation and management of their businesses.

This is why decision-makers attach a particular interest to the university for the training of executives and entrepreneurs.

4.3. University practices and entrepreneurial skills

The modern university works to the employability of graduate students. This is a fundamental aspect of the recasting of higher education, as presented by the Bologna Process (Geddes, 2016). University training practices facilitate the employability of students and provide them with the ability to create their own businesses. Therefore, according to Koubaa and Sahibeddine, "it seems important to work to make the university system more efficient in terms of raising awareness, training and supporting young people with project ideas." The focus must be on attitudes towards business creation, entrepreneurial skills and the intention of students to make their behaviour more efficient (Koubaa and Sahibeddine, 2012, pp. 55).

Despite the importance given by the State to the operation of encouraging young people, and the academics in particular, it is noted that the Algerian university has not kept pace with this strategy. As can be seen in the Algerian university, there are few training programs in entrepreneurship, there are not even teaching units (modules) aimed at educating students and providing them with the skills necessary to Creation of their businesses. This makes the Algerian student, in the majority of cases, and in the majority of the scientific disciplines, unable to set up his own business and manage it, although the State policy encourages it. This blocks and inhibits the entrepreneurial intention of the Algerian student to create his business and manage it.

4.4. Impacts of the university's organizational culture

Entrepreneurship training is not limited to training programs and teaching practices. It is also influenced by the organizational culture and daily practices in the academic environment.

The Algerian university suffers from negative practices within the teaching, administrative and student bodies. These aspects can be identified in the non-observance of time, the frequencies of absences, delays, strikes, as well as the policy of populism and the application of social in the passage of students.

This explains the fact that the Algerian student has lost the sense of rigour, discipline, seriousness, and diligence, while they represent the hallmarks of the entrepreneur's success.

These negative events affect the personality of students and hinder their willingness to become competent and successful entrepreneurs, having to evolve in an environment full of constraints, to which they have not been well trained confront them.

5 ENTREPRENEURIAL INTENTIONS AND THE DEVELOPMENT OF UNIVERSITY PRACTICES

The entrepreneurial intentions of students can be clues to evaluate the pedagogical practices related to these intentions, and this can help to improve these practices and correct them for better practice, as presented in the following figure.

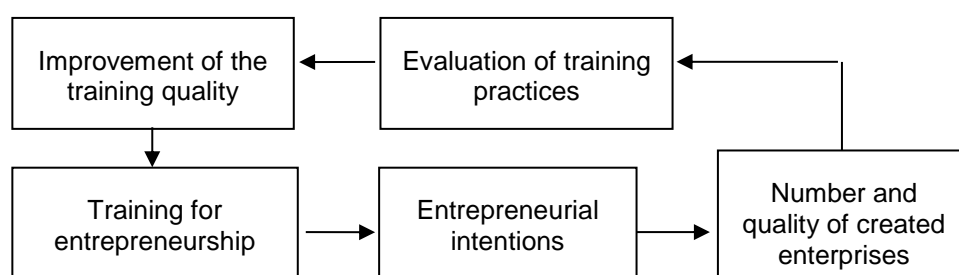


Fig. 1. The relationship between the number and quality of created enterprises and the university practices

In order to evaluate the entrepreneurial intentions of Algerian students as a result of the practices of the Algerian university, a field study was carried out.

Research goals

The objective of this research is to assess the level of success of the Algerian university in training for entrepreneurship through the entrepreneurial intentions of Algerian students.

6 METHODOLOGY

6.1.Problematic

In developed countries, states have disengaged in the creation of employment for the benefit of private enterprises and initiatives of young people creating their own enterprises. Entrepreneurship is encouraged through assistance and support. The university in developed countries plays an important role in preparing young academics for entrepreneurship by providing them with scientific knowledge and techniques for planning and managing their businesses.

While in Algeria, as in the majority of developing countries, the university failed to provide students with the scientific and methodological tools for launching their own businesses. This requires a field study to invest the practices and constraints of Algerian universities with regard to entrepreneurship training.

6.2. Research Questions

In order to guide our research, the following questions were formulated:

1. What are the constraints of the Algerian university with regard to the preparation of students for entrepreneurship?
2. What are the impacts of the training practices of the Algerian university on the professional and entrepreneurial intentions of the students?
3. What are the impacts of university training practices on student entrepreneurial skills?
4. What are the impacts of academic practices on student psychological traits?
5. How can the Algerian university's practices be improved for the preparation of its students for entrepreneurship?

In order to approach the subject of the professional and entrepreneurial intentions of the students, we have chosen the method of the questionnaire for data collection.

6.3.Data collection tools

In order to study the pedagogical practices in the Algerian university and their impact on the professional and entrepreneurial intentions of the students, a questionnaire was developed for the collection of the data.

The developed questionnaire deals with the following aspects:

- The personal information of students.
- The entrepreneurial intentions of the students.
- The capacity to develop a business creation project
- The entrepreneurial skills of the students.
- The psychological characters of the students.
- The nature of the trades envisaged by the students.

In order to examine its level of validity and reliability, a first version of the questionnaire was developed and discussed with students and teachers in methodology and work psychology. The observations of students and teachers were taken into consideration to develop the final version of the questionnaire.

6.4. Sample of the study

A sample of 237 students from three faculties and specialties from two universities in the Wilaya (County) of Oran in Algeria: The University of Oran 2 and the USTO (University of Science and Technology of Oran). The students completed the questionnaire as follows:

Table 1. Sample of students.

Faculty (University)	Gender		
	Male	female	Total
Psychology of work (University of Oran 2)	38	40	78
Economy (University of Oran 2)	39	40	79
Architecture (USTO)	40	40	80
Total	117	120	237

Table 1 shows the distribution of the sample between the students of psychology, economics, and architecture from the two universities.

7 RESULTS

After turning the frequencies of the responses into scores by assigning 0 for "No", 1 for "a little", and 2 for "yes".

Table 2. The preferred occupations by students

The characteristics of the chosen occupations by students	Psycho.		Eco.Sc.		Archit.		Total		Total	
	M	F	M	F	M	F	M	F	Tot.	%
I want to ensure job security	28	31	31	28	15	19	74	78	152	45.50
I like stability at work and not taking risks	09	10	12	10	21	19	42	39	81	24.25
I don't want to end my life as an employee in an office	09	05	10	07	17	15	36	27	63	18.86
The little insured is better than venturing into entrepreneurship	02	07	04	07	04	02	10	16	26	7.78
I feel relieved when I work under the authority of others	03	01	01	05	00	02	04	08	12	3.59
Total	51	54	58	57	57	57	166	168	334	

Table 2 shows that the greatest concern for Algerian students in choosing their occupations is job security, followed by a desire of not taking risks.

Table 3. The professional intentions of students

Professional Intentions of students	Psycho.		Eco. Sc.		Archit.		Total		Total	
	M	F	M	F	M	F	M	F	Freq.	%
Working in the public sector	17	24	19	24	06	10	42	58	100	34.36
Create my own Business	10	07	09	10	15	24	34	41	75	25.77
Working in commerce	04	06	14	05	07	03	25	14	39	13.40
Working in the Public service	09	10	06	05	01	01	16	16	32	10.99
Working in the private sector	02	02	04	00	11	11	17	13	30	10.30
Working in a family business	00	00	02	02	00	07	02	09	11	3.78
Integrating a security body	01	00	02	01	00	00	03	01	04	1.37
Total	43	49	56	47	40	56	139	152	291	

Based on the results presented in table 3, the majority of students prefer to work in the public sector and then start their own business in second place.

Table 4. The ability to create a private business after graduation.

The ability to plan a project of a new enterprise	Psychology		Economic Sciences		Architecture		Total		Total	
	M	F	M	F	M	F	M	F	Total	%
Yes	17	20	23	19	27	29	67	68	135	52.33
No	20	20	42	19	09	13	71	52	123	47.67
Total	37	40	65	38	36	42	138	120	258	100.00

In response to a question about the ability of students to develop a business creation project (52.33%) Students answered yes.

Table 5. The students' entrepreneurial skills

Role of the university in building entrepreneurial skills		Total			Score	
		Yes	Little	No	Score	%
4	The creativity ability	35	33	28	103	15.5
1	Sufficient scientific knowledge	16	63	14	95	14.3
6	Business Management	06	39	33	51	7.6
Total		195	274	162	664	100.0

Table No. 5 shows the extent to which some of the necessary skills are obtained by entrepreneurs through their consideration by university training.

Table 6. The students' psychological characteristics

Role of the University in the development of psychological characteristics		Total			Score	
		Yes	Little	No	Score	%
3	Self Confidence	47	30	15	124	18.6
5	The Autonomy Spirit	41	31	16	113	17.0
2	The initiative spirit	35	41	17	111	16.7
7	Entrepreneurial Spirit	15	37	39	67	10.0
Total		195	274	162	664	100.0

As shown in table 6, the responses of our sample of students from the Algerian university demonstrated that self-confidence (18.6%), the spirit of autonomy (17.0%), the spirit of initiative (16.7%). On the other hand, it failed in providing sufficient scientific knowledge, T business management skills.

8 DISCUSSIONS

From my personal experiences as a teacher at the University of Oran, and through discussions with students, regarding their future professional or entrepreneurial, as well as taking into account the results of analysis of Questionnaires, we were able to obtain a set of results.

8.1. The socio-economic constraints of the Algerian university

Despite the problems students face in their daily lives, it is found that the majority of students are optimistic, and are sure to find a job. The majority of students prefer to work in the public sector (34.36). While a large group of young entrepreneurs do not have a university level.

The results of this study are consistent with those obtained by other researchers who say that young people, who hold a secondary and even primary level, have a stronger desire to succeed because they have no professional choices in a developing country of development. This is confirmed by Hamidi and Hibaq who say: Young academics have several possibilities of employability because if they fail in their entrepreneurial approaches, they have the opportunity to find a job rather than a young non University ". (Hamidi and Hibaq: 2013, 17).

This is due to the weakness of the industrial and entrepreneurial fabric, and to the bureaucratic constraints in the Algerian administration.

8.2. Training practices and entrepreneurial intentions of students

According to table 2, the majority of students replied that she preferred to work in the public sector, especially those studying psychology and economics. While the choice to create their own businesses comes in second place. Architectural students prefer to create their own design offices. Few students intend to work in their family businesses.

A question about personality traits that affect his or her professional choice, the majority of students want to feel secure in their job. A good part of the students is sure of his success if she decides to set up her own business. Apprehension is noticeable because for some of them "the environment is difficult, and it is not easy to create a business". Only a minority of students expressed their sensibility of "relief from working under the authority of others".

8.3. Academic practices and student competencies

At the question about the ability of students to do a business creation project, half of the students replied "negatively" by a "no" (123 on 258). While the majority of architects responded "positively" by a "yes" and they can propose a business creation plan.

With regard to the psychological characteristics of students, their responses, as shown in table 6, indicate that the Algerian university has been able to strengthen their entrepreneurial skills in the psychological aspects, such as the Self-confidence, the spirit of autonomy, and the ability to be creative. The spirit of initiative and sufficient knowledge in business management.

8.4. Role of the university in the entrepreneurial society

Among the roles assigned to the modern university are the training of managers and competent entrepreneurs who participate in the creation of employment and the wealth necessary for the nation.

The Algerian University has adopted the application of the LMD system which promotes the mobility and employability of students. Socio-cultural and economic environments have proven to be constraints on achieving these goals. Among these constraints is a binding organizational culture within the university. The success of the application of the LMD can be facilitated by a healthy tradition of work, respect for time, and seriousness. This is not always the case in Algerian universities, where no semester takes place without the occurrence of strikes initiated by students who generally require facilities to pass from one year to another. Unfortunately, they are often successful with the university administration.

The Algerian university, by its legal status, is influenced by centralized management within the "Ministry of Higher Education and scientific research". It is obliged to respect the directives coming from above, and which are often decided by political structures. It is also influenced by the socio-economic environment and the weakness of the industrial and entrepreneurial fabric that should allow students to gain practical experience in companies.

In order to improve the training of students in entrepreneurship, the introduction of more training programs related thereto, and the training of teachers on training practices that tend to develop the scientific, managerial skills, and psychological qualities, are necessary to ensure success in entrepreneurial activities.

The Algerian university must also improve its organizational culture in order to have more rigour in its management. It must also be autonomous in relation to the political bodies in order to be able to make the appropriate decisions necessary for its proper functioning and for training in entrepreneurship.

9 CONCLUSIONS

The available training at the Algerian University does not follow the policy, initiated by the state, of encouraging students to create their enterprises. Training programs are not adapted to socio changes. Despite the revamping of higher education in Algeria, there are still no programmes that could give students the necessary scientific and entrepreneurial knowledge to facilitate the creation of enterprises.

The Algerian university trains executives who are able to work in the bureaucracy of the public service and in public or private enterprises, but who find it difficult when it comes to creating their own business. They lack the confidence in their abilities, the sense of autonomy, the creative skills, as well as the spirit of undertaking.

Algerian students aspire to work in the public service or in public enterprises, and few consider venturing into the creation of their own businesses.

The repeated complaints from students confirm the failure of the Algerian university to provide them with sufficient scientific knowledge, necessary in the research and maturation of ideas for business projects.

That makes the students graduated from the Algerian university unprepared to launch their enterprises and has negative impacts on their abilities to face the reality and the entrepreneurial challenges in Algeria.

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INCORPORATING LIFE SKILLS SUBJECTS IN TECHNICAL-VOCATIONAL EDUCATION AND THE IMPACT ON STUDENT PERFORMANCE

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ABSTRACT

Asia Pacific Academy of Management, Science and Technology is a tertiary technical vocational educational institution offering various courses in the Hospitality, Information Technology and Retail Sectors. Observations of student behavior affecting their academic performance have been raised numerously by faculty members. As one innovative solution and based on various studies, a life skills program was added to the curriculum. Its goal was to positively affect the student performance as measured by grade point average of the students. Across four batches worth of graduates, with and without the new program were compared to find statistical evidence for its effectivity. Based on the results, there were no statistical evidence to claim the program's effects on student performance based on grade point average between the groups. The institution then will have to re-assess the program of its design and intent and whether this is a program that should be continued for application. Further studies would have to be done as well to study other factors affecting the results and if recommended for inclusion in the modular design of programs for the Technical Education and Skill Development Authority as policy.

Keywords: Technical Vocational Education, Life Skills, Curriculum, Student Performance

1 INTRODUCTION

Asia Pacific Academy of Management, Science and Technology (APAMST) is an educational and training institution in the heart of the City of San Fernando, Pampanga offering up-to-date and relevant market based, quality education and training services since year 2006. Over the last 13 years, it has produced graduates now productively working and placed in various industries locally and internationally.

APAMST is a Technical Education and Skill Development Authority (TESDA) registered school offering various qualifications under the areas of Hospitality and Tourism, Information Technology, and the Retail and Wholesale Sector.

In order to meet the changing needs of the industry, the institution continues its aim to deliver up-to-date and relevant industry based modules. Alongside its highly qualified and seasoned trainers and facilitators, it envisions to be at par towards becoming a center of academic excellence, thus graduates becoming job ready, life ready, and world ready.

Despite having a learning atmosphere with modern facilities and professional and well-motivated faculty and administrative staff, it has been observed that over the years, common concerns over academic performance have been raised with regard to students' attitudes towards schoolwork and exams. For example, they want just to exactly pass an exam and submit the work as it is, without extra effort. They also do not want to maximize exam time given to them for a potential increase in scores. The school has been then inviting speakers to talk about topics such as commitment, perseverance, goal setting and personal command, with the hopes that these will help students with their behavior towards schoolwork. Feedback from these activities have been positive.

As such, in school year 2015, as a new curriculum was crafted, Life Skills as subjects for first year students have been incorporated. The subjects which tackles various topics covers areas of development from independence, topics such as goal setting, time management and perseverance, among others, to interdependence, topics such as teamwork, communication and synergy. The manner of instruction is done through a combination of three methods: lecture, focus group discussion and experiential activity. Lecture is the traditional chalk and talk procedure, focus group discussion asks participants questions to reflect on the answers and experiential activity is game based with learning and insight sharing at the end. The goal then is to develop the students with not only technical skills but the much needed soft skills to be able to tackle various concerns of the 21st century.

Technical Vocational Education Training (TVET) [1] as a system is “referring to those aspects of the educational process in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of the economic and social life [2]. In this definition then, it is imperative to not only teach technical skills but also relevant behavioral or soft skills to be able to adapt to the world of work and people. Being able to develop certain attitudes and self-productivity practices is in line with the purpose of the program of the educational institution of interest.

Further, UNESCO with its partners aimed “to ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes” (World Forum on Education, 2000). Sustainable Development Goal 4 on education aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” Consistent to this and the Education 2030 Framework for Action, UNESCO presented recommendations for TVET (2016-2021) to support and improve TVET systems. As part of this recommendations, “A new holistic, humanistic and sustainable development context calling for a broader and wider scope for TVET, as well as reforms in the content and governance of TVET systems”. This entails not merely focusing on technical skills per se but includes as well soft skills or life skills.

According to Connect to Learn, an organization based in New York with partnerships between Columbia University, Ericsson and Millenium Promise, their programs help increase opportunities for youth in employment and better quality of life in general by teaching and equipping them with 21st century skills. Further, it states that “In addition to these vocational skills trainings, girls learn skills in leadership, entrepreneurship and financial literacy, and are teamed up with women mentors to guide them in their business development.” Thus, their manner of teaching is a blended approach and mentoring plays a huge role with developing life skills.

According to [3], “teachers appreciated the extent to which life skills are integrated and explicitly specified in the formal curriculum of the teaching discipline... that our initiative is based on the fact that the National Curriculum only provide a framework. The concrete development and further refinement of life skills in VET schools and subject curricula is carried out by individual teachers themselves, in the class.” Thus, there is evidence that common practice for life skills education is done better through integration and part of the curriculum. The school of interest does provide teacher training on how to hold the classes using the three mentioned methods above. Topics as well have been identified for a whole year, reflecting two semesters worth of life skills topics.

Further, supporting evidence about the benefits of teaching life skills, for example, are The Leader in Me by Franklin Covey in the US for primary schools and Marywoods High School in Bukidnon. Their programs have life skills embedded into their curriculum. In 2011, the Department of Labor and Employment [4] and Asian Development Bank (ADB) had a JobStart program [5], teaching life skills for out of school youth and connecting them to the job market after a 10-day program and on the job training. For the moment, there is none for tertiary, technical vocational institutions in the Philippines and for a shorter time period as based on studies.

This study aims to answer the question on whether life skills being taught in a subject has an effect on student performance. Can life skills subjects taught in a technical vocational education curriculum positively effect student performance as seen through their overall grade point average (GPA)? Further, the research would like to ask the following questions:

- a. Is there a significant difference between the overall GPA of students without life skills subjects in their curriculum (pre- 2015 school year) and overall GPA of students with life skills subjects in their curriculum (2015 school year)?
- b. Is there a significant difference in overall GPA of students with life skills subjects in their curriculum between various programs (Computer Science and Technology (CST), Hotel and Restaurant Management (HRM), Corporate Services and Office Management (CSOM), Tourism Management (TOUR))?
- c. Is there a significant difference in overall GPA of students with life skills subjects in their curriculum between genders?
- d. Is there a significant difference between the GPA of students during the life skills subjects during their first year and after during their second year?

The aim of pursuing this study is to be able to establish any impact of teaching life skills as part of the curriculum of technical-vocational students to improve their performance and behavior towards schoolwork.

In being able to establish any relation between students undergoing a life skills program and their improved behavior in school, this will promote incorporating life skills into the curriculum of technical vocational colleges and institutions, and possibly, even a module under all TESDA national certifications.

However, the study was done particular to a technical vocation institution in a city in the province of Pampanga. Conclusions of this study will be a reflection of this background. The entire population of students who graduated from batches 2014 and 2015 (old curriculum) and batches 2016 and 2017 (new curriculum) are part of this study.

2 METHODOLOGY

Student data were requested from Asia Pacific Academy of Management, Science and Technology. The following student data were collected: Program they graduated from, Gender and Grade Point Average across semesters. Further, four batches worth of student data were collected, 2 each for the old curriculum (without life skills subjects) and the new curriculum (with life skills subjects). These were requested from the Registrar's office.

Upon data collection, data analysis was done with the aid of a statistical software. To answer the research questions, various statistical methods were used. Descriptive statistics to provide a background of the students and further, non-parametric statistical analyses at a 0.05 level of significance were done. Specifically, to answer the first research question, the Mann-Whitney U Test was applied. For the second research question, the Kruskal-Wallis Test was applied and subsequently, a multiple comparison test was done as needed. For the third research question, the Mann-Whitney U Test was used again. Finally, for the last research question, the Wilcoxon Signed Rank Test was used. The results and discussion will be presented in the next section.

3 RESULTS

As mentioned four batches worth of student data were collected. Below is a summary of the background data and the various statistical tests done.

Table 1. Gender

	Male	Female	Total
Without Life Skills Subjects (Batches 2014 and 2015)	22	49	71
With Life Skills Subjects (Batches 2016 and 2017)	24	49	73

Table 2. Course

Course	NA	CST	HRM	CSOM	TOUR
Without Life Skills Subjects (Batches 2014 and 2015)	10	14	16	17	14
With Life Skills Subjects (Batches 2016 and 2017)	0	27	17	25	4

Table 3. Research Question 1

Research Question 1: Is there a significant difference between the overall GPA of students without life skills subjects in their curriculum (pre- 2015 SY) and overall GPA of students with life skills subjects in their curriculum (2015 SY)?				
Mann-Whitney U Test	Life Skills	N	Mean Rank	Sum of Ranks
GPA	Without	71	76.42	5426
	With	73	68.68	5014
	Total	144		
Test Statistics a				
	GPA			
Mann-Whitney U	2313			
Z	-1.113			
Asymp. Sig. (2-tailed)	0.266	> 0.05	Do not reject Ho.	
a Grouping Variable: LifeSkills				
Conclusion: There is no significant difference between students' GPA with and without life skills subjects in their curriculum.				

Table 4. Research Question 2

Research Question 2: Is there a significant difference in overall GPA of students with life skills subjects in their curriculum between various programs (Computer Science and Technology (CST), Hotel and Restaurant Management (HRM), Corporate Services and Office Management (CSOM), Tourism Management (TOUR))?			
Kruskal Wallis Test			
	Course	N	Mean Rank
GPA	CSOM	25	32.64
	HRM	17	35.68
	CST	26	45.04
	TOUR	4	8.63
	Total	72	
Test Statistics a,b			
	GPA		
Chi-Square	12.303	> 7.815	Reject Ho
df	3		
Asymp. Sig.	0.006	< 0.05	Reject Ho
a Kruskal Wallis Test			
b Grouping Variable: Course			
Multiple Comparison	diff	CV	Decision
CSOM-HRM	3.1	17.35569569	Not Significant
CSOM-CST	12.4	15.46465573	Not Significant
CSOM-TOUR	23.97	29.73109095	Not Significant
HRM-CST	9.3	17.22007107	Not Significant
HRM-TOUR	27.07	30.68082528	Not Significant
CST-TOUR	36.37	29.65212377	Significant
Conclusion: For students with life skills subjects in their curriculum, there is a significant difference between students' GPA between courses. Specifically, CST and TOUR students have significant difference between them.			

Table 5. Research Question 3

Research Question 3: Is there a significant difference in overall GPA of students with life skills subjects in their curriculum between genders?				
Mann-Whitney U Test				
	Gender	N	Mean Rank	Sum of Ranks
GPA	Female	49	32.59	1597
	Male	24	46	1104
	Total	73		
Test Statistics a				
	GPA			
Mann-Whitney U	372			
Z	-2.537			
Asymp. Sig. (2-tailed)	0.011	<0.05	Reject Ho	
a Grouping Variable: Gender				
Conclusion: For students with life skills subjects in their curriculum, there is a significant difference between students' GPA between genders.				

Table 6. Research Question 4

Research Question 4: Is there a significant difference between the GPA of students during the life skills subjects during their first year and after during their second year?				
Wilcoxon Signed Ranks Test				
		N	Mean Rank	Sum of Ranks
After - During	Negative Ranks	43a	34.44	1481
	Positive Ranks	28b	38.39	1075
	Ties	2c		
	Total	73		
a After < During				
b After > During				
c After = During				
Test Statistics a				
	After - During			
Z	-1.163b			
Asymp. Sig. (2-tailed)	0.245	> 0.05	Do Not Reject Ho	
a Wilcoxon Signed Ranks Test				
b Based on positive ranks.				
Conclusion: There is no significant difference between students' GPA during and after their life skills subjects.				

4 IMPLICATIONS, CONCLUSION AND RECOMMENDATION

Introduction and inclusion of new subjects in a particular curriculum can be considered as an innovation. It can set an institution apart from others with a unique characteristic. Further, it can differentiate one graduate from another, through its teaching methods and instruction, which may help them become more productive individuals in the future. The study then wanted to find out this unique feature of Asia Pacific Academy of Management, Science and Technology's impact to student performance as measured through their GPAs. This will then support further and strengthen the need for these subjects and maybe used as a basis for policy making for TESDA and its programs.

In summary, the results show that there is no significant difference between batches with or without the life skills subjects affecting the students' GPAs. Further, there is also no significant difference between the GPAs of students while taking the subjects and a year after. Significant difference in GPAs of students with life skills subjects in their curriculum have been seen between courses, specifically CST and Tourism, as well as between genders. However, these maybe due to other factors not related to the life skills subjects taken.

Furthermore, below are the findings and further recommendations on the study.

Table 7. Conclusion and recommendation

Findings	Conclusion	Recommendation
There is no significant difference between students' GPAs with and without life skills subjects in their curriculum. Further, no significant difference as well during and after taking the subjects.	The life skills subjects included in Technical Vocational Education curriculum has no impact to student performance as measured by their GPAs.	<p>Research: Further studies could be made regarding the impact of life skills in technical vocational education and what other factors may it positively affect towards student development and performance. Also, comparative studies can be made between life skills education between different levels of education, such as primary, secondary and tertiary education. This will support the development of the program appropriately.</p> <p>Practice: The institution should re-assess their program as to its main purpose and impact. Depending on the results, as additional subjects affect operational costs and tuition rates, redesigning or removal of these subjects may affect these factors. Life skills training then may go back to seminar or activity based by design and not as part of the curriculum.</p> <p>Policy:</p>

		For now, it is not recommended that TESDA include life skills training into their various national certification modules until other studies support otherwise.
There is a significant difference in students' GPAs between CST and Tourism students who took up life skills subjects.	The difference found between one pair of courses, CST and Tourism, cannot be attributed to the life skills subjects taken. Factors such as number of respondents from Tourism (4 students) and level of difficulty of courses could be other factors affecting the result.	Research: Further research could be made with more data to validate the difference between the two courses. Also, other studies could be made to look at other factors affecting difference in GPAs between courses.
There is a significant difference in students' GPAs between males and females who took up life skills subjects.	The difference found between one pair of courses, CST and Tourism, cannot be attributed to the life skills subjects taken. Other factors may have been contributed to this difference.	Research: Further research could be made to look at other factors affecting difference in GPAs between genders.

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FACTORS INFLUENCING EMPLOYEE RELATIONS AND MOTIVATING EMPLOYEES

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ABSTRACT

Organizations today are a much more diverse working environment than they have been in generations past. With such a vast array of age, gender and educational differences, it is no longer possible to motivate all employees with the same incentives. In line with this, knowing different methods used to motivate workers is essential in maintaining good employees and attracting new ones. However, there is a little documented evidence of what specific factors make an impact on increasing motivation of employees and their ranked importance. Therefore, the aim of our study was to recognize and describe the importance of certain factors in motivating employees in organizations. The other purpose was to investigate the job related motivation factors among senior and junior employees as well as explore issues in the workplace that may affect work demoralization

Keywords: Motivation, employment, organization, work environment.

1 INTRODUCTION

Motivation directly relates to the achievement of employees and employee relations in the workplace. It is a term that has also been referred to as a catalyzer or an engine that runs the human forward [1]. Achievement in the workplace deals with the pride and sense of accomplishment employees feel about their jobs and employers [2]. So, the purpose of this paper was to recognize and describe the importance of certain factors in motivating employees. We analyse these factors taking into account age, gender and education.

In this article, we discussed important considerations in the development of a research question and hypothesis and in defining objectives for research. The data collection tool in the research investigation involved a questionnaire. The target population of this study included employees in Serbia. We expect that theories investigated together with our research will help describe how managers can influence their employees to self motivate and produce the best work possible.

2 RESEARCH HYPOTHESIS

Three hypotheses were build based on the literature and were tested in perspective of the previous studies and literature.

H1 :Each generation have different work expectations what make an impact on collision of different generations and their relations in the workforce (Ron Zemke's theory);

H2: The employees are motivated by the possibilities of promotion in the organization and achievement in the workplace (David McClelland's- achievement theory)

3 REVIEW OF LITERATURE

The issue of motivation has been approached from many aspects in an extensive literature on the subject. Firstly, the effect of the work environment on the employees' motivation to do their best at work was analysed. Also analysed were the rewarding system and the ability of managers and leaders to motivate their employees to contribute to their organization's success and through good organizational behavior be committed to its further progress. In addition, the subject of study were the effects of gender and age differences on behaviour and work ethics at workplace. Finally our itention was to investigate employees' perceptions of the relationship with their co-workers.

Motivation Factors are factors that their existence results in satisfaction and motivation, while their non-existence doesn't cause dissatisfaction, e.g. promotion opportunities, growth opportunity, advancement opportunity, increased responsibility, recognition and fame [3]. Deciding which motivating factors to use should be based on individual employees' needs.

The contemporary motivation theories are classified into following categories: endogenous and exogenous theories, behavioral and cognitive theories, content and process theories, evolutionary theories and macro theories [1]. Three early theories that managers can reference when determining their approach to motivating their employees are Maslow's hierarchy of needs, Taylor's motivation theory, Herzberg's motivation-hygiene theory, and McGregor's X and Y theories. Maslow's theory divides human needs into five categories: lower-order physiological and safety needs and higher-order social, esteem, and self-actualization needs [4]. According to Maslow's hierarchy of needs, if the basic needs are fulfilled and an employee finds fulfillment in his daily tasks by doing meaningful work in a good and safe work environment then a manager has found a win-win situation and his/her employees will be motivated to give their best effort. The „scientific theory of motivation“ is developed by Taylor (1911). It is based on assumption that monetary rewards play strong role in motivating employees. Similarly, Herzberg's motivation-hygiene theory proposes that hygiene factors such as pay and working conditions may prevent a worker from being dissatisfied with their job, but employees are more likely to be motivated by opportunities for personal growth, recognition, responsibility, and achievement [4]. McGregor's theories X and Y proposed two differing sets of employee characteristics, each demanding a different managerial approach. Theory X assumes that employees are lazy, dislike work, and try to do as little as possible and theory Y asserts that employees are not lazy and are committed to organizational goals. Though these classical theories are often referenced, the more contemporary goal-setting, equity, and expectancy theories are more applicable in today's organizations. Goal-setting theory, proposed by Edwin Locke, postulates that setting goals increases performance and is a major source of motivation [4]. Therefore, managers should strive to set specific, adequately challenging goals in order to keep their employees motivated. Equity theory proposes that employees evaluate the amount of work they put into their job and what they receive in return, such as salary, and compare this to others, such as coworkers, friends, and family. Namely, managers might find it difficult to grasp how to motivate employees. This is because employees are motivated in different ways. What works for one employee, might be meaningless to another. The benefit of understanding what motivates others is important. Motivation increase productivity, quality and service. It also helps to achieve goals, gain positive perspective, create the power to change, builds self-esteem and capability and helps people manage their own development [5]. There are tools a manager can use to determine what motivates their employee. Managers should ask employees what motivates them. They should make it a point to complement others on a job well done. Managers should make an effort to change things that may demotivate their employees. This might be something as easy as replacing equipment. It might also be more substantial, such as correcting unfair practices. Managers should be supportive and provide incentives for their staff. Efforts should be made to manage change and be mindful of different learning styles. Finally, consistent feedback is also helpful [5]. However, given that all people are not the same and that they have different knowledge and belong to different age groups and gender, employees can not be motivated in the same way. Taking mentioned into account, a good manager will try to lay out a strategy that will show the employees they are trusted, that their work is valued, and try to make necessary changes that will help employees find the most fulfillment in their daily tasks. In the scenarios where the younger employees are having to wait for a promotion, or in a scenario that there are barely in baby boomers and mainly a younger employee population, in both situations, a manager must assess what necessarily steps he must take to motivate his employees to work to their best abilities.

4 MOTIVATING EMPLOYEES IN TRADITIONAL ORGANIZATIONS: AN EVIDENCE OF SERBIA

When discussing the work environment, teamwork, job satisfaction, customers and leadership are topics with relevance [6]. Teamwork and cooperation are more likely to exist in a company that has a positive work environment. Negative work environments are not conducive to productivity and foster negative emotions within the team. Job satisfaction also increases in a positive work environment and employees have a greater respect for the organization and offer praise to their employers more often. This helps attract customers. Positive employees interact better with customers and are able to meet their needs in an efficient manner. Finally, positive work environments help nurture workers into leaders through positive reinforcement and education [13].

Motivation is the process that accounts for an effort made to attain a goal. It includes the intensity, direction and persistence displayed in achievement of those goals. Motivation show how hard the individual works,

how focused they are on the goal, and how long they are willing to work to achieve the desired result [4]. Motivation applies to an individual or a group of people. The process of motivating others often falls on the manager. Managers are often responsible for motivating others in a variety of ways and instances. For example, today's work force is comprised of a large percentage of baby boomers not yet ready to retire. Jobs are not available to younger workers and moving up the career ladder takes longer when they do find positions. The older employees are rooted in their careers, making it difficult for younger workers to be successful. In contrast, once the large number of baby boomers begins vacating their roles, younger workers will not be able to fill the void. These two distinct scenarios would both represent a challenge to a manager; motivating a young employee that has few job choices and faces a long climb up the career ladder and motivating a young employee with a multitude of choices and opportunities.

With all mentioned approaches to motivation, the level of education and its effects on boosting the employees' motivation to contribute to their organization through new ideas and improvements of the organization's business, were neglected. On the other hand, however, there is a need to see whether there is a correlation between the level of education and the wish for personal achievement and promotion at work, which eventually results in achieving a successful career and professional reputation.

In the era of globalization, a multi-cultural workforce symbolizes a new way of thinking about diversity [7]. For these reasons this study pays special attention to the level of education as a key determinant of the increase in motivation among the diverse employees, both on the individual and on the organizational levels. The aim of this research was to point to the need that the organization should educate and develop its employees in order to motivate them to implement their knowledge at their workplace towards their own well being and the prosperity of the organization they are employed with.

5 RESEARCH METHODOLOGY

The literature overview of the domain is used to explore the topics related to the research questions. Research Methodology .The study is divided into three sections: research question, research hypothesis and research objectives. For the purpose of analyses ,the data has been collected from one hundred and twenty eight respondents. The questionnaire sought personal information such as participants' age, gender, and educational status. In addition, the questionnaire was distributed to different employees in many areas of work. The survey asked participants to choose one out of six factors in terms of importance for motivating them to do their work. The response categories were from 1 = "most important" to 6 = "least important".

As regards the age, the structure of the sample mainly consisted of respondents aged 26 to 34 (59%), while those aged 55 to 64 were rather few (7%) (Fig.1).

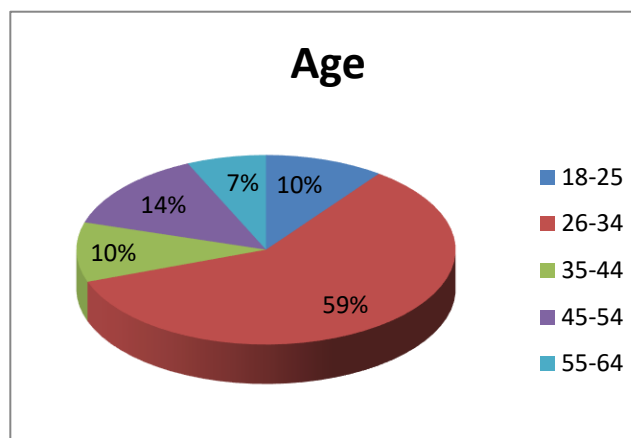


Fig. 1. Distribution of respondents by age

The structure of the respondents by education is mainly consists of the faculty-educated persons (58%) (Fig.2).

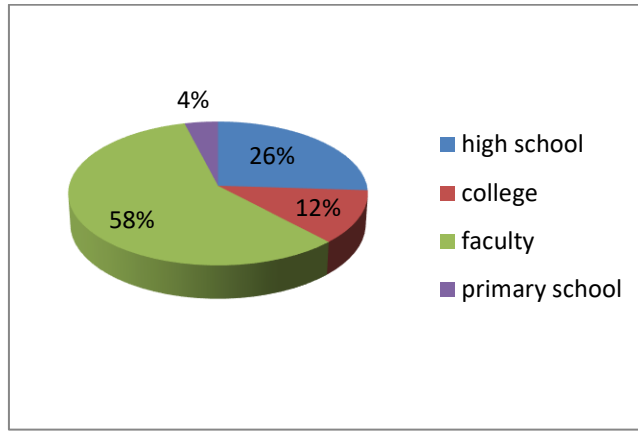


Fig. 2. Distribution of respondents by education

From a review of literature, a survey questionnaire was developed to collect data for the study. The study was undertaken in the year 2018. In the survey were participated 128 adult employees. The participants of this study were randomly samples. The data collection tool in the present investigation involved a questionnaire.

6 KEY FINDINGS

The hypothesis, which states that each generation have different work expectations what make an impact on collision of different generations in the workforce (Ron Zemke’s theory) was accepted. The results show that employees in all generations agree on the importance of motivation on employee performance. However, research showed that works as incentive for one generation may not necessarily motivate another. An example of this is the generational differences that can be seen in employees in today’s organizations. “Each generation has distinct attitudes, behaviors, expectations, habits and motivational buttons“ [8].

A large portion of the current workforce is composed of workers from the baby boomer generation, born between 1946 and 1964 (Fig. 3).

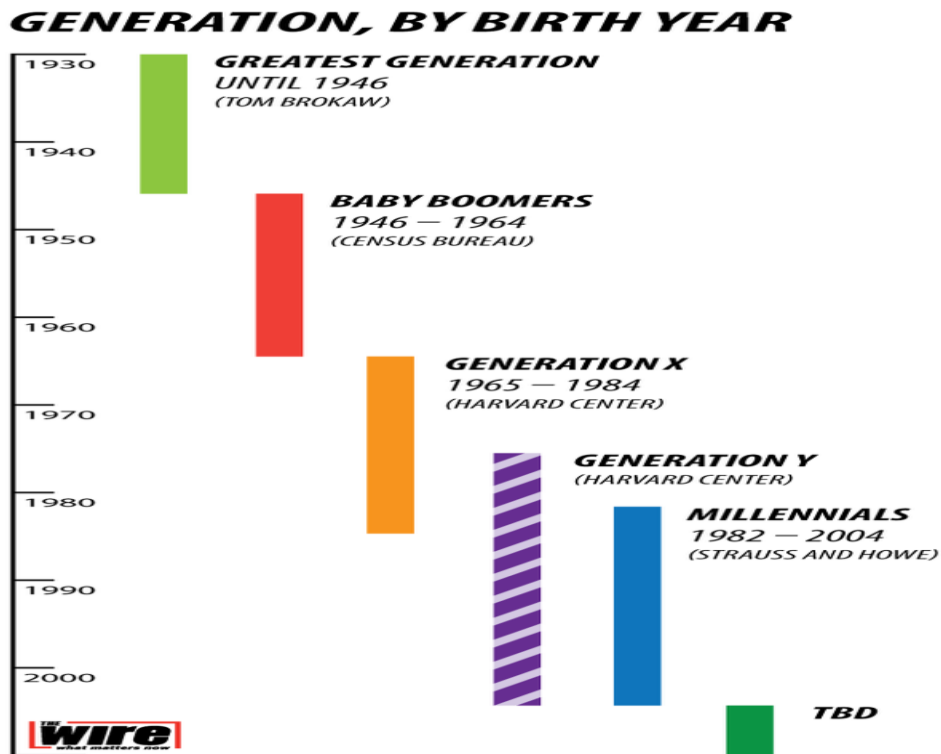


Fig.3. Generation timeline

Source: [8].

Employees from this generation will be continuing to work long into their retirement years simply because it is no longer financially feasible for most to retire at the age of 65.

Motivating employees from the baby boomer generation should include offering medical and life insurance policies as well as retirement packages and a flexible schedule. Motivating members of generation X, however, requires a slightly different approach. Generation Xers are the children of baby boomers, born between 1965 and 1980. Having grown up in homes where their parents often worked long hours and had little home life, members of this generation tend to have a “work hard, play hard” mentality [9]. However, it should be pointed out that not every person in a generation shares all of the various characteristics in the same generation. Therefore, these examples are indicative of general patterns.

As such, managers should make an attempt to give them the option to use their creativity and provide plenty of opportunities to gain new skills and knowledge [9]. Lastly are the members of generation Y, those born after 1980. Generation Yers grew up in an era where children were rewarded just for their participation and were often involved in numerous extracurricular activities. To motivate members of this generation, managers should encourage multitasking, working in teams, and be sure to offer plenty of positive reinforcement [9]. Furthermore, Zemke et al.,[10] examined organizations that have been successful in managing multiple generations.

While it is clear that when dealing with employees from different generations, different motivational techniques will be more effective, it should also be noted that it is important to tailor these techniques to the individual employee as well. Just as factors that have affected members of each generation will have an impact on an individual, so too will the unique environment in which they were brought up and any formative experiences they have been through. It is very important for managers to take this into consideration when determining the best approach to motivating their employees. It is necessary for them to get to know their workers on an individual basis, and then decide which techniques will best build upon each employee’s own strengths and weaknesses.

The hypothesis, which states that the educational level has a strong impact on employee motivation for achievement in the workplace has also confirmed in our research. The university graduates in Serbia maintain that an interesting job and good working conditions are most highly motivational. This category of respondents also find flexible working hours and promotion at work to be equally important, whereas steady job ranks lowest in the list. Contrary to the university graduates, the employees with secondary or even lower level of education find that the highest motivation factor is good pay. According to the college graduates, a most highly placed motivation factor is promotion at work.

The hard work, low wages,poor work environment, repetitive work,insecure jobs,inability to use the full potential are all factors that can lead to job dissatisfaction .On the other side , flexible working hours,possibility of promotion, good working conditions,job security,good salary and interesting are job factors that can lead to job satisfaction and truly inspire individuals to perform at their very best.

The Pearson product-moment correlation coefficient was used to establish the correlation amongst important variables for our research.

The relationship amongst faculty and high school educated respondents and the certain factors in motivating them show that there is a high positive co-rellattion ,i.e. $r = 0,872402415$. In addition, the relationship amongst faculty and college educated respondents also show that they are positively co-rellated, $r = 0,466252404$ (Fig.4).

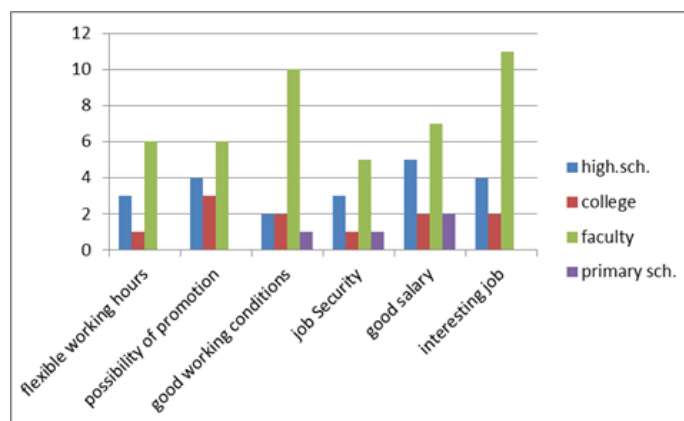


Fig. 4. Importance of certain factors in motivating employees by the level of education

Source:Authors

Our research has shown that there is a close correlation between the level of education and the level of motivation at workplace. The awareness of the needs and of motivation factors of individual education groups can help leaders and managers create such education policy in their organization to stimulate their employees by raising their level of motivation in accordance with the requirements of their job, however respecting their individual goals that they try to accomplish within the organization [11,12]. Furthermore, there is a difference in type of training solutions preferred between the generations.

The findings related to the second hypothesis that the employees are motivated by the possibilities of promotion in the organization and achievement in the workplace, showed that it is not characteristics of all educational levels of employees. Research has shown that there is an increased level of motivation to prosper in the workplace for each older group of respondents, but it is sharply decreased in the oldest group (Fig.5). It might be expected for the category of respondents between 54-65 years, given that they are more focused on ending their career and they are not interested much in developing new job relations with younger generations..

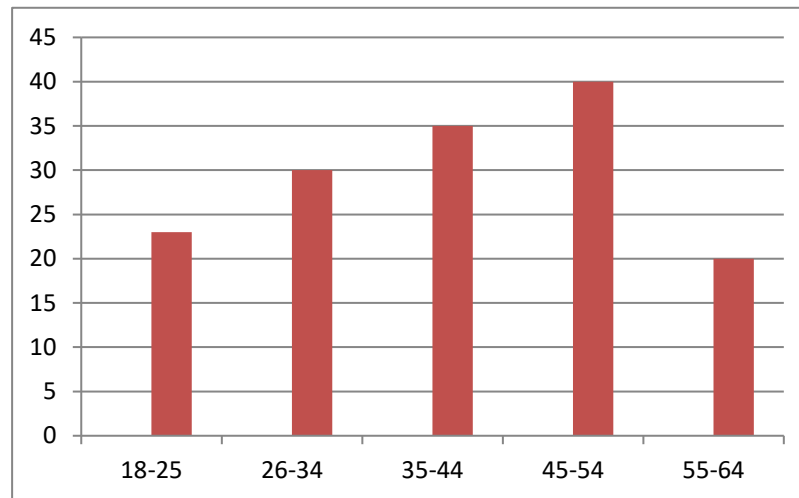


Fig.5. I will leave my job if, I cannot be promoted at workplace

Source: Authors

7 CONCLUSION

In view of that workers motivation matters a lot and should be concerned for both managers and the employees. Motivating employees is an important function of today's manager. Current trends in the job market and projections about future events make it a skill worth pursuing. Not every employee is motivated in the same way. An individual's motivation is influenced by intellectual, social, economic, emotional and other factors. In line with this, motivating a diverse workforce helps the companies create an amalgamated workforce composed of people with many different backgrounds, perspectives, skill sets, and tastes. It helps them retain the best and the brightest talent needed to compete in an increasingly competitive economy. Offering on-the-job training, especially in the area of technology, can also help to boost employee confidence. By bringing together the different backgrounds, skills, and experiences of the diverse workforce, businesses are better able to produce innovative and creative solutions that are a must to succeed in an increasingly competitive economy. Hence, understanding motivation is essential in determining how to motivate both workers who find it difficult to succeed when jobs are scarce and workers who have an overload of opportunity. Therefore, the managers must use a variety of methods such as modifying the work environment, promoting employee participation and rewarding employees. Spending time to understand motivation and demotivation can be helpful in maintaining good employees and attracting new ones. In this context, managers must play a more supporting rather than supervisory role in the whole process of employees learning.

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TEAMWORK IN SAVA COMPANY LIFE INSURANCE

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ABSTRACT

The subject of this paper is the analysis of team work in the company SAVA NON-LIFE INSURANCE a.d.o. The paper examines the importance of team work within the company's business. Teamwork is significant not only in the company's business but also in other companies. In order for a company to achieve success on the market, gain the name and profit, a successful team of associates is needed, led by a manager who organizes team work.

Teams should have a common goal that members can only achieve through common work and a combination of knowledge and skills from different fields. Then each member will have the opportunity to give their contribution in solving the problem. Customer satisfaction is a measure of teamwork efficiency.

SAVA NON-LIFE INSURANCE a.d.o. is an insurance company that has successfully been operating in Serbia for 16 years. The indicator of their successful business in addition to the large number of satisfied customers is a large number of insurance programs that are being innovated year after year and offer their customers a growing range of possible insurance.

The survey was conducted on a sample of 91 respondents, from employees of SAVA NON-LIFE INSURANCE a.d.o.

Keywords: teamwork, success in the market, satisfied customers, a common target.

1 THE IMPORTANCE OF TEAMWORK FOR THE COMPANY

The term "team" means an organized group of people who deliberately work on achieving the common goals of the organization. To this end, everyone is responsible, everyone is trying to reach him, to achieve it, to try to overcome his own expectations. It is especially important that all team members understand each other and respect each other. [1]

This century brought with it a number of changes when it comes to the realization of the set plans and goals of all organizations in the whole world, and not only with us. In this time, without teamwork, every business is inconceivable. The team in the 21st has an enormous impact on the overall success of an organization and implies one of the surest way to organize the work. [2]

As the most important reasons for this, we point out the following:

1. positive experiences and previous positive effects of team work;
2. the ability to quickly adapt to new situations;
3. commitment and loyalty between team members, team and management and team and organization as a whole;
4. increased motivation;
5. improved communication and improved interpersonal relations;
6. rational use of human resources in the organization;
7. Reducing production costs, etc. [3]

1.1 Similarities and differences between the working group and the team

A working group and team are concepts that are usually always identified. These are similar but not identical terms. A working group is a term that represents a structure that has specific characteristics, and it is not just a simple set, a sum of individuals. The working group represents their common functioning.

A working group is formed primarily to exchange information and make decisions to help each member to perform the work more efficiently and effectively. [4]

When it comes to teams, as their main characteristic, it is pointed out that for small working groups in organizations, the main reason why teams exist is to produce goods of social importance. When we compare these two terms, we keep in mind the fact that all teams in the world are certain groups, but that all groups are not and can not be teams. A group of people may and does not have to be a team, but the team has to be unique, fully functional, active and organized group of people who have a common goal. The achievement of the goal then tends to each of the members individually, which is the main characteristic of each team.

Unlike the group, team members have complementary knowledge and skills that lead to a common goal, for which they are considered responsible - individually and collectively. Teamwork creates synergy because the result of team members' work is not just a mere sum of the individual results of each member's work, as is the case with the group. The effects of teamwork depend on both individual and collaborative work, and the effects of group work depend solely on the individual performance of each member. The difference is also evident in the degree of autonomy. Groups can, but do not have, be independent in their work, while teams enjoy a high degree of autonomy in work and decision-making. For groups, it is characteristic to make decisions by voting, while teams, as a rule, come to a consensus solution. [5]

Contrary to individuals belonging to one group, all those team members have complementary knowledge and skills which aim to achieve a common goal, and for which realization everyone is accountable to everyone, both individually and collectively. It is important for all members to make their work successful and to produce positive results. What is the result of their cooperation is not just summarizing the individual results of the work, but the achievements of teamwork depend on both individual and collective action in the team, and the effects of one group work depend solely on the personal performance of each of its members.

Working groups permanently have a formal leader who has a certain power and rights towards other workers. Work teams are groups whose members work intensively on a specific, common task (achieving the goal) using their positive synergy, individual and common responsibility and additional skills through coordinated effort. [4]

We come to the conclusion that work in a team implies every activity that individuals perform within a given group, which is deliberately organized, with some goal, and the division of work within it is based on cooperative work, trust, mutual help and competence of various experts.

1.2 Factors that affect teamwork efficiency

The very essence of the organization is to continually seek out a new way to help them and make it easier to cope with the competition, the requirements set by innovations in the work. The quality of team work is based on the outcome that is striving to work, but also to the satisfaction of all those working in that team.

Satisfaction is based on the ability of team work to meet the personal needs of members and thus increase loyalty to the team. Factors such as team types, structure, composition, homogeneity, or team heterogeneity, in terms of age, gender, skills, knowledge and attitudes, affect internal processes in teams that ultimately determine the satisfaction of members and the ultimate result. [6]

Since there has been a work process, it has not been noted that some of the team work models ever in business were more significant for the organization's business than it was in the 21st century. From there, all the potential reasons why business teams are increasingly being used.

One of the most important factors for the successful work and functioning of the team is determining the strategy of work. The team must have clearly defined goals, and in accordance with them, a clearly developed strategy and concept of work. The strategy defines the issues that you are in team work, internal team relationships, team attitude towards the environment, etc. It is therefore desirable that team members, especially at the beginning of their work, draw up a plan and a strategy of work. [7]

The final result is determined through the qualitative and quantitative achievements of the team defined through team goals. Satisfaction is based on the ability of team work to meet the personal needs of members and thus increase loyalty to the team. Factors such as team types, structure, composition, homogeneity, or team heterogeneity in terms of maturity, gender, skills, knowledge and attitudes, affect internal processes in teams that ultimately determine the satisfaction of members and the end result. Efficiency is important because it is a determinant of organizational success and refers to meeting the organizational valley. Efficiency is the degree of correlation between the actual and the desired result. [6]

Teams should have a common goal that members can only achieve through common work and a combination of knowledge and skills from different fields. Thus each member will have the opportunity to give their contribution in solving the problem. Customer satisfaction is a measure of teamwork efficiency.

Feedback about common successes or failures, knowledge of a shared result, and a rewarding system that values the team, rather than individuals in it, encourages motivation for working together.

Communication is a two-way process between the sender and the recipient of the message, where the recipient of the message must not only receive but also understand the message. Successful communication implies that the information is accurately received in terms of the content and meaning assigned to it by the sender. [8]

This important role have their manager who gives feedback about the results of the entire team's work. It also encourages communication among teams and make influences in the development of a competitive spirit among them. Processes in teams such as conflict, developing group norms, cohesion and believing members in the effectiveness of their team also have a major impact on team efficiency.

Successful communication is the basis for a good and quality team work. Teamwork, as a common form of work for a larger or a smaller number of people, depends to a large extent on how information is transmitted between team members. If the information transfer system is adequate, the efficiency of team members is greater. Inadequately transferred information can lead to collapse in the work of the team and to the distancing from the set goals. In order to successfully communicate team members, they need to master basic communication skills. [7]

1.3 Role in the team

In response to the question of how some teams have successful work behind and some not, many theorists have watched organizations in order to give a good answer to this question. Their research has shown that teams work much more efficiently when there is a combination of team roles in the company. In order for the team to function successfully, and while achieving enviable results, it should be equally focused on the tasks that are before it, but also on the emotional and intellectual status of his members.

Apart from common approach and complementary roles, complementarity of knowledge and skills, as well as dedication to the common purpose of the work that gives teamwork identity, teamwork must have a shared responsibility as the sense of responsibility of each team member towards the team and the team towards each member. It can be said that teamwork is a key component of productivity, efficiency, job satisfaction and results. [7]

The composition of any team in the company as well as their tasks largely depend on the form of occupation and the goal that is ahead of the team.

Teamwork has become a necessary element in the successful operation of each organization. Each type of team work is important for the development of the personnel potential of an organization. Regardless of the problems and obstacles that can arise in team work, the results are much better and decisions are more appropriate if more people work on one task. All are based and focused on the benefit of the team. Team development is a dynamic process. Most teams are in constant state of change. To make the team as efficient as possible, it must first become a team. [7]

The mood of the members goes from excitement to depression. Each stage is equally valuable, as part of the planned road to team maturity, and bad is only the one in which the team is insufficiently developed or too long. The first stage of the development of the team should point to what is still to be realized, and the last stage indicates what the planned one has achieved, what has been done more than what was predicted, what was not achieved, and so on.

2 SAVA COMPANY NON-LIFE INSURANCE A.D.O.

Business SAVA NON-INSURANCE INSURANCE a.d.o. is based on the trust that employees, shareholders, clients and other interested public have in the value of the company to which it is bound. The basis of this trust is the procedures and abilities of employees, including the management, as well as their commitment to create value for clients, shareholders and other stakeholders. Every insurance company that actively approaches its business has its own mission, vision and values, and thus SAVA NON-LIFE INSURANCE a.d.o.

The mission is to contribute to security through partnership and support, to provide the owners with a secure future by providing capital gains, providing professional and personal development to employees, and building a responsible attitude towards the social environment.

The insurance vision is to preserve an insurance company that can be easily identified on the market by the quality of its services.

Values are: commitment to clients, employee satisfaction, innovation, ethics, business efficiency, success in the Company's business and the reputation gained, responsible attitude towards the natural as well as social environment.

2.1 Analysis of the importance of team work in the company SAVA NON-LIFE INSURANCE a.d.o.

The survey was conducted on a sample sample of 91 respondents, from employees of SAVA NON-LIFE INSURANCE a.d.o. A survey questionnaire was used to collect data in the form of a Likert scale for measuring attitudes, specially constructed for the given research. The Lycert scale is defined with five levels of gradation: (1) I do not agree, (2) I mostly disagree (3), neither agree nor disagree - I do not have a clear position, (4) I mostly agree and (5) I agree. The survey questionnaire had four parts with the offered views:

1. Synergy in companies SAVA NON-INSURANCE INSURANCE a.d.o.
2. Quality of work of team members SAVA NON-LIFE INSURANCE a.d.o.
3. Innovation in the operations of teams SAVA NON-LIFE INSURANCE a.d.o.
4. Quality of business within the team SAVA NON-LIFE INSURANCE a.d.o.

The problem and the subject of the conducted research

The problem of this research is: Efficiency of team work in SAVA NON-LIFE INSURANCE a.d.o.

In accordance with the problem of research, the focus of our interest was to find out the relationship of the teams in the mentioned company. The subject of this research is set in accordance with the defined problem. As an object of this research, we say: The degree of efficiency of the application of teamwork in SAVA NON-LIFE INSURANCE a.d.o.

Goals and tasks of the research

With the increase in the number of insurance companies in Serbia, their expansion, greater market penetration, the expansion of their capacities, and the complexity of their organization, the existence of teams in business has become a necessary link in the chain of their business. Among other things, teamwork is also required in the SAVA NON-LIFE ASSURANCE COMPANY a.d.o. due to the fact that this company has experienced a rapid expansion over the past decade. In order for its functioning to keep pace with the needs of the 21st century, the expansion of its business will also increase the number of necessary teams so that only business can be successful and have positive results. In line with this, we define the goal of our research: Determining the importance of team business of SAVA NON-LIFE INSURANCE a.d.o.

From the set target, research tasks are formed:

1. Determine whether there is synergy in teams,
2. To determine whether team members have the appropriate skills in business,
3. Determine the extent of the innovative achievements of the teams,
4. To determine whether the teams operating in the company perform their duties in a quality manner.

Research hypotheses

The hypotheses of our research are determined according to the set goal and tasks. The main hypothesis is formed according to the set goal and secondary to the set tasks. The main hypothesis reads: It is assumed that team business is of great importance for the insurance company SAVA NON-LIFE INSURANCE a.d.o.

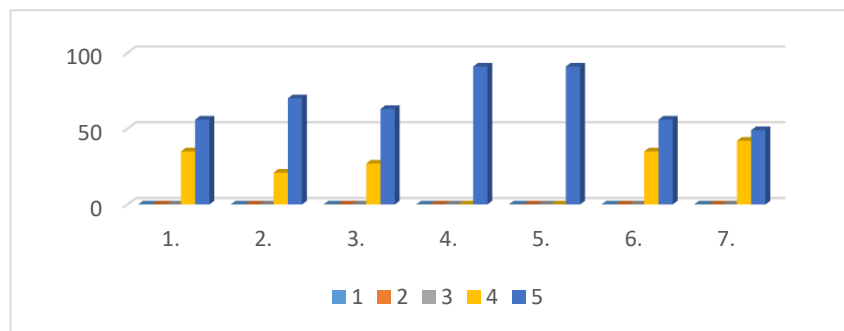
Secondary hypotheses are: 1. It is assumed that there is synergy in teams, 2. It is assumed that team members have the appropriate skills in business, 3. It is assumed that a high degree of innovative team achievements, 4. It is assumed that teams that operate in the company they perform quality assignments.

Interpretation of research results

We will analyze the results individually on issues, as they were in the survey questionnaire. Questions arise in the form of groups, or circuits. The first table relates to the first research task in order to confirm / reject the set hypothesis. We need to determine the degree of synergy in the teams of this company, or whether the synergy in the teams exists. The term synergy means the sense of belonging to the team. The answers we received were tabulated graphically and textually.

Table 1. Synergy in companies SAVA NON-LIFE INSURANCE a.d.o.

Proposed claims	Frequency of received responses				
	1	2	3	4	5
1. It is clearly defined the affiliation with the team in which i am a member	0	0	0	35	56
2. The needs for teamwork are clearly defined	0	0	0	21	70
3. We communicate effectively within the team	0	0	0	27	63
4. I consider myself to be very responsible team members	0	0	0	0	91
5. I am very pleased with the team I work in	0	0	0	0	91
6. The goal that a team strives is defined and clearly defined	0	0	0	35	56
7. All members of the team in which they operate do their best to achieve the goal of the team and the business itself to be effective	0	0	0	42	49



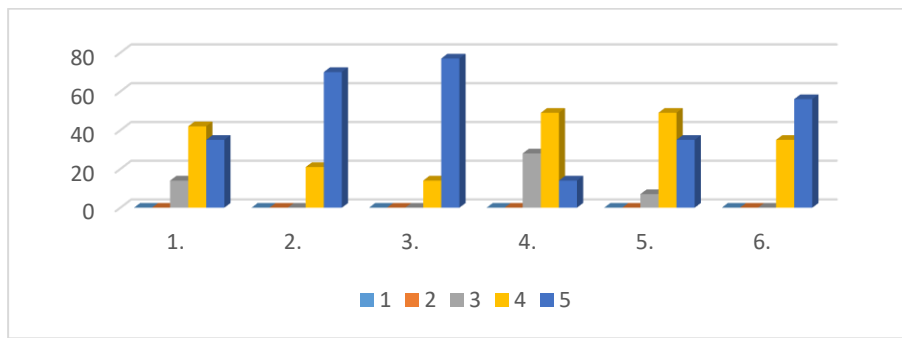
Source: author

When it comes to synergy in the teams of this company, we note that all of the respondents claim to feel very valuable to their team members. This is extremely important for both the team and the overall business of this insurance company. It is important for the company to provide its employees with favorable working conditions in order to make them feel comfortable. The sense of affection at work leads to positive results. All team members have roles that are clearly defined, and members within the team establish normal communication. For the efficiency and progress of the team, it is important to achieve a link between the goals of the team and the goals of the company. Only in this way, the achievements of the team will reach their highest level.

The second group of offered statements, of which respondents should choose the one that is most competent to describe the existing situation, relates to the skills of team members, the quality of each member, and the ability to fulfill their tasks in a satisfactory manner, in order to achieve the planned results.

Table 2. Quality of work of the team members SAVA NON-LIFE INSURANCE a.d.o.

Proposed claims	Frequency of received responses				
	1	2	3	4	5
1. All members of my team professionally perform their duties in order to successfully achieve the goal of the team	0	0	14	42	35
2. The company strives to constantly improve the skills of its employees, through vocational training and education	0	0	0	21	70
3. The company enables additional training of employees in accordance with their needs and possibilities	0	0	0	14	77
4. Each of the team members has a number of activities to deal with, and is trained for their performance	0	0	28	49	14
5. All members in one team are ready to learn more	0	0	7	49	35
6. All team members are quickly adapted to work innovations	0	0	0	35	56



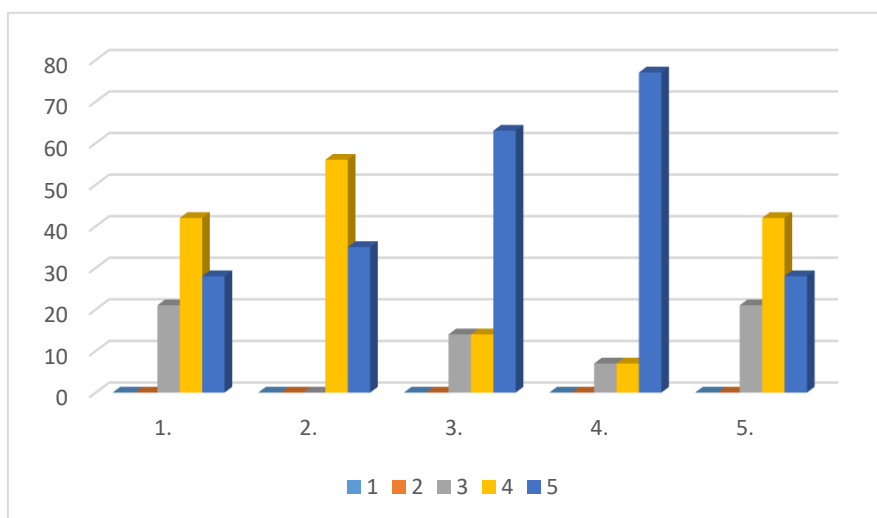
Source: author

When we talk about the quality of the work of the team members individually, what we have to notice is that members professionally carry out their duties in order for the team to be successful and in order to achieve the set goal. It is of utmost importance that a company recognizes not only the roles of its clients but also the role of its employees. With the company SAVA NON-LIFE INSURANCE a.d.o. , that's the case. According to the answers of the employees who participated in the research, we see that the company strives for constant improvement of the skills of its employees, both through professional training and education, which will enable members to be constantly introduced to innovative approaches in their work. The company recognizes the possibilities and affinities of its employees, and accordingly organizes additional training of team members. In order to realize the goal of the team at a given moment, it is important that all team members fulfill their duties, that is, what is required of them. Team members are ready to learn more, to advance, to work primarily on themselves, and later it also reflects on the quality of the company's business. All team members are adapting very quickly to innovation in the business process.

The third set of questions relates to innovation in business.

Table 3. Innovation in the operations of teams SAVA NON-LIFE INSURANCE a.d.o.

Proposed claims	Frequency of received responses				
	1	2	3	4	5
1. Team members are interested in trying out new forms of work within the team	0	0	21	42	28
2. The innovative activities of the team are highly valued by the company and are often rewarded	0	0	0	56	35
3. All the problems that the team members find, they are solved promptly and timely	0	0	14	14	63
4. Solving problems within the team represents a new motivation for progress, learning and development	0	0	7	7	77
5. All team members very often make proposals for introducing innovations on their own	0	0	21	42	28



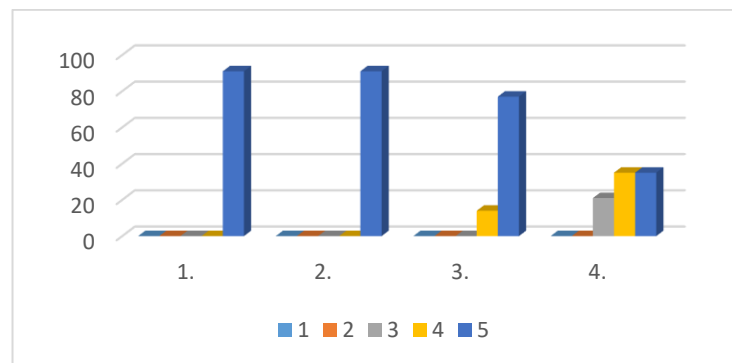
Source: author

When talking about innovations in the business of this company, it is necessary first of all to emphasize that the introduction of innovations into the work is of great importance. We came to the conclusion that in the company, team members are very motivated to apply innovations in their business. Innovations are mostly priced and rewarded, which can only be an incentive for employees in future work. Solving problems for employees represents learning and self-promotion. Team members often themselves propose the introduction of some innovative ways to achieve the goal of the team and accept the innovation that makes the company suitable for doing business and quality performance of the assigned task.

The fourth group of questions relates to the quality of business.

Table 4. Quality of business within companies SAVA NON-LIFE INSURANCE a.d.o.

Proposed claims	Frequency of received responses				
	1	2	3	4	5
1. Members are sensitive to the needs of clients	0	0	0	0	91
2. The business goal in the team is defined and clearly specified	0	0	0	0	91
3. The work of all team members is regularly monitored, evaluated, corrected and rewarded	0	0	0	14	77
4. Potential client complaints, team members consider and react in a timely manner	0	0	21	35	35



Source: author

In this group of questions, we come up with data on the quality of business within this insurance company. Team members who made a sample of the survey are familiar with the needs, demands, wishes of the clients, are empathetic towards them, and the standards of a team's operations are clearly defined through the goal that the team is aiming at. It is very important that employees have regular feedback about their work. This places the employee in the focus of interest, not just the client. Their work is monitored, evaluated, corrected, rewarded. This also motivates employees to continue at that pace, possibly improving the details related to their work, in order to make the team even more progressive and position high on the team's rankings.

On the basis of a complete research, we conclude that this is a serious company, whose quality is based not only on customer satisfaction, but also on the satisfaction of the people working there.

3 CONCLUSION

According to the research we conducted, we came to the conclusion that for the company's business it is essential that members of all teams are committed to fulfilling their duties, to cooperate, to work together to achieve a common goal, while at the same time pricing and solidarity with each other.

Team efficiency is also reflected in the overall performance of this insurance company. The results, which were obtained by anonymous interviewing 91 employees of SAVA NON-LIFE INSURANCE a.d.o., were presented in a tabular, graphic and textual manner. As a concise conclusion on this phenomenon, we state the following:

All team members have roles that are clearly defined, and members within the team establish normal communication. Accordingly, the hypothesis of the research that was published was confirmed: It is assumed that there is synergy in the teams.

When we talk about the quality of the work of the team members individually, what we have to notice is that members professionally carry out their duties in order for the team to be successful and in order to achieve the set goal. Through responses to the quality of team work, another side hypothesis was confirmed: Team members are assumed to have the appropriate skills in the business.

In the company SAVA NON-LIFE INSURANCE a.d.o. team members are very motivated to apply innovations in their business. Innovations are mostly priced and rewarded, which can only be an incentive for employees in future work. By confirming the existence of innovative activities in the operations of the Sava Insurance companies, the subsidiary hypothesis was confirmed: It is assumed that there is a high level of innovative achievements of the teams.

In the fourth group of questions, we come to the data on the quality of business within this insurance company. Team members who made a sample of the survey are familiar with the needs, demands, wishes of the clients, are empathetic towards them, and the standards of a team's operations are clearly defined through the goal that the team is aiming at. By analyzing the fourth group of respondents' answers, we came to the conclusion that the last by-pass hypothesis was confirmed, which read: It is assumed that the teams operating in the company SAVA NON-LIFE INSURANCE a.d.o. they perform their duties well.

Through the answers to the questions asked, we came to the conclusion that the hypotheses we set up - confirmed.

We also made a review of the factors that influence the team's efficiency and we also checked the methods of measuring this efficiency. In complex and complex tasks that require different abilities and knowledge, or consist of a number of operations that must be performed simultaneously, the need for teamwork arises. It is difficult to imagine an organization based on the individual work of employees and a rigid management. The management of the organization is more than ever interested in maximum utilization of knowledge of employees, which is realized within the framework of team work where the personnel resources and potentials for realization of the goals of the organization are united. It is important for all members to make their work successful and to produce positive results. The result of the work of the team depends both on the individual work of each member individually and from the joint work, and the effects of the work of one group depend solely on the personal performance of each of its members. For the effective functioning of the team, the team needs to be equally focused on the task as well as on the socially emotional behavior of the members. It is therefore important to conclude that the teams in this company are highly efficient. This company has people-oriented business. Members achieve good results but are motivated and willing to learn more about their business. By maintaining this continuity condition, each team will be successful and the team members are satisfied, which further leads to the fact that the company itself will only succeed in the future.

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AN ADVANCED MODEL FOR INTERPERSONAL COMMUNICATION

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ABSTRACT

This paper focuses on Interpersonal Communication and aims at outlining a more advanced and complete model in the attempt to represent in the best possible way, such a complicated issue as the communication process.

Starting from the Shannon and Weaver schema, the first fundamental though definitely incomplete model, we try to introduce all the fundamental key drivers that play a fundamental role in communication, presenting a far more detailed and complete model that, if properly used, may become a powerful tool for successful communication.

We stress how we nearly always communicate aiming at well defined goals and how it is therefore fundamental to master the principles of a persuasive communication taking into due account the aspects indicated in the model, according to circumstances, .

We then report the results of a research on interpersonal communication and, highlighting some fundamental differences between private life and business, we show how interpersonal communication not only is a main pillar of corporate communication, but it also plays a key role for the organization's success. We finally draw our conclusions and we make some suggestions for improvement.

Key words: Interpersonal Communication. Models to describe communication. Persuasive Communication. Interpersonal and Corporate communication.

1 INTRODUCTION AND THEORETICAL REVIEW

Communication, despite its extraordinary importance, is a relatively new discipline and has always been considered such a spontaneous and natural phenomenon that it could not even be conceived the necessity to analyze, describe and study it. This is so true that the first structured approaches to the topic of communication not only started in very recent times but, on top of this, they were also related to particular aspects of the communication process, such as phonetics, glottology and so on. The focus was therefore on some aspects of spoken and written language, the main tool of communication, but not on the process of communication in itself.

As [1] reports, it was only on 1954 when Shannon and Weaver, an engineer and a mathematician, published their book "Mathematical Communication Theory" where they laid the foundations of the discipline of communication, working out the first fundamental schema to represent the communication process as in Fig.1.

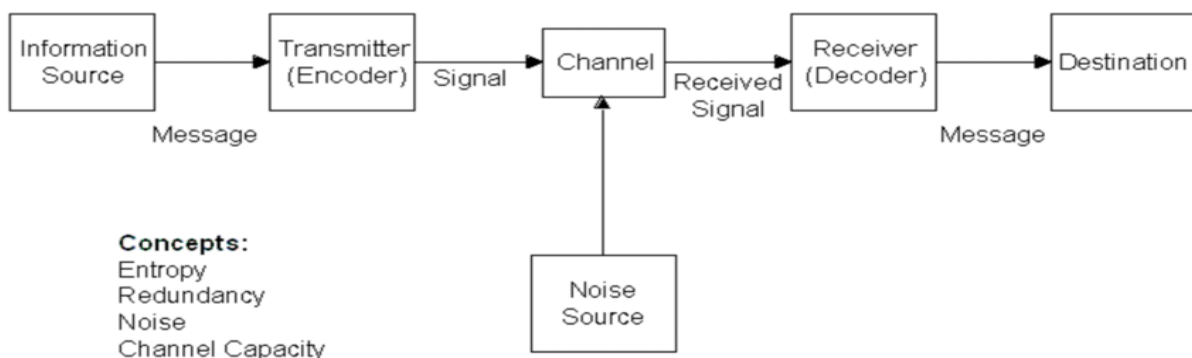


Fig. 1. The Shannon Weaver's basic communication model

The authors in particular identified three possible "macro areas" in communication activities, namely communicate information, express instructions and motivate others, highlighting also how a common purpose may be found in each of these three macro areas, namely to produce a change in all the possible choices of the recipient of the message.

What about this model nowadays? We must say that it is subject to many criticisms and, in fact, much more is needed to describe the phenomenon and process of communication, but, nevertheless, it was actually the first serious and well-structured approach in the study of communication and, considering the times, a real milestone to describe and understand it.

Approximately 60 years later we find another model as it is shown in Figure 2, [2] which adds some fundamental aspects, namely the "fields" of experience of the source and the receiver, interactivity in communication, the specific context and the receiver's motivation.

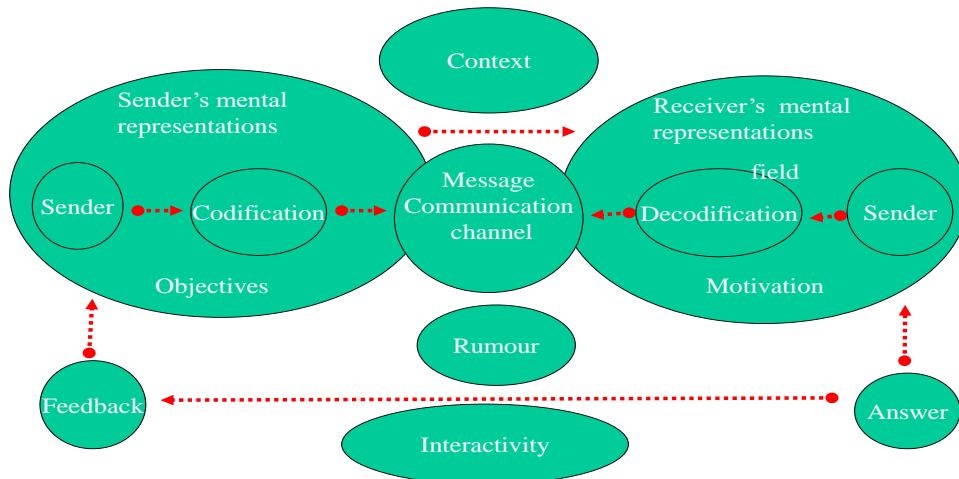


Fig. 2. A more recent model to describe the communication process (adapted from Pastore, 2008)

The field of experience is a fundamental pillar in a communication process, in the sense that how the message is conceived and transmitted by the source and even more how it is processed and understood by the receiver, is inevitably connected - if not strongly influenced and often determined - by the specific experiences of the individuals involved in the process. Beyond this, the two fields of experience show a common area where they overlap; here we find the message and the communication channel by which two individuals come in contact.

The second fundamental aspect is that communication is represented as a two-way process, an interactive one, with continuous feedbacks from both the receiver and the sender, a kind of circular process rather than a one way process as it happens in mere information. The authors also mention - even though they do not indicate it in the model - the fundamental aspect of message interpretation, namely that neither the source nor the receiver merely send and / or receive messages; they actually interpret them.

Finally, they highlight the importance of the specific environment where the communication process takes place as well as of the receiver's motivation.

This model is definitely by far more evolved, but it still does not fully describes the phenomenon of communication; in fact, going back to the main aspect of message interpretation, it's fundamental to take into due account "inferential aspects" that represent the essence of communication and that gives a meaning and a value to every message.

To understand better the key role of inference, we have to consider the important contributions coming especially from the Gestalt theory, that early in the twentieth century gave an important innovative contribution to highlight how our minds tend to perceive objects as part of a greater whole and as elements of more complex systems on the basis of a top-down mental processing that actively organizes the single sensorial stimuli we receive.

This mainly takes place in accordance with the Gestalt laws of perceptual organization in an automatic and unconscious way; in this regard it is really impressing the image of the Fig. 3 that refers to Helmholtz's studies on visual perception; the two trees according to the laws of optics should provide equal-sized images on the retina but, nevertheless, our brain "understands" that the more distant tree is bigger than the closer one. This means that in human visual perception, the visual angle subtended by a viewed object sometimes may be differently perceived and looks larger or smaller than its actual value. Here inference is extremely helpful, because it "corrects" automatically our physiological perception and we understand that the two trees have a different size [3] .

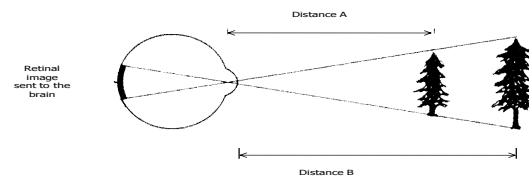


Fig. 3. The unconscious inference described by Helmholtz in distance perception

Actually, perception involves inferential hypothesis testing (Passer, 2009), meaning by this that each of our perceptions is essentially an attempt to try and make sense of stimulus input, to search for the best interpretation of sensory information, on the basis of our knowledge and experience. An enlightening example of this may be a comic strip created by Gustave Verbeek in the early 1900 as it is shown in Figure 4; it's sufficient to turn the image upside down to see a quite different scenery. Even without turning objects upside down, we have a double possible interpretation in the Fig. 5 (Darley, 1991), where we first see either a cup outlined by the white colour, or two people facing one another if we consider the black outline. It is not possible to see both at the same time, our brain can only switch from one to another, giving in practice two different interpretations of the same image along with two different possible logical configurations.



Fig. 4. Gustave Verbeek 's comic strip, that turned a candlestick or upside down, shows a completely different scenario

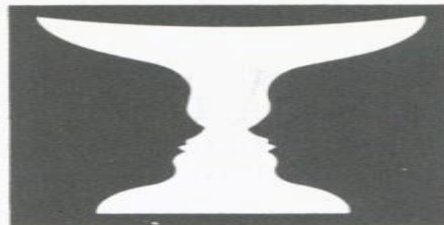


Fig. 5. Reversible figures; a two people facing one another?

Therefore perception is not a passive process but an active one by which our perceptual systems always elaborate stimuli and sometimes correct them as we have seen with Helmholtz's contributions. This is a mechanism that extremely amplifies our perception possibilities because of the so called "perceptual constancies"[4], that allow us to recognize familiar stimuli under different conditions; for instance we can recognize a tune even if it is played in a different octave or by another instrument, providing that the relations among its notes are maintained. In a similar way, in the case of an opening door, the actual shape of the object is sensed as changing but then perceived as the same [3]. Were it not so, we should have literally to rediscover what something is, each time it appeared under different conditions and perspectives. Apart from this, inference may be in many occasions a kind of powerful "sixth sense"; think of the extraordinary power of the eyes to express our emotions; sometimes words are absolutely useless because only from the eyes we can infer much more than from a whole speech.

Nevertheless, inference may be sometimes also rather deceiving and causes illusions or false perceptual hypothesis; in Fig. 6 [3], we definitely have the impression to see two triangles, a white one and another one outlined in black, one superimposed upon another, while in Figure 7, [4] we have the Mueller-Lyer illusion, with line A that seems definitely bigger than B.

Substantially we do not perceive the world as it is but we interpret it and we inevitably add something when on the basis of automatic and unconscious mechanisms and according to the context and our personal experience, we organize and give a meaning to the sensorial stimuli we receive; as we have seen this additive interpretation may be helpful and successful but sometimes deceptive and illusive.

If this happens with basic perception what about our mental representations of objects and even more of concepts and abstract ideas? Do we all infer the same thing?

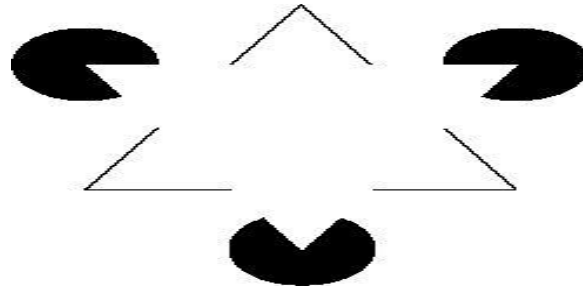


Fig. 6. Two triangles created by our mind. seems bigger than B, but they have exactly the same size.

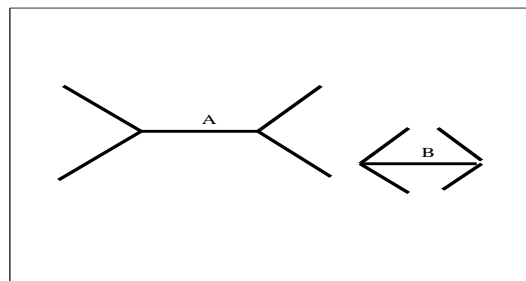


Fig. 7. The segment A, have exactly the same size

2 MENTAL REPRESENTATIONS AND THE UNIQUENESS OF EVERY PERSON

Unfortunately - but sometimes thanks to God - mental representations differ quite a lot among people. A basic enlightening example is to ask someone to make a drawing of an absolutely common object as it may be a chair; everyone will agree that it may be considered a flat surface sustained by 3/4 legs to allow a human being to sit down but, if we look at the Figure 8 [5], it's easy to see how we can have hundreds of different chairs all in line with this general definition.



Fig. 8. Many possible different representations of an extremely common object as a chair

If for an extremely common object we can have so many different representations, it's not difficult to imagine what may happen for abstract ideas or concepts, such as friendship, moral, happiness and so on. For instance, as for happiness, [6] reports that already Terentius Varro (116-27 BC) had listed 289 different ways to define happiness while in 1972, in a radio programme, representatives of four different disciplines had not been able to find a common definition, despite the support of a cooperative professional moderator.

Substantially everyone of us has a specific unique experience as well as one's own culture and it is on the basis of all this that he creates his own ideas and concepts and, at this level, much more than in perception of objects, inference may produce rather different and sometimes distorted representations.

In his worldwide famous book, *Anleitung zum Unglücklich sein* (Directions to be unhappy), Watzlawick (1983) describes in a masterly manner how we rather often manage to turn ourselves in our worst enemy giving free course to a complicated chain of thoughts and expectations that in many cases lead us to completely distorted interpretations. We can see this in many vignettes in his book, the most emblematic of which we believe may be "Self fulfilling prophecies", with the author stating that "The prophecy of the event leads to the event of the prophecy". Substantially, every one of us, to a certain extent, may create his own reality in his mind.

What happens when two individuals communicate?

3 COMMUNICATION BETWEEN INDIVIDUALS

In comparison to what we have seen in case of one single individual who is substantially communicating with himself, the situation will obviously be extremely more complicated. In fact, as always [6] points out referring to Bertrand Russel's contributions on the topic, one thing is to say that "this apple is big" and another that "this apple is bigger than another one"; in the first case we refer to a characteristic of the first apple as we perceive it, in the second we refer to a unique relationship that exists, and exists only between the two apples in question. It would not make sense to apply it to one of the two separately, as well to any other relationship involving other apples.

Therefore, when in human relationships two individuals are communicating something on a topic, we will have two different levels of communication, the object level - namely the topic in question - and the relationship level, that is the relationship between the two individuals. As far as the topic is concerned we will already have a more complicated scenario because of the possible different mental representations of the two individuals as we have already seen in the case of chairs. Anyway, much more complications arise when we consider the relationship level because this, as in the case of apples, will be unique but definitely more complex considering that we are speaking here about human beings. In particular, the confrontation won't be between *two* personal different representations of an object or of a topic but among all the *numerous aspects* that play a key role to make a relationship a success or a failure. In fact when someone proposes something to us we are not only listening to his words; we evaluate, mainly in an unconscious and automatic way, a lot of other factors; his physical appearance, the way he is dressed, his gestures, the words he uses and the relevant intonation, if he looks at us in our eyes, if he smiles, if he answers in a clear way to our questions and so on. Substantially a lot of different aspects normally have an impact to produce in us an overall positive or negative impression.

Therefore the success or the failure of communication between individuals on a certain topic will depend on the interaction among 3 unique elements, namely two different representations of the same topic and the particular kind of the relationship that the same individuals will establish. This last one, as we already said, will be influenced by many factors that, on top of this, may also differ substantially in every individual; consequently, the result, apart from being unique, will also be rather unpredictable.

Communication between individuals - and even more among many of them - is therefore a very complicated realm where we can find many distorted and wrong interpretations, as well as contradictions and absurd behaviours; also in this regard, [7] gave a fundamental contribution in his book "Pragmatics of Human Communication", where he describes most of the pathological aspects that we can have in communication.

How can we capitalize on all this to improve interpersonal communication?

4 AN ADVANCED MODEL TO DEPICT AND UNDERSTAND INTERPERSONAL COMMUNICATION

For all that we have said, to have more possibilities to be successful in communication on a certain topic, the first step will be to check the soundness of our relevant mental representation and our knowledge of possible different perspectives. Secondly, we should make a serious effort to understand who is our interlocutor and what are his personal representations; therefore we should ask questions and let him speak and only after - when we have understood what kind of person is in front of us - make an effort to adapt accordingly our communication approach. Actually we should try to do what experts define "mirroring" [8] , basically imitate his gesture, speech pattern, or attitude to help create a good rapport that often causes others to like and trust us more. As [9] points out, imitating someone's gesture and behaviour is as though we were sending to his unconscious a message of this kind: "You can trust me because I am as you are". An important part of this, will be to capitalize as much as possible on the "shared parts" - namely what we have in common - especially if they regard hobbies, passions and similar aspects of private life. [10], in line with Neuro Linguistic Programming principles, goes a little further and states that every individual has his own "sensorial window" from where he observes the world and interprets messages and events; therefore if we succeed in adopting at least in part the same perspective, there will be more possibilities to create a good rapport, so that our interlocutor accepts us, considers us trustworthy and listens to what we propose.

Apart from this, we should consider other important contributions from different scholars, namely:

4.1 Non verbal aspects. Words intonation as well as the body language (gestures, face expressions, posture, poses and so on) that are absolutely fundamental [11]

4.3 Proxemics, namely proximity, or mainly the way to manage the distance and the space in communication [12];

4.4 Multi-sensory aspects and communication tools; we have to consider that our brain perceives normally an object or an event in a multi-sensory way, for instance of a tomato we have many different mental images related to its shape and colour, its smell, its consistence to touch and its taste. If we use tools to send a message that impacts on more senses it may be definitely more effective than one directed to one sense only [13] .

On the base of the above considerations we therefore worked out our model of the communication process, as indicated in Fig. 9. The fundamental innovative characteristic is that it focuses on self-analysis as well as on inference strictly related to specific mental representations, rather than to generic fields of experience only, highlighting at the same time the fundamental role of mirroring and shared parts to explain the success or the failure of communication. It also summarizes all other important aspects in communication.

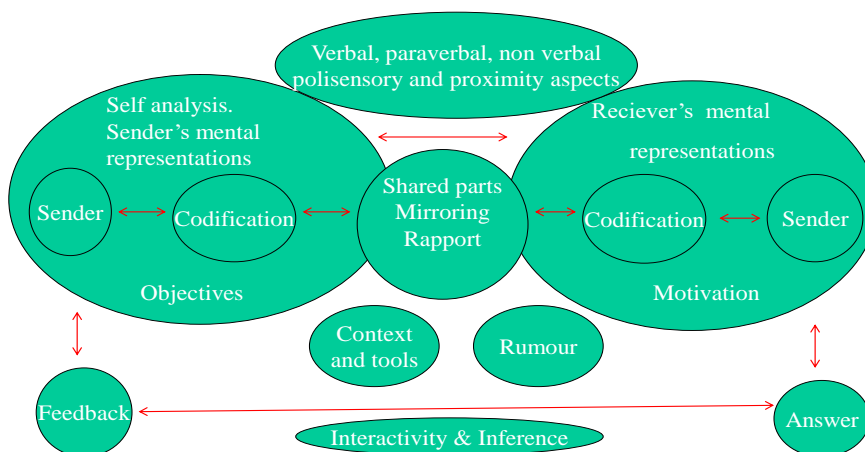


Fig. 9. A more advanced model to describe the communication process

5 THE IMPORTANCE OF COMMUNICATION

At this stage someone may ask: "Why should we be so concerned with communication?" The answer is that very seldom we communicate just to say or state something; on the contrary, we do it in most cases to have others' consent, to try to "sell" something, an idea, a belief, ourselves, while in the case of companies it may be a product, a service, a brand, in politics a candidate and so on. As Visconti (2009) very wisely states, any form of communication, message, expression, verbal and non-verbal, has its goal, its objective, conscious or unconscious that this may be.

Whatever are our goals, their achievement necessarily presupposes a good social interaction (unless we decide to live in a cave as a hermit) and we will not be judged for what we really are, but for the impressions we arise in others and this will depend essentially on how we communicate with them. In this regard, we have to consider that there are many things that cannot be bought in any way but only obtained through a persuasive communication; let's think only of friendship, respect, love, as well as of a job interview when a few minutes can change our life. There are obviously many other things that we can buy but, also in this case, the way we receive them may significantly change depending on how we are perceived and evaluated. In other words, being able to communicate well, at all levels, has a huge impact in our life.

Interpersonal communication, on the other hand, is everywhere and not only in our private life as generally people believe but also in business, in politics, at school and so on; limiting ourselves to business, companies are made of people and important decisions are in most cases taken by individuals in a process where interpersonal communication plays a fundamental role. Let's think for instance of an important contract finally signed up between two companies after a long and heavy negotiation; the final result will depend also on the relationship established among the decision makers involved in the negotiation. The same applies to management and Unions negotiating something, or to the relationship between a boss and his aide ending up in a promotion and salary increase (or in a dismissal) and so on.

Obviously in business we have to consider some specific aspects of interpersonal communication that are substantial. In our private life, albeit *cum grano salis*, it is sound to express oneself freely, on the base of what we spontaneously feel; for instance we choose our friends because we like them and we feel well with them. At work, on the contrary, it makes no sense and it may be insane to express oneself without adequate control; we look for customers because they allow us to carry out our business and therefore a spontaneous aversion to a customer should be set aside, doing also our best to be appreciated, even though we would never dream to spend our free time with him. In essence, in the private sphere we are more entitled to be spontaneous and sincere, as well as to make some mistakes in communication considering that we are not supposed to be skilled in this sense. Conversely, if we consider interpersonal communication in business, things are different, we have to control ourselves carefully and we should be able to communicate in an efficient and professional way, adapting our communication style to every particular case.

If communication is so important what's the situation among private individuals and entrepreneurs? We made a research on this.

6 RESEARCH ON INTERPERSONAL COMMUNICATION: OBJECTIVES, METHODOLOGY AND RESULTS

We made a research [15] with a questionnaire on entrepreneurial and managerial competences with many statements on which the interviewed could agree or not; out of these, 2 were focused on interpersonal communication and another 6 on corporate communication.

The two statements regarding interpersonal communication were:

1. to be successful when we try to sell something to someone, we have to start immediately speaking fast, showing self confidence and assertiveness, arguing with force that our ideas or proposals are for sure the best solution for his needs (fully wrong).
2. when we promise something to someone, some little exaggeration may be tolerated but we definitely must take care that what we will be able to offer something that is substantially in line with our promises (fully right).

The questionnaire, based on a 7 values Likert scale - with 1-3 corresponding to a decreasing level of disagreement, 4 to indifference and 5-7 to an increasing level of agreement - was filled up by approximately 150 Economics and Business administration students and by 90 entrepreneurs. The maximum possible score was 1 full point for both statements; in the table 1 we have the results:

Table 1. The results of the research on interpersonal communication

Students	Interviews	Statement 1 Score	% of right answers	Statement 2 Score	% of right answers
Italy	51	19	37,25%	45,4	89,02%
Other countries	104	45,6	43,85%	76	73,08%
Entrepreneurs	Interviews	Statement 1 Score	% of right answers	Statement 2 Score	% of right answers
Italy	68	35	51,47%	58	85,29%
Other countries	21	16	76,19%	19	90,48%

As we can see, referring to statement 1, an extremely high percentage of the interviewed sample agrees with it and therefore seems to still have an old-fashioned and nowadays completely wrong idea of interpersonal communication based on being aggressive, speak fast and so on, rather than listening carefully and only after this communicate accordingly. Substantially the prevailing approach is exactly the contrary of what is required for a successful communication.

As for the statement 2, most people agrees that we must promise what we can really offer, though still a remarkable percentage of students from other countries (26,92%) agrees with the statement. As far as entrepreneurs are concerned, we have to add that also the results of the research on corporate communication that we mentioned above, show how, despite impressive declarations of a full availability in respect of customer's needs, entrepreneurs still continue to be focused mainly on themselves and customers still seem to be someone to whom to try and sell what the company has, rather than what he needs. This leads to an aggressive approach in sales, promising a lot of benefits, with little or no support in after sale; conversely, companies in the sample with a correct communication approach, are also the most successful.

7 CONCLUSIONS AND FUTURE OUTLOOK

We believe that we were able to have a deeper insight into the communication process; capitalizing on contributions from psychology, we focused on inference and on the distortion that may occur especially in case of communication between two individuals because of their unique mental representations and of the unique relationship that they will establish. We also put together other important contributions provided by different scholars.

This made it possible to work out a new more complete model that, in order to be successful in communication, highlights in an unmistakable way the fundamental importance of a double preliminary analysis: firstly a critical self-revision of our mental representations of the specific topic and, secondly, of every specific situation and in particular of our interlocutor, looking for the shared parts, namely what we have in common with the person to whom we address, using the mirroring technique, adapting as much as possible our way to behave and communicate in accordance with him and the specific situation.

We then highlighted how interpersonal communication may be extremely important not only in private life but also in many other spheres and especially in business.

We also carried out a research that shows how, at least in the sample we interviewed, it is still predominant a wrong and old-fashioned approach in communication, both among students and entrepreneurs, mainly based on an aggressive approach without any previous analysis of our interlocutor and of the relevant context, proposing the same things to everybody in the same way, which seems to be the main reason for the many failures in interpersonal and corporate communication.

What to do?

First of all further research would be necessary as we have been working on a convenience sample that is also a very reduced one. Were our results to be confirmed we believe that a lot can be done providing that the general approach to communication changes; we are not speaking about rethoric or learning how to make a good speech. Communication has a fundamental importance in all spheres of life and being able to master it, especially in a high competitive environment as we have nowadays, can make everyone of us a winner rather than a loser. On the other hand, to widespread communications skills implies that we start creating the conditions for people to understand it better. Communication skills may be learnt but this may be possible only if we understand fully its importance and start teaching it, wherever possible, at schools, in Universities, in seminars for entrepreneurs and so on.

We are sure that a small investment in this direction may produce great results allowing people to attain their goals in an easier way.

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INNOVATION ANALYSIS OF SMES IN THE REPUBLIC OF SERBIA (2010-2017).

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ABSTRACT

Innovations today represent the key factor of growth and development of modern enterprises and in many industrialized countries they represent the main driving force of the development of economy. Innovativeness is one of the most important factors in survival, growth and development of an enterprise. Through innovations enterprises adapt faster to changes in the environment, meet customer needs and requirements and achieve better business performance on the market. According to the Global Innovation Index in 2018, Serbia was on the 55 th place out of 126 countries, which is an improvement of seven positions in comparison to 2017 and the best rank in the last five years.

In this paper innovation in the sector of small and medium-sized enterprises in the Republic of Serbia during the period from 2010-2017 is going to be analyzed.

Keywords: Innovation, SMES, Serbia

1 INTRODUCTION

Sector of small and medium enterprises and entrepreneurs in Serbia, and almost all the countries in transition, represent the most efficient segment of economy. This sector has the main role in the economic development of countries, especially in emerging economies. The importance of small and medium enterprises results from the fact that they are considered to be drivers of economic growth and increase of employment, and that most businesses start within small enterprises[1]. The sector of small and medium enterprises (SME) represents 99% of the total number of enterprises and their innovative capabilities are correlated with the recovery and further development of Serbian economy.

There is the growing attention on identifying the factors that support or constrain innovation activities in the SME sector. Funding for SMEs activities plays a critical role in their growth and sustainability as a result. With the help of innovations, it is possible to quickly adapt to changes in the environment, meet the needs and demands of customers, improve business and enterprise performance and develop the economy. Through the successful innovation, the sector of SMEs provides a sustainable competitive advantage as well as stimulates its own growth and development. The work of an enterprise on the realization of innovative activities leads to an improvement in the overall performance of that enterprise, since innovation can be freely said [2] to be in the heart of the success of any organization, because, besides the improvement of product quality and reducing costs they enable the organization the increasing of efficiency and the increasing of sales. Innovation must be a continuous process. By applying innovative culture that has to encompass all segments of organizations, conditions for development of creative individuals will be made, and in that way organizations will become innovative with the possibility of relying on their own potentials, which will enable even faster development of innovations[3].

2 INNOVATION IN SME SECTOR

Innovation in SMEs can be a product, process or marketing innovation adopted in order to increase performance of enterprises in terms of sales volume or otherwise. Small and medium enterprises are considered as the machine of economic growth that drives and promotes equitable development of nations, which is achieved by adopting innovation principles [4].

Innovativeness of small and medium enterprises is primarily reflected in the fact that they are open for changes, because creation of values is the expected result of innovations. Innovativeness in SMEs means that they can enter a market or identify a new market niche and launch new products with cutting-edge

attributes[5]. Tether [6] believes that innovation represents the successful usage of an idea, or directing an idea into profitable products, processes, services or business practice. The basis of the concept of innovation is doing something special as

well as dealing with uncertainty and taking risks. Innovation has many forms, but the two forms that have received the biggest attention are new products and new processes. We can connect innovations with the growth of a business system and the improvement of its performances. Performances are expressed by measurable indicators of business success and are manifested through changes in efficiency, productivity, quality, new positioning in the market, new segmentation of the market, etc. The ability to innovate is undoubtedly an important factor of economic power because it directly contributes to the competitiveness of the business system, the economy branch and the country as a whole. Scherer [7] has summarized the advantages SMEs may have in innovative activity: "Smaller enterprises make their impressive contributions to innovation because of several advantages they possess compared to large-sized corporations. One important strength is that they are less bureaucratic than more highly structured organization. Second, and something that is often overlooked, many advances in technology accumulate on a myriad of detailed inventions involving individual components, materials, and fabrication techniques. The sales possibilities for making such narrow, detailed advances are often too modest to interest giant corporations. An individual entrepreneur's juices will flow over a new product or process with sales prospects in the millions of dollars per year, whereas few large corporations can work up much excitement over such small fish, nor can they accommodate small ventures easily into their organizational structures. Third, it is easier to sustain a fever pitch of excitement in small organization, where the links between challenges, staff, and potential rewards are tight. 'All-nighters' through which tough technical problems are solved expeditiously are common."

There is much less bureaucracy in SME than in formally structured large enterprises:

- Many technological advances have been made as a result of innumerable small inventions in the field of individual components, materials and manufacturing techniques for which large corporations are generally not interested in. The attractiveness of a business venture is estimated differently in large enterprises than in smaller ones, namely, the new product or process, which incomes from sale are estimated at millions of dollars a year, is extremely attractive to SMEs, and too modest for large corporations. New business ventures are generally difficult to incorporate into the already existing, formal organizational structure of large business systems;
- The excitement about some new ideas is much easier to maintain in SME because the relationships in relation challenges- employees- potential reward are much firmer and it is easier to nurture culture that encourages and stimulates the acceptance of innovative and risky ventures.

The innovative performance of SMEs is measured through[8] :

- Innovations of SMEs in products and processes- the number of SMEs which have introduced a new product or process into one of their markets. Technological innovations measured with the introduction of new products (goods or services) and processes are the most important for innovations in manufacturing activities:
- Marketing and/or organizational innovations of SMEs- The number of SMEs which have introduced a new marketing and/or organizational innovation into one of their markets. This indicator shows the extent to which SMEs innovate through non-technological forms of innovation.
- Innovation activities of SMEs inside the enterprise- this indicator measures the extent to which SMEs, that have introduced a new or significantly improved product or production process, have innovated internally:
- Collaboration of innovative SMEs with others- this indicator measures the extent to which SMEs are involved in the collaboration in the field of innovation. It measures the flow of knowledge between public research institutions and enterprises, as well as between different enterprises.

Lumpkin and Dess (1996) hold that "innovativeness reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes" . Hilmi and Ramayah (2008) defined innovativeness as the ability to create something new or bring about sound renewals and changes by acting in a way that utilizes this ability. Study by Terziovski, (2010) which investigates the relationship between innovation and performance of wooden furniture manufacturing SMEs in Indonesia finds that innovation has a positive effect on firm's performance. Innovations and development of innovativeness in enterprises enable faster and better adjustment to dynamic changes in the environment as well as more complete satisfaction of the needs and demands of consumers, changes in the way of organizing, operating and doing business of an enterprise.

3 INNOVATION IN SME SECTOR IN SERBIA

The research on innovative activities in business entities in Serbia in the period 2010-2012, conducted by the Statistical Office of the Republic of Serbia, on the sample of 3500 business entities (the framework for the selection of samples was active business entities obtained from the Statistical Business Register, which contains 11841 business entities with 10 or more employees), showed that the largest share in innovative activities is the participation of large business entities themselves. This research also showed that manufacturing business entities are more innovative than service business entities.

Tabela 1. Business entities according to innovativeness activity and size, 2010-2012 [9]

	Total	Innovators	Business entities that did not innovate	The share of innovators
Total	11841	5280	6561	44.6
Small business entities	9057	3691	5366	40.8
Medium business entities	2264	1245	1019	55.0
Large business entities	520	344	176	66.2
Manufacturing business entities	4122	2007	2195	48.7
Service business entities	7719	3273	4366	42.4

The results of the research about innovative activities in business entities in Serbia in the period 2012-2014, conducted by the Statistical Office of the Republic of Serbia on the sample of 3587 business entities (the framework for the selection of samples was active business entities obtained from the Statistical Business Register, which contains 16659 business entities with 10 or more employees) showed that the size of the business entity is the key factor for innovative activities of an enterprise (Tabela 4). According to this research there were 37,4% small enterprise innovators, 52,7% medium enterprise innovators and 68,1% large enterprise innovators.

Tabela 2. Business entities according to innovativeness activity and size 2012-2014 [10]

	Total	Innovators	Business entities that did not innovate	The share of innovators
Total	16659	6739	9920	40.5
Small business entities	13863	5182	8681	37.4
Medium business entities	2253	1187	1066	52.7
Large business entities	543	370	173	68.1
Manufacturing business entities	4865	1977	2888	40.6
Service business entities	11974	4762	7032	40.4

The research in the period 2012-2014 showed that more than 68% of large business entities, a little more than a half of medium business entities and more than 37% of small business entities are innovative. Innovative activities are equally represented in manufacturing and service businesses, where innovations were introduced by just over 40% (SORS, 2015). In terms of the type of innovation represented according to the territory and the size of the business entity it is noticeable that there is the same participation of business entities (innovators) in product and process innovations as well as that the participation of innovative business entities decreases with the decrease of their size.

Table 3. Business entities-innovators [11]

Territory	Size	Business entities- Innovators					Non-innovators
		Product/Service Innovation	Manufacturing process innovation	Abandoned innovations or still in process	Organization innovation	Marketing innovation	
The Republic of Serbia	Total	20.4	20.2	10.9	24.9	23.8	59.5
	Small	18.5	17.4	9.6	21.9	21.2	62.8
	Medium	27.8	31.2	13.4	37.9	35.8	46.5
	Large	39.4	43.1	32.6	47.1	37.9	31.8

From the total number, 18,5% of small enterprises introduced a product or service innovation, 17,4% a manufacturing process innovation, 21,9% an organization innovation, 21,2 a marketing innovation. In medium enterprises 27,8% enterprises introduced a product or service innovation, 31,2 a manufacturing process innovation, 37,9% organization innovation, 35,8% a marketing innovation (Republic Statistical Office, 2015. Stated by - Innovative activities of enterprises 2012-2014.). However, the research in the period 2012-2014, showed that there were factors which made innovation more difficult such as the lack of own funds and difficult obtaining of government grants and subventions (Table 4).

Table 4. Factor importance [12]

Factors	Importance			
	Large	Medium	Small	Negligible
Lack of own funds for innovation	67.6	18.4	1.0	3.0
Lack of credit or private capital for innovation	44.4	31.6	17.1	6.9
Lack of qualified staff in business entity	11.7	43.8	22.8	21.7
Difficult obtaining of government grants and subventions for innovations	55.6	25.2	10.2	8.9
Lack of cooperation partners	20.2	33.8	27.5	18.5
Uncertain market demand for your innovative ideas	37.2	31.8	18.6	12.4
Too much competition in your market	26.0	39.7	17.5	16.8

According to the number of innovative activities, in the period 2010-2012, Serbia was among EU members with 47,5% (behind Germany, Luxembourg, Ireland and Italy, and ahead of Bulgaria, Poland and Romania) (Eurostat, 2015). The growing importance of innovations in business requires that the issue of managing innovation activities is raised with the necessary seriousness at the enterprise level. Since its appearance as an entrepreneurial organizational form of economic life, the enterprise has had a growing active attitude to innovation. "Such an approach is constantly gaining in importance, and this brings us closer to the stage when there will be only innovative enterprises, because all others will fail because of neglect of innovation. In other words, we have come very close to the moment when innovativeness becomes the essence of existence" [9], because innovations are these that enable enterprises to create additional value, satisfy the needs of customers as well as the needs of the enterprise itself. In order for Serbia to achieve economic progress and development, it is necessary to develop competitive economy based on knowledge, innovation and new technologies [10]

Based on measuring innovative business performance of small and medium enterprises, Serbia lags behind the EU 28 and Slovenia, but it has better performance than all the other countries in the region.

Tabela 5: Indicator of innovation of SMES of the Republic of Serbia and selected countries in the region in 2017 [13].

	EU	HU	SL	HR	RU	BG	MA	SRB
SME with product or process innovation (current performance)	30.9	15.1	32.6	25.4	4.9	14.0	25.6	28.3
SME with product or process innovation (in regard to EU 2017)		16.7	109.0	71.2	0.0	11.3	72.2	86.2
SME in marketing or organization innovation (current performance)	34.9	15.2	33.2	30.8	8.8	14.8	27.8	32.9
SME in marketing or organization innovation (in regard to EU 2017)		19.4	93.0	83.4	0.0	17.4	71.0	91.7
Innovative activities of SME inside the enterprise (current performance)	28.8	11.7	26.1	21.1	4.5	11.2	18.7	23.8
Innovative activities of SME inside the enterprise (in regard to EU 2017)		16.6	86.8	62.6	0.0	13.9	50.7	75.4
Cooperation of innovative SMEs with others (current performance)	11.2	6.2	13.2	6.8	1.8	3.1	7.1	4.9
		49.8	119.2	55.6	0.0	19.0	58.6	37.1

The low level of innovation of SMEs in the Republic of Serbia is reflected in the low volume of technological innovations and the weak connection and cooperation between education, research institutes and commercial sector. Non-technological innovations which are related to the promotion of marketing and organization, advanced use of information and communication technologies, etc., are not enough present in these enterprises.

8 CONCLUSION

Innovation in companies that do business in Serbia is a prerequisite for its competitiveness because of these innovations enable companies to create added value, meet the needs of consumers and the needs of the company. Good innovation policy will allow the introduction of changes and innovations in the way of doing business with the aim to improve the situation and achieve a competitive edge. Research conducted in recent years in Serbia has shown that innovation in SMEs in Serbia is at a low level, as a company's development of innovation is far behind compared to the same sector in developed countries. Accordingly, it is necessary to create favorable conditions for innovation, raising awareness about the necessity of innovation, creating a favorable climate that supports and encourages innovation. In the process of the development of innovation for SME the state should take a leading role and provide conditions for dynamic development, innovation, innovative SMEs and competitive economy based on knowledge and innovation.

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COMPREHENSIVE BENCHMARK FOR BETTER EXPLORATION OF SYNERGIES: MAIN SIMILARITIES AND DIFFERENCES BETWEEN THE HUNGARIAN AND THE SERBIAN INNOVATION SYSTEM FOCUSING ON SME SECTOR

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ABSTRACT

Serbia is one the most important non-EU partner of Hungary for the past five years. According to the expert forecasts, Serbia is facing economic boom in the near future, giving investors much more opportunities than ever before. In addition to, the development of Budapest-Belgrade railway line based on an intergovernmental agreement can be a milestone on the way for the European-scale cooperation due to global involvement of China in the frame of its One-Belt-One-Road (OBOR) initiative. Serbia is fully committed itself to European integration and needs to catch up with one of the most advanced economic communities in the world, which is particularly challenging in terms of high-value-added knowledge-based economy and the sustainable economic growth. Hungary is ready to share all of its previous experiences with Serbia. In this context, making comprehensive benchmark to reveal the mutually beneficial innovation-based cooperation fields via analysing the similarity and the differences between the Hungarian and the Serbian Innovation System, focusing predominantly on the SME sector can be crucial importance. The methodology based on secondary research analysing EU, OECD and national documents, on-line literature sources and relevant, up-to date statistical data as well. The conclusions and recommendations based on this „desk research” work reflects the authors' own professional views and hopefully can contribute for strengthening and widening the innovation-based partnership between the two countries, accelerating the knowledge-based economic transformation and improving the competitiveness of the SME sector in both countries at the same time.

Keywords: Main features of the innovation systems, innovation-driven opportunities; knowledge-based economy, development of SME competitiveness.

1 INTRODUCTION

Serbia is one the most important non-EU partner of Hungary for the past five years. According to the expert forecasts, Serbia is facing economic boom in the near future, giving investors much more opportunities than ever before. On the other hand, the Hungarian economy has been able to develop continuously, exceeding the EU average GDP growth rate. This trend has led to an increasing number of Hungarian companies that are able to invest beyond abroad predominantly in the Carpathian basin and the Western Balkan countries, build up and increase market positions, realising significantly more revenue and profits from cross-border activities speeding-up the domestic economic development of the “origin country”. In the future, one of the main components of the Hungarian economic growth will be that, due to the foreign investments of Hungarian companies, the Hungarian economy will receive new sources of growth.

Effective capital allocation is essential for sustainable economic growth. Balanced economic growth requires access to financial resources with adequate pricing and availability, and by finding alternative financing solutions that are not threatening financial stability of the economic stakeholders predominantly the SME's. These can be the true reasons beyond the pure fact, that the Hungarian government supports the foreign investments of the Hungarian companies. The Hungarian government provided 10 billion HUF (30 million euros) financial sources support the Hungarian companies' investments in Serbia. In addition to, for the Joint Economic Development Program, the Hungarian Government and the Vojvodina Hungarian Association concluded an agreement and Hungary initially provided 50 billion HUF (150 million euros) for this initiative, but later this sum was increased.

In the course of the last three years, the Vojvodina economic development program proved a real success story. Between 2016 and 2019, 10,426 applications were supported by a total of 38.3 billion HUF (114 million euros), which resulted in 75.4 billion HUF (225 million euros) investment in Vojvodina. The fruitful cooperation between the two countries reflected in other areas of the economy, with a trade record in 2018, bilateral trade last year exceeded 1.6 billion euros, and an increase of 9 % in the first two months of 2019. [1]

Further connecting links can be between the two countries:

- Considerable Hungarian ethnic minority has been living in Serbia.
- The development of Budapest-Belgrade railway line based on an intergovernmental agreement can be a milestone on the way for the European-scale cooperation due to global involvement of China in the frame of its One-Belt-One-Road (OBOR) initiative. The OBOR is a global project, which is aiming the global transportation corridor and large energy infrastructural developments, making easier for China to reach the global, primarily the EU markets its products and services ("New Silk Road"). The investments have implemented under the Chinese sponsorship umbrella. Hungary can play a central role with the new railway line at the western end of the New Silk Road; therefore, Hungary is committed itself to implementing the railway line as soon as possible. In order to construct the two-track electrified railway line between Budapest and Belgrade, 350 km of railway section will have to be renovated, of which 166 km will pass through Hungary and 184 will pass through Serbia. In addition to passenger traffic, this route will be able to carry significant freight traffic. The Budapest-Belgrade railway line contributes to the expansion and modernization of the currently incomplete North-South railway connections in Central and Eastern Europe, it is important that Chinese companies deliver most of their goods destined for Europe from the port of Piraeus to the continent through Serbia and Hungary. It is planned to complete the renovation and modernization by 2023. This investment can largely contribute to the Serbian and Hungarian economic development as well and presumably will be proved attractive for Serbia, because the country major regional investments needs don't coincide with the EU pre-accession funds and lending requirements.

Finally, Serbia is fully committed itself to European integration and needs to catch up with one of the most advanced economic communities in the world, which is particularly challenging in terms of high-value-added knowledge-based economy and the sustainable economic growth. The Hungarian-Serbian partnership has gained new meaning from the point of view taking into practice the knowledge-based economic transition and strengthening the competitiveness of SME sector.

In this context, it is worth to make a comparison between the two countries national innovation system focusing primarily on the business innovation. This study is aiming a special Hungarian-Serbian knowledge sharing based on the previous Hungarian experiences related to strengthening and widening the innovation-based partnership, accelerating the knowledge-based economic transformation and improving the competitiveness of the SME sector in both countries at the same time.

2 METHODOLOGY

The methodology based on secondary research analysing EU, OECD and national documents, on-line literature sources and processing relevant, up-to date statistical data as well. Based on these methodologies, the main features, similarities and differences of the Hungarian and Serbian innovation systems were investigated. The conclusions and recommendations based on this „desk research” work reflects the authors' own professional views and experiences.

3 MAIN FEATURES OF THE HUNGARIAN INNOVATION SYSTEM

The fastest growing Far Eastern economies in the world are showing increasing interest in Hungary. An example of this is the South Korean automotive industry, which has gained enormous market share in Europe, has invested more than 500 billion forints (15,4 billion euros) in Hungary in the latest years, and created more than 3,200 new high value-added research-based jobs. Among the largest South-Eastern Asian automotive manufacturing companies that bring production to Europe, they mostly choose the Central European region, and especially Hungary: three of the Far East Electric Automotive Company with five European manufacturing capacities are already in Hungary. Hungary contributes to all this through, among other things, low corporate taxes, a steady reduction in the tax burden on labour and research development resources.

From the above example you can see, that Hungary is an open economy with a strong industrial sector in which foreign direct investments play a crucial role. Furthermore, research and development is one of the main priorities of the Hungarian National Economic Strategy; its importance is emphasized in every sector of the Hungarian economy. R&D investment is raising in every year as a result of the development activity of domestic enterprises, active engagement of the Hungarian Government, and EU co-financed grants arising from the European Union Structural and Cohesion Funds. Based on the Hungarian Central Statistical Office data, total R&D expenditure (GERD) was 1,375 million EUR in 2016, corresponding to 1.22% of GDP (2016, up from 0.62

in 2008). The Hungarian government focusing on investments in business R&D. The government has the second highest share in direct support for business R&D among 35 OECD and EU-28 countries. The Hungarian private sector has registered notable increases in R&D activities since the country's accession to the EU. The share of the business sector for the total R&D expenditures reached 56% or €777m (HUF241b) in 2016. Large companies accounted for 55.26% of BERD, while SMEs depend on external sources of R&D funding, mostly government and the EU Structural Funds. Central Hungary (including Budapest) accounts for the majority of corporate R&D, R&D-performing companies and patents. Pharmaceutical, ICT, machinery and automotive companies make the highest contribution to the BERD. [2].

Besides that, the Hungarian Government made efforts widening the taxation and other indirect R&D incentives in recent years. They are especially benefiting companies, since they can reduce their tax liability with corporate tax deductions for their R&D expenditures. Research infrastructures developments also play important role to put Hungary on the world map of innovation. In this context, the ELI Laser Research Center², as well as the European Institute of Innovation and Technology in Budapest³ can mean good opportunities for taking into practice this intention [3]. To support university-industry collaboration Centres for Higher Education and Industrial Cooperation (FIEK) were established in 2017, which will be able to adapt university research programmes in applied science and innovation to industrial needs in the years to come.

The availability of resources alone is not enough to catch up to the European leading innovator country group. Hungary – who belongs to the moderate innovator country group for one decade based on the European Innovation Scoreboard data - definitely needs to take further steps in order not to stay behind in the international competition for the high-value production innovation hub.

3.1. Main pillars of the Hungarian innovation policy [4]

The Hungarian innovation policy is strongly focusing on transforming the domestic economy into knowledge-based economy based on high value-added activities. It means that the country's overall development strategy, defined in line with the European Union's cohesion and innovation policies for the 2014-2020 programming period. The complex development strategy lies on the following pillars.

3.1.1. National Research, Development and Innovation Strategy 2020

The "Investment into the Future - National Research and Development and Innovation Strategy 2020" was approved by the Hungarian Government in 2013. The mission of the strategy is to increase RDI investment reaching the 1,8 % GDP size till end of this decade, and besides that generating such kind of business environment, which will mobilise the Hungarian economy coincide with the social and market demands and strengthen its competitiveness.

3.1.2. National Smart Specialization Strategy (S3)

The S3 is developed in every member state within the framework predefined by the EU. Hungary's smart specialisation strategy was approved in November 2014. It sets the directions for the entire country, along with which RDI are to be supported in the most sustainable way, with the greatest social profit and the promise of the best financial utilisation rate. The Strategy sets up six sectoral (Healthy society and well-being; Advanced technologies in the vehicle and other machine industries; Clean and renewable energies; Sustainable environment; Healthy local foods; Agricultural innovation) and two horizontal research and innovation priorities (ICT (info-communication technologies) & Services; Inclusive and sustainable society, viable environment). These priorities encompass domains, areas and economic activities where Hungary has a competitive advantage or has the potential to generate knowledge-driven growth in the programming period 2014-2020.

² "The Extreme Light Infrastructure Attosecond Light Pulse Source (ELI-ALPS) Laser Research Centre is one of the pillars of this infrastructure was built in Szeged and is one of the largest scientific investments in Europe, with support from the European Union amounting to over 70 billion HUF. The purpose of ELI-ALPS is to establish a unique, laser-based European user research facility where ultrashort laser pulses and light sources will be accessible for international researchers. A scientific industrial park is planned in a 80-hectare area surround the ELI-ALPS facility and is welcoming all start-up and successful businesses that could utilize the laser research centre. The Hungarian Molecular Medicine Centre of Excellence will also operate in the ELI Science Park and will be established as a large scientific investment of the EU. An automotive industry competence centre may also be formed in conjunction with the University of Kecskemét'. [11]

³ The European Institute of Innovation and Technology (EIT), established in 2008 with its headquarters in Budapest, Hungary. The EIT is the EU's flagship institute designed to connect European business and research, and to integrate innovation, research and economic growth in Europe (this called knowledge triangle). The mission of EIT is carried out through the so-called Knowledge and Innovation Communities (KICs), integrating European innovation platforms of leading European stakeholders from industry, academia, and policy.

3.1.3. Irinyi Plan

The government elaborated a new strategy of Industry 4.0 in 2016 (Irinyi Plan). The aim of the Irinyi Plan is to further increase the share of manufacturing in Hungarian GDP with the support of key industries: the motor vehicle manufacturing (public transport), the defence industry, the construction industry, the textile industry and medical equipment. Supplementary goal of the strategy is to raise the share of these industries in GDP to 30% by 2020.

3.2. Main challenges for the Hungarian Innovation System from the point of view of business sphere

According to the Policy Support Facility⁴ Review [2] and industrial experts:

- Hungary has to make steps to widening its innovation base, which is currently concentrated in a limited number of companies. It should support innovation in businesses of all types and sizes and throughout the innovation cycle: establish stronger cooperation between the public R&I system and entrepreneurial sphere, promoting knowledge transfer programmes; fostering the mobility of researchers to industry and vice versa, as well as closer-to-market research; setting up and joint usage of appropriate physical infrastructures (e.g. shared laboratories, incubators, accelerators, science parks, innovation clusters);
- In addition to, the Hungarian SMEs today have to face challenges such as digital switchover, increasing innovation production and export capacities. Examples of problems affecting SMEs include the lack of labour, the lack of financial awareness, lack of managerial competencies and the increasing wages.
- The added value of small and medium-sized enterprises (SMEs) in Hungary to the domestic economy is growing, around 50 %. However, the share of exporting SMEs is low, with only 6-7 out of 100 companies on the external market. The reason for this can be lack of foreign languages and lack of market knowledge
- In digital coverage (4G), Hungary is good, exceeding the EU average (Hungary is in the sixth place in the 4G coverage ranking, only Romania, Poland and Bulgaria are ahead of Europe in business digitalization and e-commerce) The goal of the government is to become a European centre for 5G developments in Hungary. Artificial intelligence is constantly expanding and becoming more accessible to SMEs. At the same time, it is important to recognize and manage the dangers of using data assets accumulated through digitization.

4 MAIN FEATURES OF THE SERBIAN INNOVATION SYSTEM [5]; [6]; [7]; [8]; [9]

Serbia is one of the Western Balkan countries. [8], which managed to take into practice a functioning market economy in the course of the last couple of years. Unemployment rate dropped significantly but still high (average value was 15 % 2015).

In Serbia's innovation system, as a result of the European integration process, the process of structural change in all areas of the country, from the political sphere to the economic segment to education, has begun. Adapting to the European Union directives will entail a change in the country's legislation and set new strategic goals and the implementation of tasks to do so that affect the Serbian innovation policy decisions. In this context, Serbia reached a significant progress in the field of increasing the efficiency and effectiveness of its national innovation system. Legislation governing the higher education system (Serbia currently has 19 accredited higher education institutions, of which 8 are public and 11 are private institutions., RDI activities and IPR. The main background document for the Serbian Innovation System is Strategy on Scientific and Technological Development of the Republic of Serbia for the period 2016-2020 - "RESEARCH FOR INNOVATION" (Official Gazette RS, No 25/2016) 03-03-2016 [7]

Concerted actions were taken to reverse the undesirable brain-drain processes and streamlining the Serbian Academy of Sciences and Arts.

As part of the reforms, Serbia's parliament passed legislation on 7 December, 2018 to set up a national science fund that will oversee the awarding of much-needed national research grants. The science ministry has until now been in charge of grants, but made its last call for proposals in 2010. (In 2010, with the

⁴ The Policy Support Facility is a tool set up by the European Commission, to support EU Member States in improving the design, implementation and evaluation of national R&I policies. The Peer review process is one of the services offered by the PSF, that constitutes an in-depth assessment of a given country's R&I system.

purpose for improvement the domestic research infrastructure conditions, 400 million euros were allocated for 4 years time period). [10]

In 2017, the Statistical Office of the Republic of Serbia recorded that there was a total of 22,782 employees in the field of research and development, which is 3.2 employees per thousand inhabitants. In recent years, the Republic of Serbia has improved its scientific research potential, which is illustrated by the fact that Serbia's output accounts for 0.3% of the total world production of scientific works and the country is ranked 46th on the list of over 140 countries (SCImago Journal&Country Rank), whereas the University of Belgrade is ranked on the "Shanghai List" 2016, of the world's best universities between positions 200 and 300. In the last ten years, Serbian researchers have achieved encouraging initial results in the domain of international scientific and technological cooperation. The programmes in which they have been involved include the FP7 and H2020 projects, as well as COST, EUREKA, NATO Science for Peace and Security. Researches from Serbia also cooperate with the International Atomic Energy Agency (IAEA), and take part in bilateral cooperation programmes. In addition to these cooperation programmes, Serbia has actively participated in European and international scientific organisations such as CERN.

Despite these efforts, the economic competitiveness of Serbia predominantly based of the low-value added, labour workforce intensive activities, the innovative, high value-added entrepreneurial activities are marginal. The hidden-grey economy can be one of the largest barriers in front of the business environment development. [6]

In ICT the level of innovation in general is good. The majority of young companies are active in this sector. But agriculture and food technologies also represent key areas of interest for innovators. Established sectors like metals, etc. show relatively lower innovation activity, but have high potential (there are some internationally visible success stories of newly established firms). Foreign-owned firms are mostly low-cost producers or providing outsourcing solutions, but with low domestic innovation, they have no interest to look for higher value-added solutions or applying locally available resources for their global innovation.

The venture capital market is weak, only international or foreign firms are investing into innovative projects (interviewees mentioned one US based and one Bulgarian venture fund that are active in Serbia, or the Western Balkans Enterprise Development and Innovation Facility as a regional initiative for early stage funding).

Universities are non-integrated, faculties have full legal and financial independence, which may create a strategic vacuum and may lock the system in conservative modes. This situation may result in administrative mismatch between university's administration and faculties, which makes flexible operation very difficult (including IPR policy). Universities are strong in research but their performance is very uneven.

5 THE MAIN CHALLENGES FOR THE SERBIAN INNOVATION SYSTEM [6], [7]:

- 75,2 % of researchers worked in the Serbian higher education system, 21,4 % in public research organisations and 3,3 % in the companies (2013). Compared to the OECD countries, these ratios were: 32,2 % in the HEI; 7,8 % in the PRO and 59,9 % in the business sector.
- Relatively small number of financial instruments to help market-oriented research and innovation in the economy. Mostly supply-side measures are applied, demand side approach and tools/measures are missing from the policy design and formulation; direct measures (direct financing of research and innovation activities) are dominant, the application of indirect measures is sporadic.
- Underdeveloped institutional and legal framework to support innovation in the business sphere. Despite the 7 Innovation Centres, 20 R&D Centres, 47 Production Centres, 11 other Support Organisations that were newly established in Belgrade, Novi Sad, Nis and Kragujevac in the past years, these organisations have to face that they have not enough human, financial capacities to meet the requirements arising from their mission.
- The grey/informal economy and corruption are still a bottleneck for competition and innovation.
- Low business R&D intensity in terms of expenditure and the number of researchers (the demand for research and research-based services is low, the R&D sector acts as an island, not open to business)
- SME's, which should be leaders in economic development, do not have the capacity for strategic planning, realization of development projects with research teams, adequate research equipment. They are mainly focused on short-term objectives and constant struggle to survive.

6 SIMILARITIES AND DIFFERENCES BETWEEN THE TWO SYSTEMS FOCUSING ON THE SME SECTORS

According to an international benchmark that in both country the major obstacle in front of widening and accelerating all types of innovation process can be lack of trust (different expectations, conflicts of interests, absence of information feedbacks), among the interested stakeholders to cooperate each other's.

On the other hand, the public research groups used to carrying out long-term projects in 4-5 years lifecycle, so the flexibility and adaptability to cooperate with the SME sector in tailor-made manner often lead to such kind of difficulties (the market environment and technologies are rapidly changing) that despite good intentions, every efforts will be doomed to failure. Generally, there are shortcomings in the management competencies in the PRO's and the SME sector (the majority of SME's are mainly focused on struggle to survive).

Table 1. Comparison of the Hungarian and the Serbian Innovation System performance. According to [11]; [12] own edition

Year	HUNGARY		SERBIA	
	Global Innovation Index (GII) ⁵	Bloomberg Innovation Index ⁶	Global Innovation Index (GII)	Bloomberg Innovation Index
2018 Rank	33	27	55	49
2017 Rank	39	27	62	44
2016 Rank	33	30	65	40

The difference is that in Serbia, the innovation system does not prioritise the business sector and there is a resistance to any possible change. Besides the small number of financial incentives encouraging the innovations in the business sector, underdeveloped legal and institutional conditions (innovation friendly environment) and the inadequate human resources for business innovation are the weakest innovation dimensions in Serbia, which reflect in the below two table in the form of international ranking.

Table 2. Benchmark FY2018 between the Hungarian and Serbian innovation system from the point of view business sophistication. According to [13] own edition

Business sophistication	HUNGARY (2018 Rank)	SERBIA (2018 rank)
University/industry cooperation	65	90
GERD financed by business enterprise	22	74
Employment in knowledge intensive sector	38	50
State of cluster development	81	90
High-tech imports	15	101
Research talents in business enterprise	12	61
FDI net inflows	5	28
Intellectual property payments	43	37

According to the European Innovation Scoreboard 2017, Hungary and Serbia belong to moderate innovator country group. The Serbian innovation performance is far behind the Czech Republic or Slovenia, closely follows Slovakia and Hungary, and better than Poland, Croatia or Bulgaria. Serbia has been in a catching up period for 10 years (except for a small decline in 2011). Serbia is performing below the EU average on nearly all dimensions and indicators. The most significant relative strength is in non-R&D innovation expenditures. The strongest relative weaknesses are in VC investments, community designs, community trademarks, R&D expenditures in the business sector, such as license and patent revenues from abroad. Scoreboard statistics show that SMEs are much more active in innovation when they have resources in-house. Research and collaborations with the traditional public knowledge-creating networks (universities and PROs) are very weak, direct spending on R&D is low, and in general the

⁵ The Global Innovation Index (GII) provides detailed metrics about the innovation performance of 126 countries which represent 90.8% of the world's population and 96.3% of global GDP. Its 80 indicators explore a broad vision of innovation, including political environment, education, infrastructure and business sophistication.

⁶ The Bloomberg Innovation Index rates countries on factors that when used together, are a representation of innovation levels. These factors are: R&D intensity; Manufacturing value-added; Productivity; High-tech density; Tertiary efficiency; Researcher concentration; Patent activity

cooperation among companies is also poor. Not surprisingly, the co-publications of public and private actors are far below EU average, the low R&D intensity of the business sector keeps these stakeholders away from strong collaborations.'

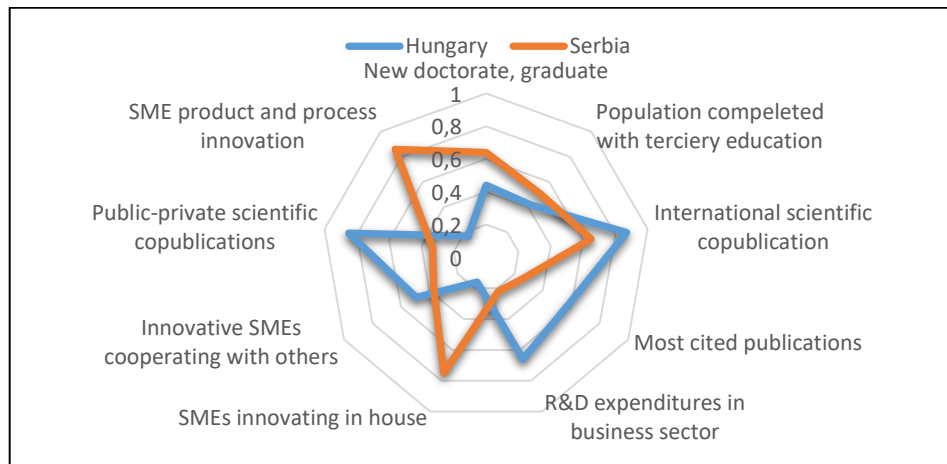


Fig. 1. The Hungarian and the Serbian innovation system relative performance to EU-28 in 2017 based on selected relevant indicators. According to [14] own edition

7 RECOMMENDATIONS IN THE FRAME OF THE HUNGARIAN-SERBIAN KNOWLEDGE SHARING PROGRAMME”

In order to speed-up the Serbian knowledge-based economic transformation, based on this paper and the Hungarian innovation and business experts' experiences, the following recommendation should be taken into consideration, which can help for Serbia catching up to the EU Member States in the field of innovation performance,

Recommendation No.1.-: VAT exemption for innovative products or services

Worldwide, it is particularly difficult to introduce into the market a new, innovative product or service due to the hidden risks. Competitors in the given market segments are trying to prevent from gaining access to the market the same or partially the same, but at the same time better and / or cheaper solution. In terms of the whole innovation chain (value creation chain), remarkably higher proportion of the emerging cost is due to the "marketization" of the finished product - so the most important thing would be to support this step.

Newly developed products that have a prototype for sale or a null series can benefit from a VAT exemption for a specified period of time upon request (1-3 years). Thus, the manufacturers would be able to sell his product to end users with a price advantage that initially assists them overcome the difficulties that are usually emerging for anyone, who introducing new products or services. Approximately 20% price advantage (due to VAT exemption) already reaches the sensitivity threshold that has impact on the clients buying decisions.

Once the given product or service has been made known to the customers/clients, the manufacturer can rely on a much faster distribution of the product, and can count on the earlier return on development costs. The faster return on investment in the economy can generate new, additional product, process or service innovation processes, which means the pillar of the economic growth and competitiveness.

The advantage of the recommendation is that it helps to transfer the newly developed products to the difficult stage of market introduction and significantly improves the possibilities of the developers to realize the profit and reduces their risks. Consumers will also gain access to innovative products sooner. At the end of the discounted period, the budget can already generate significant VAT revenue. It may seem to be a disadvantage of the proposal that the state will lose VAT revenue in the initial period. However, in a low number of hard-to-sell products, there would have been only minimal revenue for the budget. At the same time, this "loss of revenue" is counter-balanced by the payment of other taxes related to production, and the subsequent VAT revenue. It should also be noted here that in the case of products sold for export, you cannot calculate VAT revenue. Accelerating the business and commercial exploitation of innovative products and services, increasing the motivation of enterprises engaged in research and development, innovation, and expanding their activities.

Recommendation No.2.-: Widening the innovation –oriented public procurements

In Hungary, the public sector is one of the most important "clients" on the public procurement market (different investments, developments and maintenance projects, which generates needs). The public procurement evaluation system tries to take into account numerous types of selection criteria (the most favourable bidding, which simply means the lowest price used to be dominant). However, the innovative character has so far been omitted. The innovative public procurement system is also a solution proposed in the European Union because of its economic stimulating effect. [7].

In public procurement procedures, the state should take into consideration the innovation content of the product and service as a new aspect, thus providing space for the introduction and testing of novel products and services developed for the public sector. Developers are thus gaining access to the market, as well as receiving feedback on their product, and getting help in spreading their products and services. Innovative public procurement also provides an opportunity to enable domestic products to be favoured in a way that does not violate EU law. The disadvantage can be that it forces the public sector to consider aspects that have not played a role in the past. Speeding up spreading of innovative products and services, increasing the motivation of enterprises engaged in research and development, innovation, and expanding their activities, improving the service level and infrastructure of the public sphere with introducing the state-of-the art solutions.

Recommendation No.3.-: Deductible taxation forms of dual higher education trainings

Currently, only 1% of students in higher education are involved in the classical form of dual training. At the same time, the remaining 99% is getting worse or no practical training. The result of the classical dual training model is that after a multiple filtering and brain-drain process (leaving abroad, leaving the job, employment by multinational companies) just the remaining of the potential labour workforce will be available for the domestic SMEs. The task is to develop a training system in which every student can get to practical training places and gain relevant practical experience there.

It should create practical training centres (both corporate and university) where students can acquire practical knowledge of the subject in a particular topic. It is necessary to eliminate the existing parallelism at universities (educational workshops with the same objectives) and only the practical training that has the best qualities at each university. In areas where there is a lack of university training infrastructure, companies need to be interested in providing space for practical training (for example in the frame of corporate social responsibility). Promotion of deductible taxation forms can be an excellent way to finance training places. By eliminating duplication, the newly established, cost-effective practical training network possess with relevant competencies and strong industrial linkages. Students have been learning on real machines and equipment, under real company working conditions.

In order to implement the proposal, it is necessary to assess the existing university practical training places (workshops) and then to determine which higher education institution will provide training in the given practical fields. In the missing areas, expert companies should be involved - after developing an appropriate system of interest. An organizer (logistics) centre has to be created to ensure that each student is able to complete and complete the practical training at the right time. The most important is the effect that occurs at the general social level - the professionals who have been trained in domestic companies at lower cost, based on high HEI standards, presumably they will have tendency staying at home, in Hungary and in Serbia as well.

Recommendation No.4.-: Reduction patents maintenance fees [3].

The patent regulatory environment has a decisive impact on the R&D expenditures. In addition to the effectiveness of legal protection, patent fees are also worthwhile affect the willingness to register.

More favourable maintenance fee can also increase patent activity. In the United Kingdom, such a discount exists since 2013 (UK Patent Box). The system provides UK firms with a 10 % reduction in corporate tax on their patent revenues (in 2017, the effective corporate tax rate in the UK was 20.5 %). The discount can also be used after an EPO patent or for exclusive use of a patented technology. The discount is subject to a revenue growth condition. Affiliate, you can take advantage of the discount if you are involved in the development of the patent. To do this, you need to develop an accounting standard where revenue from patent rights is listed separately. In Austria, until the end of the fifth year after the patent was approved, you will be exempt from paying the patent maintenance fee, and in the sixth to eighth year, the amount to be paid is lower compared to the Hungarian value.

Recommendation No.5.-: Introduction the Industry 4.0. Sample Factory programme

According to the previous favourable Hungarian experiences, in the Industry 4.0 Sample Factory programme the participating SMEs will receive comprehensive, beneficial information and knowledge about the Industry 4.0 relevant issues, as well as practical help that will apply them to enhance their competitiveness by reducing their operating costs, increasing their productivity, and minimizing passive production times. With these, you can qualify for supplier ratings and enter new markets.

How to take it into the practice? The competent experts help to position the Industry 4.0 maturity level of the registered SMEs and then provide company-specific practical advice within the framework of on-site surveys. Participants will have the opportunity to visit a variety of sample factory (e.g. Continental, FESTO) and Industry 4.0. Technology Centre where they get to know the latest technologies and gain practical knowledge (digitalisation, automatization, robotization, big data, artificial intelligence, machine learning, case studies).

8 SUMMARY AND CONCLUSIONS

Lessons learnt from the benchmark, in which Hungary is ready to share its experiences [9]:

- Serbia made remarkable efforts and reached significant progress in the field of innovation and economic competitiveness but further concerted actions will be necessary.
- Serbia has to: a) increase the national funding for research; b) stimulate more intense cooperation between industry and academia, in line with the national research strategy the near future
- The Serbian Innovation Fund continues to be increasing budget contributions from the Ministry of Education, Science and Technological Development (MESTD). In this regard, Serbia should follow up on recommendations of the smart specialisation strategy, which is being developed with support from the European Commission, and adopt it in 2019, following the methodological framework of the Joint Research Centre for smart specialisation in the EU enlargement and neighbourhood countries.
- Furthermore, it is urgent demand to remove barriers to innovation and productivity, including regulatory and bureaucratic obstacles. One of the most important tasks in the SME sector is to increase efficiency and capacity, and the other is to support competence-based job creation and sustainable business models.
- New financial instruments need to be developed to better respond to the needs of companies, particularly the most innovative ones.

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INNOVATION STRATEGIES OF SMALL AND MEDIUM-SIZED ENTERPRISES IN CONTEMPORARY BUSINESS ENVIRONMENT

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ABSTRACT

The main precondition of long-term business stability and growth is innovation. The process of introducing innovation in small and medium-sized enterprises (SMEs) is specific due to various innovation obstacles i.e. lack of accumulation capacity, lack of internal research and development (R&D). The main aim of this study was to analyse innovation strategies and innovation obstacles in selected Serbian SMEs. Research sample consisted of 54 SMEs. 20 of them have been introduced innovation during past two years. The results revealed that dominant innovation obstacles were lack of sharing knowledge and lack of finance. Imitative and absorptive innovation strategies have been implemented in observed SMEs. The limitations and directions for future research were presented, too.

Keywords: innovation, strategy, SMEs, knowledge, innovation obstacles

1 INTRODUCTION

The wealth of the country and its competitive advantage are established at the microeconomic level. Macroeconomic stability, efficient public institutions, a stable political and legal system are necessary, but not sufficient to achieve long-term economic progress.

The most wanted goods and services on the market are the one based on innovation and knowledge. Innovation is a challenge for every business, and the basic philosophy behind each innovation is linking technical possibilities and market needs. Developing countries search for the means of growing their local and national economies. Innovation is broadly considered to be one of available means to achieve this desired growth. [1]

Innovation is a prerequisite for the development and conditio sine qua non of success of every enterprise and economy as a whole. The results of innovations are new ideas, new solutions to the problem, and new ways of doing business, especially in the small and medium-sized enterprises (SMEs) sector. Most current economic growth is largely a result of small and medium sized enterprises. [2]

During the crisis and transition period, in order not only to survive on the market, but also to improve the existing market position with better prices, better quality products or services, entrepreneurs are especially forced to introduce new products, new business processes and in general new ways of doing business. As the result there are new ideas, new opportunities that bring new jobs. The competitive advantage of the modern company is reflected in its ability to innovate, which ultimately affects its advantage over the competition, and the achieved competitive advantage results in an increase of profit which is the basic goal of every modern company. In order to make progress in competitiveness the "Innovation Economy" must be implemented which will provide for entrepreneurs creation of wealth of unprecedented scale. Changes in the very nature of businesses, capital, competition, markets and consumers will enable creation of conditions for overcoming a crisis. Economies faced with the problem of recession, in their efforts to overcome situations of crisis, create environments stimulating the advancement of knowledge and innovation.

The necessity of social development imposes the need for improving the overall social innovation capacity and the development of entrepreneurship. The future of SMEs is reflected in the development of knowledge-based business and the activation of the latent potential that exists in the company. A company which is able to offer a resource of high-quality intellectual capital will surely find partners. Today, the most demanding goods and services are those based on innovation and knowledge. Since it is known that growing small businesses have a positive impact on the country's economic wellbeing through the creation of wealth and jobs, such growth also spurs further innovation. [3]

A successful company, which at this time of the necessity of innovation is not capable of innovating, is convinced that it will collapse. Every business organization needs one essential competence – innovation. [4]

Modern research and development (R&D) centers, high-tech equipment of developed countries, the availability of large financial resources are only a part of the advantages that developed countries have in relation to developing countries

Revenue from innovation in enterprises is rarely measured, while the traditional BSC model is not suitable for assessing revenue from innovation. [5] Incorrect measurements can have a bad influence on decision making process and actions taken in the company [6]. Therefore, the choice of the right model for assessing innovation can be an important basis for corrective actions and improvement of the innovative potential of the company [6]. Due to the above mentioned advantages of developed countries, models of assessment of innovative activities of modern and prosperous countries are not fully applicable in developing countries.

Each economy differs, so the flow of introduction and implementation of innovative activities varies, therefore it is important to identify key domains in order to achieve good business strategy. [7]

Economically-developed countries work better because of faster adaptation of the business strategy to the market and greater application of innovative activities in the business of the company, which has a positive impact on the economic and social average of the population. [8]

Competition with companies operating on the regional as well as on the world market demands constant changes in the way of doing business and modernization of enterprises, therefore, state support is very important in order to encourage their development and facilitate the process of change.

Innovation is not the same as creativity. Innovation is the realization of profits from ideas that are new to the organization. The essence is not in possession, but in the realization of profitable ideas, that is, finding a commercial road and creating novelties in the process, product or solution, which will result in better economic results.

There are three innovation strategies corresponding to R&D intensity: conservative, absorptive and imitative [9]. If all organizational members concentrate efforts to their own research, managers implemented conservative innovation strategy. External knowledge that used by organization implies to imitative strategy. Managers that combined aforementioned strategies were choiced absorptive innovation strategy.

Innovative activity is inversely proportional to the economies of scale: a larger enterprise, less innovative solutions. This fact is recently understood in large business entities, which with their great economic strength, capital and number of employees; compensate lack of inventiveness and employee innovation.

The main obstacles to the faster development of the SME sector are classified into six main areas: financial barriers, institutional barriers (including regulatory framework and taxation regime), barriers to a competitive market, barriers to internal organization and resources, social barriers (including support from state agencies) and the level of trust among companies.

Flexible operations of SMEs are especially expressed in periods of slowing down of economic activities and crisis, when they become the driving force of the economic development of the economy and are a potential generator of entrepreneurial ideas and innovations. Serbian SMEs are not in a position to become branch leaders in the EU market, but can develop an innovative approach to real market needs and thus find their place in the European market. However, what distinguishes SMEs in Serbia is relatively low awareness of the role of knowledge, training in the areas of management and business functions.

Doing business in the "Knowledge Age," a time where is the special value of intellectual resources in relation to material resources differs greatly from the management of the organization and its processes in the industrial era. The value of intellectual property is reflected in information, research and development activities, transfer of knowledge and skills that can be viewed through a permanent innovation process. The precondition for success is to raise the level of the organization's culture to the level of the employees awareness about the necessity of changing the innovative character.

In order to increase their competitive ability, companies should be restructured so that they can meet the demands of modern business and become more productive and more competitive [10]. The SMEs sector, due to its ability to easily adapt to changes in the market, is a sector that contributes to the reduction of the unemployment rate and therefore plays a major role in balancing regional economic development.

2 THEORETICAL BACKGROUND

The importance of SMEs stems from the fact that they are considered to be the drivers of economic growth and employment growth, and that most of the business starts in small businesses [11]. In order to stay efficient in the global market, SMEs must constantly work to innovate and improve their processes [12].

An innovative approach always engages all the potential resources available. Innovative companies accept philosophy, there is always a better way of doing business and search for new ideas that will increase their value, or reduce costs.

SMEs have a number of advantages in comparison to big companies, which are based on size and all other characteristics. More direct internal communication, as well as close proximity with consumers, enables entrepreneurs to quickly understand consumer needs and demands in relation to large enterprises [13].

SMEs are very different from large business in that most of them lack a formal process for developing new products and services [14]. This is partially due to having limited resources (i.e. capital and people) to dedicate to such a process, which creates a vicious circle that prohibits most small businesses from growing substantially; even if SMEs have R&D departments, they typically do not spend as much as big companies do in total, or even as a percentage of overall revenue (Narula, 2004).

The strategic importance of SMEs is reflected in the following [15].

- The development of the SME sector helps in the restructuring of large inefficient enterprises,
- SMEs mitigate the monopolistic impact of large enterprises and companies offering competitive goods and services, in line with changes in modern economies,
- The basic characteristic of small industrial enterprises is to produce primarily for the domestic market, using mostly national resources.

Small and medium-size firms can be profitable if they adopt innovative strategies that continually improve operating efficiency, and innovative practices that create competitive advantages and better business performance [16].

The SME sector encourages the transformation of social and state ownership into private ownership, since SMEs are privately owned more flexible and can be adapted more quickly to oscillatory changes in the market. They generate employment, help diversify economic activity and influence the development and increase of export activity and trade. SMEs also have a significant place in the field of innovation and high technology. Thanks to their flexibility and innovation, many of them become large companies.

SMEs in direct contact with customers reveal their wishes and needs and in this way they come to know where innovation is needed. Some innovations can be free. On the other hand, most of the innovations require investments. At an early stage, while ideas are being sought, there are likely to be investments in time and effort of people. Later it may be required to invest additional funds. When the organization's management chooses to invest in a major innovation project, they open one door of opportunity, but on the other hand, due to limited resources, they will probably close the rest. For these reasons, SMEs can only deal with a certain amount of innovation. Some forms of innovation, especially with technical products, start at R&D and switch to production departments. Efficient implementation of product innovation requires that horizontal processes are optimized.

In order to measure innovation, global organizations have developed a large number of indicators, as well as composite indexes on the basis of which different aspects of innovation are measured directly or indirectly. With these indicators it is possible to measure the innovative ability of an economy or enterprise. The most important factors are: human resources, quality of the education system, possibilities for financing innovations, protection of intellectual property and others (EIS, 2019).

Innovative activities include all scientific, technological, organizational and commercial steps: procurement of machines, equipment, facilities, software and licenses; engineering and development work, feasibility studies, design, training, research, development and marketing, which are undertaken to develop and / or implement product or process innovation.

Implementation of innovations brings with it a certain risk for each enterprise and it is often a very complex process for SMEs. In their three-year research work on innovations, authors Davila, Epstein and Shelton [17] have examined the activities that managers can take to improve the company's innovation. In their study, they propose one way to measure the success of the company. This study included empirical data from two major studies conducted in 1997 and 2001. Leading global companies have been studied on the processes of introducing innovations to the market and relevant measurements of innovations have been carried out.

Many of the companies surveyed have high annual spending and separate significant research and development funds. Some of these companies allocate large financial resources, but are generally dissatisfied with the impact and innovations in their companies. The authors came to the conclusion that measuring the performance of the company can be assessed not only by the number of innovations introduced, but also by the innovative activities carried out in the company. Authors Davila, Epstein and Matusik [18] summarize the results of the research and show that measuring the innovative activities in the company through rewarding employees or the number of projects achieved is very difficult and does not contribute to adequate results. It follows that there is no clear picture of the situation, since all of the company's performance are not involved in this measurement process, as these authors state in conclusion, that in addition to financial indicators, measurement process must include also non-financial indicators.

Halidej and others [19] define performance measures as a class of indicators implemented in managerial activities, which measure success in the company's promotion programs.

Modern SMEs face limited financial resources, lack of adequate machines, skilled employees and knowledge, employees do a variety of different jobs. In developing countries, the main obstacles to the development of SMEs are the high unemployment rate and the low level of economic activity. A small number of innovations, insufficient development of the legal system, lack of investment, high level of corruption and low competition rate on the market are also obstacles that negatively affect the business of SMEs [20].

Companies that attach greater importance to business culture and employees, who can contribute to the new ideas and prosperity of the company, as well as the direction in which they should conduct research and innovate with the application of appropriate models (such as the BSC model) could even more improve their business. With innovation, companies can be ahead of their competitors, because today the market is not acceptable to customers. Customers always look for the best product or service with the possibility of lower prices. Strengthening and encouraging innovative activities has a positive impact on other performance in the enterprise .

During the period of economic recovery, there is a greater interest in financing and implementation of new technologies, while in the recession and economic stagnation, innovative activities in enterprises are less conducted [21].

Transition countries generally try to implement all reforms at the same time, so the Governments in such cases map and introduce economic priorities and instruments that are applied in developed countries. This results in wrongly defined plans and their implementation, because the situation with the actual situation in the field is different .

Innovative activities have a significant effect on employment, but a longer period of their implementation is needed to show their real impacts, so innovative activity is more important for less developed countries than for countries leaders [22].

Each economy differs, so the flow of introduction and implementation of innovative activities varies, therefore it is important to identify key domains in order to achieve good business strategy.

According to The European Innovation Scoreboard 2019, Innovators, Firm investments and Sales impacts are the strongest innovation dimensions. Serbia scores high on Entreprises providing ICT training. SMEs innovating in-house, and Non R&D innovation expenditures. Intellectual assets, Attractive research systems and Finance and support are the weakest innovation dimensions. Low-scoring indicators include Design applications, Venture capital expenditures, and R&D expenditures in the business sector (EC, 2019).

3 RESEARCH METHODOLOGY

Previous study embodies 76 firms all sizes in manufacturing sector [23]. Based on Oslo Manual (2005), the prototype of questionnaire had been developed and tested [24]. Research instrument consisted of 20 questions, which has been divided into three parts: information about enterprise, innovation activities and strategies, and innovation obstacles. There were two types of questions – categorical (yes or no), and Likert scaled questions (“1” indicates very minor importance to “5” very high importance).

Importance of manufacturing sector for economic development of Republic of Serbia, relating to generated turnover, total value added and total numbers of employees, was the main reason for authors to analyse SME from four manufacturing sectors (see Table 1).

Table 1. Structure of research simple

Size	Manufacture of food products	Manufacture of chemicals	Manufacture of metal products	Manufacture of rubber and plastic products
Medium	9	2	18	4
Small	15	1	4	1
Total	24	3	22	5

Source: Authors' data

The research sample consisted of 54 SMEs selected from Excellent SME database based on their financial performances (<https://usluge.pks.rs/portal/pregled-excellent-sme>). Geographical distribution of enterprises is irrelevant, because the vast majority of SMEs were from Belgrade and Vojvodina. According to number of employees, sample was consisted of 21 small firms (less than 50 employees), and 33 medium-sized firms (51 to 250 employees).

The research was realized in firms' facilities during the February 2019.

Respondents were entrepreneurs from small firms, and entrepreneurs or managers from medium sized firms.

Statistical analysis was conducted by authors of the study.

4 RESULTS AND DISCUSSION

During the past two years, 20 of them have been introduced innovation. In this study authors analysed number of ideas implemented in practice. This corresponds to main definition of innovation [25]. The results of exploration relationship between size and innovation strategy choice are illustrated in Table 2.

Table 2. Strategic choice

Size	Conservative strategy	Imitative strategy	Absorptive strategy	Total
Medium	1	2	11	14
Small	0	4	2	6
Total	1	6	13	20

Source: Authors' data

Small entrepreneurs favors imitative strategy. Although, medium-sized firms used absorptive innovation strategy. This goes in line with study conducted by other authors (Dodgson&Rothwell, 1991).

Regarding the manufacturing sector, 2 SMEs from manufacture of chemicals implemented innovation, along with all 5 observed SMEs from manufacture rubber and plastic products, 4 SMEs from manufacture metal products, and 9 SMEs from manufacture food products.

Dominant innovation obstacles were lack of finance (78%) and lack of sharing knowledge (22%). In previous period most of observed SMEs used commercial loans. Those loans have high interest rate than Government loans. According to Bickenbach et al. (2009), innovation requires three factors: human capital, macroeconomic conditions and finance sources.

It is important to inform Serbian entrepreneurs about various options of financing innovation from Government and EU funds, which has lower interest rate and grace period.

The second obstacle, lack of sharing knowledge is closely related to lack of trust in observed SMEs. Managers and entrepreneurs have to spread mentor work, and codify key competences in order to improve human capital.

5 CONCLUSIONS

Modern economies will thrive in case they accept innovations as the largest generator of prosperity ever and are no longer based only on capital, knowledge and natural resources, but also on innovation. New ideas will affect new markets, create new industries and encourage new investments in contrast to traditional factors which in past determined success of an economy.

Implementation of innovations brings with it a certain risk for each enterprise and it is often a very complex process for SMEs. Modern SMEs face limited financial resources, lack of adequate machines, skilled employees and knowledge; employees do a variety of different jobs. In developing countries, the main

obstacles to the development of SMEs are the high unemployment rate and the low level of economic activity. A small number of innovations, insufficient development of the legal system, lack of investment, high level of corruption and low competition rate on the market are also obstacles that negatively affect the business of SMEs.

Innovative activities have a significant effect on employment, but a longer period of their implementation is needed to show their real impacts, so innovative activity is more important for less developed countries than for countries leaders.

Each economy differs, so the flow of introduction and implementation of innovative activities varies, therefore it is important to identify key domains in order to achieve good business strategy. In this study, authors explored types of innovation strategy and innovation obstacles in selected Serbian SMEs.

Only one SMEs used conservative strategy that focuses internal R&D. Majority of medium firm has been used absorptive strategy. Small firms have favored imitative strategy that prevailed to external R&D.

78% of interviewed managers considered that lack of finance was primare innovation obstacles.

One of major limitation of study is small research simple. Furthermore, all SMEs came from one national economy and same industry sector - manufacturing.

The results representes a basis for future research that should embodied larger sample as well as different national environment.

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THE SITUATION AND A PROPOSAL FOR DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES IN SERBIA

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ABSTRACT

The small and medium enterprises (SME) sector have a strategic importance for developing countries, but also for developed countries that have recognized the importance of investing in private businesses and employees in recent decades. One of the basic positive characteristics of these companies is their flexibility and easy adjustment to changes in the market. In Serbia, it is mainly about companies that operate on local markets. With adequate incentive programs, small and medium-sized enterprises can become competitors in foreign markets. However, the main problem of development of this sector is financing and insufficient entrepreneurial education. The most common source of financing for the development of these companies are bank loans. When it comes to this type of financing, the largest brokers for entrepreneurs represent high interest rates and difficult access to credit. Innovation and education are another important segment. Generally speaking, a small number of entrepreneurs in Serbia have entrepreneurial education either formally or informally. Courses, trainings, seminars are just one form of non-formal education that is necessary for entrepreneurs if they really want his company to do business successfully. Some of the main characteristics of entrepreneurs are innovation, creativity, courage, willingness to take risks, etc. The greater the risk, the greater the profitability. The entrepreneur must be one step ahead of the competition, monitor their behavior and adapt to the demands of consumers. Providing new ways of financing and easier access to financial resources, introducing entrepreneurial education in curricula in schools and developing the innovation and entrepreneurial spirit of young people is the key to success in the development of the SME sector.

Keywords: Small and medium enterprises, entrepreneurship, innovation, entrepreneurship education, financing of small and medium enterprises.

1 INTRODUCTION

Small and medium enterprises – SME, have a long history in developed countries. In developing countries, they experience an expansion with the transition to a market economy. They are successfully involved in modern business globalization and become significant sources of economic growth and job creation, resulting in a reduction in unemployment in transition economies. The importance of SMEs is more intensively discussed over the last twenty years. If we look at all the macroeconomic indicators, we will see that in recent years in Serbia, the number of small and medium enterprises and entrepreneurs has increased, as well as their participation in the gross domestic product of Serbia. The global economic crisis has left its mark in Serbia. As a priority goal of Serbia's economic policy in the fight against recession, it was the development of small and medium enterprises and entrepreneurs.

When we talk about this important sector, we must point out that, on the other hand, there are economists who do not see the SME sector as a potential for development. Some believe that only the development of industry, and mainly by heavy industry, can bring about the prosperity and progress of the country. Such a way of thinking was especially present in socialist countries, even in the old Yugoslavia, where the emphasis was placed on the development of industry.

However, the current development of this sector has proved to be of strategic importance for the Serbian economy, and that is its most vital part. The balanced regional development of the country depends on the number and performance of SMEs and their even distribution in all parts of the country. The business of SMEs is mainly local. These companies can very well become a competitor and prepare for going to foreign markets. When it comes to the performance of SMEs, an important segment is education. If we want strong, successful and competitive companies, they must be managed by efficient and well-trained managers. The development of skills and competency management must be a priority for the development of small and medium enterprises and entrepreneurship. The introduction of entrepreneurship as a subject in secondary schools is only the first step in the development of entrepreneurial ideas, creativity and the development of entrepreneurial spirit among young people.

2 DEVELOPMENT OF SMES IN SERBIA

The development strategy, in Serbian conditions, is based on the determination that micro, small and medium enterprises become bearers of future economic development, which would compensate for the existing vacuum created by the total collapse of large companies. [1]

The continuous strengthening of the SME sector is the result of improvement of the general business conditions and undertaking of incentive measures for the development of this sector in Serbia. All EU reports indicate a positive tendency for the development and impact of SMEs on mitigating the negative effects of transition. According to research by the World Bank and the International Finance Corporation (IFC), Serbia was named the leader in reform implementation in 2005.

There is marked regional unevenness regarding the level of development of SMEs in Serbia. The largest number of these companies is concentrated in Belgrade and the South Bačka District, while comparisons are in the Toplica district only 1% of the total number of registered SMEs. After 2000, there were great expectations of the people in terms of the accelerated growth of living standards and the recovery of the economy. It was necessary to improve the economic activity that, after the sanctions, wars, the disintegration of the country and the markets of the former Yugoslavia, was characterized by outdated technology and equipment, especially in the industry and production that could not follow the requirements of the foreign market. Through market reforms, privatization and inflow of foreign investments, institutional and material assumptions for stable development are created. [2] In the transition period, inflows from the sale of state and social capital were mainly used to cover the deficit in the budget. Favoring the services sector and neglecting the production sector is characteristic for that period.

After the unsuccessful transition, the economic crisis has inflicted enormous losses, which are reflected in the increase in unemployment, the reduction in real demand, the increase in poverty rates, the decline in the purchasing power of the population, etc. On the other hand, the SME sector faces a serious financing problem, insufficiently qualified labor, obsolete technology, insufficient information on markets, and a lack of information on technologies. Addressing the problem of financing, both in the money market and in the capital market, is the most important feature and biggest problem for SMEs. [3] The sector of SMEs in countries like Serbia remains another "oasis" of national economic sovereignty and potential levers of developmental economic policy. [4] The period of recovery of the entrepreneurial sector and the development of SMEs starts in the period from 2014 to 2017. The SMEs sector dominates in all regions and most territorial areas of Serbia in 2017. The largest share of the SMEs sector is in the Sumadija and Western Serbia region (it accounts for 99.9% of enterprises, employs 77.0% of employees, makes 75.0% of turnover and generates 72.0% of the GDP of the region), and the least in the Belgrade region (makes 99, 8% of enterprises, employs 55.9% of workers, accounts for 62.7% of turnover and creates 50.9% of GDP of the region). Although they have the least participation in the region, the SMEs from the Belgrade region (with a share of 32.7% in the total number of SMEs, 33.1% in employment, 44.0% in traffic and 44.4% in the MFA) dominate in relation to the SMEs from the Region of Vojvodina, the Region of Sumadija and Western Serbia and the Region of South and East Serbia. [5] In the period from 2009-2014., the SMEs sector recorded a continuous decline in employment, where in 2009 due to the economic crisis, the largest decline was registered (by 7.2%). In 2015, the trend of total non-financial sector employment growth continued in 2016 and 2017, which is the result of an increase in the number of employees in all enterprises, but the level of employment from the pre-crisis period is still not reached. The employment of the nonfinancial sector in 2017 increased by 47,983 workers (+ 3.8%) in the: SME sector for 35,930 workers (+ 4.3%), micro for 3,817 workers (2.5%), small by 9,699 workers (4.8%), secondary workers for 12,317 workers (5.8%)[6]. Undoubtedly, it can be concluded that the sector of SMEs is recovering and that it records the growth of the number of newly registered companies but also the number of employees. It is undoubtedly that this sector has great potential and every investment in its development will bring enormous benefits to the national economy and bring Serbia closer to more developed countries.

3 CHARACTERISTICS OF SMES

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Do not use abbreviations in the title or heads unless they are unavoidable. Thanks to its flexibility, SMEs can easily adapt to changes in the environment. The most important advantages of SME can be highlighted:

- High level of flexibility
- Entrepreneurial spirit developed

- Precisely defined core competencies
- Easy handling

SME are flexible due to the simple organizational structure with a small number of hierarchical levels, a small number of employees and direct communication with the owner of the company. Developed entrepreneurial spirit refers to the continuous search and exploitation of opportunities in the environment. Entrepreneurs must be creative and innovative, have to explore and always be a step ahead of the competition.

The core competence is a set of knowledge, skills and technologies that enable the company to create specific values for its customers. [7]

For SME it is characteristic that they focus on doing one job, precisely defining the core competencies, while large companies often perform a number of different jobs. [8] In addition to numerous advantages, SMEs have their own shortcomings. The main disadvantages of SMEs are: [9]

- Lack of funds
- Inability to access large profitable markets
- Lack of professional staff

In order for the functioning of each organization to be effective, it requires that it be managed. Each organization requires the existence of a certain number of individuals who will deal with its mission, goals, strategy and implementation of defined activities. The most important definition of management was given by Mary Parker Follet. It defines management as the ability to do things through people. Generally speaking, we can say that managing is the process of directing activities towards achieving defined goals of the organization. The SMEs enterprise is different from other enterprises because of the fact that there are constantly focused on new chances, innovating and changing. According to Dracer: [10] "The real entrepreneurial economy is based on innovation, both on those that fall into the category of great ideas as well as those that result from the systemic work of the entrepreneur - a purposeful innovation."

When it comes to SMEs, it is impossible not to mention entrepreneurship. An entrepreneur is a person who is guided by internal psychological needs experimenting within a business. These are creative people who are oriented both to present and future events. These are people who initiate and undertake ventures. Entrepreneur is a person who, by applying a new idea or initiative and taking over business risk, places the company's products or services on the market in order to obtain a profit. [11]

Under entrepreneurship, we mean the social function of creating and creating new values through the creative combination of business resources. It emerges as a willingness to take initiatives, activate socio-economic mechanisms, and consciously risk exposure when transferring the idea of business ventures.

4 INNOVATION - THE KEY OF SUCCESS IN THE DEVELOPMENT OF SMES

Contemporary conditions of business are characterized by uncertainty, constant competition with competition and struggle for the market. In such cases, innovation is the most desired feature of companies. "The term "innovation" was used by economist Joseph A. Schumpeter of the 1930s to describe the conversion of ideas and knowledge into new and commercially successful products and services." [12] "Entrepreneurial innovation was," according to S. Chumpeter, "the engine that actually triggered economic development. Innovation is the production of a new good or new quality that the consumer has not yet met." [13] Simply put, innovation can be defined as the application of a new idea, process, service, product that provides new benefits to both the clients and the organization. Innovative business strategy is applied mainly by large companies that have financial opportunities for research and product development, because innovation should be sustainable in the long run and provide the company with benefits in terms of better performance. [14] Innovations in the global economy are a strategic development factor. They need to provide companies with a strategic advantage through socio-economic novelties. (15)

According to the innovation performance data for 2017, the Republic of Serbia is classified as a group of 16 moderate innovators (the index of innovation is 0.335) and significantly lagging behind the EU-28 average (0.504) and most European countries. In comparison to countries in the region, only the innovation in the Republic of Serbia has better innovation. [16] According to the Global Innovation Index, in 2018, Serbia ranks 55th (out of 126 countries), an improvement for seven positions relative to 2017 and the best rank in the last five years. However, according to the Global Innovation Index, Serbia still lags behind most of the surrounding countries and is better ranked only by Bosnia and Herzegovina, Albania and Macedonia. [17] Based on the four indicators used to measure the innovative performance of SMEs (innovation of SMEs in products and processes, marketing and / or organizational innovation of SMEs, innovation activities of SMEs within the enterprise, cooperation of innovative SMEs with others), Serbia lags behind the average of countries The European Union and Slovenia, while better performances from all other countries in the region.

Table 1. Division of SMEs towards innovation

I Innovation leaders 1-3% of all SMEs	II Leading innovation users 10-15% of all SMEs
III Potential innovators about 40% of all SMEs	IV Non-innovative SMEs about 40-45% of all SMEs

Source: OECD, 2000.,p.209.

The reasons for the low level of innovativeness of SMEs in Serbia are: small scale of technological innovations, poor linkages and cooperation between the education sector, research institutes and the commercial sector. Non-technological innovations, which are related to the improvement of organization and marketing, advanced information and communication technologies and the like, are weakly used by SMEs. Innovations can also significantly contribute to solving specific problems. For example, a service provider can open a virtual office where clients will be able to file a complaint, proposal, or suggestion. By introducing such an office, the problem would be solved in a short period of time.

Innovative leaders are seen as SMEs that base their business on the development of new, superior products or services and build a competitive advantage on the basis of this that is shown in table 1. The leading users of innovation are those SMEs that do not have enough capacity to be innovative leaders and build their survival on the rapid application of the latest scientific and technical knowledge. [18] Potential innovators account for 40% of SMEs. Their business is not too innovative, they are dealing with traditional activities in which the changes are not particularly fast and significant, but actively follow innovations in the market and are trying to adopt them. The largest group of companies are non-innovative enterprises. These are companies that do not have the ambitions, capacity or the need to innovate in their business.

These are mostly old companies that are well-marketed in the field of low-tech processing industry where monitoring of technological innovations is not necessary for their survival on the market. Not only developing countries, but also developed economies during decades have focused on the development of innovation, competing globally in attracting the most capable individuals and increasing market share. [19]

Indicators of innovative activities of SMEs in the period 2014-2016.: [20]

- Business subjects towards innovation, activity and size. The largest percentage of innovators is among large business entities (66.3%), followed by medium-sized enterprises (54.4%) and the smallest percentage of innovators are small business entities (38.2%)
- Innovation of products or services was mostly introduced by large business entities (45.4%), medium (33%) and small businesses (25.3%)
- Innovation of the production process was mostly introduced by large business entities (44%), medium (28.9%) and small businesses (19%)
- Innovations in the organization were mostly introduced by large business entities (47.3%), followed by medium (31.8%) and small businesses (22.1%)
- Innovations in marketing are most common in large business entities (40.9%), followed by secondary (30.3%) and least in small business entities (20.3%)
- Most non-innovators have among small businesses (61.8%), slightly less among medium-sized enterprises (45.6%) and the smallest among large business entities (33.6%)
- For most business entities, which are not innovators, 77% of them had no reason for innovative activities, while 23% needed them, but did not innovate because of too many obstacles. As the biggest obstacles to innovative activities, business entities assessed the lack of their own financial resources for innovation and too high cost of innovation.
- In the total population of business entities, one-quarter of them are those in which there are no employees with higher education, although they are mostly small business entities. The largest number of medium-sized business entities employs 1% to 4% of highly educated, while almost a third of large business entities employ between 10% and 24% highly educated staff

The most significant shortcomings of innovative policy in the Republic of Serbia are: [21]

- Lack of cooperation between political institutions and the lack of engagement of business organizations in determining priorities and instruments of innovation policy;
- Research is rarely the basis for the development of innovation in enterprises;
- The contribution of the economy to research funding is low, including the private sector;
- Lack of cooperation between domestic and foreign subjects in the field of innovation development.

Innovation policy should include activities focused on:

- Promoting the importance of innovation for strengthening the competitiveness of enterprises,
- Creating awareness about the necessity of innovation in modern economic conditions,
- Stimulating and encouraging entrepreneurs to innovate more,
- Creating an economic environment that will stimulate and motivate entrepreneurs to innovate;
- Providing financial support to SMEs by developing a domestic financial market;
- Providing system support to SMEs by changing the legislative framework;
- Education of entrepreneurs in order to acquire the necessary knowledge and skills;
- Enhancing the cooperation of SMEs with large enterprises, faculties and research and scientific institutions, because only synergy can provide for the strengthening of the competitiveness of the domestic economy;
- Easier access to information;
- Creation of science-technology parks, business incubators, innovation clusters that will enable fast and efficient dissemination of research and innovation results, etc.

5 ENTREPRENEURIAL EDUCATION AS A INFALLIBLE ELEMENT OF DEVELOPMENT OF SMES

Education is viewed as one of the main conditions for the growth and development of the SMEs in Serbia. Investing in employees is the biggest investment, since knowledge is the most important value of the organization. Employees drop out of education and training mostly for financial reasons.

According to the Republic Institute for Statistics on Adult Education from 2016, the situation is as follows: [22]

- According to the obtained results, the rate of participation of adults in some form of formal or non-formal education or training is 19.8%, which is slightly higher than in 2011 (16.5%), but is significantly below the average of the member states of the European Union (45, 1%).
- In some form of education and training, in the period of 12 months preceding the survey, women (21.4%) were more represented than men (18%). The participation rate is the highest among the population aged 25-34 (29.2%).
- The data show that in lifelong education the most frequent woman is 25-34 years of age, with higher education, employed and living in the city.
- In formal and / or non-formal education, the most active were 25-34 years of age (29.2%), then aged 35-49 (23.5%) and at least 50-64 years of age (10, 5%).
- The highest percentage of respondents has higher education (39.9%), and secondary education was in response to 14.2% of respondents.
- As regards the working status, the highest percentage of those who participated in some form of formal or non-formal education or training is employed (32.5%), the unemployed is 11%, while those who are inactive 9.8%.

Improving entrepreneurial education is reflected in improving the quality of both formal and informal education. One of the possible ways of entrepreneurial education is the introduction of entrepreneurship into the curricula of schools and faculties, while the second way of acquiring knowledge is reflected in the organization of various courses, seminars, trainings and other forms of non-formal education.

6 SOURCES AND PROBLEMS OF FINANCING DEVELOPMENT OF SMES

The survival, growth and development of SMEs is conditioned by funding opportunities. When an entrepreneur decides to start a business, he is faced with investing in resources for work, human resources, materials, promotion of products or services, etc. Starting from the assumption that their own funds are sufficient to start a business, the problem will arise when the need for business expansion and the introduction of innovations arises. SMEs companies have limited access to financial sources both in the money market and in the capital market, which is the real and biggest challenge that this sector faces.

In the Republic of Serbia, entrepreneurs and SMEs can provide financial resources from several sources: loans to commercial banks, leasing companies, factoring, business angels, microcredit organizations and capital market - corporate bonds, share issue. [23]

Table 2. Phases of SME development and financing methods

Development Phase	Financial sources
Seed stage	Money from owners, scholarships
Start-up phase	Business angels, Risk capital
Early growth	Risk capital, Bank loans
Expansion	Bank loans, Stock exchange

Source: J. Chris Leach, Dr. Ronald W. Melicher, *Entrepreneurial Finance*, 5th Edition, Cengage Learning, 2014. pp. 115-119.

Table 2 shows phases of SMEs development and financing method. Development phases are seed, start up, early growth and expansion. Financial sources are: money from owners, risk capital, bank loans, stock exchange.

The results from table 2 show that when using bank loans as sources of financing, the most common problem of SMEs is high interest rates.

Table 3: Structure of the answer to the question: When using bank loans, the biggest problem are[23]

Problems	Frequency response
High interest rates	45
Securing loans	26
High banking costs	11
Slow and long procedure for processing claims and granting loans	9
Limited loan amount	7
Insufficient information	2
Insufficient branch network	0
Something else - what to state?	0

Factoring is also a way of financing businesses aimed at SMEs that have difficulty accessing bank loans. They involve the sale of receivables from the buyer to specialized financial institutions before maturity with a deduction for a certain interest. In factoring, the complete risk of collecting receivables is taken over by a financial institution. It belongs to the range of modern financial instruments, which are widely applied in developed economies, while in Serbia it is still insufficiently used, although it is present since 2005. [24]

In transition economies, funding for SMEs is still difficult and unstable. The Republic of Serbia helps the opening, growth and development of the company and from its own sources, through various funds dedicated to this sector.

7 CONCLUSION

From all of the above, it can be concluded that SMEs represent a significant sector in most countries, so any investment in their development will be a benefit for the entire national economy of each country. As soon as they realize the importance of innovation, small and medium-sized enterprises will be able to tackle modern business challenges and provide themselves with a secure place on the market. Serbia belongs to a group of moderate innovators.

The biggest problem is the provision of financing for the people. Regarding entrepreneurial education of employees, Serbia is well below the EU average, but there is a positive trend of growth compared to 2011.

By introducing entrepreneurial education in schools, one of the basic problems will be solved, which is insufficient knowledge of entrepreneurship and starting a business without knowledge, training, courses and seminars that are necessary for future entrepreneurs to gain elementary knowledge for starting a business. Certainly the biggest problem for small and medium-sized enterprises is their financing. Although there are many sources of funding, they are still underdeveloped in our market, or are unfavorable and insufficiently developed for entrepreneurs.

Based on the fact that the financing problem is the biggest problem of the development of the SME sector, the state should find ways for easier access to financial resources.

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THE DOUBLE EMBEDDING OF SOCIAL ENTREPRENEURSHIP: THE DISRUPTION OF SOCIAL INNOVATION AND THE TERRITORIAL DEVELOPPEMENT

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ABSTRACT

Faced with the challenges of setting up a new model of economic development in Morocco through better social and territorial inclusion, we sought through this communication to show the role and challenges of social entrepreneurship in this context.

The concept of social entrepreneurship remains unclear and literature abounds on this subject. To this end, we show the common criteria on which this type of company could be identified, taking the Anglo-Saxon model, the European model and the vision of the Social Solidarity Economy bill in Morocco.

We have discussed the importance of the innovative behavior of the social enterprise, namely its double embedding, both social and territorial, which is part of a necessity for the existence and survival of this type of organization.

We conclude with recommendations relating in particular to the promotion of social enterprise among investors and young project holders to encourage the creation of these structures and their support.

Keywords: Social Entrepreneurship, Social Innovation, Territorial Development, Social Solidarity Economy

1 INTRODUCTION

Long regarded as part of a marginal economy, social entrepreneurship is everywhere in the world as a new response to the challenges faced by megacities as small agglomerations: fight against exclusions, recycling of waste, fight against the pollution, promotion of culture ... All sectors are invested by social enterprises, whose activities are geared to the basic social and environmental needs of citizens. Because they carry models that often allow "better with less", because their agility allows them to develop solutions perfectly calibrated to the specificity of local issues, social entrepreneurs are undoubtedly major players in economic development and social inclusion in our territories.

The time has come to build a new model of growth and development in Africa. The one adopted by Morocco is based on shared prosperity, job creation and human development. The acceleration of regional integration is a major imperative and social entrepreneurship is considered today as a real lever for "co-development" (Moroccan Today Forum -July 2017- "Co-development the vision of a King "). On the sidelines of this forum, a "Casablanca Institute for Peace and Inclusive" was created to encourage young people in social entrepreneurship.

The social entrepreneur puts the economic finality at the service of the social purpose, that is to say that he will combine the economic, environmental and social logics so that they reinforce each other and contribute to the development of the regions. An example of this is Kick Start International, which focuses on meeting the needs of smallholder farmers in Africa by selling efficient and low-cost irrigation solutions and has been able to lift more than 1.200 000 from poverty and contributed to the creation of 240,000 small businesses.

In terms of entrepreneurship, the social is very often confused with solidarity. Solidarity entrepreneurship, mainly in the form of cooperatives, aims to help disadvantaged groups by giving them access to finance, access to finance and solidarity-based work. A social enterprise seeks the same goal in a different way. It tries to offer goods and services to consumers in the marketplace. However, it differs from the traditional business in that it reinvests its profits to pursue its social or environmental mission while ensuring its financial viability.

Social entrepreneurship proposes new modes of organization that are more respectful of women and men, values solidarity between employees and develops new modes of governance. It is a concept that is too much or not clearly defined. To better understand the concept and provide a common definition, we will start by approaching different conceptions of social entrepreneurship and give common criteria, and then we will look at innovation at the heart of social entrepreneurship and end with some recommendations.

1.1. The notion of social entrepreneurship: what criteria for a common definition?

We will begin by tracing the emergence of this concept in the North American and European contexts. Then we will come back to the Moroccan case in particular.

The emergence of the concept of social enterprise dates back to the early 1990s in the United States with the launch by Harvard Business School of the "social enterprise initiative".

Moreover, the concepts of social enterprise, social entrepreneurship, and social entrepreneurs often appear to be interchangeable. But two currents predominate: the school of market resources and the school of social innovation. (Dees and Anderson 2006, Defourny and Nyssens 2010)

In the school of market resources, one finds in particular the notion of "social business" put forward by Muhammad Yunus (2010) and which covers the companies whatever their status, which must cover all their costs by resources market. In the vision of Muhammad Yunus, "social businesses" are generally companies formed by investors who do not receive dividends, the profits being reinvested entirely in the company at the service of the social mission ". The most commonly cited example of this, is the "Grameen Danone", which produces and sells extremely nutritious yogurts for poor people in Bangladesh at a very low price.

For the school of social innovation, it is the profile of the social entrepreneur that is highlighted, as well as its creativity, dynamism and leadership to realize innovative responses to social needs (Dees, 1998). The focus is therefore on the systemic nature of innovation and the extent of social impact, rather than the type of resources mobilized. In Europe, a network of EMES researchers was formed in 1996 to study the emergence of social enterprises. The network set out to build a "typical ideal", that is to say an abstract model synthesizing the main characteristics of the new entrepreneurship observed in the social and solidarity economy. Nine indicators recognized by EMES are classified into 3 economic indicators and 6 social indicators, economic indicators and social dimension indicators.

The criteria for defining the social enterprise of MOUVES, social entrepreneur's movement in France, are the same as those mentioned above by the ERN (European Research Network). They define social entrepreneurship as the creation of viable economic activity to meet social and environmental needs. Moreover, the Mouves and its adherent's community are involved in projects and initiatives that promote the acceleration of social innovations in the territories, what the object of our communication.

In Morocco, the Social and Solidarity Economy Bill retains in article 3 that private legal entities operating in the SSE sector must comply with their training, organization and operation of the SSE sector, following principles:

1. Primacy of the person and the social object over capital
2. Freedom of accession or withdrawal
3. Democratic control by members
4. Conjunction of the interests of members, users, beneficiaries and the general interest
5. Defense and implementation of the principles of solidarity and responsibility
6. Management autonomy and independence from the public authorities
7. Allocation of most of the surplus, if any, to the development of the activities of the organization and / or the general interest
8. Cooperation between social and solidarity economy organizations at local, regional, national and international level
9. Education and training of members, elected officers, employees, beneficiaries and information to the general public

In summary, we can retain the following common criteria, which are the essence of social entrepreneurship:

- Social enterprise is first and foremost a private initiative serving the collective interest
- It is an entrepreneurial initiative which means risk taking
- This initiative has a dual purpose, social, in the societal or environmental sense
- The social impact is more important than the economic purpose

At this point of the analysis, it also seems important to distinguish between social enterprises and companies with social responsibility (CSR) vocation. In fact, the revenues generated by the social enterprise are first generated to defend the social or environmental purpose, which was determined by the

project leader (s). The economic purpose is not a purpose in itself but a means to serve the social purpose which is not the case of the company that has a CSR-oriented policy.

This leads us to raise the importance and the stakes of the profitability of a social enterprise to ensure its survival and autonomy, which, at the end, remains a company that meets the same risk criteria as a traditional company. The social entrepreneur must therefore meet two main challenges:

- Ensure the economic sustainability of its business
- And, measure the social impact of his company to prove its effectiveness

It is this last point that holds our attention here. Key criteria for measuring social impact are social utility, effectiveness, efficiency and sustainability (by government institutions and NGOs)

For the economic challenge, traditional financial metrics such as ROI (return on investment) can be used.

For social challenges, a new indicator is proposed by social scientists, SROI, the social return on investment (Community Sector Council NL, 2013). It is inspired by the cost-benefit method and social reporting. It is a method that provides a framework for analyzing social, economic and environmental impacts. It consists on measuring the change that could be attributed to the action of the social enterprise and then giving it a monetary value as a unit of measure as well as the social value created. It allows social entrepreneurs, and those who finance them, to legitimize their action by attributing a monetary value to their contribution. SROI makes it possible to speak the same language of the community of traditional entrepreneurs who measure their ROI (return on investment).

Among the other difficulties and major challenges of social entrepreneurship to ensure its existence and sustainability, these are the financing difficulties faced by these companies because of a rather limited investment in solidarity because of the complexity of the sector and that it is not clearly defined by legislation (report of the British Council and MCISE, 2014)

The major challenge for social entrepreneurs is to be a repair force that compensates for what the system has created as difficulties, but, above all, a force for innovation. This strength of innovation must change the system so that it is as inclusive as possible

2 INNOVATION AT THE HEART OF SOCIAL ENTREPRENEURSHIP AND TERRITORIAL DEVELOPMENT

The social entrepreneur is often an innovator, not because he designs cutting-edge technologies, but because he invents new solutions to old problems (insertion of young people looking for work, people with disabilities, insertion of women in a precarious situation, geographic dispersion of the family, sustainable development, fight against discrimination of all kinds ...), through organizational responses while taking advantage of new information and communication technologies (S.Boutiller, 2009)

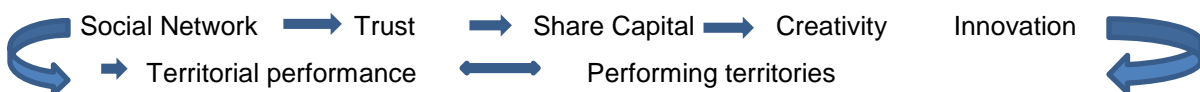
The social entrepreneur develops his activity in activities that are not necessarily profitable for the "classic enterprises". In fact, it is a classic entrepreneur who develops an activity that he considers socially useful because it responds to new social and economic needs of the moment.

To survive and have a real and measurable social impact, we will discuss here the importance of its innovative behavior namely its double embedding. We support the idea that disruptive behavior is the product of socio-technical-economic embedding and territorial registration of these networks.

Therefore, the territories must redraw the contours of their strategy in the sense of attractiveness and a better defined retention.

It is then a question of wondering what constitutes innovative behavior and of deriving the consequences, as regards the territorial strategies of development.

There is a circular and dynamic causality of the double embedding of innovation:



Each causal relationship must be understood as a necessary condition which remains insufficient. Indeed, at any time, one of the elements of the network, creativity for example, can't be deduced from the mere existence of social capital. Social capital is understood as the set of information resources derived from belonging to a social network, participating in individual creativity and then participating in a disruptive innovation process (Coleman 1988)

More generally, the relationship between these innovative individual behaviors and spatial determinants is the subject of very little reflection. Our aim here is to shed light on the fundamental elements of creativity and rupture, but also to show what position, no less fundamental, must hold the territories in this process of creativity.

- **Social capital**

It is a question of defining the forms of social capital that favor creativity and disruptive innovation and not the way in which each individual invests in social relations to build social capital (Glaeser, Laibson and Sacerdote, 2001).

We agree with Coleman's definition and consider social capital as an individual resource that contributes, through a multiplier effect, to other forms of individual capital, to differentiate individuals as to their ability to innovate.

- **The collective invention**

For Allen (1983), the collective invention feeds on the principle of circulation and exchange of information, themselves based on the existence of a network of social group (coherent and homogeneous social groups).

It is therefore necessary to understand how social groups (intra-community dynamics) are formed and evolve, but also how they interact with each other (inter-community dynamics), each of which is capable of retroacting on the other, in order to define the way in which a collective invention emerges.

We must ask ourselves if there are modalities of interaction that best promote the decisive circulation and diffusion of innovations, and, if there is a singular form of interpersonal relationships that promote the exchange of ideas and innovation.

- **Network dynamics**

Dissemination of information between agents is the key to collective invention. The nature of the links that support transmission, namely the transmission and reception of information, as well as the organization of links between them, are crucial (Jackson and Wollinsky, 1996).

- **Social spaces of innovation**

The affective dimension of social relations can often be a brake on atypical and deviant behavior. These social relations are assimilated to the local links of the "small worlds" model (Watts 1999) and ultimately, very little favor original combinations, new experiments and creativity.

In fact, it is the "weak", i.e. external, social relations that promote adaptability to new situations since information on new opportunities is more easily accessible. Based on the study by Julien Andriambelason and Ramangalahi (2002) concerning the innovative behavior of 147 SMEs, it is clear that the most innovative are those who are willing to use "weak links". In other words, the only observation of its competitors and its micro environment is not enough to have a disruptive innovation. The use of external relations, professional, institutional or associative networks, that is to say those that support the diffusion of opportunities external to the clique of belonging, promotes individual adaptability to an evolving and uncertain environment.

From the point of view of the regional decision-maker, what counts is not only the location of economic activities and the various technological or pecuniary externalities that boost the territory, but also the relational externalities. A territory which releases many relational externalities contributes very quickly to raise the costs of exit.

Indeed, by promoting the simultaneous reduction of a fracture between highly nested agents and those more isolated, it promotes the collective ability to innovate away from the dangers of conformism. In this, it presents the characteristics of an attractive territory and conducive to entrepreneurship (Raphael, Suire 2004)

Innovation is therefore part of a more explicit conception of the economic and social dynamics of territorial development.

2.1. Is innovation necessarily disruptive?

One could ask the question of the extent or intensity of social innovation: is there a radical change, a break to talk about innovation, or is incremental change enough?

For Dees, social entrepreneurs must be innovative but do not need to be "inventors". Innovation can be about applying an existing idea to another context or mobilizing new sources of funding.

This conception is echoed in the BEPA (Bureau of European Policy Advisers, commission.2010) report which considers that innovation can be "macro or micro, structural or local". A social innovation can be a product, a production process, a technology, but it can also be an idea, a principle, a social intervention or a combination of them.

We finally retain the idea that social innovation is a non-technological innovation whose objective will be to facilitate access to the market for people in precarious situations. It is based on entrepreneurs who are able to contribute to the production of the general interest in addition to or instead of the local authorities and the State when they are lacking. Innovation is then social essentially by the target audiences.

Another analytical stance is to adopt a more organizational grid of social innovation. Thus, several legal statuses make it possible to associate a plurality of stakeholders of a particular sector of activity or territory and to pool resources among the actors.

Here we can cite the innovative financing methods of social entrepreneurship, crowdfunding and especially the Civic crowdfunding. The specificity of Civic Crowdfunding lies in the creation of synergies between the territorial actors. It is not only a financial tool to facilitate the collection of funds through a collaborative funding platform (CFP), but also and above all, a powerful communication tool, able to federate a community around a project. Finally, it should be noted that the Civic Crowdfunding is not a substitute for public action but its complement. Several pioneering platforms such as Spacehive (UK) and Patronicity (USA) have initiated co-financing partnerships with local authorities to increase their social impact.

We can also mention the case of fair trade, where price fixing rules are called into question: at a price that is sustained or at a low price as an expression of competition, a "fair price" succeeds, with the capacity to guarantee a decent income to producers. The price thus becomes the expression of the solidarity of a distributive social justice, and no longer the result of a competitive process and the search for efficiency and individual profit.

What then are the characteristics of the organizations that make innovation emerge, that make it possible to consolidate it and that contribute to its diffusion?

Social innovation is approached as much in the processes that make it possible for its emergence and its deployment, as in the uses and their appropriation by the actors.

A significant weight is then given to the participation of the actors and to their "empowerment", in order to reinforce their capacity to act on the territories.

Social innovation does not concern only one category of people in relation to another, but it characterizes the fact of mobilizing heterogeneous resources, in participative organizations that privilege cooperation and collective learning internally and externally. In this sense, collective entrepreneurship is part of territories in order to mobilize the actors and existing resources in this territory. It is thus a process of transformation of the rules, establishment of renewed cooperation and links in territories in order to produce positive externalities in the long term.

The objective is threefold: "to do together" in a participatory process, insofar as social innovation makes sense only if all the actors are involved, for a "collective" use, the effects of which go beyond mere consumption individual

3 RECOMMENDATIONS

In Morocco, social enterprises remain largely underdeveloped. It is therefore necessary to promote the concept of social entrepreneurship by organizing symposia, forums and training within high schools and universities.

We need to unify the sector and make it visible for:

- Acquire greater credibility with investors
- Evaluate the impact of social enterprises
- Propose genuine public policies for social entrepreneurs

The SSE sector has more than 12,000 cooperatives with more than 450,000 members. But their social impact remains below expectations. This is due to the fact that their creation is part of a global system aimed at generating a response to the problems of precariousness and exclusion and which is formulated urgently. It is therefore necessary to professionalize the practices by setting up operating obligations. The role of support structures and Universities is fundamental here. It is within this framework that the Faculty of Legal, Economic and Social Sciences of Casablanca launched in 2016 the Master "Expert in ESS and Social Governance" in order to contribute to the training of dedicated managers in the management and governance of these structures for that these structures can ensure a better social impact.

The role of incubators is fundamental for the development of innovative and successful social enterprises. At present, most incubators are in the Casablanca- Rabat axis. Other regions remain handicapped by the lack of dedicated incubators. We must encourage the establishment of social incubators in other parts of the kingdom.

Regarding the financing of social enterprises, we must go beyond the logic of donations, assistantship and charity by creating "foundation-companies" managed as start-ups, which will surely create wealth.

Women and young people should no longer be considered as a population to be integrated but as actors of change

Finally, it would be appropriate to create a "social enterprise" label to encourage investors to create social and innovative businesses.

4 CONCLUSION

These conceptions of social innovation, whether or not they carry a social transformation project, have in common to broaden the conception of innovation to non-technological dimensions, to define social innovation as a creative response to unmet social needs.

These conceptions, however, mobilize a very different definition of the term "social". Between the access to the market for the poorest and a new form of cooperation between the actors, the spectrum of the aims pursued is very broad.

In the absence of a clear definition based on collectively recognized criteria, the risk is that the use of the "social innovation" category could be interpreted as a tool for profitable enterprises to ensure their development.

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FINANCING THE DEVELOPMENT OF SMALL AND MEDIUM-SIZED ENTERPRISES IN THE REPUBLIC OF SERBIA

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ABSTRACT

Small and medium-sized enterprises appear as bearers of the development of each country. The results of numerous recent studies show that these companies represent the motor, that is, the driving force of economic growth, as an inexhaustible source of creative entrepreneurial ideas and innovations. While for the developed countries, small and medium-sized enterprises are nothing new, they represent a new phenomenon for the former socialist countries. Their importance is reflected in the process of privatization and liberalization. It can undoubtedly be said that they are also a factor in the stabilization of national and European economies. The ownership and economic transformation of the domestic economy conditioned the development of small and medium-sized enterprises. The process of transition for developing countries, including Serbia, is a step forward towards approaching world trends. This means that these countries are adapting their standards, laws and ways of doing business to those in the world. This paper analyzes the development of small and medium-sized enterprises, and the sources and problem of financing of the SME sector in Serbia in the period from 2016 to 2019.

Keywords: small and medium enterprises, entrepreneurship, financing of small and medium enterprises.

1 INTRODUCTION

Although, since the end of the last century, small and medium-sized enterprises are more intensely discussed, their existence in the form of some primitive forms dates back to the distant past. An interesting fact is that the first known records about the existence of small and medium enterprises appeared 4000 years ago. A small enterprise existed in almost all the cultures of the old peoples. Arabs, Babylonians, Romans, Egyptians, Greeks and Phoenicians were continually developing small enterprises. The products produced in these primitive companies were often of poor quality, and in such a way they made a mistake and deceived customers. That is why the Babylonian King Hamurbandia 2100 BC. issued a code of about three hundred laws protecting consumers and small entrepreneurs from fraud. This law is known as Hamurabi's law. In our scientific literature, about the role and significance of small and medium-sized enterprises is written only eighty years ago of the last century. [1]

The globalization of the world economy and the development of modern technologies have led to the development of entrepreneurial culture, creativity and innovation. Regarding Serbia, we can say that economic reforms promote entrepreneurship and small and medium-sized enterprises as the basis for survival and development. The initiators of these changes are innovative entrepreneurs, i.e. Small and medium-sized enterprises. What also characterizes the small economy is the low specialization of managerial and business functions. Small and medium-sized enterprises have an important role in both local and regional development. On the other hand, for medium-sized enterprises, which are mostly hierarchically structured, the specialization of jobs is performed according to a functional principle. Market reforms, privatization and the inflow of foreign investment create preconditions for stable development.

The key development problem of the Serbian economy is unemployment, high level of public debt and low level of investments. Creating an environment that is stimulating to investors is one of the important dimensions of the regulatory framework. [2]

The Republic of Serbia recognizes the importance of the establishment and development of small and medium-sized enterprises and encourages the development of entrepreneurial spirit, innovation and creativity among young people through its incentive programs.

2 DEFINING OF SMALL AND MEDIUM-SIZED ENTERPRISES

In the period after the Second World War, the industrial policy of the SFRY, based on the then prominent USSR, was based on the idea of creating bulky enterprises in order to achieve economies of scale. The concept of integrated production considered the creation of large state or social enterprises, within which the entire process of production was rounded up.

The organization of these enterprises was complex and often included agricultural goods, restaurants, tourist organizations, resorts, printing houses and many other facilities owned by these giants. In such an environment, the development of the private sector was extremely marginalized.

With the overthrow of the then single-political regime, the process of transition of economic political systems into multilateral parliamentary democracy and market economy begins. [3]

We can not precisely define the definition of SME¹ due to the influence of various factors such as: geographic area, population, domestic gross product, national income per capita, as well as the social political organization of the country.

The entrepreneurial environment is influenced by numerous elements of the entrepreneurial system: government policy, regulatory framework, institutions, human capital, local and global markets. In order to create better conditions for financing small and medium enterprises, as well as conditions for the development of entrepreneurship, not only amendments to laws, but also changes in the education system and organizational culture are not enough. [4]

The conditions that must be fulfilled in Serbia to place the enterprise in the ranks of small or medium-sized enterprises are:

Table 1. Criteria for classifying small and medium enterprises

SMALL ENTERPRISES	MEDIUM ENTERPRISES
- The number of employees is lower than 50	- Number of employees less than 250
- Gross income up to 2.5 million euros	- Gross income up to 10 million euros
- Value of 1 million euros	- The value of the funds up to 5 million euros

Source: Author

It is sufficient for the company to fulfill two of the three conditions in order to be classified as a small or medium-sized enterprise.

Experience shows that the best way to develop entrepreneurship and SME sector in transition countries when activities and assistance are integrated and directed at three hierarchical levels: [5]

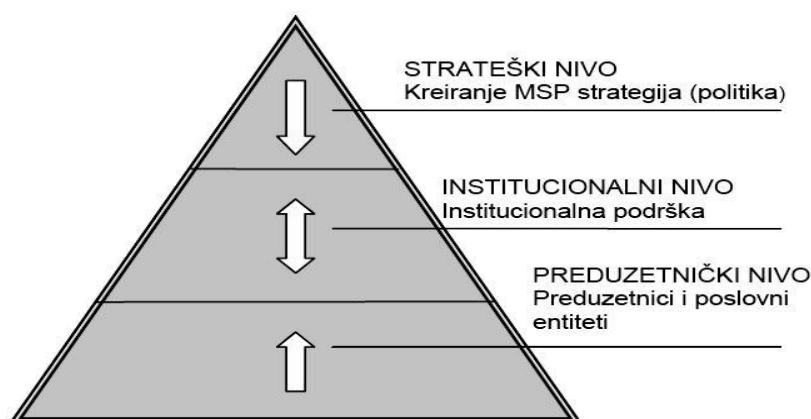


Fig. 1. Pyramid of development of small and medium enterprises

Source: Avlijaš, A. (2008). Entrepreneurship and management of small and medium enterprises

Entrepreneurship is an activity focused on starting, organizing and innovative business operations, from creating a new market and gaining profit. Entrepreneurship includes a body of knowledge, skills, competencies, as well as creativity, spirituality, dynamism, responsibility, dedication and perseverance. [6]

3 APPROVAL ANALYSIS OF SMALL AND MEDIUM-SIZED ENTERPRISES IN 2016 AND 2017

The Small and Medium Enterprises and Entrepreneurs (MSPP) sector is an extremely important segment of the Serbian economy: in 2017 it consists of 99.9% of total active enterprises, employs almost 2/3 employees in the non-financial sector and participates with 33.6% in the GVA of Serbia. The MESP sector generates 28% of Serbia's GDP and employs 44% of registered employment. [7]

Table 2. Indicators of the development of small and medium enterprises

	MSPP ⁷		Great		In total		Participation MSPP %	
	2016	2017	2016	2017	2016	2017	2016	2017
Company number	340.112	357.234	501	521	340.613	357.755	99,9	99,9
Number of employees	837.532	873.462	437.910	449.963	1.275.442	1.323.425	65,7	66,0
Promet (mil.din.)	6.609.879	7.164.098	3.539.947	3.763.035	10.149.826	10.927.133	65,1	65,6
GVA ⁸ (mil.din.)	1.222.519	1.325.728	953.383	1.014.194	2.175.902	2.339.922	56,2	56,7
Export (mil.din.)	669.259	716.645	969.179	1.095.675	1.638.438	1.812.321	40,8	39,5
Import (mil.din.)	1.180.263	1.256.385	914.431	1.048.062	2.094.694	2.304.447	56,3	54,5
Robni bilans (mil.din.)	-511.005	-539.739	54.749	47.613	-456.256	-492.126		
Investments * (mil.)	331.923,6	-	286.042,6	-	617.966,2	-	53,7	

Source: Ministry of Economy on the basis of SORS data; * The latest available investment data for 2016.

Table 3. Indicators of small and medium-sized enterprises in 2016 according to company size

	Micro		Bad		Medium		MSPP	
	vrednost	%	vrednost	%	vrednost	%	vrednost	%
Company number	327.695	96,3	10.154	3,0	2.263	0,7	340.112	100,0
Number of employees	401.848	48,0	203.681	24,3	232.003	27,7	837.532	100,0
Promet (mil.din.)	2.592.424	39,2	1.952.475	29,5	2.064.981	31,2	6.609.879	100,0
GVA (mil.din.)	472.675	38,7	338.364	27,7	411.480	33,7	1.222.519	100,0
Employment by enterprise	1,2	-	20,1	-	102,5	-	2,5	-
Earnings per employee (thous.)	832,8	-	915,1	-	1064,1	-	916,9	-
Turnover per enterprise (mil.din.)	7,9	-	192,3	-	912,5	-	19,4	-
BDV po preduzeću (mil.din.)	1,4	-	33,3	-	181,8	-	3,6	-
Export (mil.din.)	153.832	23,0	183.997	27,5	331.430	49,5	669.259	100,0
Import (mil.din.)	264.130	22,4	409.609	34,7	506.525	42,9	1.180.263	100,0
Robni bilans (mil.din.)	-110.298	21,6	-225.612	44,2	-175.095	34,3	-511.005	100,0
Coefficient of export / import		58,2		44,9		65,4		56,7

Source: Ministry of Economy based on data RZS

Table 4. Indicators of the business of small and medium enterprises in 2017 according to the size of the company

	Micro		Small		Medium		MSPP	
	value	%	value	%	value	%	value	%
Company number	344.279	96,3	10.583	3,0	2.372	0,7	357.234	100,0
Number of employees	415.762	47,6	213.380	24,4	244.320	28,0	873.462	100,0
Turnover (mil.din.)	2.730.958	38,1	2.133.418	29,8	2.299.722	32,1	7.164.098	100,0
GVA (mil.din.)	514.560	38,8	359.489	27,1	451.679	34,1	1.325.728	100,0
Employment by enterprise	1,2	-	20,2	-	103,0	-	2,4	-
Earnings per employee (thous.)	888,1	-	967,8	-	1124,1	-	973,6	-
Turnover per enterprise (mil.din.)	7,9	-	201,6	-	969,5	-	20,1	-
GVA per enterprise (mil.din.)	1,5	-	34,0	-	190,4	-	3,7	-
Exports (mil.din.)	158.609	22,1	195.364	27,3	362.672	50,6	716.645	100,0
Import (mil.din.)	272.271	21,7	450.030	35,8	534.084	42,5	1.256.385	100,0
Commodity balance (mil.din.)	-113.662	21,1	-254.666	47,2	-171.411	31,8	-539.739	100,0
Export / import coefficient		58,3		43,4		67,9		57,0

Source: Ministry of Economy based on data RZS

⁷ MSPP – small and medium enterprises and entrepreneurs

⁸ BDV – gross value added

Observed by enterprise size, as in previous years, SMEs dominate by all observed indicators (12,955 enterprises generate 52.4% of employment, 61.9% of turnover, 61.2% GVA, 77.9% of exports, 78.3 % of imports of MESP). Compared to 2016, there were no significant changes in the structure of the MESP. Only a slight decrease in the share of exports, imports and trade in micro-enterprises is observed, and the increase in the share of these indicators in medium-sized companies. [7]

Table 5. Number and structure of economic entities in the nonfinancial sector in 2016.

Form of organization	MSP	Great	Total	
	Number	Number	Number	Struktura(%)
Companies	96.522	501	97.023	28,5
Entrepreneurs	243.590	-	243.590	71,5
Total	340.112	501	340.613	100
Structure (%)	99,9	0,1	100	

Source: RZS, obrada Ministarstva privrede

Table 6. Number and structure of economic entities in the nonfinancial sector in 2017

Form of organization	MSP	Great	Total	
	Number	Number	Number	Struktura(%)
Companies	99.967	521	100.488	28,1
Entrepreneurs	257.267	-	257.267	71,9
Total	357.234	521	357.755	100
Structure (%)	99,9	0,1	100	

Source: RZS, processing of the Ministry of Economy

In the non-financial part of the Serbian economy, in 2017, 357,755 business entities operated, which is 17,142 (+ 5.0%) more than in 2016. The MESP sector in 2017 encompasses 357.234 business entities and participates with 99.9% in the total number of companies. In the MSP, the number has increased entrepreneurs for + 5.6% (13.677), small by + 4.2% (429), micro for + 3.5% (2.907), medium + 4.8% (109) and large companies for +4, 0% (20) compared to 2016. [7]

Table 7. Number and structure of business entities in the SME sector in 2016

Form of organization	Micro	Small	Medium	total	
	Number	Number	Number	Number	Structure (%)
Companies	84.105	10.154	2.263	96.522	28,4
AD	902	237	213	1.352	0,4
DOO	79.649	9.502	1.805	90.956	26,7
Other	3.554	415	245	4.214	1,2
Entrepreneurs	243.590	0	0	243.590	71,6
Total	327.695	10.154	2.263	340.112	100,0
Structure (%)	96,3	3,0	0,7	100	

Source: RZS, Ministry of Economy based on data

Table 8. Number and structure of business entities in the sector of small and medium enterprises in 2017.

Form of organization	Micro	Small	Medium	Total	
	Number	Number	Number	Number	Structure (%)
Companies	87.012	10.583	2.372	99.967	28,0
AD	872	199	184	1.255	0,4
DOO	82.519	9.965	1.951	94.435	26,4
Other	3.621	419	237	4.277	1,2
Entrepreneurs	257.267	0	0	257.267	72,0
Total	344.279	10.583	2.372	357.234	100
Structure (%)	96,4	3,0	0,7	100	

Source: RZS, Ministry of Economy based on data

In the structure of the MESP sector in 2017, micro enterprises (344.279) 3 dominate with a share of 96.4%, and according to the form of organization, the most numerous are entrepreneurs (257.267 - 72.0% of the MESP sector) and DOO (94.435 - 26.4% of the SME sector). Compared to 2016, there were no significant changes in the structure of business entities in the SME sector. It notes a slight increase in the number of micro-enterprises, the number of entrepreneurs and DOO. [7]

4 SOURCES OF FINANCING FOR SMALL AND MEDIUM ENTERPRISES

As mentioned above, small and medium-sized enterprises take a significant place in the Serbian economy. The financial position of these companies is continually improving, which also increases the requirements for financing. At present, external financing in Serbia is concentrated on a banking sector with a lack of alternative sources of funding [8]. Banks in Serbia account for over 90% of the total sources of financing for SMEs, with very low share of other financial institutions. Data show that in the period from 2011 to 2016, the banking sector recorded a decline in the volume of financing of legal entities. SMEs are most often faced with the problem of obtaining investment loans, and most often as a result of the lack of adequate collateral, insufficient current financial capacity and lack of financial history. In terms of financing SMEs, the survey data indicate that around 33% of the total credit placements of banks in Serbia are concentrated in SMEs, and that the participation of long-term loans in total loans used by SMEs is gradually increasing even though SMEs are aware of the difficult access to investment loans. The surveyed banks state that the rate of approval of investment loans is the lowest in relation to other types of loans and ranges between 10% and 30% of the total number of applications. The most common reasons for the high rate of rejection are: insufficient financial capacity (inadequate cash flow, insufficient capitalization of the company, ie low share of own funds, high competition that affects the decline in profit margins, high risk of refinancing), lack of adequate collateral, risk of owners and management (i.e. lack of an adequate system of corporate governance), lack of quality business plans, lack of credit history. From the perspective of SMEs, the key barriers to securing a higher level of external financing are: high interest rates, insufficient maturity of loans that often do not meet the needs of the project being funded, inflexibility, debt and complicated procedures in the process of granting loans.

Vrsta proizvoda	Rok finansiranja	Iznos sredstava	Namena
Revolving kreditna linija	60 meseci	do 1.000.000 EUR	Finansiranje tekuće likvidnosti, periodičnih potreba za obrtnim sredstvima. Pogodno za MSP koja imaju neusklađenost naplate i rokova plaćanja, te sezonalnih poslova koji se unapred finansiraju
Kreditni za likvidnost	12 meseci	do 6.000.000 RSD	Finansiranje tekuće likvidnosti. Tradicionalno najskuplji finansijski proizvod. Periodično se može koristiti za finansiranje obrtnih sredstava. Često se koristi za plaćanje PDV i korišćenja kratkoročnih prilika kada dobavljači daju visoke rabate
Kreditni za nabavku obrtnih sredstava	60 meseci	do 1.000.000 EUR	Finansiranje obrtnih sredstava, zaliha i potraživanja, izvoza, refinansiranje postojećih kratkoročnih kredita i drugo. Finansiraju se utržive zalihe i naplativa potraživanja. Omogućava dobro upravljanje zalihama
Kreditni za nabavku osnovnih sredstava	120 meseci	do 1.000.000 EUR	Kupovina i izgradnja poslovnog prostora, finansiranje kupovine opreme, transportnih sredstava, mašina i drugo. Potrebno je detaljno sagledati opravdanost investicije, te da li je bolje koristiti lizing osnovnog sredstva. Banke očekuju sopstveno učešće u investiciji (najčešće 20-25%)

Fig. 2. Types of loans intended for financing small and medium enterprises

Source: Sources of financing for small and medium enterprises, URL: www.wmep.rs

The offer of alternative forms of financing is poorly developed in Serbia and there is a smaller number of funds that SMEs provide finance through additional capital. [6]

Encouraging and developing the dialogue and cooperation between companies and investors, it is expected that this trend could be changed, giving SMEs another source of financing for their future growth. [7]

The financing of small and medium-sized enterprises by the institutions of the Republic of Serbia can be obtained from the Agency for Insurance and Financing of Exports, the Development Agency of Serbia, the Development Fund of the AP Vojvodina, the Guarantee Fund of AP Vojvodina, the Provincial Secretariat for Economy and Tourism, the Development Fund of the Republic of Serbia through the programs of non-refundable funds of the Ministry of Economy, as well as through the Innovation Fund.

The dominant source of funding for EU funds is implemented through several SME support programs, such as Horizon 2020, Cosme, IPARD, WB, EDIF, etc. Source: Sources of financing of small and medium enterprises in Serbia. [10]

The European Union creates a business-friendly environment in the following ways:

- *Promotes entrepreneurship*

The Commission promotes entrepreneurship through an Entrepreneurship Action Plan, supports entrepreneurship education, and provides tools to support entrepreneurs who strive for entrepreneurship.

- *Improves access to new markets and internationalization*

The Commission's priority is to ensure that businesses can rely on a business-friendly environment and use cross-border activities, both within the EU and outside the EU.

- *Facilitates access to finance*

Access to finance is a major problem for many SMEs. The Commission is working to improve the financial environment for small and medium-sized enterprises and provides information on possible sources of funding.

- *Supports competitiveness and innovation of SMEs*

Promoting competitiveness and innovation are key aspects of European Union policy, especially for small and medium-sized enterprises. • *Pružna ključne mreže podrške i informacije za MSP*

Business portal "Your Europe Business Portal" is a practical guide to doing business in Europe. It provides entrepreneurs with information and services that help them expand their business abroad. "Enterprise Europe Network" helps small and medium enterprises and entrepreneurs in accessing market information, overcoming legal obstacles and finding potential business partners across Europe. The SME support page provides information on foreign markets and helps European businesses to internationalize their activities. [11]

Traditionally, SMEs are focused on domestic markets. However, a number of manufacturing SMEs are internationally competitive. These companies, which operate on the international market, mostly grow faster than their domestic equivalents. Compared to larger firms, SMEs can better respond to changing market conditions. [12]

The sector of small and medium enterprises in Serbia, according to the United Nations analysis, has the following internal ones strengths and weaknesses and chances and threats in their environment: [13]

Table 9. SWOT analysis of the MSP sector in Serbia

<p>STRENGTH</p> <ul style="list-style-type: none"> - Longer entrepreneurial position compared to other transitional economies - Fairly large number of registered SMEs and entrepreneurs - Relatively good financial results of existing SMEs - Strong institutional structure 	<p>WEAKNESS</p> <ul style="list-style-type: none"> - The scarcity of financial resources - Inadequate tax policy and administrative barriers - Lack of new technologies and knowledge - Lack of healthy, large companies for cooperation - Concentration on trade before production
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> - The privatization process - Opening Serbia after a period of isolation - Qualified workforce - Development of the domestic market - Policy and measures taken by the Government - Serbia in order to promote SMEs 	<p>THREAT</p> <ul style="list-style-type: none"> - Lack of stimulating business environment - Grey economy - Liberalization of foreign trade - The arrival of foreign companies on the domestic market

Source: Small and medium sized Enterprises in countries in transition , United States, New York and Geneva, 2006.

The strategy for supporting the development of small and medium enterprises, entrepreneurship and competitiveness stipulates that in 2020 Serbia will have 350,000 small and medium enterprises with 950,000 employees.

In order to achieve a strategic vision, the Government of the Republic of Serbia adopted six pillars. The government plans to improve the business environment and access to funding sources, develop human resources, strengthen the sustainability and competitiveness of MSPP, improve access to new markets and develop and promote entrepreneurial spirit.

Under the improvement of the business environment, the Strategy implies reduction of tax and non-tax liabilities to the economy, introduction of more efficient procedures for investments, as well as improvement of the regulatory and legislative framework. According to this Strategy, small and medium-sized enterprises should have better conditions for participation in public procurement.

The priority of the Strategy is to improve access to funding sources. It is planned to improve the quality of the supply of the banking sector and the development of new financial instruments. According to this Strategy, the state should be decisively struggling with one of the biggest problems of SMEs, high bank interest rates. [14]

5 CONCLUDING CONSIDERATIONS

Based on the above, we can conclude that from year to year in Serbia, the number of small and medium-sized enterprises that have a significant share in the growth of gross domestic product of the country is increasing. Serbia incentive programs motivate young entrepreneurs to get involved in the process of self-employment and starting their own business. Our country is still in transition and is facing the scarce sources of financing for small and medium-sized enterprises. The European Union is trying its programs to help the development of these companies, which are the backbone of every economy. Further growth in the number of small and medium enterprises is expected. The state of Serbia has a great responsibility to provide a favorable business environment for business. Small and medium-sized enterprises mainly produce for the national market, but it is not rare that they move their business internationally. The European path of Serbia and the successful transformation of our economy and the harmonization of national laws with the European Union will open Serbia's door to new investments, employment and continuous economic growth and economic development.

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REVALUATION OF MINIMUM WAGES IN MEXICO AND ITS FINANCIAL IMPACT ON ORGANIZATIONS AND PRIMARILY ON SMES

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ABSTRACT

The development of this work is aimed at emphasizing the devaluation suffered by the general minimum wage in Mexico, highlighting the need for its revaluation as a response to the economic marginalization of vulnerable sectors and regions with greater lag in the country, as well as a to stop the deterioration of the wage-earners' living standards mainly, taking into account the demands of nations with respect to the new Agreement between the United States, Mexico and Canada (USMCA). However, its recovery must be planned through a gradual process that allows the progressive adaptation with respect to its economic impact. For this, a qualitative and quantitative analysis was carried out, describing its deterioration, the loss of purchasing power, proposing a restitution scheme in a period of six years to avoid affecting financially organizations and SMEs mainly.

Keywords: National index of consumer prices, inflation, purchasing power, SMEs and minimum wage.

1 INTRODUCTION

In recent years, the issue of the minimum wage has been the subject of discussion in Mexico, by different sectors of the political, journalistic, business organizations, among others. Currently with the process of signing the new Agreement United States, Mexico and Canada (USMCA), is a central theme that was discussed, derived from the abysmal difference with these countries. The reality is that for Mexicans it has represented the gradual loss of purchasing power, affecting mainly vulnerable sectors, such as the countryside and marginalized areas in federal entities, which in accordance with the data for 2016 of (CONEVAL), National Council of Evaluation of the Social Development Policy (2017) [1], Chiapas concentrates a poverty rate of 77.10% of its population, Oaxaca 70.4%, Guerrero 64.4%, Puebla 59.4%, Michoacán 55.3% and Veracruz 62.2%, these being the highest impact.

The general minimum wage in effect for 2018 in Mexico is 88.36 pesos for a workday of 8 daytime hours, equivalent to 4.63 dollars, of the United States of America at the exchange rate of 19.06 pesos, published in the Official Gazette of the Federation of August 30 of the current year. The above has aroused controversy on the subject, reflecting the deterioration of the population's standard of living, generating different positions, without presenting a coherent plan for the recovery of purchasing power, which does not imply a financial impact on organizations, primarily in small and medium-sized companies, where appropriate, give rise to an inflationary effect.

Therefore, the appreciation of minimum wages in Mexico cannot be postponed. According to figures from CONEVAL (2017) [1], there are 53.4 million people in the poverty level and 9.4 in extreme poverty. This research is aimed at the general, in order to demonstrate its devaluation. However, the proposed recovery must be planned, structured and applied gradually, so that there is a benefit to the working class and the productive sector has a process of adaptation, mainly that these changes allow a period of maturity of the business sector, including SMEs, a sector vulnerable to changes that impact their economic results.

2 BACKGROUND

Minimum wages in Mexico are regulated in article 123 of the political constitution of the United Mexican States, section VI, which in its second paragraph says that the general minimum wages must be sufficient to satisfy the normal needs of a head of family, in the material, social and cultural order, and to provide the compulsory education of the children. The minimum professional salaries will be set considering, in addition, the conditions of the different economic activities. It also establishes that they are set by a national commission composed of representatives of workers, employers and the government, which may be assisted by special advisory committees that it deems essential for the best performance of its functions.

The deterioration of the purchasing power from the seventies was aggravated, because to determine its increase has been considered as a benchmark inflationary indicator during the year. However, in some of them the price index far exceeded minimum wages established, causing a detriment in its value, such is the case of the periods of 1995 and 1988, in which the burden of the crisis was transferred to the workers who obtained this remuneration or a small amount higher than this, being the way that a reduction in remuneration has gradually accumulated. Then, the effect is shown in these periods, through the application of the national consumer price index (NCPI) and the general minimum wage (SMG).

Table 1. Inflationary effect and detriment of the general minimum wage[2]

Inflationary effect			detriment of the general minimum wage					
Period	NCPI		Inflationary Effect	Period	SMG		percentage increase	Loss vs Inflation
NCPI December 1995	43.471	-1	51.97%	SMG 1995	\$ 20.15		31.96%	20.01%
NCPI December 1994	28.605			SMG 1994	\$ 15.27			

It was taken as an example from December 1994 to the same month of 1995, to measure the relative to a period of twelve months and as observed the inflation presented in this period was 51.97%, a very high figure, while the general minimum wage was only increases 31.96%, which represents a 20.01% lower. The indexes published in the official newspaper of the federation corresponding to these months were considered. This effect was given in different periods, in some with greater or lesser impact, as an example the year of 1988 is presented with a loss superior to the previous case.

Table 2. Inflationary effect and detriment of the general minimum wage[2]

Inflationary effect			detriment of the general minimum wage					
Period	NCPI		Inflationary Effect	Period	SMG		percentage increase	Loss vs Inflation
NCPI December 1988	11.963	-1	51.66%	SMG 1988	\$ 7.765	-1	20.02%	31.65%
NCPI December 1987	7.888			SMG 1987	\$ 6.47			

In this period, the inflationary effect is 51.66%, very similar to the previous case. However, the increase to the minimum wage is 20.02% in relation to the previous one, which causes a percentage loss of 31.65% compared to the indicator of increase in prices. In this way, the loss of purchasing power was experienced, mainly impacting on the lowest salaries, derived from the link between minimum wage increases and other remunerations above these. In the resolution of mathematical operations equally, the unit is subtracted to determine the effect by the passage of time, separating the value taken as the basis for its measurement.

It is absurd to think that the minimum wages currently in force, both general and professional, are sufficient to cover the basic needs of a family, related to housing, food, education, clothing and health as established in the Political Constitution of the United Mexican States. This problem in some way directly affects the migration of workers to the United States, the concentration of the population in large cities, the abandonment of the countryside, as well as school drop-out which in turn are the cause of other social problems in an environment with high rates of poverty and marginalization.

3 APPROACH AND DELIMITATION OF THE PROBLEM

The present research work is aimed at highlighting the loss of the purchasing power of the general minimum wage over the last four decades, which urgently requires their recovery as already mentioned, through an orderly process to avoid financially drastic impact to organizations, specifically to SMEs. Likewise, to stop the deterioration of the standard of living of the most vulnerable sectors in the country such as the countryside, indigenous communities, domestic work, regions of greater marginalization, as well as to increase competitiveness in this area with the countries of the North, with the that Mexico has concluded trade agreements. The question that arises as a result of this problem is whether a gradual revaluation of the general minimum wage in an orderly and structured way, will avoid a financial impact that affects the business sector and specifically SMEs.

3.1 Research objective

Analyze the devaluation of the general minimum wage in Mexico, to propose an orderly and structured gradual revaluation scheme, avoiding a high financial impact in organizations, mainly in SMEs, but also to restore the purchasing power to workers.

3.2 Justification

In Mexico, by Constitutional provision in article 123 section VI, currently in effect, the minimum wages that workers must enjoy will be general or professional, and are established by a national commission composed of representatives of workers, employers and government. It may be assisted by special commissions of an advisory nature that it deems indispensable for the best performance of its functions. However, its detriment over the last four decades has affected vulnerable sectors, aggravating the poverty indicators in the areas with the greatest marginalization in the country and the purchasing power of the working class has generally deteriorated. On the other hand, worryingly, it is observed that, comparing with other Latin American nations, the penultimate place is occupied as shown graphically in the following image.

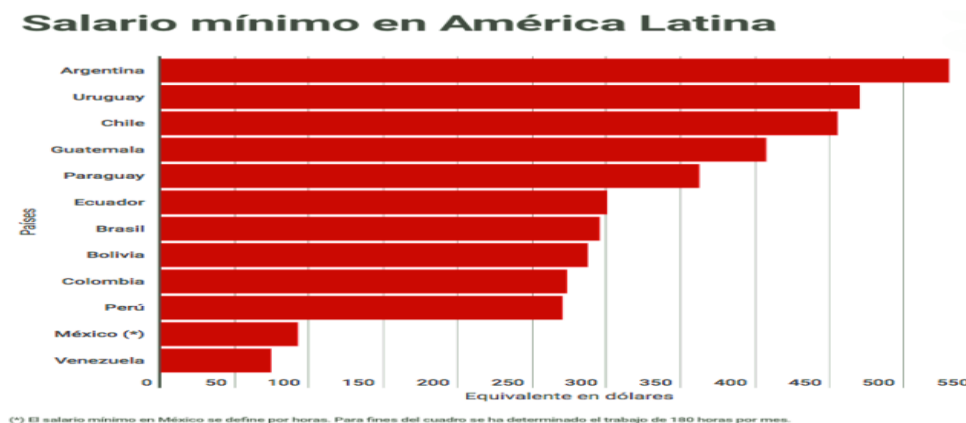


Fig. 1. Minimum wage in Latin America (Monthly)

Source: Expansión in Alianza con CNN (2018) [3].

Argentina and Uruguay are the ones with the highest pay, at the end of the graph is Venezuela, followed by Mexico, which currently has a minimum wage of 88.36 pesos per day, well below the next country, which is Peru. It is understood the reason why the United States of America and Canada, insisted on this issue in the negotiations of the free trade agreement just concluded. In states such as Chiapas, Oaxaca and Guerrero the results are alarming, the level of marginalization creates a worrying gap in relation to others, even though there is a distribution that reflects poverty indicators. In the following image, an ignored economic reality is presented and demands its immediate attention, in the different states.

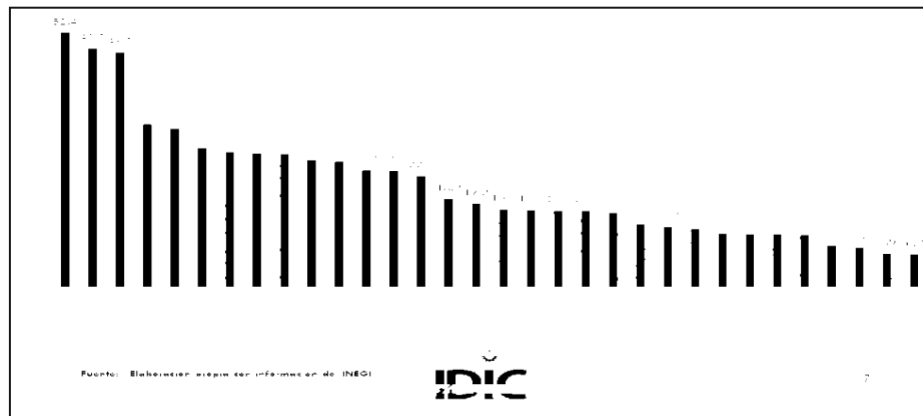


Fig. 2. Percentage of the employed population that does not receive income and with incomes of up to 1 minimum wage.

Source: Institute for Industrial Development and Economic Growth A.C. (2017) [4]

The state of Chiapas has a population that does not receive income and up to a minimum wage of 52.4%, Oaxaca with 49.2%, Guerrero with 48.3%, which are considered to have a higher rate of poverty and marginalization. In all of them it is common the emergence of social problems, in the face of government backwardness and indifference. Puebla and Hidalgo have an indicator above 30%, Campeche, Michoacán, Veracruz, Yucatán Tlaxcala, Tabasco, San Luis Potosí, Nayarit and Zacatecas show figures above 20%, mainly improving the areas where industrial development has flourished. Lacking sufficient resources will cause school dropout, it will also impact on the migration of workers to the United States of America, as well as to centers of economic growth in the country, leaving remote populations and the countryside, which causes agglomeration in the main cities of the country.

4 THEORETICAL FOUNDATIONS

4.1 National consumer price index

The measure of inflation that is most used in the United States according to Samuelson & Nordhaus (2007) [5], is the consumer price index, also called IPC, which they define as a measure of the average change, with respect to time, of the prices they pay urban consumers by a market basket of consumer goods and services. The market basket includes the prices of food, clothing, shelter, fuel, transportation, medical care, tuition and other goods and services purchased for everyday life. Prices of 364 separate classes of goods and services are collected in 23,000 establishments in 87 areas of that country.

According to the National Institute of Statistics and Geography (INEGI, 2013) [6], the national consumer price index measures the average change in the prices of a fixed basket of goods and services purchased, which is representative of the expenditure on goods and services for the consumption of urban homes in the country over time. According to the Bank of Mexico (nd) [7], the NCPI is an economic indicator that is used recurrently, whose purpose is to measure over time the price variation of a fixed basket of goods and services representative of household consumption.

The national price index allows measuring the variation that is originating in the value of goods and services, as a result of the increase in prices, in Mexico it is calculated by the National Institute of Statistics and Geography (INEGI) [6], for which it quotes at least 1,000 products in 30 cities with more than 20,000 inhabitants of 20 states. However, it is an estimated average, for this reason it does not reflect 100% of reality. Also, taking into account that the monetary authorities establish the inflationary goal, a situation that allows manipulation by not considering goods with greater mobility in prices such as gasoline and other oil products, because according to information García (2018) [8] Premium gasoline in December 2012 to August 2018 increased by 80.7%, the magna 76.8% and diesel 81.4%, while the price index officially determined during the same period increased only 24.72%.

The previous increases to fuels and the price index give rise to the comment that the official inflation issued by the INEGI [6], does not reflect the reality, because when fuels increase, the price of goods and services increases directly, as a consequence of the change in the cost of production in the industry and transport services.

4.2 Inflation

Due to the economic importance of the country, it is very important to mention that for the Bank of Mexico [7]. Inflation is the sustained and generalized increase in the prices of goods and services of an economy over time. The increase of a single good or service is not considered as inflation. If all the prices of the economy increase only once, this is not inflation either. Inflation is a generalized and continuous increase in the general level of prices of goods and services in the economy. Inflation is usually calculated as the percentage change in the consumer price index (CPI), which measures the average prices of the main consumer items (Gutierrez & Zurita, 2006) [9].

For his part Samuelson & Nordhaus (2007) [5], mentions that inflation occurs when the general level of prices rises. It also states that inflation shows different levels of severity. The usual thing is to classify them into three categories: low inflation, galloping inflation and hyperinflation, the first with single-digit rates, the second ranges between two and three digits and the third is highlighted by the disastrous increase in prices.

The above definitions agree that inflation consists of the generalized increase in prices, which causes products mainly of the basic basket to increase their value, causing a deterioration in the standard of living in sectors whose salaries are equal to the minimum or little more, because they do not increase in the same proportion as said goods. In Mexico in recent years, a control has been maintained in this indicator at one-digit levels. However, in previous periods, specifically the decade of the eighties, the figures were alarming, prompting that in 1992 the elimination was decreed of three zeroes to the weight, entering into force this provision in 1993. Said measure aimed at stabilizing the economy, given the high value of goods and services, which to acquire a large amount of money was needed.

4.3 Purchasing power

Purchasing power is the value of a currency expressed in terms of the quantity of goods or services that a unit of money can buy. Purchasing power is important because, other things being equal, inflation decreases the amount of goods or services that could be purchased (Céspedes, 2017) [10]. The purchasing power is the availability of resources that a person has to satisfy their material needs. In other words, the purchasing power is associated with the income of the subject to specify the purchase of goods or the contracting of services. Therefore, it is the availability of resources that a person has to satisfy their material needs (Pérez & Gardey, 2015) [11].

The purchasing power of families, determinant of poverty levels, depends on the evolution of prices. Up to now, the Bank of Mexico [7] has made important efforts to avoid further pressure, but it is evident that the dynamics expected for the coming months anticipate an impact on the real wages of workers, especially since prices continue to rise (González, 2017) [12].

The aforementioned authors associate purchasing power with the ability of a person or family to meet their needs through the purchase of goods and services, is directly linked to their income. However, over time inflation has exceeded percentage of this availability, affecting their standard of living by reducing wages, in the same way contributing to higher marginalization and poverty rates.

4.4 SMEs

Companies are a source of income for workers, suppliers, government and businessmen, promote the economic development of society, contribute to the sustainability of public services, represent a means for personal fulfillment or satisfaction, and foster the capacity and development of skills, as well as investment and capital formation (Münch, 2006) [13]. The Ministry of Economy, in Mexico, defines small businesses as those businesses dedicated to trade, which has between 11 and 30 workers or generate annual sales of more than 4 million and up to 100 million pesos. It also says that they are independent entities, created to be profitable, whose objective is to dedicate themselves to the production, transformation and / or provision of services to satisfy certain needs and desires existing in society.

The medium enterprises according to the economy secretariat (2010) [14], are the businesses dedicated to trade that have from 31 to 100 workers, and generate annual sales that go from 100 million and can exceed up to 250 million pesos. In addition, it points out that they are economic units with the opportunity to develop their competitiveness based on the improvement of their organization and processes, as well as improving their business skills. SME (Pyme) is the acronym for small and medium enterprises. It is a commercial, industrial or other company that has a small number of workers and that registers moderate income (Pérez & Gardey, 2009) [15].

The above definitions start in principle with the conceptualization of the company, highlighting its role as a source of income for workers, first, then suppliers and finally the government. The minimum wage is the central theme of the present investigation, a means of subsistence that must cover the basic needs of

wage earners. Subsequently, the SME is described, the authors agreeing to describe them considering the number of workers and the amount of their income, without taking into account their administrative and therefore competitive limitations, which makes them vulnerable to drastic changes in the environment.

4.5 Minimum Wage

In Mexico, in accordance with article 90 of the federal labor law (2015) [16], minimum wage is the minimum amount that the worker must receive in cash for the services provided in a work day. It also mentions that it should be sufficient to satisfy the normal needs of a head of family in the material, social and cultural order, and to provide for the compulsory education of the children.

The minimum wage includes a benchmark of the irreducible economic amount that, by legal mandate, every person who performs personal and subordinate work must daily receive, in order to satisfy their basic needs and those of their family, in the material, social and cultural order, and to provide compulsory education for their children, as established in article 123 of the Constitution, section A, section VI (National Human Rights Commission, 2018) [17]. The minimum wage has been defined as the minimum amount of remuneration that an employer is obliged to pay its employees for the work they have done during a given period, an amount that cannot be reduced by virtue of a collective agreement or an individual agreement (International Labor Organization, nd) [18].

The literature consulted agrees that the minimum wage is the lowest amount that a worker must receive by legal disposition, enough to cover the primary needs of a family, a situation that in Mexico has gradually moved away from reality, its deterioration has reached very worrisome levels, due to its impact mainly in some states of the republic already mentioned, where the level of marginalization and impoverishment is increasing every year, also generating social problems, such as food, education, justice among others.

4.6 Unit of measurement and update (UMA)

In accordance with the official newspaper of the federation of December 30, 2016, UMA is the Measurement and Update Unit that is used as the unit of account, index, base, measure or reference to determine the amount of payment of obligations and assumptions provided in the federal laws, the federal entities and the City of Mexico, as well as in the legal dispositions that emanate from said laws.

The Unit of Measurement and Update (UMA) is an approved economic reference and used since January 27, 2016. It was introduced to replace the scheme times the minimum salary (VSM), with which the payment of obligations as fines was calculated, the credits of the INFONAVIT and even the personal deductions. It was created with the aim that an increase in the minimum wage of the workers did not have such a marked inflationary impact, since increasing it not only increased salaries, but also fiscal obligations [19].

This economic reference as described in the literature consulted, comes to benefit in the payment of obligations, including those of a fiscal nature. However, it affects workers in the limit of the base salary of contribution. Therefore, in the determination of pensions and their subsequent increase. In the same way, it can impact on some benefits that according to the contract are linked to it.

5 METHODOLOGY

The methodology used for the development of this research is based on a qualitative and quantitative analysis. Qualitative data analysis used in this study derives meaning by reading and reviewing the data several times from electronic, literary and scientific sources, as well as governmental and journalistic statistical information, obtaining the information considered relevant to solve the problems raised in the present work, getting familiar with it and start looking for basic observations or patterns from transcribing the information, revisiting research objectives, developing the framework and identifying patterns and connections looking for common responses. It is considered a descriptive study because it provides valuable information regarding the loss of value of the minimum wage in Mexico, as well as its impact derived from an unscheduled adjustment.

The quantifiable treatment in this research is present when analyzing the variations and effects that have affected the minimum wage, by using economic indicators, as mentioned by Hernández, Fernández & Baptista (2014) [20]. The quantitative approach uses data collection to test hypotheses based on numerical measurement and statistical analysis, in order to establish patterns of behavior and test theories. To determine the impact, the data was taken from the year 1970 to date, updating the historical values with the NCPI, using the base December 2010, for practical reasons, as from July 2018 a new one is implemented. The foregoing in order to make a comparison with the current amounts and define the loss of purchasing power.

6 ANALYSIS OF RESULTS

In the background of this research, it was analyzed how the inflationary effect in the years taken as an example, exceeds the percentage increase of the minimum wage, causing a loss in purchasing power, since prices have increased above the increases in this retribution. Over the years, this differential has contributed to the impoverishment of the most vulnerable groups, such as day laborers in the countryside, indigenous communities, workers in rural areas and populations far from areas of development, accentuating more in states such as Chiapas, Oaxaca and Guerrero, in which the situation is worrisome. To illustrate in a reliable manner, the impact of the six-year period from 1982 to 1988 is determined (See table 3).

In this period being President of Mexico Mr. Miguel de la Madrid Hurtado, the inflationary effect is 3,709.87% compared to the percentage increase in salary, of 2,033.24%, generates a differential of 1,676.63%, producing a very strong impact on the power purchasing of employees in general, because the increase to a certain extent serves as a reference for others with higher salaries.

Table 3. Inflationary effect and detriment of the general minimum wage

Inflationary effect			detriment of the general minimum wage					
Period	NCPI	Inflationary Effect	Period	SMG	percentage increase	Loss vs Inflation		
NCPI December 1988	11.963	-1	3709.87%	SMG 1988	\$ 7.765	-1	2033.24%	1676.63%
NCPI December 1982	0.314			SMG 1987	\$ 0.364			

Source: Own elaboration with data taken from the official newspaper of the federation (2011) [21] and Cárdenas., Peralta., & Cárdenas, (2008) [22].

The disparity between the previous percentage figures, proves the decrease in the purchasing power and the level of life of the workers, who finally have gradually loaded the weight of national economic disorders and those generated in the international arena. In the resolution of the mathematical operations equally, the unit is subtracted to determine the effect only by the passage of time, separating the value taken as the basis for its measurement (see table 4).

Table 4. Inflationary effect

Inflationary effect		
Period	NCPI	Update factor
NCPI December 2017	130.813	8056.73
NCPI January 1970	0.016236489142	

Source: Own elaboration with data taken from the Official Gazette of the Federation (2011) [23], [24].

In the previous table, the update factor is determined by the NCPI expressed according to the base of the second half of December 2010, which was set at 100, published in the official newspaper of the federation (Diario Oficial de la Federación, 2016) [22], corresponding the period from January 1970 to the last month of 2017. The result of the previous operation reflects an inflationary impact for the period of time of 8,056.73, this indicator shows the effect due to the time taken for the calculation, applying the official information, that could be different from the real, for this it would be necessary to develop a new investigation (See table 5).

Table 5. Minimum wage update to December 2017

Minimum wage update from 1970 to december 2017	
SMG year 1970	0.032
(*) Update factor	8056.73
(=) Salary updated to december 2017	257.82

Source: Own elaboration

When applying to the general minimum wage corresponding to 1970 the update factor determined according to the previous table, the value is obtained considering the effect derived from the passage of time, resulting in an amount of \$ 257.82, two hundred and fifty-seven pesos 82 cents, much higher to the

\$ 88.36 eighty-eight pesos 36 cents in force for this year of 2018. The above produces a devaluation of \$ 169.46, one hundred and sixty-nine pesos with 46 cents, deterioration that generates a decrease in the standard of living of workers and the disproportionate increase of the levels of poverty in the aforementioned areas, which in turn are the source of other problems of a social nature. Therefore, it is urgent to establish a gradual recovery mechanism, which allows organizations and mainly SMEs, to have a period of maturity, to avoid financial problems.

The difference for the devaluation of 169.46, it is advisable to distribute in the following 6 years of government proportionally, considering the inflationary effect with the purpose of not losing value. In recent years, Mexico has maintained this indicator in one digit and the distribution of the projected adjustment proposed is shown in the following table 6.

Table 6. Distribution of the adjustment for the devaluation of the updated minimum wage.

	2018	2019	2020	2021	2022	2023	2024
Difference due to devaluation of the general minimum wage	169.46	181.32	194.01	207.60	222.13	237.68	254.31
Estimated annual inflation	7%	7%	7%	7%	7%	7%	7%
Annual inflationary effect	11.86	12.69	13.58	14.53	15.55	16.64	17.80
Difference mor inflationary effect	181.32	194.01	207.60	222.13	237.68	254.31	272.12

Source: Own elaboration

In the previous table, the determined difference is updated for each year considering an estimated annual inflation of 7%, since when distributed proportionally in the following federal government period, it would retain its value. At the time the real indicator would be applied, in this way the minimum wage would maintain its value. It begins in 2018, because it is the base year to determine the one that will remain valid for the following period. Next, the percentage to be increased to the general minimum wage determined each year, to compensate the accumulated loss is shown. That is, the amount per adjustment that must be added to the amount established by the national minimum wage commission.

Table 7. Increase per year to the minimum wage, from the proposed adjustment

	2019	2020	2021	2022	2023	2024
Difference mor inflationary effect	194.01	207.6	222.13	237.68	254.31	272.12
Previous year increase		32.34	39.99	43.69	46.89	50.20
Basis of calculation	194.01	239.94	262.12	281.37	301.20	322.32
Percent to increase per year	16.67%	16.67%	16.67%	16.67%	16.67%	16.67%
Amount to increase the minimum wage per year	32.34	39.99	43.69	46.89	50.20	53.72

Source: Own elaboration.

This table reflects the amount that, in addition to the established minimum wage, would be increased to gradually pay the accumulated devaluation in the reference period, starting from the current increase for the year 2019. This in turn taking into account the estimated inflation considered for this case, it would maintain the following behavior.

Table 8. Increase per year to the minimum wage estimated according to inflation

	2018	2019	2020	2021	2022	2023	2024
General minimum wage	88.36	94.55	101.16	108.24	115.82	123.93	132.60
Estimated inflation	7%	7%	7%	7%	7%	7%	7%
Increase for the following year	6.19	6.62	7.08	7.58	8.11	8.68	9.28
General minimum salary the following	94.55	101.16	108.24	115.82	123.93	132.60	141.89

Source: Own elaboration.

The calculations begin in 2018, as mentioned above, since it is the basis for determining the general minimum wage that will be in effect for the following year. 7% of estimated inflation is applied in each of the years. In this way, its value is maintained at least coincident with the official data, which does not precisely prove that it is the real one. Finally, the following table summarizes how the projected minimum wage would be, considering the annual increase due to inflation, plus the adjustment per year derived from the accumulated devaluation.

Table 9. Minimum estimated salary plus the proposed adjustment

	2019	2020	2021	2022	2023	2024
General minimum wage	94.55	101.16	108.24	115.82	123.93	132.60
Adjustment for annual depreciation	32.34	39.99	43.69	46.89	50.20	53.72
Adjustment for devaluation previous years	0.00	32.34	72.33	116.02	162.91	213.11
General minimum salary with adjustment to be paid	126.89	173.49	224.26	278.73	337.04	399.43

Source: Own elaboration

The above calculations consider the increase in the minimum wage taking into account the estimated inflationary effect each year, as well as the adjustment for devaluation, applied in the six-year government period, in order to recover the accumulated loss in the analysis time of the present work, achieving in this way compensating in part the purchasing power of the remunerations in general, as well as improving the quality of life in the areas of greatest poverty. This allows organizations and mainly SMEs to have a period of gradual increase to avoid financial problems by drastically raising their labor costs and taxes on salaries such as worker - employer contributions to the Mexican Social Security Institute, tax on outlays for remuneration to personal work, provided under the direction and dependence of an employer, and contributions to the national housing fund for workers.

The following table shows a calculation of the monetary effect, considering the minimum wage in force for this year 2018, integrating with the minimum benefits established in the federal labor law in this example, for the payment of employer's fees as the legislation indicates, of the social security (IMSS), the institute of the national fund for housing for workers (INFONAVIT), and the tax on outlays for remuneration to personal work, provided under the direction and dependence of an employer (payroll tax). It is necessary to mention that the unit of measurement and updating (UMA) was approved on January 27, 2016. Currently, it has a value of 80.60 established by INEGI, [6], it is mentioned for being used in the determination of the contributions to the IMSS in the examples presented below.

Table 10. Cost for employers' social security contributions and the payroll tax of a minimum wage

	Employer quotas for salaries up to 3 UMA				
	Salary daily fee	Salary base contribution	% of employer fees	Monthly base salary	Monthly employer fees
Employer contribution to the IMSS	\$ 88.36	\$ 92.35	30.550%	\$ 2,862.85	\$ 874.60
Employer contribution to INFONAVIT	\$ 88.36	\$ 92.35	5.0%	\$ 2,862.85	\$ 143.14
Payroll tax	\$ 88.36	\$ 92.35	2.0%	\$ 2,862.85	\$ 57.26
					\$ 1,075.00

Source: Own elaboration

As already mentioned for the payment of the IMSS quotas, the payment for daily quota must be integrated with the benefits received by the worker, to which amount the established percentages are applied. For a general minimum salary, the taxes on salaries paid by the company, amount to \$ 1,075.00, per month. It is clear that the fees to INFONAVIT, retirement insurance and unemployment in old age and old age, are covered on a bimonthly basis, but for clarity they were calculated for a period of 31 days. The payroll tax is state-owned and the percentage corresponds to Michoacán. Therefore, in other states it may coincide or be different. The effect of these contributions for the remuneration updated from January 1970 to December 2018 is shown below.

Table 11. Cost for employer social security contributions and payroll tax considering the minimum

	Employer quotas for salaries greater than 3 UMA				
	Salary	Salary	% of	Monthly	Monthly
	daily	base	employer	base	employer
	fee	contribution	fees	salary	fees
Employer contribution to the IMSS	\$ 257.82	\$ 269.47	31.650%	\$ 8,353.57	\$ 2,643.90
Employer contribution to INFONAVIT	\$ 257.82	\$ 269.47	5.0%	\$ 8,353.57	\$ 417.68
Payroll tax	\$ 257.82	\$ 269.47	2.0%	\$ 8,353.57	\$ 167.07
					\$ 3,228.65

Source: Own elaboration

In employer quotas for the Mexican Institute of Social Security (IMSS), there is a percentage increase, derived from the base salary of the contribution exceeding the equivalent of 3 UMA, whose current value as mentioned is \$ 80.60, in accordance with the established in the current social insurance law. When considering the salary updated to December 2017, the taxes to the remuneration are raised from \$ 1,075.00 to \$ 3,228.65, a two hundred percent more, which implies an increase whose impact can generate financial problems mainly of liquidity in the organizations mainly in the SMEs, have disadvantages in its administration, derived from an unplanned change.

In addition to the increase in taxes on salaries, payroll in the same way will have a substantial increase, depending on the remuneration that has been established, as some organizations handle amounts a little above the established minimums, a situation that will be reflected in the expenses of operation and consequently in the economic results, in the payment of taxes, in the distribution of the profits to workers and in the growth and investment programs, derived from the strategic plans. With regard to SMEs derived from their low average life, it can represent a problem in terms of staying in the market.

Finally, the devaluation of the minimum wage due to increases less than inflation, not only causes injury to the weekly or biweekly perception of the worker, but also transfers to retirement, severance and old age insurance contributions, of the IMSS employer fees reflected in the previous calculations, negatively impacting the pensions when quoting with a low retribution, together with the above the determination of these through the UMA. Similarly affects the contributions to INFONAVIT, reducing the possibility of qualifying for a loan, if necessary have a smaller contribution by the employer.

7 CONCLUSION

This research work shows the process of devaluation of the minimum wage in the period taken as a sample from January 1970 to December 2017, as well as the states with the highest poverty rates, largely due to the gradual loss of power purchasing, result of inflationary indicators superior to the salary increase established. It is also observed that Mexico occupies the penultimate place within the Latin American countries with the worst compensation for this concept and with respect to the United States and Canada, trading partners, there is a huge difference.

Therefore, it is concluded that it is urgent to revalue the minimum wage, benefiting workers who perceive it and in some way those who are slightly above it, to restore purchasing power, also improving the standard of living of those who live in areas with a high rate of marginalization. Among them, day laborers in the countryside, casual workers, domestic workers, especially starting a recovery phase, avoiding the continuation of the punishment of the entry of the most vulnerable sectors and the middle class, as in recent years the increase in salaries is linked to this, resulting in a collateral effect. Similarly, the implementation of the UMA in the pension system, comes to shrink their amounts considerably in retirement, to be left with a lower value.

The revaluation of the minimum wage is proposed gradually, during the period of the incoming government, that is, beginning in 2019, proportionally increasing the sixth part of the accumulated devaluation. It is not recommended immediately, so that the organizations and mainly SMEs, have a period of adaptation with respect to the impact on their costs for salaries, as well as in taxes on salaries, whose increase as shown in the results of this research, rise considerably. The proposed mechanism is based on the application of inflation rates published previously by the Mexican bank (Banco de México) [7], currently by INEGI [6], which may maintain biases, since the increase in gasoline during the current six-year period, as mentioned, has led to a generalized gradual increase of prices, leaving the published official data in doubt.

The most relevant findings of this research refer to the need to plan a process of revaluation of the minimum wage considering the effects of not establishing an adaptation period. In the same way, the increase established each year must be proportional to inflation, even that the procedure for determining this is certified by an independent body that guarantees its certainty. In addition to the above, the negative impact on workers' pensions is analyzed, as well as its link with the UMA, which has a negative effect. As for the benefits related to retirement insurance, unemployment in advanced age and old age, provided by the IMSS, are diminished as well as contributions to INFONAVIT, when a low compensation is perceived, putting the worker at a disadvantage with respect to his pension and possibility of obtaining loans for buying a house or acquiring housing for the whole family.

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AN OVERVIEW OF CURRENT STATE OF SMALL HYDROPOWER PROJECTS IN SERBIA

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ABSTRACT

The growth of the global economy and population at global level has resulted in enormous consumption of fossil fuels, environmental pollution, increased greenhouse gas emissions and evident climate changes. In the context of the global initiative for more intensive uses of renewable energy sources (RES), particular attention is paid to hydropower plants as the most important renewable resource, which is partly exploited. According to United Nations Industrial Development Organization data, the globally installed SHP capacity is approximately 1.9 % of the World's total power capacity and contributes approximately 7% of total renewable energy capacity. Republic of Serbia has a large tradition of Small Hydropower stations. This paper presents institutional and planning framework which regulates development of Small Hydropower projects SHPs.

Keywords: Renewable energy sources (RES), Hydropower potential, Small hydropower projects (SHPs), Cost of energy

1 INTRODUCTION

Today energy is one of the most important components of the development and functioning of the economy and society in general. For this reason, energy has key geopolitical importance, where climate change and security of energy supply being the dominant contributors to this situation, taking into account, first of all, the fact that fossil fuel reserves are limited and concentrated in a small number of countries. In development countries as well as in developed one, there is a need for clean and renewable energy sources (RES), which is increasingly being emphasized, considering already visible effects of climate change (storms, devastating hurricanes, catastrophic floods, tropical heat waves, droughts, large fires, the rapid melting of ice on the poles and glaciers,..), the geopolitical and economic uncertainty of traditional fossil fuel markets. Electricity is one of the basic preconditions for the economic development of modern society, which is still predominantly produced from fossil fuels in the World by 73.5% [1], while only 26.5% of electricity is generated from RES.(Fig. 1)

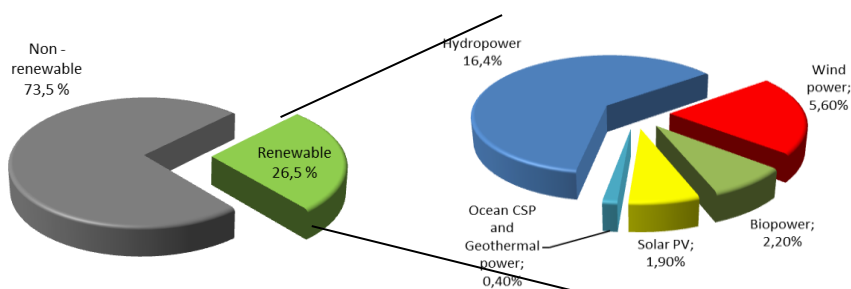


Fig. 1. Energy structure in electricity production from RES in the World in 2018. [1]

The largest share in the structure of electricity production in the World from renewable energy sources has hydropower with over 1.2 TW of installed capacity (about 16.4% of the total electricity produced in the World). [2] Considering from the point of view of reliability of energy supply and economy, could be said that water it is the most reliable and economical RES. However, the inadequate design and planning of hydropower projects, often cause a negative impact on the environment.

2 CURRENT STATE OF ELECTRICITY GENERATION FROM SMALL HYDROPOWER SYSTEMS IN THE WORLD

Small hydropower systems (SHPs) are important renewable energy source all over the World. Global share of renewable energy are shown on figure 2.

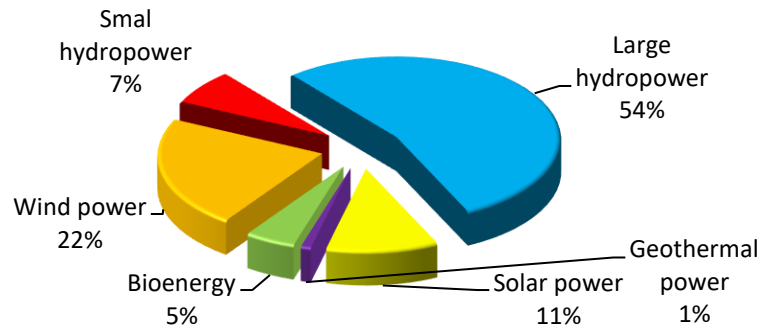


Fig. 2. Global share of renewable energy (%) (Source: World Bank) [2]

According to United Nations Industrial Development Organization data, the globally installed SHP capacity is estimated at 78 GW in 2016, what represents approximately 1.9 % of the World's total power capacity and contributes approximately 7% of total renewable energy capacity. SHPs are established in more than 160 countries and are often built in mountain regions.

According to International Center on Small Hydro Power (ICSHP) approximately 36% of the total global SHP potential has been developed as of 2016. Approximately 29 % of the world's total SHP potential are located in China - 51% of the World's total installed capacity (definition of below 10 MW). China has more than four times the SHP installed capacity then the rest of top five countries (Italy, Japan, Norway and the USA) combined. Together, the top five countries account for 67 % of the World's total installed capacity SHPs2. In Europe potential capacity of SHPs is estimated at 38.943 MW, while instalated capacities is 18.684 MW (about 48%), but we should mention that Western Europe has already reach the World's highest development rate (85 %). [2] We could expect that SHPs are going to be the most favorable source of hydroelectricity because most of large hydroelectric sites has been already developed. SHPs electricity supplies electricity for over 13 million households in Europe, which contributes to 29 million tones of CO₂ avoidance annually. [3]

3 DEFINITION OF SMALL HYDROPOWER SYSTEMS

Hydroelectric power plants are plants where the potential energy of flowing water converts into mechanical energy through hydraulic turbines and then into electricity through hydroelectric generator. Hydropower capacity is proportional to the product flow rate and drop height. [4]

Hydropower plants are divided into large and small hydropower plants according to installed capacity. There is no precise definition in the world of the limit of indicated power to which a hydroelectric power plant is considered as a small and varies from country to country. The value of hydroelectric power has particular importance for economic reasons, since electricity producers from SHPs have a *feed-in tariff* for the energy produced in them. Of the 160 countries studied, approximately half of them have established national or local feed-in tariffs. Table 1 shows definition of small hydropower in international policy context [5]

Table 1. Definition of small hydropower in international policy context [5]

Organization responsible for definitions of small hydropower	Rated power
Clean Development Mechanism (INFCDC, 2004)	1-15 MW
International Renewable Energy Agency (2016)	1-10 MW
International Energy Agency (2015)	1-10 MW
World Small Hydropower Development Report (Small Hydropower World, 2013) (collaboration of UNIDOS and ICSHP)	1-10 MW

The concept of ESHA (European Small Hydro Association), International Renewable Energy Agency, European Commission and UNIPEDE (International Union of Producers and Distributors of Electricity) is generally accepted in European countries according to which a hydroelectric power plant is considered

small if its rated power is less than 10 MW (Portugal, Spain, Norway, Croatia, Greece, Belgium, R. Serbia, etc.), although there are exceptions. Thus, e.g. in Sweden a small hydropower plant is considered to be an installed power plant below 1,5 MW, in Italy and Luxembourg below 3 MW, in France 8 MW, in the United Kingdom and in Germany 5 MW. And globally it is similar. Thus, e.g. for small hydroelectric power plant in India, it is considered to have a hydro power plant with a rated power of 1 - 15 MW, in China of 0,5 - 25 MW, in Brazil and Russia of less than 30 MW, and in the USA of 5 -100 MW. [4,5,6]

3.1 Classification of small hydropower systems

However, in recent years, the following classification of SHPs based on their combined power capacity and the capacity of a single unit is becoming widely adopted:

- piko HPs (up to 0.01 MW);
- micro HPs (up to 0.1 MW);
- mini HPs (up to 1 MW); and
- SHPs (up to the combined power capacity reaching 30 MW and the capacity of a single power unit reaching 5 MW) [7,8]

SHPs also can be classified in three categories according to operations and type of flow [4]:

- Run – of – river (ROR) (there is no accumulation, so plant produce energy from stream flow and elevation drop);
- with indivisible water reservoir. This group of hydropower plants includes hydroelectric power plants with a large fall ($\geq 100\text{m}$) and a rated power exceeding 1 MW; and
- with several weeks of reservoir by accumulation of water.

Run of the river SHPs (Fig. 3), do not have accumulated water as already mentioned and therefore the produced power of the hydroelectric power plant changes depending on the available flow.

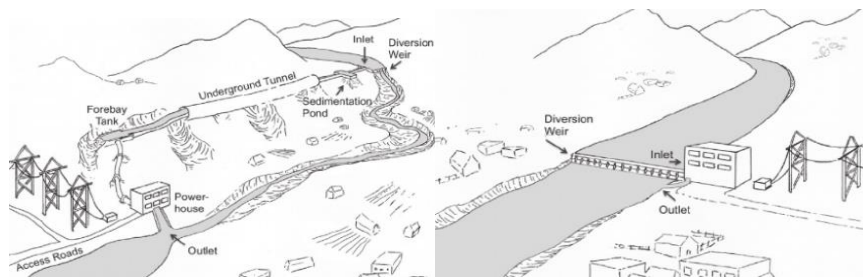


Fig.3. Small Hydropower System design – „Run of the river“ a) High Head and b) Low Head Diversion type [5]

In the system with Dam/Reservoir SHPs with medium or large falls, dams are built which divert the water to the water intake. Mostly, a gentle slope is being built along the river flow to the water treatment plant, and from there the water is brought to the machine building by a short pipeline. It should be noted that there are embodiments of the said pressurized pipeline but these are generally expensive. In case of a small fall (fall in the range of 2 - 30m) a small dam is built - a lake (reservoir). Water from the reservoir (which accumulates during periods of lower load) is used during peak periods when the price of electricity is higher. However, the construction of water reservoirs of small hydropower plants is generally not economically, so this solution is only applicable if the reservoir is already built for the purpose of: irrigation of land, supply of surrounding settlements with water, etc.

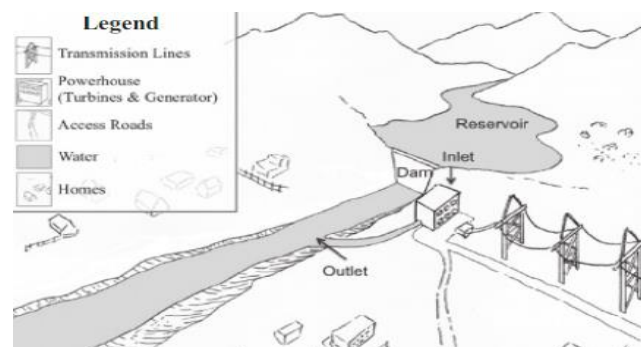


Fig. 4. Small Hydropower System with dam/reservoir [5]

Which of these technological solutions for small hydropower plants will be applied depends on different parameters. For example, projects may be categorized as: a high or low head what depends of water drops, or by amount of storage, where a project that stores a little water is called “Run – of – the – River” and one with a large reservoir “called storage type” [5, 9]

4 ANALYSIS OF THE STATE OF USE OF SMALL HYDROPOWER PLANTS IN THE REPUBLIC OF SERBIA

According to the data presented in the Energy Sector Development Strategy of the Republic of Serbia for the period by 2025 with projections by 2030, the total theoretically available hydroelectric potential of water flowing through watercourses in the territory of Serbia is about 25,000 GWh/year, most of which is over 70% concentrated on water courses: Danube, Drina, Great Morava, Lim and Ibar. According to the same strategy, the technically usable potential in Serbia is about 19.5 TWh/year, with about 17.7 TWh/year, on hydropower plants exceeding 10 MW. The total technical potential of SHPs has been estimated at 1,800 GWh/year according to the data presented in this strategy.[9]

The technical potential of watercourses in Serbia was estimated on the basis of the Cadastre of SHPs, which was created as early as 1987, and which never became a legally binding document. In this document, 856 sites in Serbia are presented. Most of the mentioned SHPs sites are located on watercourses that have an unstable hydrological regime - mostly they are torrential streams in the hilly areas belonging to the river basins: Black and White Timok, Great and South Morava, Ibar, Nišava, Kolubara, Drina, Lim, etc. Considering that during the last 32 years there have been changes in the hydrology of watercourses, and that during the inspection of 600 sites from the Cadastre of SHPs performed by Srbijavode, it was found that many of these sites are no longer available and that at least 1/5 of the locations listed above are not on the water, some sites have already been used or are in the National Parks area, it was necessary to update the data and create a New Cadastre of SHPs. Completion of the preparation of this document which would be the basis for drafting by-laws in the field of issuing energy permits for reliable assessment of planned power plant projects from the point of view of utilization of hydroelectric potential. New Cadastre of SHPs was expected in early 2019, however, there is no indication from the line Ministry of Mining and Energy that this document has been realized.

In order to meet the requirements of the European Union, in accordance with Directive 2009/28 / EC and the Decision of the Ministerial Council of the Energy Community of 18 October 2012 the Republic of Serbia adopted the National Renewable Energy Action Plan of the Republic of Serbia (NAPOIE) (In accordance with the template foreseen in the Directive 2008/29/EC- Decision 2009/548/EC) and set a binding national target for its share of 27% in its gross final energy consumption in 2020. Based on NAPOIE, by 2020, it was necessary to build new power plants with a total installed capacity of 1,092 MW. Fig.5 shows the planned generation of electricity from new plants that would use different RES.

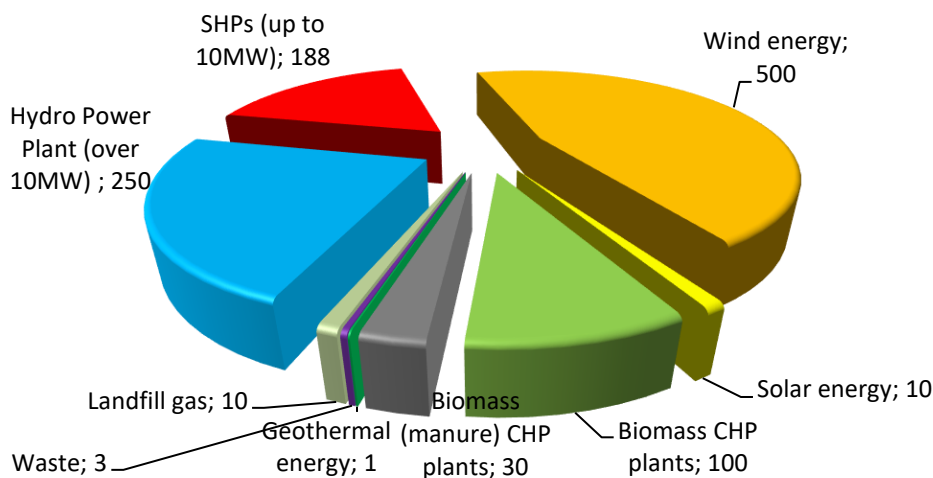


Fig.5. Production of electricity from RES from new plants in 2020 in Serbia [10]

Based on the data of the NAPOIE it was foreseen that in 2020, Serbia will build new 1092 MW power plants and generate 1108 GWh of electricity from large hydro power plants. It was also planned to build new SHPs with a total capacity of 188 MW and their production of 592 GWh of electricity (16.2% of the total planned production of RES electricity) in 2020.

Table 2. Feed-in tariffs for energy produced from hydroelectric power plants in connection with the Incentive Price Regulation [11]

The type of power plant of a privileged producer		Installed power (MW)	The incentive purchase price (c€/kWh)
1.	Hydropower Plant		
2.		to 0,2	12,60
3.		0,2 – 0,5	13,933 – 6,667*P
4.		0,5 – 1	10,60
5.		1 – 10	10,944 – 0,344*P
6.		10 – 30	7,50
7.	At the existing infrastructure	Exceeding 30	6,00

In order to achieve the set goals, and in order to stimulate investments in the RES sector and reduce the risk in their investment, the Government of the Republic of Serbia has adopted the Decree on incentive measures for privileged power producers from RES and from high-efficiency combined production of electricity and heat. This regulation describes in more detail the projected feed-in tariffs for electricity produced from RES. Incentive purchase prices for electricity from RES are determined every 3 years. Table 2 lists the incentive purchase prices for electricity produced from hydroelectric power plants, which are valid until December 31, 2019. For comparison, the commercial price of electricity for households is 6.5 c € / kWh.

According to the data presented in the Energy Balance of the Republic of Serbia for 2019, which determines the annual amounts of energy and energy products needed for reliable and quality supply of energy buyers, the gross electricity production in 2019 should amount to 40,005 GWh, which is 4% more than the estimated production in 2018 which was 38,318 GWh. It is planned to produce 9,623 GWh of electricity from hydroelectric power plants or 24% of the total electricity, during 2019. In the structure of electricity produced from hydroelectric power plants, hydroelectric power plants participate with 86% of accumulation with 2% of reversible hydroelectric power with 9% and SHPs with 3%.[12] The total power of all small hydropower plants is estimated at 102 MW, and the installed capacity of hydroelectric power plants that will use feed in tariffs to generate electricity is 82 MW.[12] Based on the above data, it can be observed that the targets for the use of RES from the NAPOIE relating to small hydropower plants have not been achieved. Namely, although according to the NAPOIE project, the total capacity of the SHPP by 2020 is 188 MW, by the end of August 2019, 102 MW has been achieved, which is 86 MW less than projected. According to the Ministry of Mines and Energy, at the end of August 2, 2019, have been issued 188 energy permits for the construction of hydropower plants. Based on the Register of Privileged Power Producers, 151 electricity producers from hydropower plants have been registered and have received "feed in tariffs" for which incentive measures have been envisaged. Privileged status of electricity producer has 106 producers (which means that Electric Power Company of Serbia buys produced electricity at a preferential price), status temporarily privileged 38 producers and status producer from renewable energy sources 7 producer. [13] (Fig. 6)

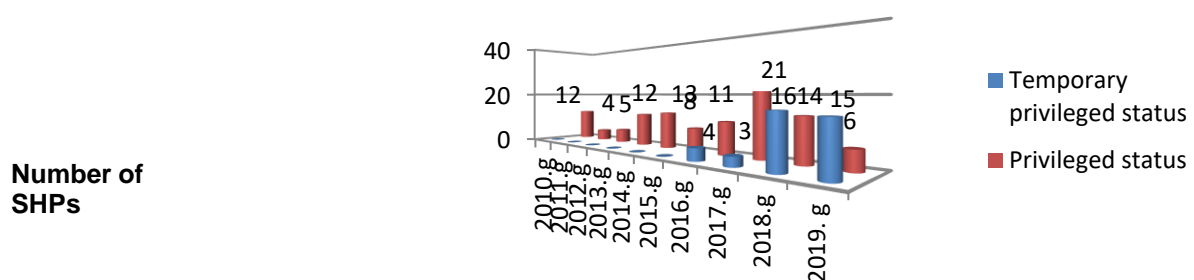


Fig.6. Number of SHPs with temporary or privileged status (August 2019)

Since 2010, when incentives measures for RES production in the Republic of Serbia began to apply, the construction of small hydropower plants did not have large fluctuations related to investments unlike other RES technologies, although there is a slight trend of increasing the number of electricity producers from 2016. The location for the construction of SHPs received 120 companies, during 2013., while only 12 SHPs were realized. Following two calls from the Ministry of Mining and Energy and great interest in this type of RES utilization, a large number of investors have given up on the construction of SHPs due to: as already mentioned non-updated data from Cadastre of SHPs, unresolved legal issues at the locations shown in Cadastre of SHPs and lack of data on the potential of watercourses, the complexity of the procedure for obtaining permits for construction from line institutions and connection to the power distribution network of the Electric Power Industry of Serbia.

5 ECONOMICS OF SMALL HYDROPOWER SYSTEMS

The construction of SHPs is a capital-intensive technology characterized by long lead times for development and construction. The unit cost of the construction of a small hydroelectric power plant is not possible defined generally, given that it depends on the following factors:

- Type of small hydropower plant (flow, length of pipeline, with or without dam, tunnelling and canal construction,);
- Installed power and number of generators
- Usable fall
- Dam and reservoir construction
- Locations (length and height of embankments, hydrological networks, Powerhouse construction; terrain configuration, land prices, grid connection, distribution network distance)[4,6]

SHPs that are built far from existing transmission networks imply that the construction of transmission lines can contribute significantly to the total cost. Costs of turbines, generators, transformers, cabling and control systems can vary significantly and generally do not depend on site characteristics. As a result, Table 3 shows the percentage of individual elements in the total cost of SHPs. In the United Kingdom, plants between 1 MW and 7 MW have installed capital costs between 3 100 and 3600 €/kW (Crompton, 2010). However, plants below 1 MW can have significantly higher capital costs. The range can be from 3 100 to 9000 €/kW, or even more for pico-hydropower projects.[6] Repayment period of the funds invested in SHPs are, on average, $2 - 4 \text{ years} / \text{kW}$. [4] It should be mentioned that the typical lifetime is 40 years, but in some cases can be less for small-scale hydropower plants and that the annual cost of maintaining the equipment in SHPs averages 0.07-0.1 €/kW of installed power [4,6]

Table 3. Percentage share of individual elements in the total cost of construction of small SHPs [4]

Elements of investment	Percentage share in the total cost of a small hydropower plant
Hydro-technical part (dam, water intake, water supply, drainage)	up to 60%
Turbines	up to 25%
Power house	up to 5%
Electrical equipment	up to 10%

For example, simplified calculation of the cost of the SHP "Zebica II" will be shown below. SPP "Zebica II" is located on Đački potok, located 0.7 km upstream of the village Zebica located in Municipality of Kuršumlija. The installed capacity of the plant is 90 kW, with a mean flow of $0.123 \text{ m}^3 / \text{s}$, and a biological minimum of $0.012 \text{ m}^3 / \text{s}$, with a net fall of 40.86 m. [14]

Table 4. Estimated construction and hydropower construction costs of SHP "Zebica II" (materials and works) [14]

I Construction and hydrological works		Cost [RSD]
1.	Water intake with fish path and sedimentation tank (concrete overflow threshold with Tyrolean water intake. Dimension, 4,75x7,8x2,5m concrete sedimentation tank, 15,7x2,1x2,9m)	907.000
2.	Pressure pipeline	6.308.000
3.	Machine building with drainage channel (Reinforced concrete building with drainage channel, dimension 4,5x6,25x7,1m)	1.148.000
4.	Other construction and hydro construction costs	896.000
TOTAL I		9.259.000

Table 5. Costs of electrical and other equipment and works Construction and hydrological works[14]

II Costs of electrical and other equipment and works Construction and hydrological works		Cost [RSD]
1.	Aggregate with associated equipment	4.588.000
2.	Hydromachinery, hydromechanical and machinery equipment	690.000
3.	Other hydraulic and mechanical equipment	352.000
4.	Low voltage electrical equipment	796.000
5.	Power transformer	450.000
6.	Medium voltage electrical equipment at SHP and at connection point	900.000
7.	Connection line	1.100.000
8.	Other electrical equipment	600.000
TOTAL II		9.476.000

In addition to the above mentioned costs of construction of SHPP "Zebica II", it is necessary to allocate certain funds for project planning, design and management, as well as certain funds for various fees, one-off fees, land purchase and other costs.

Table 6. Founding investments of SHPP Zebica II[14]

III Construction and hydrological works		Cost [RSD]
1.	Planning and designing	1.600.000
2.	Project management	28.000
3.	Fees, one-off fees, land purchases and more	4.000.000
TOTAL III		5.628.000

The total cost of construction of the mentioned small hydro power plant "Zebica" would be 24.363.000 RSD.

6 CONCLUSION

The total technical potential SHPs in Republic of Serbia is estimated at approximately 1.800 GWh/year. However potential of SHPs is estimated based on the data from Cadastre of small hydro power plants from 1987, which is obsolete. Regardless 151 electricity producers from hydropower plants have been registered and have received "feed in tariffs". SHPs are the excellent option for rural electrification. However, attention should be paid to projects which are not environment friendly or/and socially acceptable, because they cannot be economically sustainable in the long run.

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REGULATION AND MANAGEMENT OF MARKET CONCENTRATIONS IN THE UNITED STATES - EUROPEAN UNION

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ABSTRACT

The control and management of market concentrations is a specific part of the competition law and incorporates an ex ante assessment of transactions, and thus is the most delicate area of competition law. It directly affects business entities and their activities on the market without the existence of a factual activity or an act that directly violates the market competition.

The comparison of the systems that are in charge of controlling the market concentrations between the United States and the European Union, is imposed due to the significance of the United States antitrust system as the first system that set certain criteria for regulating the market concentrations which were followed by other developed legal systems. For this reason, the comparison of the regulation of concentrations is a good way to see the possible advantages and weaknesses of European Union law in this area.

Keywords: Law, Market, Concentration, Management, Competition

1 INTRODUCTION

The comparison of the systems in charge of control and management with the market concentrations of the United States of America and the European Union arises in many respects, but above all the importance of the United States of America as the first country to systematically set certain criteria for regulating the market; and their management. The countries of the European Union have largely taken advantage of the experience of this Regulation and have endeavoured to adequately address weaknesses in these areas.

The European Union is a specific regional system that unites 28 countries around shared values, goals and policies. Its uniqueness consists in the fact that its legal market system is unique in the sphere of international politics, so it directly affects the member states. In fact, European Union law and markets directly affect the national legal systems of the Member States.

2 OBJECTIVES OF THE RESEARCH

The Competitive policy is an important segment of the politics of any modern state that aspires to have a functioning and efficient market economy. An important aspect of such policy is the existence of an adequate and efficient system for regulating market concentrations.

The overall objective of this research was to gain deeper insights into the functioning of the market concentration regulation system and to identify the strengths and weaknesses of this system in order to identify opportunities and modalities for its improvement.

3 METHODOLOGICAL APPROACH

In order to obtain some idea of the functioning and performance of the system of regulation of market concentrations and its several segments that stand out as the main actors within this area. This certainly includes existing legislation covering all significant segments of market concentration regulation including the reporting criteria and thresholds, including the evaluation procedure itself.

A comparative analysis of the EU and US market merger regulation systems showed that each system was the result of different circumstances and legal traditions. It can be said that the US system has been developed more organically and over a long period of time so it is less formal and rigid. Whereas in the EU

system, because it is a supranational and relatively young system, there seems to be a need to regulate every detail of the procedure. It can be concluded that each system has its drawbacks as well as advantages it can derive from the other. Thus, in the United States, there may be a need for more detailed regulation of the rights of participants in the proceedings and the competences of individual authorities and bodies. In the Union, however, it may be necessary to segregate the research and evaluation function sitting in the Commission. It is also important to emphasize the importance of the two countries' mutual cooperation in this field, as two of the most developed markets and legal systems in the world.

4 THE REGULATION OF MARKET CONCENTRATIONS IN THE LEGAL SYSTEM OF THE UNITED STATES AND THE EUROPEAN UNION

The regulation of market concentrations in the United States began with the adoption of the Clayton Act in 1914 [1], whereby Article 5 stated that "any acquisition that greatly reduces market competition or creates a monopoly" is prohibited. Clayton's law is still in force and it forms the basis for the regulation of market concentrations in the United States. In fact, since the origins of the regulation of market concentrations, this country has accepted the so-called test for significant reduction and obstruction of competition, unlike the European Union, which used the dominance test.

When analysing the institutions responsible for enforcing competition law, it can be seen that there are significant differences between the control of market concentrations in the United States and the European Union.

Namely, there are several entities in the United States that have the authority to enforce the law in the field of concentrations. Thus, there are two bodies that are in charge for enforcing the right to competition - the Department of Antitrust of the Department of Justice and the Federal Trade Commission.[2] However, such authorities also have state-level authorities who, regardless of the decision of the bodies in charge for controlling competition, may require blocking a certain concentration before the courts.[3]

For their part, they can adopt legislation that effectively rejects the application of federal competition provisions. This situation is quite specific given that the European Union, unlike the United States which is a federal state, is distinguished by more power within the framework of competition law and market competition, which in no case can be violated and derogated by the states - members.[4]

In such a network of participants that have a certain degree of competence within the control of market concentrations, the regulatory bodies of certain industries and sectors, such as the Federal Communications Commission, which use the competence for granting licenses for work in this sector as an opportunity for assessment of the possible anticompetitive consequences of a business entity that was created through a concentration.[5]

Another significant difference in the setting of the systems for controlling concentrations in the United States and the European Union is the role of judicial authorities. In the US, courts are involved in the initial assessment of concentrations in that, that the decision taken by the aforementioned bodies must be approved by a federal court.[6] From this we can rightly conclude that the US system has set up a very strong mechanism for controlling decisions on concentration assessment. In this circumstance and the dissatisfied parties, they are given the opportunity before a competent court to prove that a certain concentration is not dangerous to market competition. In addition, such a possibility of litigation can actually motivate both sides in the procedure-regulators and participants of the concentration to reach a certain agreement that involves undertaking certain measures for removing the dangers of market competition.

On the other hand, in the United States, there has been a practice of challenging concentrations before courts by private entities.[7] Such a practice does not exist in the courts of the European Union, which can only control the acts of the Commission, although in theory the legal entities may seek redress for a certain concentration and challenge it before the national courts, given the direct effect of the Union regulations.

The presence of many regulators in the area of market concentration makes the evaluation procedure very specific. Thus, the participants in the concentration, as well as the system of the European Union, have an obligation to report a certain concentration exceeding the prescribed thresholds, but then there is a period of 30 days in which the two bodies actually decide which one to consider in the case and whether the concentration should cross in the assessment phase.[8] This situation can lead to a clash between the two bodies, which have developed various practices for the allocation of cases, including the tossing of a coin.[9] After this period, a second phase of extensive assessment of the concentration follows, and unlike the European Union, participants are not allowed access to their file, with the deadlines of this phase continually prolonging in practice.[10] It can rightly be said that this puts the regulatory bodies in a fairly privileged position and greatly jeopardizes the rights of the participants of the concentration who can be exposed to a lengthy procedure, and they are kept in complete ignorance about the course of the procedure.

From this it can be concluded that the United States and European Union Evaluation Systems, although considered to be the most developed and leading, are, however, largely different to each other. The difference in the institutional infrastructure itself which is widely spread and developed in the United States is most evident, and it can be noted that this leads to greater uncertainty for the participants in the concentration because once the approved concentration can be banned from the state authorities or from the regulatory bodies of the certain industry. Unlike the United States, the European Union has a rather specified and formalized procedure set up by Regulation 139/2004 and the Implementing Regulation, which sets out in detail the deadlines and stages in the assessment of concentrations.

Within the framework of the procedure for assessment of market concentrations in the European Union, the Commission also appears as an investigative body and as the body that makes the final decision regarding the concentration, while the procedure in the USA ends with a court decision as an objective third party. Hence, it can be said that the courts in the United States have a more active role in the application of the right to competition in this area, and in the United States there is a developed practice of litigation initiated by state authorities or private entities in deciding on the nature of a particular concentration and its impact on market competition.

Of course, the cooperation between the European Union and the United States in this field, which is covered by the 1991[11] "Co-operation Agreement" and the "Good Practice" Practice Document in this area from 2011, [12] should also be emphasized. According to these Good Practices, the goal of cooperation between the two systems is to achieve the same result and decision in procedures that involve international business entities that are subject to consideration of the two jurisdictions, which in today's globalized economy is a very common case. Such cooperation includes mutual reporting and communication in order to reach decisions that are acceptable to both parties.

5 THE PROCEDURE FOR REPORTING AND ASSESSING CONCENTRATIONS UNDER REGULATION 139/2004

It is evident that the increased integration of the EU Member States' economies and with that the strengthening and development of the common market have increased the need to regulate this area at pan European level. As mentioned above, the European Union has decided to take a more centralized approach, putting the procedure in the hands of the European Commission. This avoids multiple controls by individual national bodies processing different legislation and criteria and creates a greater legal certainty for businesses, and pushes towards the realization of the Union's core value – effective and fully integrated, single European market.

The procedure for reporting and evaluating concentrations meeting the criteria for assessment by the Commission is primarily governed by Regulation 139/2004 but also by Implementing Regulation No 802/2004 adopted by the Commission for the purpose of more precisely regulating certain procedural issues concerning the application of the law in the field of concentrations. It regulates the reporting deadlines and information to be provided by the applicant, the deadlines for submitting proposals for certain obligations that the participants would undertake in order for the concentration to be permitted, as well as the procedure for hearing during of the concentration assessment procedure. Furthermore, the Commission as the responsible Institution in the area has adopted several decisions, best practices and similar documents magazines in the conduct of the procedure for assessment of concentrations.

According to Article 4 of Regulation No.139/2004, a concentration with a European dimension must be reported to the Commission prior to its implementation following any of these events: contract preparation, publication of a public offer, acquisition of a controlling package. Therefore, concentrations must be evaluated ex ante in order to avoid any negative effect on the market that can be eliminated afterwards. An exception to this is the stock exchange transactions where the one who has taken over another entity in this way must refrain from exercising his voting rights or do so only to maintain the value of the entity. In addition, the Commission may, at the request of participants, derogate from this rule.[13] It can be concluded here that it is a matter of adopting a balanced approach to the Union, thus avoiding being a brake on the business of the common market.

The characteristic of the merger procedure is that the Commission, in particular the Directorate- General for Competition, as the competent body for the evaluation of mergers, always contacts and meets with the participants prior to the formal merger declaration. It can be concluded that, given the complexity of the procedure itself, with the participants being required to provide a large amount of information and to submit a large number of documents, this ensures the further success of the procedure. On the other hand, such contacts make the procedure more transparent and also , it can be assumed that in this way it looks more like a process of cooperation between the commission and the business entities. With regard to transparency, it should be noted that any new concentration notices will be published on the Competition Commission's website, as well as in the Official Journal of the Union.

The notification of concentrations is governed by Regulation 139/2004 and the Implementing Regulation, which establishes quite large obligations for reporters in providing detailed information on the transaction, as well as information relating to the definition of the relevant market and the level of its concentration. This obligation involves sharing all internal transaction-related documents. Extensive literature on this issue holds that the large amount of information required by reporters is too large and unnecessary. According to such considerations, the required content of the so-called Form CO (the official form which should contain the information stated) was determined before the Union had experience with the application of the new regulation and it did not correspond to the large workload of the Commission thus overloaded with a lot of unnecessary information.[14] The existence of the so-called simplified procedure for the evaluation of certain concentrations which substantially reduces the reporting obligations of the rapporteurs is not groundless. Such a procedure shall be regulated by the Commission by means of a so-called notification setting out the criteria which must be met by the concentrations in order to be assessed in this way. It should be noted, however, that the Commission adopted a new Notice on 14 December 2013 expanding the scope of concentrations falling under such procedural rules.[15]

After the notification, the procedure for analyzing the notification is divided into two phases, with the concentration that will not be allowed in the first phase going into the second phase of thorough analysis. It can be seen that such a procedure allows the Commission to process more rapidly those concentrations which do not pose a threat to competition and thereby conserve all resources in a thorough analysis of more complex cases. This can also be inferred from the fact that 90 per cent of the reported concentrations are dealt with in the first phase, with the majority being approved without any cost commitment.[16]

In the first phase, the Commission has 25 working days [17] to analyze a particular concentration where it has the power to request additional information from the parties to the concentration and other entities that may contribute to clarifying the circumstances of the relevant market and the role of the participants in the competition.

At the end of the first stage the Commission can either approve the concentration (unconditionally or with certain obligations for the parties), or decide to start the second phase of the analysis due to the existence of conditions of negative impact on competition. With regard to the possible obligations which the Commission may impose as a condition of a transaction permit, it should be noted that they should be on the proposal of the participants themselves [18] and they usually refer to the sale of certain business units and businesses. Such is the case with the acquisition of the music company by Universal Music Group in 2012 [19] which actually meant the merger of two of the four largest companies in the music industry, so the Commission obliged EMI to sell some of the entities it owned as the famous music company Parlophone.

The second stage of the merger evaluation involves a deeper analysis of the concentration by obtaining more information from the mergers, their competitors and consumers, while conducting a deep market analysis to determine the sustainability of the doubts about the negative effects on competition. If it finds its doubts grounded, the Commission shall send a statement informing the parties of its conclusions, with the parties having the right to respond to such a statement in writing or to request an oral hearing before the Commission.[20] It can be seen that this procedure lacks transparency in that the parties have access to their file only later in the second stage of the procedure, only to be able to respond to the Commission's statement.

In respect of decisions that may be taken in the second stage of the merger evaluation, the Commission may prohibit the concentration, or permit it, as such permission may be unconditional or result from the undertaking of certain obligations by the participants.[21] With regard to the deadlines, the Commission is obliged within 90 days to decide on the permissibility of the concentration, but this deadline can be extended for additional 20 days at the request of the parties, but the Commission may terminate the proceedings if the parties refuse to provide certain information relevant to the assessment of the concentration.[22]

From the above it can be concluded that the Union has created a relatively efficient procedure to respond to the needs of business entities and the Commission itself by organizing the procedure in such a way as to enable simpler cases processing as well as enabling business entities to undertake certain obligations to achieve compliance with EU competition rules. However, the Union must constantly monitor the public's views on the procedural difficulties encountered by business entities and allow for greater transparency of the overall procedure.

6 CONCLUSION

The regulation of market concentrations is one of the integral components of a modern competition protection system. In doing so, its ex ante nature requires the existence of high legal and economic experimentation in order to achieve a balanced and comprehensive approach that will be in line with the general objectives of competition law. As it can be seen from the historical analysis of the regulation of concentrations, regulators must be constantly referred to the markets and activities of market participants in order to build and develop an efficient system of regulation that will be adapted and appropriate to the actual conditions and dangers after the competition in the markets.

In conditions of strong globalization and connection of world markets, transactions leading to market concentrations are more common, they increasingly have an international character and, therefore, their control is more difficult. A product of such processes is the European Union with its sui generis legal system that is based on the ideal of the common, or internal market, as the fundamental value of the Treaties of the European Union. In fact, the first supranational regulatory system was created, which can be assumed to be an example of international cooperation in this area, given the increasing integration of the world market.

The actual building of a system for regulating market concentrations and market competition in general begins with the process of integration and rapprochement with the European Union, and the guidelines and solutions that exist in its legal system are implemented.

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THE CONCEPT, LEGAL REGULATION AND PROTECTION OF WORKPLACE ABUSE IN THE REPUBLIC OF SERBIA

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Abstract

When it comes to organization and employees, the problem that is becoming increasingly new is workplace abuse. This problem deserves special attention because violence then becomes part of the organizational culture and affects the performance of the organization. Most employees spend almost half a day in the workplace, so the importance of interpersonal relationships cannot be challenged while performing tasks. What if interpersonal relationships are disturbed, when the superior, instead of taking care of his tasks, daily, systematically and deliberately violates the human dignity of the individual? Can job abuse be discussed or is it something else? From a legal point of view, mobbing is characterized as unlawful conduct that values the dignity and integrity of the individual. The paper distinguishes between mobbing and discrimination. It also discusses legal regulation and insufficient legal regulation of this term. Finally, and in the face of rising global unemployment, the assumption is made of an increase in mobbing cases in various forms.

Keywords: workplace, mobbing, violence, abuse, discrimination, protection, unemployment

1 INTRODUCTION

Mobbing is characterized by psychological abuse or harassment, mental terror or moral abuse. The difference between mobbing and all other forms is that it happens in the workplace. With the entry into force of the Prevention of Work Abuse Act, abuses at work have become punishable. Represents any active or passive behavior towards an employee or group of employees of an employer who is repetitive or violates dignity, reputation, personal and professional integrity, health, position of the employee and which causes fear or creates hostility, degrading or abusive environment, deteriorates working conditions or causes to isolate employees or indicate that they will terminate their employment on their own initiative or terminate an employment contract or other contract. Abuse is also an indicator that others are behaving as described above. An employer of mobbing is an employer who is a natural person or responsible person with an employer with the status of a legal person, employee or a group of employees of an employer who commits abuses. The victim of abuse may be employed or otherwise personally employed.

According to the International Labor Organization (ILO), mobbing is abusive behavior that manifests itself as cruel, vicious, vindictive, degrading and abusive attempt to sabotage one or even a group of employees.

Basically mobbing has a negative effect on the employee's psyche. Mobbing causes health disorders and symptoms, changes in the psychic and emotional sphere, changes in the physical health plan, and changes in behavior. Great competition in the market, globalization, organizational changes, privatization, restructuring, computerization, economic crisis, job insecurity, inflexibility of workers have led to an increase in the frequency of mobbing. Workplace abuse has become more noticeable than ever.

1.1 The term mobbing

Mobbing is primarily a form of communication in a work environment that is inherently hostile, unethical, and most often psychological abuse of a particular person by a boss or superior.

Mobbing is present in various business organizations and institutions, and some data show that in Serbia it is most present in the state administration and education.

The first scientist to begin investigating this phenomenon was German psychologist Heinz Leimann. He first used the term "mobbing" for certain workplace behaviors, determined its characteristics, health effects, and set up a clinic to assist victims.

According to Leiman: "Mobbing or psychological terror in business life refers to hostile and unethical communication that is systematically directed by one or more individuals, mainly toward an individual who is placed in a position where he or she is powerless and incapable of defending himself or being kept in a permanent position. by abuse, they occur at high frequency (at least once a week) and long term (at least

6 months). Due to their high frequency and long hostile behavior, this abuse leads to significant mental, psychosomatic and social suffering." [1]

The English word mobbing is an etymological void originating from the Latin term *mobile vulgus*, which means flipping the world to the movement. [2]

The first significant study of mobbing was conducted by the Swedish psychotherapist Heinz Loiman. In English-speaking areas, the term "bullying" is used to refer to school violence. [3]

For the purpose of defining mobbing more precisely, we will talk about the legal formulation of this institute, according to which mobbing is a specific form of behavior in the workplace, by which one or more persons systematically, for a long period, mentally abuses or humiliates another person with the aim of endangering his reputation, honor, human dignity And integrity.

Mobbing an employee can take a variety of forms, from constant and unfounded criticism, humiliation, overloading such a person to work tasks that are incompatible with her job description and profession, ignoring what she says, constantly breaking into communication to openly insulting and punishing her. Mobbing can also be present in unusual formats such as convening meetings where the director only speaks, holding monologues and not inviting discussion and discussion. This behavior implies that employees are in the function of satisfying his or her personal need for attention and proof, and their opinions remain neglected.

Mobbing is most common in the relationships of subordinates and superiors, but it also occurs in the relationships of colleagues in companies at the same hierarchical level.

In this case, mobbing is most often manifested by putting a person in social isolation in the sense that their colleagues do not address them, do not invite her to meetings and generally avoid her society. Mobbing often appears in hidden form, in the behavior of superiors who justify their behavior by having more work and collegial goals.

In some companies, especially in the private sector, there is such a business practice where some employees are expected to work more than ten hours a day.

Overtime, which, of course, is not adequately paid, is seen as an indicator of employee loyalty, willingness to work, commitment to companies and shared goals. The employee receives motivation in a manipulative way, which means praise for the dedication and collegiality of the company, but not compensation for overtime, and therefore remain in a vicious circle of abuse by superiors. As we can see, there is a possibility that mobbing can be done in a very perfidious way and can be overcome by the classic abuse of collegiality and team spirit. By creating a work atmosphere where overtime is the norm, and vacations, days off or illness, proof of a company's lack of commitment creates a fertile ground for various types of employee mobbing. So, we come to the type of person who can easily target mobbing, that is, they easily resort to manipulations and abuse that occur under heavy work and victim engagement.

2 VICTIMS OF MOBING

Mobbing is pathological (hostile and unethical) communication in the workplace, systematically directed by one or more persons to one person during mobbing, subjected to psychological abuse, and placed in an endless situation where it is retained through the enduring characteristics of mobbing.

Mobbing activities take place at least once a week and can last for at least six months, which is a very long period.

Due to the high frequency and longevity of hostile behavior, this harassment leads to great suffering that can be mental, social and psychosomatic.

The word mobbing, English "mobbing", is a coin of the verb "to mob" which means an angry attack, a reversal. It is often associated with the word "abuser" (abuser, abuse, chivalry). Generally speaking, this is a newly defined but longstanding form of workplace abuse. Mobbing has many similarities, but essentially involves constant assault, humiliation, abuse and isolation, to the point where a person exposed to mobbing can no longer function in the workplace with the ultimate goal of eliminating it completely or simply declaring him paranoid or insane. It is about abuse that is not sexually and racially motivated. Psychiatrists often say that they have been dealing with such a problem for a long time, but that they are often reported late and diagnosed after a long period of abuse.

The situation in the world that has taken over mobbing is illustrated by the many legal acts adopted in a large number of countries, predominantly developed, which provide for sanctions in cases of mobbing.

Under the term mobber, people are mentally, morally, sexually and otherwise abused, trying to eliminate people they feel are harassed. Cell phones are less capable but powerful people, without a sense of love, play, creativity, giving and empathy for other people.

In this way, they secure a dominant position or fit, eliminating whoever stands in the way of success. They often do so out of personal fear that no one will appreciate them and that they may become someone's victim. Some abusers do this on purpose, wanting to hurt their colleagues and forcing them to quit.

The victim of mobbing can become anyone, regardless of gender, age, social status, outward appearance, educational level or professional position. Moreover, the better positioned the business, the more subtle mobbing is. Although research and experience have shown that men tend to bully men and women almost exclusively women, experts say women are a risk group nonetheless.[4]

Characteristics of mobbing victims are that they are: creative, capable and professional people, responsible, conscientious and motivated workers sensitive to criticism. They are desirous of recognition in the context of work and are very sincere in social relationships, will increasingly strive to be fair and committed to their work, and in their commitment they do not realize that their conscience is being abused.

Mobbing in a random place is a violation of a number of employees' social rights, as well as a violation of privacy rights and dignity at work.[5]

The initial effect is that the mobbing victim must have made a mistake and that is his fault. Common thoughts that occur during this period are: "Am I responsible for the problem?", "Where did I go wrong?", "I don't understand how this could have happened?" And feelings of confusion and anxiety are characteristic. The victim of mobbing is lonely, dismissed, and often afraid of everything that happens.

In loneliness, the victim is lonely, rejected, and often ashamed of everything that happens. She fears that others will not believe her, so she does not talk about her problem in family or with friends. This phenomenon is commonly referred to as "double mobbing". A common thought that occurs during this period is: "It cannot happen to others," and the characteristic feelings are anxiety and depression.

Mobbing is also a personal disorder in which depression occurs. The victim is overwhelmed with the thought, "I can't adjust." "I can't solve the problem because I'm incompetent. They don't appreciate me." The struggle to block and eliminate mobbing reactions is characteristic of strong and intelligent people and they are often very aware that they have fallen under the influence of mobbing.

They use available legal, psychological, sociological, media and other means to draw the public's attention to the phenomenon of mobbing.

3 TYPES OF MOBBING

The types of mobbing are:

- empty table syndrome,
- full table syndrome,
- horizontal mobbing, i
- vertical mobbing.

An empty table syndrome refers to a situation where an employee is disabled from working (does not invite meetings, moves to a separate room away from colleagues or managers, removes funds for work, does not invite to participate in joint celebrations, gossip, ridicule) . He is deprived of all responsibilities, obligations and duties and indirectly lets him know that he is superfluous.

The syndrome of a "full" desk is an employee's overload of duties and tasks that he does not complete (the person is exposed to constant and unfounded criticisms and complaints, he is not allowed to go on vacation, pay cuts, constant changes in work tasks). In this way, the employee is under constant stress and criticism from their colleagues.

Horizontal mobbing occurs among workers in the same position on the scale of the company hierarchy. Feelings of vulnerability, envy and jealousy can become a desire to eliminate a colleague, especially if it is thought that removing him or her could lead to the advancement of a cellphone's career.

Vertical mobbing occurs when a superior abuses a subordinate worker. The superior abused one worker at a time until he destroyed the entire group - the so-called.

4 WAYS TO PREVENT AND COMBAT MOBBING

Psychologists say a potential solution lies in finding ways to harass abusers, especially if they are superiors. However, this is not easy, as employees are most often afraid of losing their job or criticizing their "bad" job. In order not to be a victim of mobbing, it is sometimes helpful to be obedient but to hold on to your belief. On the other hand, preventive action against mobbing practically comes down to a normal lifestyle, which strengthens the person and suppresses stress.

Many try to divert their attention from mobbing in an inappropriate or even harmful way by using nicotine, alcohol, caffeine, taurine, sugar, soothing agents and opiates, which are usually a means of trying to reduce their sense of stress.

Instead of taking stimulants and tranquility, modern man should learn methods to avoid stress and reduce its harmful effects. Some of these can be implemented by reducing the amount of daily commitments (work, family, school, social), introducing proper nutrition with many vitamins and minerals, avoiding stimulants and sedatives, regular sleep patterns, regular body exercises with relaxation techniques.

When it comes to choosing anti-mobbing measures, it is essential to know the phase of mobbing.

Prevention: It should be in the employer's best interest to put in place a policy to prevent escalation of conflict into dangerous situations. It is necessary to lay down rules that determine how to react if a conflict becomes very demanding. Early intervention management: In order to act early and preventively, it must be able to recognize the characteristics of the mobbing process.

Also, management should select one or more individuals in the organization who will be able to contact their employees for advice.

Vocational Rehabilitation: If mobbing exists, executives and superiors must be victims' protectors.

Law: Legal measures to assist in the fight against mobbing should ensure the employee's right to physical and mental health at work. It is imperative that employers regularly monitor their work environment so that they can identify and take action if mobbing occurs.

Of course, what could greatly help in the fight against mobbing are associations and counseling centers against mobbing.

5 LEGAL REGULATIONS AND PROTECTION AGAINST MOBBING IN SERBIA?

5.1 Law regulation

Mobbing in most manifestations is a negation, or violation of some of human rights and freedoms. The Labor Law of the Republic of Serbia establishes a prohibition of discrimination, and within that a ban on mobbing. The Law does not see a clear distinction between discrimination and mobbing, which raises concerns in practice. Discrimination is a distinction and violation of rights based on sex, racial, religious or other affiliation, while mobbing is a psychological abuse and intimidation. The difference is that discrimination rests on differentiation and mobbing on abuse.[6]

Criminal Code RS[7] does not use the term mobbing and does not specifically prescribe mobbing. The characteristics of this crime can be found in the crime of abuse. I am of the opinion that the criminal code of mobbing should be included in the Criminal Code of Serbia. Since the consequences can be very severe, in my opinion the range of penalties should be higher.

Law on Prevention of Work Abuse[8] has explicitly prohibited any form of abuse at work and in connection with the work of employees and other persons engaged outside of employment.

The Minister of Labor and Social Policy has adopted the Rulebook on the Rules of Conduct of Employers and Employees in relation to Prevention and Protection against Abuse at Work, which prescribes the rules of conduct of employers and employees, or other workers-engaged persons regarding the prevention and protection against abuse at work and work-related or sexual harassment.

The employer is obliged to act preventively, as well as to inform the employees in writing that the Law prohibits and sanctions abuse, sexual harassment, as well as abuse of the right to protection from such behavior.

Some authors consider that regulating mobbing by a separate law, although it is a specific form of discrimination, results in unequal position of the victims of mobbing. The victim of mobbing is at a disadvantage from the victim of discrimination because the Law on the Prevention of Abuse at Work did

not envisage review as a remedy, which is necessary to harmonize the case law. Therefore, the revisions against the decisions in which the claim is subject only to finding the abuse are dismissed, while the cases of annulment of the dismissal decision made at the initiative of the employer or employee are resolved on a meritorious basis.

5.2 Mobbing protection

Mobility protection can be:

1. Employer-provided mobbing and
2. Judicial protection

a) Mobility protection exercised by the employer

The law states that an employee who is suspected of being abused should, first and foremost, contact the person he or she suspects of committing the abuse and show his or her behavior. If this does not work, then he or she will contact the support person or the employer authorized to file a claim for protection against abuse, or another person who enjoys his trust. Therefore, the organization, when rethinking itself, should improve the relations between the organization-man and also the interpersonal relations (good management model, putting the man in the forefront, improving the relations and mutual loyalty of employees...). [9]

Initially, the parties to the dispute and the businessman agree on the choice of mediator. If the mediation succeeds, the parties to the dispute, with the participation of the mediator, conclude the agreement.

If the mediation fails, the employer is obliged to initiate the procedure for determining the employee's liability, in case there is a reasonable suspicion that the abuse was committed or that the right to protection from abuse was abused.

Inspection bodies also have the possibility to influence, within their competence, the reduction of the occurrence of mobbing and its prevention, as well as to take concrete measures. Finally, a society that insists on consistent application of the law and protection of citizens creates and influences mobbing prevention.

b) Judicial protection

The existence of mobbing is difficult to prove. It is not uncommon for an organization and an individual to commit mobbing to neutral and legal decisions and actions. It should be established that there was mobbing and, on the facts, to provide the victim with legal protection. An action to the court is the right of an employee who believes that he or she is exposed to abuse and who is not satisfied with the outcome of the mediation procedure, ie the procedure for determining the liability of an employee charged with abuse. The victim of mobbing may, through a competent court, file requests for: annulment of a particular decision which led to the fact of the existence of mobbing, compensation for material and non-pecuniary damage and criminal justice protection. When compensating for non-pecuniary damage, we must bear in mind that for its existence it is not necessary to hurt the personal good itself, but also for the person to feel that injury and feel physical or psychological pain or to show fear of a certain intensity.[10] In addition, non-pecuniary damage is not only intended to satisfy the victim of mobbing due to mental pain, but also to the function of a private teller with a strong deterrent effect..[11]

Experts dealing with this phenomenon from various positions and angles, however, are not satisfied with the adopted legal text, which carries with it various contradictions, and great possibilities for its use in practical legal life with considerable difficulties. First of all, when it comes to sexual harassment, the Law creates confusion by stipulating that its provisions also apply to cases of sexual harassment, in accordance with the Labor Code, which defines this term as a form of discrimination (it is most effective for a victim to qualify the perpetrator's conduct as one or other behavior, depending on which protection regime will exercise its rights more readily).

Furthermore, there are also allegations that the active and passive legitimation is vaguely set, that the inability to sue for an individual act of the employer is inappropriate, that the interpretation of the statutory standard of "repetitive behavior" can only be crystallized in case law, that the sanctioning of an employee who is inappropriately regulated committed the abuse of a responsible person in a legal person (especially when an agreement was reached).

However, the most objection is to the shortcomings in arranging the procedure with the employer, which is left to the improvisation of the mediator. The abuser and the employer have an interest in completing the procedure at an internal stage - until the victim does so. It is realistic to expect that conciliation will not succeed, or the result of the entire proceeding will be a statement that the parties to the dispute will refrain from further conduct that would harm interpersonal relationships and the work process. This makes it not only an ineffective tool in the fight against abuse, but also a potential additional weapon for the abuser.

6 CONCLUSION

In the last ten years, workplace stress has become an increasing problem, both in Europe and in the world. One of the most severe forms of workplace stress is mobbing.

The workplace and the company suffer from the serious consequences of mobbing, reduced productivity, impeded employee advancement, the frequency of absenteeism, the need for internal transfers, new relocation and final closure. We are witnessing mobbing in our country, but this problem is not defined, nor is it recognized by employers as such, nor by the competent institutions that would have to regulate it legally and in accordance with the Constitution as the highest act of the state. Attempts and legal solutions of states taken in our country have been noticed that mobbing is impossible to eradicate because the interest, egoism, greed for money and profit of the individual prevail, and on the other hand, the fear of existence.

Accordingly, preventive and legal measures to prevent mobbing need to be adopted in the future. I believe that the criminal code of the Republic of Serbia should incorporate the criminal offense of mobbing and in the Labor Law make an improvement and clearly separate discrimination from mobbing. Judges should be tasked with identifying mobbing or conduct that constitutes abuse at work and in connection with work, which is often very difficult in practice, so it is not uncommon for discrimination to occur due to uneven case law. Mobbing has psychological, psychosomatic, economic and other consequences. Mobbing must be seen as a social problem because besides the individual, mobbing also affects employees' family members as indirect victims. On the other hand, the consequences of mobbing are also suffered by the employer, whose mobbing creates numerous costs. The global growth of the unemployed in the future will intensify competition both among employed and unemployed. This will only create an even greater basis for increasing the harmful occurrence of mobbing.

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FRAUDULENT CONTRACTING OF TEMPORARY AND OCCASIONAL WORK IN SERBIAN BUSINESS PRACTICE

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ABSTRACT

This work analyses the issue of fraudulent contracting of temporary and occasional employment in Serbian business practice, as a labour law and a social problem. Regarding this, this work points out the ways in which work outside the standard employment relationship contracts, especially temporary and occasional employment contracts are misused, as well as the consequences of such misuse, considering the many rights that the employee is in this way prevented from exercising. The main objective of this work is to raise awareness of the unlawfulness of conclusion and effect of temporary and occasional employment contracts with both state and private employers, and to bring them into the legal framework, that is, for such contracts to be concluded solely for the jobs that are truly temporary or occasional, and only in a manner prescribed by the positively legal norms. The scientific methods used in making of this work are the majority of fundamental methods of scientific knowledge, statistical method as well as the normative workforce method.

Keywords: Temporary and occasional employment, work outside the standard employment relationship contracts, seasonal work, legislation, Serbia

1 INTRODUCTION

Temporary and occasional jobs are a form of work outside the standard employment relationship contracts and as such are not subject to the many privileges guaranteed by an employment relationship that provides the most complete protection of employee's rights. It is also a motive of many employers to use this form of contract even in situations where the law prohibits them, which provides them with a more dominant position over the employee and a much higher utilization of labor force than when hired under a contract of permanent employment.

What comes from exploitation of such contracts is the exploitation of labor, where the position of workers becomes very similar to that of the original accumulation of capital when the contracts were of a legal-obligation nature. In those days, the workforce was hired, work was the only thing that was paid for, without paid vacations, days off or sick leave. This is precisely why there exist legal restrictions, which strictly determine what can be the subject of such contracts, subsequently limiting them for a shorter period during the year. But in practice, there are ways to extend these contracts indefinitely.

Such contracts represent no issue if used for the jobs they are really intended for and last up to 120 working days per year. The problem is when such contracts are used as a means of labor exploitation. In practice, it is often the case that employees work, not for 120 days, but rather for years under these contracts, at times even longer than a decade. It is clear that this is no acting in accordance with the law, but against the law and according to the law of force and power. In such cases, there exist no parental leave wage entitlement, nor is there any concern about the frequency of physical illness and psychological issues employees are faced with due to chronic fatigue and stress due to ongoing existential fears.

The main problem lies in the fact that the state as an employer takes great advantage of this type of contract in an illegal way, which encourages private employers to do the same. That is why it is not to be expected that a labor inspection will punish such **misuses**. There is an opinion and a conception that employers have found legal loopholes, but we cannot agree with this, because the legislation, although curt in respect of temporary and occasional jobs, is very clear in terms of their definition, and especially of their duration. And that regulation cannot be interpreted in any other way without obvious unlawful conduct that affects not only misdemeanor but also the criminal law.

With an increasing emergence of "labor leasing" agencies to public and private companies, the expression "leasing workers" has already started circulating in the public. True, Radulović warns that the use of the expression in "labor law terms is especially unacceptable and, in lexical terms, very harmful", because, as he explains it, "employees are reduced to things since the leasing contract is a well-known institution of the law of obligations regulating using things "[1]. We agree with this, but it could be that the outraged

public with this metaphor and caricature wishes to draw attention to an unnatural set of circumstances in which workers are treated like things, or, speaking in ancient tongue as "speaking tools".

Regardless of whether "labor leasing" is executed through intermediaries or by directly hiring workers under temporary and occasional employment contracts for jobs that are not indeed temporary or occasional, as well as their unlawful prolongation, such practices undermine employees' labor rights and also threaten their human rights. The state does not show readiness to deal with this practice, yet implements it itself, which is an indicator of systemic abuse and corruption in the area of employment.

2 TEMPORARY AND OCCASIONAL JOBS AS MEANS OF WORK OUTSIDE THE STANDARD EMPLOYMENT RELATIONSHIP

The Concept of Work Outside the standard employment relationship

Legal Employment provides the most complete protection of employee's rights, and in the case of work outside the standard employment relationship those rights are significantly reduced. "Work outside the standard employment relationship", as stated by Kulić and Škorić, "implies the performance of work that does not result from an employment relationship but from a contractual relationship" [2]. As they point out, these are specific contracts that are different from civilly, yet according to the rights and obligations of the parties, they are "similar to those of standard employment relationship" [2].

As work outside the standard employment relationship the Labour Law considers: 1) temporary and occasional jobs; 2) service contract; 3) vocational training contract; i 4) supplementary work.[3]

In this work we shall focus on temporary and occasional employment.

2.1 The Concept of Temporary and Occasional Jobs

Temporary and occasional jobs are typical types of work outside the standard employment relationship. The temporary ones run continuously until they are finished (raspberry harvesting, street sale of ice cream or baked chestnuts), and the occasional ones are done from time to time (anti-doping control, stat-tapping in the studio). What they have in common is that they cannot last more than 120 working days during a calendar year. Only workdays are counted, not hours per day, so one day of work is counted no matter how long the hours worked during that day, with the maximum being 12 hours of work per day.

According to Jovanovic, "temporary and occasional jobs are considered to be jobs that, given the work process, are not performed as permanent and uninterrupted work, but are of shorter duration or are performed from time to time, and no special employment position is envisaged for them" [4]. As the same author puts it, "temporary jobs last a short time but, at certain times, are done continuously until termination (harvesting, harvesting of fruits and vegetables, etc.)" [4], and "casual jobs are also short-lasting but not performed in continuity, rather from time to time (for example, debt recovery jobs)". [4] What they have in common is that they last no more than 120 working days during the calendar year.

We should also take notice of Šunderić and Kovačević's view that it is a "contract concluded to meet the temporary and occasional needs of another person's employers, which is precisely why it is established at time when, by the nature of the matter, there is a need to limit the period of employee's engagement" [5]. The authors emphasize that these rules are applicable to employment in seasonal jobs, "in the agriculture, forestry and fishing sectors" [5].

2.1.1 Legal Provisions Analysis

Article 197 of the Law on Labor states: "An employer may, for the purpose of carrying out activities that are by their definition such that they do not exceed 120 business days in a calendar year, conclude a contract for the performance of temporary and occasional jobs with: 1) an unemployed person; 2) part-time employee - up to full-time; 3) the beneficiary of an old-age pension "[3], and in Article 198 it is also added: 4) "with a person who is a member of a youth or student cooperative in accordance with the regulations on cooperatives "[3]. It is also stated in Article 197 that the contract is concluded in writing.

Firstly, it is clear from the legal definition that temporary and occasional jobs are those "which by their definition are such that they do not last more than 120 business days in a calendar year". Thus, it is clear that these contracts cannot be concluded for jobs that, by their definition, last for more than 120 days in a calendar year. But, in practice, this is exactly what happens.

Further on, it can be seen that this job can be concluded with the unemployed person or with an employee who is not employed full-time (one might say partially unemployed), so for the remaining time he can be

hired under this type of contract until full time. Retirees, as well as youth and students through a cooperative, can also be hired. As we can see, these are all categories of persons who do not have or have no full-time employment.

Based on the provision that such a contract may be concluded "with part-time employees - up to full-time employees", it is clear that the statutory limitation of working hours to 40 hours per week, or 35 hours for minors, also applies to these contracts. By analogy, this restriction must apply to all those hired under these contracts, not just those who work part-time. In practice, however, there is a perception that employees under temporary and occasional contracts may not have a full-time limitation, but that they can work overtime without being paid extra.

2.1.2 Ambiguity in the interpretation of temporary and occasional jobs

A group of authors from the Ministry of Labor, judges of the Supreme Court, and labor inspectors (yet, interestingly enough, not a of law professor in sight) provide explanations and interpretations of temporary and occasional work provisions in the "Guide to the Application of the Law on Labor". Although the explanations are generally uncontested, some still leave grounds for dispute, or bring ambiguities that may lead to misuse.

As it is stated: "These are jobs performed under an work outside the standard employment relationship contract and do not have to be specified in the systematization ordinance, and if they are specified in the systematization ordinance, it may be a temporary replacement of an absent employee or increased workload." [6]

However, Professor of Belgrade Faculty of Law Branko Lubarda disagrees that temporary jobs can relate to systematic jobs. He insists that these are "jobs in the employer's activity but for which no specific job is established", ie. "The act on the job classification does not establish a workplace for the performance of these (temporary) jobs, and if a workplace is provided for, the temporary work contract cannot be concluded" [7]. For occasional jobs, too, he states that no job classification is envisaged. It can be seen here that the opinion of the group of authors of the aforementioned "Guide" is in direct conflict with the opinion given by the professor of labor law.

If the latter is correct, then everything is clear - all those who are employed under temporary and occasional contracts in the employment positions provided for in the systematization ordinance are illegally engaged. But if the former is correct, then there are disputable and unclear situations regarding "replacement of an absent employee" and "increased workload".

Firstly, the replacement of an absent employee cannot be the same if it is a replacement of an absent employee whose duration of absence is specified (maternity and parental leave, unpaid leave, military service), or the replacement of an employee whose duration of absence is not specified (serious illness, injury, rehabilitation...). When the duration of the leave is specified, there is no excuse not to offer the person who replaces the absentee a fixed-term employment contract, full or part-time. Moreover, when e.g. we know that maternity and parental leave last between one to two years, it is impossible, with the legal limit, for an employee to replace the employee on the maternity leave during the entire period. If, after 120 working days, the employee would sign a new such contract, even with the change of description, it would not be possible by law, since the absent employee had a specific job description, and the replacement would be possible if it suited this description. In theory, a new employee could only partially replace the one on the leave throughout the whole period only if the works occasionally, not temporary, provided that someone else partially replaces the absent employee. However, the absent employee's job is not "by its nature" such that it does not last more than 120 working days a year, therefore the only proper way to employ an employee in place of the absent would be for a specified period of time.

In case of replacement of an employee for whom the duration of the leave is not unspecified, it might even be possible to make an exception for the contract on temporary and occasional jobs, provided that it is reasonably expected that the duration of the leave will not exceed 120 working days. However, a fixed-term contract can be concluded here and, if necessary, extended for shorter periods, since the minimum duration of such contract does not exist.

When it comes to increased workload, it is important to know if it is a sudden increase or expected or planned increase in workload. In the event of a sudden increase in workload, the employer has the opportunity to impose overtime, no longer than eight hours a week. Sometimes overtime is not enough, so new workers need to be hired temporarily and they can be hired for a fixed time or on temporary and occasional contracts. But this is not about systematic jobs, because no one is systematizing jobs for a sudden increase in the volume of work, so the contract for temporary and occasional jobs is not in dispute here.

However it is arguable whether jobs that relate to the expected or planned increase in workload are systematized. In this case, the systematization makes sense when it comes to redistributing working hours,

ie. Working more than 40 hours per week during one period of the year, and less than 40 hours per week during the other, as long as the total average is 40 hours per week. Otherwise, it is unclear how jobs that are needed temporarily are subject to systematization for the shorter part of the year. For example, the caterer knows well when the tourist season begins and how long it is supposed to last, and when he will be needing additional staff. He has systematic jobs for those who work all year, and with a "season" he can conclude a fixed-term contract, as well as a temporary and occasional contract, if he is certain that the season does not last more than 120 days. But was that working position systematized for the duration of the season? We believe it was not.

This entire analysis would be completely unnecessary if we were to accept the notion that temporary and occasional jobs could not be those provided for in the job classification order. We agree with the view that they cannot, because the legal norm states that these jobs "are by their nature such that they do not last more than 120 working days within a calendar year."

Another point of contention is the interpretation that "the same person may work for one employer in one calendar year for more than 120 working days, but on various temporary and occasional jobs" [6]. Indeed, the law does not prohibit the same employer from entering into a new contract for temporary and occasional work, if it is a different job, but we consider this an ambiguity of the law, popularly called a "loophole."

And this is exactly where the greatest number of fraudulences and violations of the Labor Law are concealed regarding temporary and occasional jobs. Employers use this interpretation to change (in the fictitious case) the job description of the employee in the new contract so that he can continue to work even after 120 working days. Often, nothing changes in the job itself, but the employee does the exact same job, and such a change in description is false, fictitious, and subject to abuse of authority. But if we take that in some cases it really is a different job, then the question is what is the degree of the difference? To what extent is it different, and to what extent is it exactly similar or similar to that of the previous contract. To what extent does it need to be different at all? And how is that measured? All this remains ambiguous.

The best solution would be to amend the Labor Law by prohibiting employees from working on temporary and occasional jobs longer than 120 business days during the calendar year with the same employer or related persons.

2.1.3 Temporary employment contract agencies

The emergence of agencies that outsource their employees to other employers complicates the problem of pre-existing exploitations. Lubarda states, about temporary work within the trilateral agreement states that "the temporary work contract is concluded by the employee and the company / agency", and the employee accepts the obligation to "perform the work not for his employer but for another company - the company of the beneficiary directly contracted. only with a temporary work company." [7]

The author states that In comparative law, temporary work is a "form of employment", and the conclusion of these contracts is under a special legal regime "to prevent illicit trafficking in labor which is... and criminally sanctioned" [7]. However, the matters are different in our country, so temporary (and occasional) work is a form of work outside the standard employment relationship, and there is no sanctions of such trade in labor.

In practice, these agencies employ workers under various temporary contracts in order to make them available to a third party. It also includes a fixed-term employment contract, and it is exercised only if the agency enters into a fixed-term contract with the company that is the beneficiary of the workforce, so the agency will conclude such contracts with the employees it assigns for that period. In other cases, contracts are out of work, and if these are temporary and occasional contracts, then the work of the agency should be outside the standard employment relationship, since the Labor Law provides only cooperatives as intermediaries in these contracts [3]. However, Lakićević notes that in 2013, Serbia ratified the Convention on Private Employment Agencies, enacted in 1997, "which introduced the basic institutes of this Convention into our legal system," including, as the Convention states, "services consisting of employment workers for the purpose of making themselves available to a third party." [8] Unlike agencies, employment through a cooperative always involves a temporary and occasional employment contract.

3 EMPLOYMENT UNDER TEMPORARY AND OCCASIONAL CONTRACTS

The RS Bureau of Statistics does not provide precise data on the number of employees employed under temporary and occasional contracts, but rather summarily, with other types of work outside the standard employment relationship contracts. Table 1 shows a steady increase in the number of unreported employees by years in Serbia (excluding Kosovo and Metohija). And in the 2018 Labor Force Survey, it was stated that there were 30,700 hired for seasonal (temporary) jobs and 35,500 workers on occasional jobs. [10] That is a total of

66,100 workers, or 90.9% of temporary and occasional jobs in the corpus of work outside the standard employment relationship, in which 72,725 employees were employed that year.⁹

Table 1. Number of out - of - work employees [9]

Year	2015.	2016.	2017.	2018.
Number of of workers at jobs outside the standard employm. relationship	63.691	64.581	68.491	72.725

That is why the survey of the Association of Workers "Radnik", which was conducted from 1.4.2018 to 31.8.2018 is very interesting. The answers to the requests for information of public importance from 37 public services and companies were answered by 20. The results of the survey can be seen in Table 2.

Table 2. Number of employees by type of employment contract in the public sector [11]

Company/institution	Contract		Temporary and occasional	Through an agency or cooperation	Service contract	Number of workers allowed per unspecified period.
	unspecified	specified				
Kovin municipality	95	11	11	-	-	97
Health centre Čuprija	184	1	-	-	-	166
The city of Pančevo	272	24	13	33	5	287
Clinical Center of Vojvodina	2.714	457	-	-	6	3.015
Clinical Center of Serbia	6.530	745	18	44	10	7.305
Belgrade water supply and sewerage	2.609	1	245	-	-	2.227
JKP "Paraćin"	93	9	4	11	-	126
Clinical Center Kragujevac	2.149	372	-	-	12	2.312
New Belgrade Municipality	196	6	11	-	8	273
Petrovac na Mlavi	76	10	14	-	-	77
JKP "Beograd put	1.101	1	-	-	-	1.101
Paraćin municipality	98	5	20	-	-	135
JKP "Gradska Toplana" Niš	212	16	-	1	1	221
Stari grad municipality	97	7	-	56	4	220
GSP Beograd	5.611	138	-	-	-	5.283
Subotica Water Supply and Sewerage	196	3	-	-	-	210
JP "Gradsko stambeno" Beograd	293	-	-	-	2	205
The city of Šabac	192	32	11	-	2	199
JKP "Gradska čistoća" Beograd	2.585	-	-	-	-	1.625
JKP "Javno osvetljenje" Beograd	179	-	-	-	-	155

These results are incomplete, as some public sector employers do not keep records of employees hired through the agency, believing that they are not their employees, but those of agencies to which they have paid for the job. So. For example Subotica PUC Water Supply and Sewerage does not provide information on the number of workers in charge of reading the water meter, because it does not know it, considering that it is a matter of the agency with which the contract was concluded. According to the tender, the water supply company procured a water meter reading service from the agency, and the information on the number of employees hired was not stated in the bid of the bidder (agency), and "it was not even requested in the tender documentation". [12]

The correspondence with the Post of Serbia was also posted on the portal, which requested auxiliary workers on the tender, and accepted the agency's offer of around 3 million dinars for 18,750 hours of work, with a gross hour worth 163 dinars. [12] This means either that the agency operates at a loss, or it failed to pay its employees even a minimum wage of RSD 143 per hour, plus taxes and contributions. EPS workers protested over temporary and occasional contracts, some of which were hired through the agency [13]. Due to the strike, the Republic Geodetic Authority has planned to lay off workers hired under temporary and occasional contracts because they were not entitled to strike. The RGZ union has reported that there are around 500 such workers and another 300 on the World Bank project, and many of them have worked under these contracts for years [14]. There are many examples, but unfortunately there is no detailed evidence.

⁹ Survey data should be taken with some degree of reserve, as surveys do not give absolutely accurate results but forecasts based on the sample, so there may be some discrepancies. But we can safely conclude that majority of unreported engagements are temporary and occasional jobs.

3.1 Prohibition of employment as an excuse for breaking the law

It is a fact that the public sector makes extensive use of the institute of temporary and occasional employment. Some of them did not respond to the survey, and the majority were not questioned, as there are more than 500 public companies in Serbia, to which other innumerable state institutions and services should be added.

The excuse for hiring in these ways is the so-called "ban on permanent employment", ie limiting the number of permanent employees in the public sector, where there can be no more than 10% other employees. "The total number of part-time employees, due to temporarily increased workload, persons hired under a part-time contract, temporary and occasional contracts concluded directly or through a youth or student cooperative and persons hired on other grounds may not exceed 10% of the number of part-time employees in organizational form "[15], writes in the Law on the method of determining the maximum number of employees in the public sector. This legislation was brought under pressure by the IMF to reduce staffing in the public sector, which would guarantee the ability to repay loans.

As we can see in Table 2, many public institutions and companies do not comply with this law, in the sense of: 1) exceeding the number of permanent employees; 2) exceeding the 10% limit of employees on other grounds in relation to the number of permanent employees, and 3) exceeding or concealing the excess number of employees through an intermediary, by interpreting that a "service" of job performance has actually been purchased, although it also counts these workers in the said 10%. The meaning of the said law is not clear if its implementation is arbitrary and if everyone interprets it as they wish.

What is most controversial is that the official interpretation that temporary and occasional employment contracts can be concluded only in the circumstance of "replacement of an absent worker" or "increase in workload" is no longer considered. The contracts are entered as needed, either directly or through the agencies, and are extended upon expiration.

3.2 Shortcomings of temporary and occasional employment contracts in relation to fixed-term employment contracts

In temporary employment, we believe that priority should be given to fixed-term contracts over temporary and occasional contracts, whenever possible. We should note that only work is in both cases temporary, but if the need for an employment position (job) is permanent, then a fixed-term contract should apply, and if it is short-term, or occasional, then a temporary and occasional employment contract should apply.

By comparing these two types of contracts in Table 3, we will also see why a fixed-term contract is dominant in terms of employee rights.

Table 3. Differences between fixed-term contracts and temporary and occasional employment contracts

Fixed - term contract	Temporary and occasional employment contracts
1. Temporary employment	1. Unregistered employment
2. It lasts until the expiration date, and can be extended up to 2 years (with legal exceptions even longer)	2. It lasts until the expiration of the maximum of 120 days in a calendar year
3. Prior to the expiration of the contract, the employer may dismiss the employee solely on the basis of the justified reason (The employee here fears whether the employer will extend the contract after its expiration)	3. Before the expiration of the contract, the employer may dismiss the employee if the need for the job for which the employee is hired ceases, which in practice means - at any time at the will of the employer (Here the employee always fears whether he will lose his job)
4. An employee is entitled to paid annual leave and paid leave due to marriage, childbirth, death in the family, blood donation, etc., paid holiday leave, military training, government calls etc.	4. An employee is not entitled to paid annual leave and paid leave due to marriage, childbirth, death in the family, blood donation, etc., paid holiday leave, military training, government calls etc. He is paid only for his work.

5. Employee is entitled to compensation of earnings in the event of absence due to illness or injury, as well as in the case of termination of work through the fault of the employer.	5. An employee is not entitled to compensation for earnings neither in the event of sick leave or injury, nor for termination of work through the fault of the employer.
6. An employee on a maternity leave cannot be dismissed before the expiration of the contract and accumulated leave, and will receive a salary compensation for the entire duration of the leave (one year to two years)	6. An employee on a maternity leave must lose her job because the absence lasts longer than 120 working days, and she is not entitled to financial compensation during that leave (thus discouraging procreation).
7. An employee is entitled to unionization, a collective agreement and a strike	7. An employee is not entitled to unionization, a collective agreement nor a strike
8. Taxes and contributions are paid for the employee, with the existence of a non-taxable part of the income, which reduces the gross amount of earnings and leaves room for increase in the employee's net earnings	8. Taxes and contributions are paid to the employee in full - there is no non-taxable part, which burdens the gross amount of earnings (there is a certain reduction only for persons in education up to 26 years of age and employed through a cooperative, [16])
9. The employer has an obligation to reimburse the employee for the cost of transportation to and from work	9. The employer has no obligation to reimburse the employee for the cost of transportation to and from work

3.2.1 Misapplication of Temporary and Occasional Contracts

In the case of fixed – term employment, an employee according to the law must obtain a permanent employment contract if, after two years, he or she continues to work in the same workplace. But by interpreting the legal norms, a decision was brought that after two years he could be transferred to another job with a change in job description, and thus begins a new two-year term for a new fixed-term contract. This transition to another job is often fictitious, and the employee actually does the exact same job.

An identical "job description change" method is also used in temporary and occasional employment contracts. A fictitious change in job description means that the employee most often does the same job, with the same work tasks, sits in the same chair, at the same desk, uses the same means of work, etc.... But instead of 120 working days in a calendar year, the employee works continuously for years under these contracts. sometimes even longer than a decade. Employees consent to this because it is their only way of retaining any kind of work. As a rule, this contract is accompanied by lower wages, and workers remain without the right to paid holidays, paid sick leave due to illness or injury, the right to a collective agreement and strike, the right to paid maternity and childcare leave, etc. From the latter, we can see that the state's policy of combating the population decline is largely amortized by the potential mothers struggle for the survival.

In practice, there is a belief that employees under temporary and occasional contracts are not entitled to special remuneration in the case of overtime, and they are often forced and unpaid for such work. This cannot be a correct understanding, because, as we have said, it can be seen from the Labor Law that, on this basis of work engagement, workers can only be burdened to full time. Therefore, they must also be subject to the rules of limited working time (40 hours per week) and thus the rules of overtime.

Since the employee is not entitled to paid holiday leave and other paid leave, including those for health reasons, the employer has an interest in keeping him under such a contract for as long as possible, saving at least one salary a year that he would otherwise have paid when the employee is not working. Finally, employees under these contracts are more likely to be exposed to mobbing because any objection may result in dismissal.

Therefore, in the unlawful application of temporary and occasional employment contracts, there are different degrees of violation of the Labor Law, namely: 1) application in jobs that do not belong to temporary and occasional work; 2) unlawful extension of the contract after the expiration of 120 working days in a calendar year; 3) unpaid overtime; 4) mobbing that is endured due to the anxiety of being dismissed and such employment...

4 CONCLUSIONS

Temporary and occasional employment can be useful taking that it is applied in a statutory manner. But if it is applied in an illicit manner, as is the case in practice, then it demonstrates severely inhumane characteristics, with grave human rights violations and labor exploitation modeled after the 18th and 19th centuries. Physical illness and psychological consequences that such practice can have on employees due to chronic fatigue and unexpressed or expressed discontent should be determined by medical and psychology experts. If there is nothing to stand in the way of this practice, it will have unfathomable consequences, threatening to culminate in social unrest and protests that can affect the instability of the society.

We believe that it is necessary to end the practice of a high degree of tolerance towards misapplication of temporary and occasional employment contracts. They should, for the most part, be replaced by fixed-term employment contracts, and these previous ones should only be applied when absolutely justified. Any application longer than 120 working days within a calendar year by one employer should be subject to mandatory inspection of labor inspection, which should be specifically prescribed, with increased responsibility of the one who carried out the control, or possibly avoided its application. An alternative to this would be a complete ban of employment under these contracts for more than 120 working days with the same employer.

Supreme Court of Cassation of the Republic of Serbia, in Verdict no. Rev2 347/2015 of 10.06.2015. was of the opinion that auxiliary jobs are a type of work outside the standard employment relationship that "cannot grow into an employment relationship, even in a situation where it lasts longer than foreseen by law" [17]. But if in practice we are talking about permanent jobs that are not systematized but are wrongly classified as auxiliary, ie temporary or occasional, in order to enable the work outside the standard employment relationship of workers, instead of standard employment relationship, we believe that the employer should be held responsible and the employee should be recognized a fixed-term employment contract from the first day of such contract. Any unlawful extension of temporary and occasional employment contracts must be classified as punishable.

However, it is necessary before all else to raise awareness and provide information to both employers and employees about their rights and obligations under these employment contracts, as well as about the sanctions for non-compliance with the relevant regulations. In addition to misdemeanor sanctions, more serious misapplications also require criminal penalties. Employees who are employed, contrary to the law, under temporary and occasional contracts should be approved fixed-term employments contracts, and in the event that their employment under those circumstances has lasted longer than two years, they should necessarily be approved permanent employment contract.

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WHO BEARS THE BURDEN OF INCREASING MEDICAL COSTS? - ANALYSIS OF SERBIA AND NEIGHBORING EU COUNTRIES

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ABSTRACT

In the paper "Who Bears the Burden of Increasing Medical Costs?" an increase of gross domestic product (at purchasing power parity) per capita is compared to the increase in total health expenses (THE). The total health expenses are divided into costs which are covered by the health insurance and those that are not covered by health insurance, but are covered by citizens "out of pocket" (OOP). The trend of the increase in these health expenses and GDP per capita is analyzed in the period from 2001 to 2015 in the countries and confirmed trend of countries of the Western Balkans that passed through transition period that this increase is covered mainly by citizens. The significance of this paper is to stress shifting health expenses from state to citizens in an analyzed countries, that is in particular connected with employment and entrepreneurship.

Keywords: GDP, health expenses, health insurance, health services, budget, private health insurance, employment, entrepreneurship

1 INTRODUCTION

Good health is one of the basic conditions for a progressive and wealthy society. Health care policy and financing of the health sector are increasingly in the focus of economics because population health status can significantly affect the rate of economic growth [1, 2]. New expensive technologies and therapies, population ageing and increased expectation of people considering health, generate rising costs of health services. On the other side, limited financial resources impose the need for constant reviewing of health sector expenditures and initiate changes that should make it more efficient. Sustainable development concept requires, with respect to the principles of market economy, the need to manage risks, especially in sectors often susceptible to unpredictable situations on which there can be no greater influence [33]. The ratio between population over 65 and the working age population was approximately 1 to 4 in 2000 in OECD countries, and it is expected to be almost 1 to 2 in 2050 because of the increase in average life expectancy and falling birth rate [3]. Thus, it could be expected that accumulated health care funds would not be adequate to support the health care systems, and would require additional funds from the states budgets or private imbursements in the form of supplementary insurance or out of pocket expenditures.

The health insurance systems in Europe are founded with the goal to assist health service users and prevent them from excessive private expenditures, which in case of serious illness, may have devastating financial effects on individuals and households. The problems of financing health systems are particularly pronounced in the countries that had to carry out significant reforms in this area, within transition from a communist to a capitalist social system. Furthermore, Eastern and Central Europe countries that have joined the European Union had to substantially harmonize their regulations in health care to those in the European Union (EU). This process led to the transition from budget financing to at, least partially, financing health care through the obligatory health insurance. In such circumstances, a portion of the health care cost is transferred to the users. Depending on the policy and state capacity to withstand the growth of health care costs, private expenditures could grow at a higher, lower or about the same rate as the overall health care expenditures.

This paper will analyze and discuss private and public spending on health care in Serbia, the candidate country which at the end of 2015 opened the first chapters in the negotiations with the EU, and compare them with spending in the neighboring countries that have recently joined the EU. Due to their geographical proximity, similar number of inhabitants, partially common past and transitional period experiences, a comparison of Serbia with neighboring EU members, may be useful in providing an insight into the reform measures which could improve health care. As these countries suffered from more or less underfunding in

the health sector, the basic assumption is that in the case of good macroeconomic policies, investment in health in the form of total health expenditures should, at least, follow the growth of real gross national product per capita, and the growth of private health expenditures, and, in particular, out of pocket expenditures should not be higher than the growth public health expenditures.

2 THEORETICAL FRAMEWORK AND THEORETICAL BACKGROUND

Health sector changes in surveyed countries are analyzed in the context of public and private spending, but also taking into account political and economic events, given that the health system is influenced by many factors, primarily macroeconomic and political.

The maintenance of a financially sustainable health system represents a growing burden for the countries of Southeastern Europe, which priorities for funding are aimed at developing economic activities. Among the countries surveyed in this study, Bulgaria, Hungary and Romania belonged to the Eastern bloc, with the communist parties' political systems in which the health care was financed from the state budgets. Providers were government-owned and all services were free. This, so called Semashko model, was characterized by a relatively small investment in the health system, with low salaries for health workers who were prone to bribery and not motivated to improve the scope and quality of services. To receive better treatment, patient should belong to the group of privileged people or to pay to the medical staff, commonly in the form of unofficial extra payment. Shifting to a Bismarckian model of financing by obligatory health insurance in these countries was a part of change of political system, based on the ideas of independence of health funds, and even competition between them. However, majority of ex-communist countries, including surveyed, opted for a single public health insurance fund. Given that the funds collected from insurance are not sufficient for the sustainability of health systems, public expenditure on health is financed through a combination with transfers from the state budgets.

Many aspects of European Union legislation have implications on the health sector. Countries examined above which joined EU faced significant macro and microeconomic reforms. Even if not directly required in the criteria for EU accession, all candidate countries have to implement substantial changes in health system funding and management patterns and this process is connected with the increase of investment in health sector, which is to a great deal financed by international funds. Budgetary constraints and other restrictive (macro) measures represented countries' attempts to face the consequences of continued growth of health costs. Changes at microeconomic level are more about efficiency of resource allocation, for example decreasing the number of hospital beds, changes in the list of subsidized drugs, limiting scope of covered services (dental and ophthalmic services) and encouragement of the development of the private health insurance [6]. These countries also have decided to switch the burden of financing health care to higher or lower extent on private funding in the form of official fees or in the form of reduced availability of public system which could non-respond to the health care consumers. Thus, citizens are forced to buy health services from the private providers, mostly in the form of out of pocket payments.

Croatia and Serbia had somewhat different starting point than previously mentioned ex- Eastern bloc countries. Being parts of former Yugoslavia, collection of revenues for health in these countries was from compulsory insurance contributions, like in Bismarckian models. Additional funds for the purchase of capital equipment and supplies were provided by central or local authorities. This model resulted in relatively higher investment in health sector comparing with other observed countries [15]. However, since the brake of Yugoslavia in 1991, with war which led to Croatian independence in 1995, and Serbian further involvement in series of ethnic conflicts until 2000, the fate of these two countries diverges. Rapid development resulted in Croatian joining the EU in 2013, and in Serbia there has been a certain lag in development.

3 MATERIAL AND METHODS

Data used for the assessment of health care expenses in Bulgaria, Croatia, Hungary, Romania and Serbia during the period of 15 years (2001-2015) are retrieved from the World Bank [4] and World Health Organization [5]. They include: real gross domestic product (GDP) and total health care expenditure (THE) measured by purchasing power parity per capita (PPP); a percentage of GDP spent for health; share of public (PBE) and private health expenses (PRE). Within a private consumption, the growth of out of pocket expenditures (OOPE) is especially considered. Health expenses in these countries are compared with the expenses in the more developed European countries belonging to the group of EU members which adopted Euro as their official currency, Eurozone (Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain).

Data reported by the local authorities in the monitored countries were not taken into consideration in this analysis, though they may to some extent differ from those available from the World Bank Database and WHO.

Data used in this paper are last updated: 12/18/2011, after the methodology of measuring health expenses has changed. Now those data can not be found on web page of the world bank. Public does not have an insight in size and origin of those expenses anymore.

4 RESULTS

The total health sector expenditures expressed in PPP during the observed 15-year period in all countries followed the growth of GDP (Picture 1). The maximal growth of GDP was in Romania, 1,92 fold, with increase of THE of 2,58 fold. Among the surveyed countries, Hungary, which is the oldest EU member (since 2004), has the highest GDP and the lowest ratio between increase in THE and increase of GDP. On the second place is Croatia, which is the youngest EU member (since 2013). Hungary and Croatia invested in 2015 in health 1906.84 and 1683.51 PPP \$ per capita, respectively. Health expenses reached 1549.90 PPP \$ per capita in Bulgaria (EU member since 2007) in 2015, while Romania invested less (EU member since 2007) and Serbia (candidate country) invested a little bit more than 1300 PPP \$ (1262.30 and 1429.72 PPP \$, respectively). The share of GDP designed for health increased in all countries, but the countries of Eurozone had the lowest increase (Table 1).

Calculation of the increase ratio from the beginning and the end of the observational period revealed that THE expenses growth was slightly higher than the increase of GDP in all observed counties, but that ratio is the lowest in Hungary and Croatia (Table 1, Increase THE/Increase GDP).

Table 1. Expenses for health in the period 2001-2015.

State	GDP per capita (PPP \$)		Health expenses				Increase 2001-2015		Increase THE/ Increase GDP 2001-2015
			THE per capita (PPP \$)		% GDP		GDP	THE	
	Year	Year	Year	Year	Year	Year			
	2001	2015	2001	2015	2001	2015			
Bulgaria	9526.4	17794.5	688.76	1549.90	7.23	8.71	1.87	2.25	1.2
Croatia	16234.7	21528.3	1162.40	1683.51	7.16	7.82	1.33	1.45	1.09
Hungary	18683.9	25664.1	1328.43	1906.84	7.11	7.43	1.37	1.44	1.05
Romania	11268	21614.7	491.28	1262.30	4.36	5.84	1.92	2.57	1.34
Serbia	8397.9	13720.9	578.62	1429.72	6.89	10.42	1.63	2.47	1.51
Eurozone	34705.3	38346.7	3126.95	4018.73	9.01	10.48	1.10	1.29	1.17

Share of public vs. private expenses for health at the beginning and the end of the observational period is shown on Picture 2.

According The World Bank data, share of private expenses in OPE for health stayed at the same level in Eurozone, it is 60% and all the countries except from Croatia are far from that percentage which we could take as benchmark. Private expenses are almost completely in the form of out of pocket payments except for Croatia and Hungary, but in those countries that ratio has not changed significantly in the reporting period (Table 2).

Table 2. Out of pocket expenses for health (2001-2015)

	Out of Pocket Expenses						Increase OPE/ Increase GDP 2001-2015
	% of Private Expenses		% of Total Expenses		% of GDP		
	Year		Year		Year		
	2001	2015	2001	2015	2001	2015	
Bulgaria	99.94	96.59	43.71	47.67	3.01	3.73	2.12
Croatia	86.05	61.72	14.39	15.16	1.03	0.87	0.58
Hungary	89.27	77.84	28.81	29.04	1.95	1.91	0.17
Romania	100.00	95.97	18.94	21.28	2.21	2.42	1.22
Serbia	85.58	96.36	28.48	40.59	0.70	1.05	7.43
Eurozone	60.15	61.23	14.52	15.01	1.37	2.41	0.45

In the reporting period, OOPE growth was higher than the growth of GDP in all the countries surveyed. In countries of Eurozone the difference between the increase in OOPE and GDP growth was less pronounced than in the surveyed countries. Looking at the EU level, proportional representation of PRE in total THE has not significantly changed (slightly reduced or slightly growing). The largest proportional increase regarding out of pocket expenses is observed in Romania and Serbia.

5 DISCUSSION

Among the surveyed countries, except for Eurozone average, the highest health expenditure per capita is recorded in Hungary, but it is still considerably below the average for the countries in Eurozone. Characteristic of the Hungarian health system is dominance of PBE over PRE, but it is decreasing, from 69% of total health spending in 2001 to 63,5% in 2015. Since Hungary joined the EU in 2004, there has been a sudden leap in the hitherto gradual rise in the share of PRE in THE. Hungarian authors point out that a considerable share of OOPE is attributable to informal payments, which are a well-known phenomenon within the Hungarian health care system and that health care consumers even perceive informal payments as "inevitable due to the low funding of the health care system [7-9]. According to the World Bank, the share of OOPE in private payments decreased from 89% at the beginning of the reporting period to 77% in 2015, so it is possible that voluntary health insurance is becoming one of the options for providing necessary services without informal payment.

Although the increase of expenditures for health in PPP \$ per capita was the highest in Romania (2.57), this country stands out the least resources for health among the surveyed EU members. The share of PBE in THE is relatively high, around 80% since 2005. Despite the significant increase of investments, health spending was, in general, small, so the Romanian health care system suffered from severe underfunding. Romanian authors [10] state that public expenses grew slightly more than private, though data on private expenditure are incomplete, especially on the direct payments charged by private providers and under-the-table payments in the public sector. The lack of reliable data is probably the main reason for the World Bank reporting of the identical share of public vs. private financing during 15-year period. Since the country joined EU, Romanian health system was subjected to some organizational and functional changes, but these have not resulted in improved health status of the population. On the contrary, there is an increasing mortality as well as growing number of deaths from preventable causes [11]. In Romania, there is dissatisfaction with the reforms in the health sector because the lack of investments did not allow the improvement of the quality of the provided services. The situation is aggravated by the emigration of medical staff in the EU countries which offer much better work conditions and salaries [12].

Health financing in Bulgaria is nowadays a kind of a public-private mix. There are official fees for almost every health service financed by public health insurance fund, including visits to physicians, necessary diagnostic procedures and hospital treatment. The share of PBE decreased in reporting period. According World Bank data, in 2001 private expenditure for health as a share of total health expenditure was 41,60% and increased to 45,86 in 2015.

Bulgarian authors report on even more unfavorable data in terms of burdens on citizens. Private expenditure accounted for 42, 2% of THE in 2014, and though there is a possibility for private health insurance to cover the cost of services included in the basic benefit package guaranteed by public insurance, less than 3% of the population opted to purchase this kind of insurance. Thus, almost all expenditures for health are OOP (96.59%), and except for official, there are also substantial informal payments (47.1% of OOP in 2014) [13]. The aim of introducing fees in Bulgarian health system was to allow for the rational health care utilization. However, desirable result was not achieved. Instead, studies indicate that insufficient public financing and regulatory barriers undermined the principles of equity and solidarity enabling the rapid increase in private sector which was not adequately incorporated in the health system and thus made health care for the Bulgarian citizens even more expensive [14]. Among the surveyed countries, Croatia is the only country with the higher increase of GDP than THE. The proportion of GDP spent on health has grown till 2000s and since then total health spending is stagnant at the level of approximately 7.8% of GDP. Though Croatian health system analysts complained that the implemented reforms shifted health expenditure from public to private sources [16] Croatia stands out from other surveyed countries also by the fact that it has kept high share of public expenditure (over 80 % of THE). According the World Bank data, private financing has increased slightly in observational period, to almost 18% of THE in 2013, from 16.7% in 1999. OOPE accounted for all private health spending because voluntary health insurance was not available until the early 2000s, and since then decreased to about 60%. Croatian health system underwent a substantial health reforms. The majority of health care providers remained under public ownership, but primary care was completely privatized. Because of the imbalance between revenues and expenditures and financial unsustainability of the public health system, it was

necessary to limit benefits and to set up co-payments, but also to make rationalization and reorganization of health care delivery [17]. Further change was introduction of concessions, a model of public–private partnership for the provision of primary health care services. Croatia also reformed the way of payment to providers by implementing a modified version of the Australian Refined-DRG system [18].

Compared to other countries, Serbia allocates the highest percentage of its GDP on health (10.6%, similar to the average in EU), but if denominated in PPP \$, it is less than its neighbors, and far less than EU countries. THE in Serbia increased sharply since change of political regime in 2000 until the financial crisis in 2008. Reduction in economic activity with a high rate of unemployment and low average salary, as well as the evasion of contributions for health insurance, severe underfunding of public health system [19]. On the other side, public spending on pharmaceuticals doubled, and the pharmaceutical market uncontrollably increased, which led to its financial unsustainability due to public debt worsened by global recession and causing consequential shortage of drugs [20]. In the research period, Serbia recorded significant growth in OOPe, mainly due to shifting of service to private providers not incorporated in the health insurance system due to limited access to modern technologies in the public institutions and the lack of medical supplies in them. Serbia has implemented certain measures of rationalization in public health system, including partially centralized procurement of drugs, but major reforms are postponed for “better times”.

Assessment of the burden of citizens by health costs showed that solidary funding through health insurance (obligatory and voluntary) is much more evident in the richer countries of the EU, than in Serbia and the neighboring countries surveyed. Among the observed countries, the winner is Croatia, which introduced significant reforms of health care system without disproportionate increase in private costs. The population in Serbia, Bulgaria, and Hungary is burdened by private expenditures which points to inefficient allocation of resources, given that the huge burden of financing health services is transferred to patients. Informal payment (also known as “under-the-table” or “envelope” payments of health services) is a common feature for all the observed countries [21] and only the extent of this “gray zone economy” slightly differs among them. Implementation of official user fees for health care services did not lead to cessation of informal payment, but aggravated financial burden on patients who had to pay twice [22]. Except for this, patients are sometimes forced to pay quasi-formal payments (official charges set by the facility but not regulated by the government [23]). If we take into account the fact that not all users are equally burdened by private costs, but those who are sick are usually forced to pay out of pocket for services and medicines in the legal framework or through corruption, then the health care represents a huge burden on individuals and households and is quite literally inaccessible to the poorest.

6 CONCLUSION

Results from this survey may be supported by the results published by the European Health Consumer Index (EHCI) which rank countries healthcare primarily from a consumer point of view, considering availability, waiting lists, application of certain types of therapy, respect of patients’ rights and others, but also taking into account outcomes and financing. ECHI roughly divided countries healthcare into three groups of red, yellow and green colour. Bulgaria and Romania are among the countries that, in the category of health outcomes (eg, mortality from heart attack and cancer, the rate of abortion and depression, avoidable loss of years of life), received almost all the negative grades and in total are among the worst ranked. In 2012 and 2013 Serbia, Bulgaria and Romania were on the last 3 places among ranked European countries [24, 25]. In EHCI published in 2016 Serbia was “climber of the year”. The major part of the climb is the effect on Waiting Times by licensing and implementing the system for direct specialist care booking, plus e-Prescriptions, named MojDoktor (www.mojdoktor.gov.rs). Serbia took 20th place and rank among other middle, “Yellow” marked countries, but in order to obtain that result, Serbian healthcare officials are advised to work on implementation of MojDoktor in all Serbian hospitals, and on improvement of clinical results. Romania and Bulgaria stayed in the “Red Zone”. Romania and Bulgaria are rated as “suffering from an antiquated healthcare structure”, structure with a high and costly ratio of in-patient care over out-patient care.

Hungary (28th place of 34 ranked countries in 2012 and 29th of 25 in 2013) is also very poorly rated, despite the highest investment for health. Hungary remained on the 29th place in 2017. It is criticized by EHCI for being slow in fundamental reforms. Croatia, which has successfully implemented the reforms and whose citizens are not burdened by excessive private expenditures, increased ranking from 22nd in 2009 to 19th in 2013. Rank of Croatia dropped in 2017 but is still very high thanks to advanced and costly procedures provided by health insurance. In the 2017 data, Croatia suffers significant drops in the scores of Accessibility and Outcomes, the two sub-disciplines carrying the highest weight in the ranking procedure [29-31].

The aim of reforms in the health sector in all monitored countries is the same, to ensure the most comprehensive coverage and the best possible healthcare of the population within limitation of sustainability of health sector financing. Reforms should be monitored by “measurement strategies, if done right within cultural change and trusting environments could be a deciding factor for better understanding of quality of care and its impact on Universal Health Care” [32].

A common problem in these countries is the underfunding. When it comes to Serbia, it is obvious that there is political will to invest in health care, which is reflected in the relatively high percentage of allocations from GDP, as well as to create a legal framework that would enable better quality of service and respect for the rights of patients. However, there is the lack of will to reform the system of allocating existing resources and to change the way of reimbursement to providers and thus to make them more efficient. In this situation, the performance of the public health system is still poor, and increased costs are shifted to patients. Serbia, like Croatia, has inherited a relatively high quality health care system compared to the other surveyed countries, so the experience of Croatia could be very useful for tracing the directions of reform. At the same time, policy-makers and planners in mentioned countries should have a clear vision and a coherent program tailored to the needs and objective resources.

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