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Economic and Social Development

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"Corporate social responsibility in the context of the development of entrepreneurship and small businesses"

Book of Proceedings

Editors:
Marin Milkovic, Khalid Hammes, Olga Bakhtina

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CONTENTS

ANALYSIS OF THE CROATIAN TEXTILE INDUSTRY BASED ON EFFICIENCY MEASUREMENTS USING RELATIVE INDICATORS

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ABSTRACT

Textile industry as a branch of manufacturing industry is of great significance to the economy of Republic of Croatia. Textile and clothing are essential products in the representative basket of goods for every household. Increased consumption incites increased production, therewith causing growth in the industry efficiency. Objective of this paper is to depict, analyze and compare trends in certain macroeconomic indicators relevant to the Republic of Croatia's textile and clothing industry for the time period from 2013 to 2018, in order to forecast the impact of said indicators on the industry's future efficiency. Measurement of textile and clothing industry's business efficiency has been conducted for the aforementioned time period via calculations of the following relative business efficiency indicators: productivity, profitability and cost effectiveness. Units of measurement intended to track an increase in value of relative indicators are herewith suggested by the authors of this research paper. Secondary data has been used to calculate values of economic performance indicators. This research also utilizes scientific methods such as analysis, synthesis, induction, deduction and the mathematical method. The obtained results confirm that the Croatian textile and clothing industry exhibits a tendency towards growth, which is visible due to the indicator calculations. Growth is achieved due to an increase in productivity resulting from technological advancement, new products and new markets; i.e. from a combination of measures, factors and elements that might cause an increase in efficiency, as well as an improved financial and macroeconomic position on the market.

Keywords: *Croatian textile and clothing industry, Economic production indicator, Productivity, Profitability, Efficiency*

1. INTRODUCTION

Textile industry is one of the oldest and most traditional industrial branches. It includes production of textile and clothing made of natural or artificial materials. Along with the development of Croatia, the textile industry has also been developing as a branch of the manufacturing industry, but over the last few years, most of the economic indicators of this industry have been decreasing (Statistical Yearbook, 2017). Negative trends arose from the inequality of supply and demand for textile products on the market. Problems also arose in the area of cost management, technological development of textile industry, insufficient monitoring of markets, customers and competitors. Textile industry can still be counted among the labor-intensive industries because of the production's dependency on the employee count. According to (Borozan, Đ., Dragišić, Lj., 2007) the high levels of productivity, business flexibility and innovation, as well as discoveries in new markets and introduction of domestic brands with added value and business mergers are some of the core elements of sustainment and development in the value of the domestic textile industry. The global world crisis has affected the development of the textile industry in Croatia.

The value of total revenue of the textile industry in 2017 in Croatia did not come close to the value of total revenue of the industry in 2001 (Croatian Chamber of Economy, Economic Movements 2018). Croatian textile and clothing industry in 2017 employed about 16 959 employees, which is only 1.2% of total employment in Croatia (Croatian Chamber of Economy, Economic Movements 2018). In 2017 there were about 795 companies (0,7% of the total count of companies) that produced textile and clothing; said industries earning an annual revenue of 754 854 000 Euro (2016) (Croatian Chamber of Economy, Economic Movements 2018). If we examine the European Union data for 2017, about 6% of people were employed in the textile and clothing industry; which comes to a total of approximately 1,7 million employees and 178 000 companies. The textile industry generated an annual turnover of about 171 billion Euro. The most important exporters in the European Union's textile industry are Italy, France, Germany and Spain (Croatian Chamber of Economy, Economic Movements 2019). The textile industry of Croatia is undergoing a process of intensive change and structural adaptation to the market's needs (Marxs, K.,1933). Privatization process, which took off sometime post the 90s, has also affected the Croatian textile industry in an extremely negative manner. A large number of new owners have altered company management systems; divisions in ownership structure thus complicating and diminishing the process of foreign capital acquisition, which is vital to future investments and further growth. Employee count in the textile industry has been cut in half during the time period from 1990 to 1999, causing major after – effects pertaining to the preset – day trends (Babić, M., 2003). To this day, Croatian textile companies have been affected by various problems related to manpower shortage. Main objective of this paper is to depict and analyze various financial and efficiency indicators for the textile and clothing industry for the time period from 2013 to 2018 as based on the thus far conducted research, as well as to suggest economic steps and measures that might incite growth of said indicators. Relative efficiency indicators utilized in this paper analysis are as follows: development productivity, profitability and cost effectiveness. Relative indicator calculations and analysis are conducted in order to view the position of these markers within the trends for the entire industry and the manufacturing industry. By suggesting economic measures that might increase values of observed indicators, we wish to incite economic growth and an increase in efficiency through altered values of certain variables and quantitative analysis. The relative efficiency indicators for the textile and clothing industry reflect business efficiency, and their values depend on various inputs, factors or variables, which, when recognized and utilized by the industries, lead to an improved efficiency. An obvious starting point to this paper is the basic efficiency – increasing accounting category: revenue. The main hypothesis of this research is set as follows: "Revenue represents a fundamental variable, characterized by its direct impact on the value of all of the textile and clothing industry's efficiency indicators." This paper therefore examines exactly which indicators or factors lead up to the industry's revenue growth; thus also increasing productivity and efficiency. By applying the inductive – deductive method, we have arrived at the existent knowledge and were able to reach conclusions pertaining to the suggested measures. A mathematical method was used to calculate values of relative indicators for cost effectiveness, productivity and profitability; the obtained results having a great importance with regards to the suggested measures. This research paper is structured as follows: the next section provides a review of related studies, followed by a section on the macroeconomic indicators depicting the position of textile and clothing industry within the overall industry in Republic of Croatia, followed by a section demonstrating the relative indicators and measures aimed to increase the textile and clothing industry's future efficiency. The paper is capped off by a conclusion.

2. REVIEW OF RELATED STUDIES

Previous empirical research has utilized various methods designed to measure efficiency of the textile industry. Macroeconomic analysis and measurements, coupled with suggestions pertaining to the measures designed to improve efficiency indicators for the textile industry represent a topic interesting to many researchers. Some researchers (Magdalena Kapelko, Josep Rialp – Criado, 2007) have used the DEA linear programming method in order to measure the efficiency of textile industry in Spain and Poland for the time period from 1998 to 2001. Relevant financial indicators, labor productivity as well as revenue – employee count ratio were used to conduct said research. The obtained results have shown that both countries exhibit approximately 86 % efficiency. Furthermore, author Butarac (2007) arrives at the conclusion that export represents a comparative advantage of the manufacturing industry, and that the decrease in export results from poor competitiveness of the textile and clothing industry. The author further notes that the future of textile industry lies not only in production, but also in market management and creation of new brands. Magdalena Kapelko and Alfons Oude Lansink (2015) analyzed the effects of technological advancement on the textile and clothing industry's efficiency and productivity growth, using Malmguist's approach for identification of technological change contribution. This analysis included numerous countries; the research having been conducted for the time period from 1995 to 2005. Results have shown a small increase in productivity due to technology change. The effect exists and varies from economy to economy. Mohammad Jaforullah (2010) arrives at a similar conclusion by measuring the effects of technology and work force on the efficiency of textile industry in Bangladesh by utilizing the Cobb - Douglas function. The results indicate that effects of technology on the efficiency of textile industry only measure 41 %, whereas the remaining 59% result from relations and structure of the work force. Existing research has concluded that companies (Ivan Damir Anić, Edo Rajh, Ivan Teodorović, 2011) active in the textile and clothing industry in Croatia apply two basic business strategies. First strategy is a low cost – low revenue strategy due to loan businesses that constitute a larger portion of today's textile industry's revenue. The second basic strategy is a value strategy. The value strategy's aim is to develop product brands and base revenue increase on said product brands. This strategy is relevant to an increase of comparative advantages. Application of these strategies is also visible in the subject – matter research. Numerous researches on efficiency increase in other industry branches may represent a positive example and might be transferred to the textile and clothing industry. In her research, author Ivanka Avelini Holjevac (2000) describes effects of labor productivity and efficiency through an analysis of factors that serve to increase productivity; such as salaries, bonuses, awards, motivators, educations and trainings, planning and organization, but also work and moral standards. Although these factors aren't directly included in this analysis, their influence on labor productivity is indisputable. Work and moral standards are also discussed in this paper. The aforementioned researchers address various factors and investments in their work; these factors and investments being said to cause improved business results and therefore improved efficiency in the textile and clothing industry. Technological advancement, new goods produced for the domestic market, export, subsidies and benefits are highly accentuated; the combination of said factors generating an increase in productivity, thus causing an increase in revenue. Mahdi H. Al-Salman (2008) has looked into the effects of technology and technological advancements on the volume of export in the food, textile and chemical industry, finding that a technological advancement - driven increase in domestic productivity causes a trade surplus in the observed sectors. Trade agreements are also highly accentuated due to their importance pertaining to business expansion, i.e. market liberalization. All of the above may be observed as an extremely important factor pertaining to the Croatian textile industry's growth, international expansion and of course, advancements in management and technology (M. R. Scheffer, 2012).

Material related technology also plays a highly important role, as the combination of high quality textile and clothing leads toward achievement of competitive advancement. Productivity increase based on the Total Factor Productivity is induced exclusively due to technical and technological advancements in production (R.N.Joshi, S.P.Singh, 2020). Manpower represents the heart and soul of the textile industry. Existing problems related to manpower shortage may be solved by machine upgrade systems. P.V.G.N.H.Akhil and Y.P.Deepthi (2019) use an increase in efficiency and revenue due to production line automation as an example. Efficient work organization is equally as important as technology. This so called time effect provides the foundation for productivity improvement. For example, observation of 350 sewing machines has yielded the following result: it has been determined that productivity has been increased by 36% due to a good schedule of daily operations and activities (Ateeq ur Rehman, Muhammad Babar Ramzan, Muhammad Shafiq, 2019). Observation and study of time is an extremely important factor pertaining to the textile industry's productivity increase due to material flow optimization. And to cap that off, one needs to mention the 4.0. industry; a widely discussed topic in the present day and age. How does one achieve it? Utilization of artificial intelligence technology has caused increased efficiency in the furniture industry, all due to increased product quality and more efficient labor monitoring (Guang Jin Long, Bai Hua Lin, Hong Xing Cai, 2020). This might serve as a good example to the textile industry. This research is to detect the existing values of the textile and clothing industry's efficiency indicators, as well as to use the combination of factors and production improvements examined and addressed by the aforementioned authors in order to accentuate the potential future growth.

3. ECONOMIC POZITION OF CROATIAN INDUDTRY AND THE SECTOR OF TEXTILE AND CLOTHING INDUSTRY

The World Economic Crisis in 2008 has significantly affected the decline in the real sector for each economy. Each country's economic growth is based on industrial production; its value influencing the value of all macroeconomic indicators. Although with the recovery of the world and the European economy, the industry of Croatia noted a slight increase, the latest economic indicators, however, noted a decline in total industrial production for 2017, as compared to the previous trends (Croatian Chamber of Economy, Economic Movements 2018). The position of the Croatian industry in the global value chain prevails on low added value activities. The problem of low levels of production exists in part because of weak domestic demand. The personal consumption in 2017 was 7% lower than in 2008 (Croatian Chamber of Economy, Economic Movements 2018). However, foreign demand through export value in 2017 has increased by 47.7% in comparison to 2008, which is a good indicator of growth of Croatian industries and their share in the international market. With the growth of the share of the total industry in the international market, it also increased the share of the sector of textile and clothing industry. The industry in Croatia realizes about 20% of GDP and employs about 25% people of the total employment in Croatia. According to data from 2017, 83% of the total industry belongs to the manufacturing industry. The share of the manufacturing industry in GDP structure is about 14%, while the textile and clothing industry participate in the GDP structure with about 0.8%. According to Statistical classification of economic activities in the European Community, and national classification of activities from 2007 in Croatia, there is an exact division of activities that fall into the textile and clothing industry. According to the above classification, the manufacturing industry belongs to area C, and within that area section C 13 covers textile production, while section C 14 producing clothing. Within classes C13 and C14 there is further division into groups and classes, but for the purposes of this paper, we will retain to the basic division by class. Although with the country development, industrial production slowly loses its significance and the larger segment in the market pertains to the service sector (Eurotex: key data, report 2016), especially intellectual services.

However, industrial production in Croatia is still very important for the national economy and economic growth. In developing countries like Croatia, industrial production is very labor intensive, while in developed countries they focus on automation and digitalization in the industrial production. In order to explain the current position and trends in the textile and clothing industry within the whole sector in Croatia, we will show and analyze some macroeconomic indicators such as industrial production index, the share of mentioned industries in the structure of GDP and trends in international trade. Industrial production index for various industries was calculated according to the supplied data from previous years, which is shown in the table below.

Table 1: Industrial production index

	2014 / 2013	2015 / 2014	2016 / 2015	2017 / 2016	I.2018 / I.2017
Total industry	101,2	102,7	105,3	102	103,1
Manufacturing industry	103,1	103,8	105,6	102,9	107,1
Manufacturing of textile C 13	94,9	100,2	109	105,4	108,9
Manufacturing of clothing C 14	114,5	92,7	89	97,5	98,1

From the Table 1, we can see that industrial production in first quarter of 2018 in comparison to first quarter of 2017, increased by 3,1%, and in 2018 compared to 2017 we have an increase in manufacturing production by 7,1%. If we look to the total movement in textile production, then we can see that sector C 13 increased more than manufacturing increased through all observed index values. Sector C 14 had the lowest share in growth, but the table shows a rise in production in the first quarter of 2018/2017 compared to few last years. The share of textile and clothing production in GDP structure from 2013 to 2017 is presented in the following table.

Table 2: BDP structure of textile and clothing industry

	2013	2014	2015	2016	2017
GDP -growth rates	-0,6	-0,1	2,3	3,0	3,8
GDP -mil.Eur.	43.754,00	43.416,00	44.546,00	46.40600	48.700,00
Manufacturing C	11,9	12,4	12,6	12,7	12,6
Manufacturing of textile - C 13	0,2	0,2	0,3	0,3	0,4
Manufacturing of clothing - C 14	0,4	0,5	0,5	0,6	0,6

According to data presented in Table 2, we can see that GDP in Croatia is growing, but total distribution of manufacturing industry and textile and clothing industry in total GDP is very low. In 2017 the share of manufacturing industry in GDP was 12,6% while the share of textile industries was 0,4% and the share of clothing industry was 0,6%. The structure of the textile and clothing industry in GDP is low, which is the basic problem of industries that produce low value-added products. The textile and clothing industry of the Republic of Croatia is included in the large and open international exchange. The data of export and import as well as movements through previous years are shown in Table 3.

Table 3: export–import data

CROATIA	EXPORT				IMPORT			
	INDEX 2014/ 2013	INDEX 2015/ 2014	INDEX 2015/ 2016	INDEX S 2017/ 2016	INDEX 2014/ 2013	INDEX 2015/ 2014	INDEX 2015/ 2016	INDEX 2017/ 2016
Total Croatia	108,4	110,8	105,6	112,5	104,1	107,7	105,5	109,6
Manufacturing indutry – C	108,7	111,6	106,8	112,6	100,1	109,3	107,6	108,6
Manufacturing of textile – C13	129,6	112,0	108,0	106,1	121,3	101,0	104,5	105,7
Manufacture of wearing apparel – C14	156,5	106,0	101,5	104,8	170,5	108,1	108,9	106,2

Table 3 shows that the export trends exceed import in all depicted years pertaining to textile production, whereas the clothing industry demonstrates reverse values. Accordingly, in 2016 / 2017, export exceeds import by 0,4 % pertaining to the textile production, whereas import exceeds export by 1,4% pertaining to clothing production.

4. MEASURING EFFICIENCY OF TEXTILE AND CLOTHING INDUSTRY BY RELATIVE INDICATORS

Modern business success is linked to the basic economic principle of rationalization, which shows that the accessibility of resources to the company, such as production resources, all input materials, available resources and company resources maximize the benefits for the economy. The benefits for the economy are presented in the form of output, yield, income or other economic benefits. In order for the economy to achieve this approach, to be guided by the principle of rationalization, it has to minimize investments and maximize economic benefits. By positioning the textile and clothing industry on the measurable scale, quantitatively, and by using three economic indicators we will express the degree of economic success of this industry related to our research goal or initial principle. The economic indicators, which are included in this analysis, are known as relative efficiency indicators. The three basic relative indicators, which measure business success in micro and macroeconomics, are productivity, economic indicators and profitability (Buturac, G., Lovrinović, Ž., Mikulić, D., 2014). Measuring business efficiency determined by the mentioned indicators shows us a realistic position of the textile and clothing industry business in the Croatia and within the entire industry segment, i.e. within the manufacturing industry. In this chapter, we shall calculate the labor productivity indicator using a total revenue to employee count ratio; furthermore, we shall calculate the cost effectiveness indicator using the total revenue to total cost ratio and to cap that off, we shall also calculate the profitability indicator using the total gross profit to total cost ratio. The following calculations represent the total industry, followed by calculations pertaining to processing, textile and clothing industries respectively, capped off by calculations pertaining to processing, textile and clothing industries in conjunction. Said results are depicted bellow.

4.1. Productivity of the textile and clothing industry in Croatia

In the current market economy, every business investment takes into account the needs of the market. The growing social needs require and constantly increase production of all types of products, along with textile products which are categorized as essential products. The textile industry in Croatia is still a labour-intensive industry where the human factor is a very important indicator of the success and revenue of the industry. The effect of human work on company efficiency is called productivity or labour productivity (Buturac, G., Lovrinović, Ž., Mikulić, D., 2014). The increase in productivity can be achieved by including more people in the production process, by extending working hours or by increasing the intensity of work through

the system technology. Economic growth requires greater labour productivity, which means that we want to produce larger quantities of products, or the same amount of product at lower cost. According to Marx (Marxs, K.,1933) any change in the work process that shortens the time necessary to produce certain goods increases labor productivity. In this analysis we measured labour productivity in the textile and clothing industry as a relation between two variables, which include an annual revenue of these industries and the number of employees during a one year period. (labor productivity = total revenue/total number of employees). For the purpose of comparison, the analysis included indicators of productivity for the entire industry and manufacturing industry in Croatia.

$$Labor\ productivity = \frac{toatal\ revenue}{total\ number\ of\ employees}$$

The following table shows the total numbers of employees in the analysed industries from 2013 to 2018 which is one variable for the calculation of the productivity indicators.

Table 4: Total number of employees in textile and clothing industry in Croatia (in thousand)

Year	Total industry	Manufacturing industry - C	Manufacturing textile -C 13	Manufacturing clothing - C14
2013	830.928	201.950	3.239	14.501
2014	830.116	198.069	3112	14.671
2015	838.584	210.072	3140	13.963
2016	853.110	208.375	3433	13.525
2017	882.884	213.019	3409	13.279
2018	939.954	209.146	3442	13.530

Based on the data from Table 4 we can conclude that in this period we have a decrease in the number of employees in the textile and clothing manufacturing as a result of the economic crisis that affected Croatian economy, as well as the departure of workers toother branches of the manufacturing industry. Furthermore, the next two Tables shows total revenue and total costs of industrial production, manufacturing production and C13 and C14 industries.

Table 5: Movement of total revenues in the industry, the manufacturing industry and the textile and clothing sector

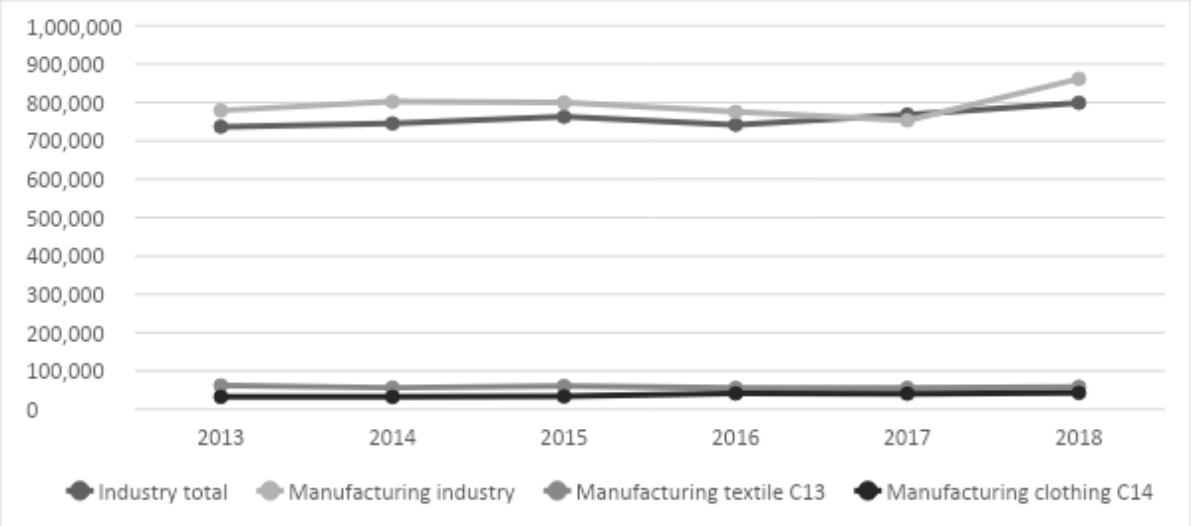
Year	Total industry (billion euro)	Manufacturing industry - C (billion euro)	Manufacturing textile - C13 (mil. euro)	Manufacturing clothing - C14 (mil. euro)
2013	81.658	20.980	201.570.268	475.179.108
2014	82.505	21.191	175.885.927	476.206.927
2015	85.286	21.200	190.719.546	473.301.351
2016	84.414	21.324	191.168.784	563.685.884
2017	90.452	21.393	190.268.889	544.960.197
2018	100.154	24.035	202.776.798	585.601.184

Table 6: Movement of total costs in total industry, manufacturing industry and the textile and clothing sector

Year	Total industry (billion euro)	Manufacturing industry - C (billion euro)	Manufacturing textile - C13 (mil. euro)	Manufacturing clothing - C14 (mil. euro)
2013	80.666	20.647	190.000.000	477.153.111
2014	80.651	20.647	174.885.927	475.000.000
2015	82.260	19.833	185.444.333	470.000.000
2016	80.272	19.186	186.466.021	533.333.824
2017	86.635	20.421	187.231.254	530.271.000
2018	95.389	22.834	192.574.001	564.391.201

Based on the data presented in Table 5, we can conclude that with a reduced number of employees, we have increased revenues in the textile and clothing industries, and this industry demonstrates the underlying principle that investments and investments in technological change are an important segment of growth and development. Costs are a very important component of productivity growth because good cost management has a greater impact on labor productivity. In Table 6 we can see total expenditure. It is important to notice that costs grow although there was a decrease in the number of employees. The wages are one of the largest expenses in labor-intensive industries. However, the increase in costs is a result of investments and development and not connected to the human factor. The productivity of textile and clothing industry, as the first relative indicator of this analysis is calculated as the ratio of total income and number of employees and it is shown in the graph below.

Figure 1: Productivity of industrial production, manufacturing industry and textile and clothing industry in croatia



From the picture 1 (picture) we can see that the textile and clothing industry have a very low labor productivity rate which results in a high share of human factor when creating the final values for these industries. As visible from picture 1., labor productivity is at its lowest in the clothing manufacturing for all observed time periods. The lowest revenue per employee has been noted in the clothing industry, mostly due to low added value of finishing works, which represent the basis of this industry's revenue.

Figure 2: Productivity of textile and clothing industry in croatia, and both

Picture 2 demonstrates higher productivity in textile production segment than in the clothing production segment or the total textile industry production, as measured in revenue per employee. This is also reflected in advancements pertaining to textile production technology, as well as in higher market demand. Textile production counts a somewhat lower employee number, whereas the technological advancements and adjustments in the production systems resulted in higher revenues.

4.2. Economic production indicator of textile and clothing industry in Croatia

The basic measure of economic efficiency is the cumulative value of all created inputs and resources included in the work process for a period of time. The result obtained by this analysis represents the degree or level of economic efficiency for industrial production. On the one side, this principle of economics is based on the cost efficiency of all the production – involved resources, whereas on the other side, it requires profit maximization (Buturac, G., Lovrinović, Ž., Mikulić, D., 2014). This is to point out that each and every industry branch, as well as each individual business, wishes to achieve the best possible business results whilst keeping their costs at a minimum, which represents the basic principles of microeconomic business management. The measurement of economic efficiency of the textile and clothing industry in Croatia determines the relation between the realized earnings and costs. The value of economic indicator is from 0 to 1 and less than 1. The value of the indicator less than 1 indicates that the industry or branches of the industry are not viable, while if the value is 1 it indicates that the business is at the economic boundary (R = C), the value coefficient greater than 1 indicates a profitable business in the industry.

$$Economic\ production\ indicator = \frac{total\ revenue}{total\ expenditure}$$

In Table 7 we have calculated the economic indicator.

Table following on the next page

Table 7: economic production indicator

Year	Total industry	Manufacturing industry – C	Manufacturing textile – C13	Manufacturing clothing – C14	Total (C13 and C14)
2013	1,01	1,02	1,06	0,99	1,02
2014	1,02	1,03	1,01	1,00	1,00
2015	1,04	1,07	1,03	1,01	1,01
2016	1,05	1,11	1,03	1,05	1,05
2017	1,04	1,05	1,01	1,03	1,03
2018	1,05	1,05	1,05	1,04	1,04

From the calculated values in Table 7 we can conclude that the textile and clothing industry strives for sustainability. The values of economic indicator are slightly above one, which shows that they attempt to make their businesses profitable. Compared to the first three analyzed years (2013 – 2015), the second period of time analyzed (2016 – 2018) demonstrates a slight increase in the indicator values, which results from the revenue increase in the observed industries.

4.3. Profitability of the textile and clothing industry in Croatia

Generating profit is the motive that triggers every business entity on the market. Profitability, as the most important indicator of performance, is expressed by the relationship between operating performance and resource expenditure. For the purpose of this paper, in the analysis of the textile and clothing industry in Croatia, we will observe the movement of the profitability coefficient of production through the relationship between the realized business profit and the total cost at the annual level. Business profit shows the difference between total revenue and total expense at the end of the business year, with the net profit referring to the gains after paid tax. In this analysis, calculations were made on the level of gross earnings achieved.

$$profitability\ indicator = \frac{gross\ profits}{total\ costs} * 100$$

Table 8: indicator of profitability

Year	Total industry	Manufacturing industry C	Manufacturing of textile C 13	Manufacturing clothing C14	Total (C13 and C14)
2013	1,23	1,58	5,74	-0,40	1,43
2014	2,30	2,56	0,56	0,15	0,18
2015	3,68	6,44	2,76	0,69	1,39
2016	5,16	9,96	2,46	1,87	4,86
2017	4,40	4,81	1,62	2,78	2,47
2018	5,01	5,26	5,29	3,76	4,14

As shown in Table 8 profitability in textile and clothing industry is significantly low. Profitability represents a cost recovery rate per invested profit unit. When comparing textile and clothing industries' respective profitability, we can see that the textile industry generates more than double the profitability of the clothing industry. This is caused by the still labor – intensive character of the clothing industry, as well as its orientation toward finishing works. Technological advancement might have a significant impact on its profitability due to an increase in production quantity, and thus an increase in revenue, it would inevitably generate (Gorup, R.. 2019).

Foreign expansion, especially into the European Union territory, has caused an increase in profitability from 2015 to 2018. The next section of the paper provides some suggestions that should affect the efficiency in these industries.

5. MEASURES TO INCREASE EFFICIENCY OF THE TEXTILE AND CLOTHING INDUSTRY IN CROATIA

Based on the thus - far conducted research, we have arrived at a conclusion regarding indicators and factors that enable revenue growth. Revenue growth represents a fundamental variable, vital to the calculation of all efficiency indicators. Business efficiency is the basic target of every branch of industry, and its value is expressed by movement and values of productivity, economic indicator and profitability of the industry. By increasing labor productivity there is also growth in cost-effectiveness, however this relationship does not always have to be in strong correlation. Since cost-effectiveness demonstrates the value of total revenue and total costs, savings on human labor can increase the value of the coefficient of economic efficiency and reduce the value of productivity coefficients. The connection between economy production indicator and profitability as efficiency indicators is considerably stronger compared to the relationship between productivity and economy. According to the principle of economic efficiency, if we are cost-effective in our business than we are more profitable too. Based on the representation of relative indicators for the textile and clothing industry in Croatia, we can conclude that there is a big struggle for the survival and development of these industries in the market. Textile products today are inputs in production of final products in other industries, such as transport industry, medical industry, protective equipment and in construction and building. The added value of textile products is still much lower than the value of products which use textile resources in their final production, which can be seen in Table 2. To increase the efficiency of the textile and clothing industry, it is necessary to include a lot of different elements in the process of development. In the following Table 9 authors define and describe some measures to improve the value of the relative indicators and increase production of textile and clothing industry in Croatia.

Table following on the next page

Table 9: measures to increase the value of relative indicators of textile and clothing industry in Croatia

Productivity	Economic indicator	Profitability
1. Opening new companies with government incentives • increase in employment leads to an increase in revenue, which booth increases productivity	**1. Cost reduction by merging companies** • reduced fixed costs lead to revenue growth, and economic indicator is growing	**1. researching** • being "the first on the market" brings huge profits entering new markets
2. The introduction of new technologies, production processes "from input to output • an increase in revenues due to the new technology with the same number of employees leads to productivity growth	**2. Better inventory management and cost management** • a good inventory management system creates savings and increases revenue to companies	**2.Design and development of new products** • new products makes larger added value
3. Produce raw materials rather than by them • raw material production is affecting on the industry's revenue growth due to the continuous flow of production	**3. Just in time production** • production that produce great savings	**3. Production for the local market** • local market is a very important customer for increase productivity

An increase in productivity will have an effect on efficiency through opening new business in the textile and clothing sector, whose core business will be the production of textiles and clothes. There is a possibility of using state subsidies for company development. Increased entrepreneurial activity encourages competition, which has a positive impact on domestic productivity and production. It is necessary to technologically strengthen the production system; the current technology that is in use cannot compete with the same technology in the global market, thus disrupting the supply and demand relationship. Modern technology will enable greater production in a very short time and increase productivity, and there will also be a possibility of producing inputs for the production of the final textile product. The value of the economic indicator increases when the value of revenue increases and the cost of production reduces. Through the companies merging system, the effect could be reducing fixed costs, which would have a positive effect on the value of the economic indicator. Many companies in the textile industry could benefit by merging and achieve a better market position and reduce management costs. Furthermore, inventory and raw materials management and "just in time production" processes can have a direct impact on reducing industry costs and increasing economic efficiency. Knowledge, innovation and aspiration to excellence in business processes are features that describe plans in our textile industry. In order to strengthen the competitive advantage and increase the profitability of these industries in relation to other industries within the manufacturing industry, we can look for a system of research, development, design of new products and production of products for the domestic market.

6. CONSLUSION

Textile and clothing industries have an important place in the Croatian economic system with regard to long-standing tradition, a large number of employees and links with European and world markets. Many international companies have recognized the potential of the Republic of

Croatia and are investing and conducting business in our area, which has significant effect on strengthening the domestic competition in this type of industry. The depicted economical indicators for the time period from 2013 to 2018 are as follows: GDP, industrial production value and import and export structure, Said indicators illustrate the macroeconomic trends in the textile and clothing industry, as well as trends of said industries within the overall manufacturing industry, which is relevant to the future projections and measurements of efficiency growth as suggested by this research. An increase in value of industrial production, especially during the first quarter of 2017 / 2018 points to sustainability of the observed industries and necessary structural changes in the industries that gravitate towards growth. Business results of each of the companies within these branches are a part of the total results generated by these industries. Relative economic performance indicators are financial indicators illustrating the business dynamics of said industries. This paper analyses three basic indicators: productivity, profitability and cost effectiveness. Total manufacturing industry indicators have been calculated along with relative indicators pertaining to the textile and clothing industry. According to the obtained results, the labor productivity for these industries, measured in revenue per employee, is very low, especially in the clothing industry. Suggested measures should cause an increase in productivity in the future. Cost effectiveness indicator points to cost effective and economical conduction of business in the analyzed industries, whereas profitability points to low revenue, which is a reflection of loan businesses with low added value. Improved cost effectiveness might be attainable by inciting cost competitiveness, whereas presence on new markets and development of new products represents a portion of measures designed to increase profitability. Effect of capital is a crucial factor that affects higher efficiency, but only in combination with labor, as stated in previous researches. Low cost strategy and increased value strategy represent a crucial portion of suggested measures designed to affect an increase in efficiency. Effects of material labor factors, such as salary, awards, benefits and training are considered beneficial to an increase in efficiency. This analysis may be viewed as a portion of or future research in the subject – matter field. We may conclude that revenue represents a variable vital to efficiency measuring. Quantitative values of all indicators utilize revenue as a key variable. Revenue growth is visible for all observed time periods, which has directly affected the growth of all relative indicators. In order to induce growth, the textile industry should have recognized certain changes pertaining to business management; such as technological advancements, production techniques and technologies, market expansions, and other factors utilized by other economies. Based on the thus far conducted research, authors have summarized some measures that might increase the efficiency of the textile industry. The objective is to have these measures recognized in order to achieve a better market position and a more efficient business future. It is possible to conclude that an increase in efficiency is based on a combination of factors, i.e. inputs or variables. Planned utilization and variation of said factors leads to better business results and improved efficiency of said industries. Industries only need to recognize, utilize or procure said factors on time.

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THE DEVELOPMENT OF BULGARIAN HIGHER EDUCATION SYSTEM DURING POST-CRISIS PERIOD

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ABSTRACT
This work represents an attempt to define a group of issues existing in the Bulgarian higher education system. Summarizing and specifying them is a matter of detailed analysis that would explain its low level and opportunities for a change. The authors of this paper have made an attempt for a brief comparative analysis of the public rankings of European universities.
Keywords: *European universities, Education, Bulgarian universities, Rankings*

1. INTRODUCTION

In times when Bulgarians are losing their spirituality and are lacking the values that have helped them survive and keep on going, we are trying to fit into the European and world educational and cultural space. Some of us insist that we deserve it by right, while others tend to think that we are already part of it and can now rest on our laurels... Unfortunately, our not-so-realistic expectations cannot be fulfilled and do not coincide with attitude and behaviour of the communities surrounding us. It is always a right solution to look for the best in ourselves and present it in the best way, but above all we need to have a clear and precise idea of where we are, what we expect to happen to us and most importantly - how it can happen to us. This approach is especially vital nowadays, while overcoming the consequences of the pandemic outbreak, as we need to wake up and realize that we are not the centre of the universe. We need to look for possible ways to realize our ideas that will motivate our social development. It is undoubted truth that the peoples who rely on their educational and cultural traditions, upholding and developing them, get that special place in the public development as they should not show off, interpret or brag about, because they themselves are such and this is their life style. And yet more difficult to understand it becomes for us from historical point of view, because this truth should be written with our Bulgarian alphabet and it has been made by us.

2. CHALLENGES IN THE DEVELOPMENT OF BULGARIAN HIGHER EDUCATION SYSTEM DURING POST-CRISIS PERIOD

strive to find ourselves among top European and world countries and we are glad when accidentally or not we appear on a certain rank list for the first time. The fact that we are on some list of “candidates” is an important achievement itself. Unfortunately, the process of restructuring this particularly significant element of our education system is incomplete. Moreover, during transformation we have proved too unprepared for such dynamic political changes. The market mechanisms have confused the process of restructuring our education system, have blocked it so that it almost is not affected by the external factors. Our people are pretty skilful at writing strategies and action plans that seem brilliant and interesting enough according to the European standards, but our existence in this so-called educational space or, in other words, our place in the society, is getting more and more insignificant, i.e. where very few narrow and not so important claims can be met. Of course there are some beautiful and impressive exceptions that make us happy, however, this mechanism has long been autonomously dead and activates only when it has to defend its survival or to note that it is on the map.

The academic autonomy of higher education institutions has led to quite critical deviations from the normal functioning of the educational process. Some of the them include: lack of respect towards the supervisor`s authority, election of the collective management bodies in a not very democratic way, increase of professional areas in which educational process takes place, without having a proven capacity, lack of any planning of these processes and a number of others. These ongoing processes are hardly unnoticed by the numerous analysts and researchers, by those who have to and are charged with creating strategic documents. However, the change, or more precisely the process of changing, turns out to be so difficult or almost impossible to achieve that none has happened in more than thirty years. The market mechanisms that created certain conditions for the establishment of a large number and variety of institutions for training and science development, also created disproportions that will be difficult to overcome and that after all created the situation in which we are searching ourselves in the list, and moreover – in the end of the list, and not to be where we maybe expect to be!? There are 50 higher education institutions in Bulgaria and for the last years the admission quota of new students cannot be reached. Some of the reasons for this matter are due to the ongoing demographic processes and growing problem of population decline in the country, but this is far not the main problem in the functioning of our educational system (Terziev, 2019; Terziev, 2019a). A return to old educational methods and even successful policies from the past is almost impossible because they were established in compliance with the current realities to address current issues. The existing ones nowadays do not answer many questions, while the competitors around us combine both past and future and are in the top lists of these rankings. Opponents of all forms of assessment would say that the criteria are not the best, the conditions are different and the funding is insufficient. But even if we assume that their standpoint is fair and true, we are in a certain situation and conditions where we shall make the right and most effective decisions. In order to justify these statements, let's look at the results of one of the many rankings that were published this month. It identifies the most popular universities in Europe. In order to be included in the ranking of UniRank, the universities shall cover certain criteria defined by it, i.e. they need to be certified and/or accredited by the relevant higher education organization in each country, to offer at least four-year bachelor's programmes and master's or doctoral studies and to administer their studies mainly in a traditional form. No Bulgarian university appeared in the Top 200 (Fig. 1) (2020) of this ranking, but it is more interesting how the education institutions are distributed in Europe and which countries are on the list. Leading positions are occupied by the British education system - almost 24% of the universities are ranked there, followed by Germany with nearly 16%. After them are Spain and France. In practice, these four countries determine a group of elite universities. Other positions are held by representatives of the Netherlands - 10 universities, Italy - 9 universities, Switzerland and Russia - 7 universities each, etc. The Balkan countries are so far represented only by Greece. There are dozens of other rankings and universities assessment systems available to public. In some best cases, several Bulgarian universities are ranked in higher positions. Among them are “St. Kliment Ohridski” University of Sofia, Technical and Medical University of Sofia. Without having claims for a detailed analysis, the cracks in the Bulgarian system of higher education should be filled and a set of problems, which are now put on the table, should be solved in an objective and correct manner. We can generalize them in two groups. The problem of surplus and the problem of deficit.

Figure following on the next page

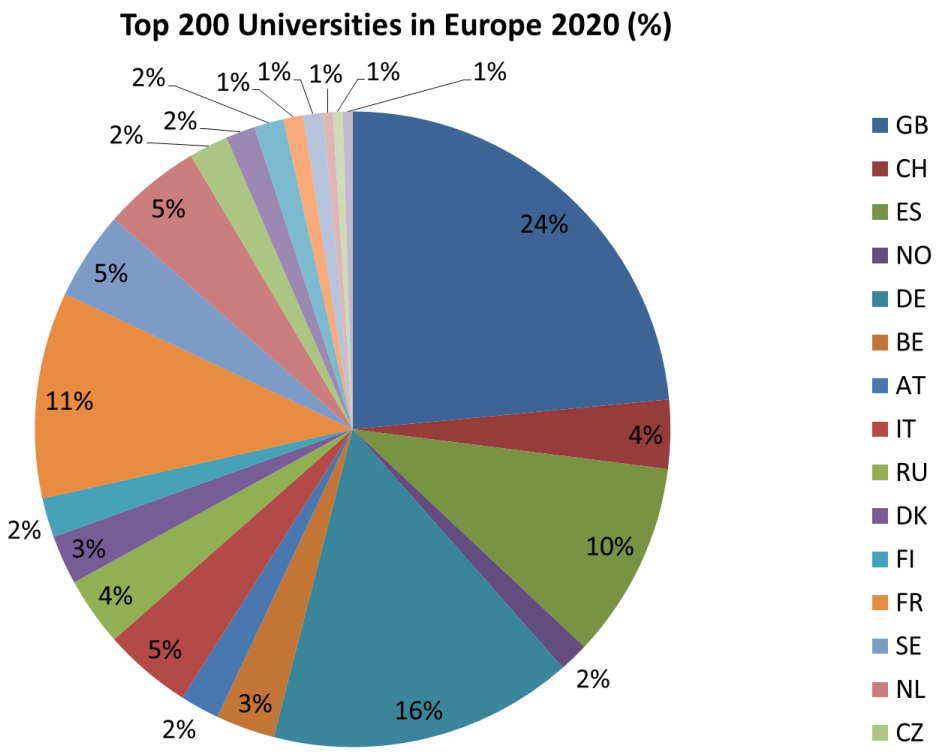

Figure 1: Top 200 200 Universities in Europe (2020)

Obviously, there is a sufficient and, perhaps, quite large number of educational institutions. They are distributed unevenly in the country in terms of scientific infrastructure. Most of the institutions are concentrated in the capital and several in the country's largest cities. Most of them offer programmes of study in almost all professional fields with few exceptions. Therefore, lack of qualified staff is not the issue, yet quite the opposite, we should have enough experts in almost all areas. Regardless of the state standards and requirements for the accreditation procedures, not all institutions (even paid ones) provide quality service. This process involves at least two parties - those who offer it and those who receive it. It won't be difficult to find a set of viewpoints criticising both, but justifiably, the result does not meet our European standards and in particular our expectations for many members of these two groups. In practice and in theory there is a problem in the effectiveness of this process, which of course is continuous and quite complex in nature, making it difficult to manage. Here is just one example that hardly answers all the questions that arise. In the last few years people have had more restrictive attitude towards a number of study programmes in the field of economics and administration and management, which shows us that in recent years there have been a sufficient amount of graduates in the field. At the same time, almost every social survey or questionnaire on this matter reports a shortage of well-trained managers, and even specialists in the field of finance and accounting. The answers and criticisms can be formulated in many ways, such as that almost all universities offer a programme of study in these areas and the three Bulgarian universities of economics are in a particularly competitive environment; that studying in some of them is dictated by direct economic benefit to accept a certain number of students; that one of the universities is located in the area with a relatively small population and not very good road infrastructure and communication relations, which makes it isolated or in worse positions than the others. In essence, all these statements are true, but they do not provide an answer to the question - why with such an excess of opportunities there is still a shortage of professionals in the real primary market?

In other cases, some of the engineering studies remain promising and necessary, yet still not very popular among students, even though the admission level of such programmes is relatively low. Until we solve the problems in both these directions and clarify their reasons, there is no way to implement and even think about a successful strategy in the field of higher education. It cannot be solved by itself and there is no way to adapt to the situation, because the main element in the management process is planning. Planning effective actions in this direction is a reflection of highest level in management and cannot be an action of a single individual, or even of an entire ministry. Therefore, before moving from one period of financing of education (according to the established practice of the European Union) to another we must strive to solve these crisis issues, which are not a consequence of a pandemic situation or other crisis phenomena, but of the lack of professional analysis, proper planning and effective policy (Terziev, 2020a; Terziev, Lyubcheva, Solovev, 2020b).

3. CONCLUSION

So when we are looking for solutions to economic, political or other problems that happen and will continue to happen to us every day, we must think in perspective about the educational and cultural processes. Only their successful solution will lead to the much-desired efficient political and economic transformations. They are about to happen to us again in the near and distant future, and they will be of great importance to us. But we must be prepared to feel more confidence to take the position we think we deserve. Otherwise, the pointlessness will overwhelm us and give us unnecessary self-confidence, rivalry and malice, but it will not help us overcome our self-sufficiency. Let us make more efforts for spiritual development and growth and not for survival so that our movement forward does not go together with decline, but with the meaning of successful development!

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GLOBALISTS' DEFENCE AMBITIONS AGAINST SOVEREIGNTISTS' OPPORTUNISM IN EUROPE

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ABSTRACT

This paper represents a product of doctoral student and mentor cooperation. In the paper, a globalist versus sovereigntist perspective regarding the building of European defence forces is analysed. Namely, globalists believe that the defence cooperation between individuals, institutions and corporations would ensure that the potential fruits of globalization would be spread throughout the world, fairly, safety, and equally. Economic globalism aims towards the exchange of goods, services, and capital that accompanied the market exchange with international defence complex between the EU and NATO, which produced, purchased, and acquired the most advanced defence capabilities. On the contrary, sovereigntists pushed many times in history the world toward an edge of destruction but globalists had intervened rapidly by preventing sovereign plots those were orchestrated at entities from military globalism as product of sovereign alliances or military treaties in the neorealist international system. We show the importance of the crucial tension between globalism and sovereignism on the example of the European defence. Neoliberal globalist system is more stable and interconnected for peace to prevent any escalations between sovereign states. It should not be forgotten that European globalists had tried to join the feudal and modern European states by joining them into the European community toward the "United States of Europe" about 200 years ago but this attempt had failed. The research was conducted by using the content analysis of the relevant sources, methods of comparation, deduction, and synthesis. Regional franchise of globalists tried to resume the implementation of idea of the common army that was postponed or delayed in the period since the Pleven Plan was refused. However, the ambitions expressed in the Plan are again actual in Brussels.

Keywords: *globalists, sovereigntists, defence, the European Union (the EU); NATO, Pleven Plan*

1. INTRODUCTION

The paper represents a product of doctoral student and mentor cooperation. In the paper, globalist versus sovereigntist perspective regarding the building of European defence forces is analysed. Globalists had planned to create a new geopolitical paradigm a similar to the ancient socialism theory. Sovereigntists stroke on transatlantic corporation NATO model as set of tools from US globalists to control the EU political society. Radical leftists' movements supported from globalists financial adoptions could drag in sovereigntists into a delicate situation if interstate political situation in the EU states rapidly deteriorated as blow up of final back up scenario at the US globalist strategy after dissolving NATO may downfall the EU too. We put the thesis that globalists are looking to launch updated plan for Europe by inserting new social-political movement how to destroy or eliminate long lasting political power of conservative circles in EU states to fight back against sovereigntists who reclaimed to return back to national

security and national interests. Sovereigntists often used reprisals for security measures to beat back radical movements by protecting interstate security. Sovereigntists are (un)ready for direct struggle with US globalists which had created neoliberal financial-economic regime in the transatlantic relationship (NATO). Sovereigntists' plans included security protection how to eliminate or avoid globalists crises after the imposed economic shocks, trade sanctions, epidemic diseases etc. against sovereign states. Its major goal preserved protectionism by staying intact from globalist sanctions against national protectionism. Regionalist states as European integralists' players played pivotal role for more defence in Europe. The EU franchise of globalists presented an option between globalists and sovereigntists struggles into transatlantic ties. Empirical methods were used here on how to analyse contradictory aspects between globalists (regionalists) and sovereign states on power of nations after Brexit within interconnected and indivisible world system at its (political) defence and military ambitions.

2. NEW "GLOBALISTS VERSUS SOVEREIGNTISTS" EU PARADIGM AND THE TRANSATLANTIC TIES

Sovereigntists are using norms and rather accepted values, such as constitution, freedom rights, democracy and rule of law. COVID-19 in Europe had shown that they need financial assistance from globalists who have financial, economic, security etc. power over states to finally socked out sovereigntists from colossal trouble. Sovereigntists adopted a realistic theory that is strongly opposed to European integration process as encountered to integrationist's theory of supranational statehood. Globalists adopted liberal ideas among trans geopolitical, geo-economical, geo-energetic etc. streams inside interconnected world, continents and regions by protagonists, meant regional power states. Two different ideologies entrenched into opposite ditched lines like in wargames scenarios, blue and red coloured players are struggled each other during battle drill exercising on the historical case study NATO against the Warsaw Treaty before 1991. If we compare EU in case study under pretext the EU house in better world presented globalists instruments to find solutions for each EU member states that was succumbed with social-economic problems. Financial or security adoptions played critical role how to find the light at end of tunnels for the entrapped sovereigntists into critical circumstance dedicated to case of corona pandemics as evident example for crises management urgency from European commission uncapable to react at right time. Nationalist and populist parties are thrown into the same basket what they promised to own nations under cunning pretention as faulty messiahs in the state authority those try to rescue own nation from globalists regime clasps. Their intention is at most financial for their own property abuse try to return national currency in payment policy, uncontrolled printing money could deteriorate financial regulations by increasing public debt that throws national currency from hyperinflation to bankruptcy. Partial properties at sovereign parties among national currency possession that run toward personal plunder of national treasury does not difficult from criminal gang machinations. They would drive within similar paths as private bankers who are intended by financing its political interests those are intertwined with national economic plunder. Aggressive sovereigntist attacks on globalists could endanger international monetary, economic and defence order that may crash and fell into global anarchy, possible to increase international disorder that pushed the critical situation of disorder into interstate and intrastate wars without regional control. Globalist thoughts oppose closing national borders by lifting tariffs for foreign goods and recover border controls before Schengen regime in the EU. Multinational or transnational companies had opened free global market and loaned money by giving lowest rates of interests. Sovereigntists claimed back to national currency by giving shark loan interests to national consumers that may choke cashflows to then and take into opposite financial results at achieved prosperity into national economy development. If we fenced market and invent autarky economic systems in the state by sovereigntists, skyrocketed shortage in public goods and

services and imported merchants was blocked, people stayed in column in front of doors empty or plundered mega markets or stores after catering of merchants deliver ceased to work through international logistics. Negative effects stand up in national defence requirements by purchasing defence capabilities from foreign producers (outsources), servicing and fixing those defence capabilities those were bought from international coalition states. What would happen if the EU defence market collapsed from small EU states those did not build up defence factories for the purpose of consummation in ammo, car parts and spearheads from foreign defence factories. National defence system collapsed if did not reactivate defend of state. More luckily are big states those had developed national defence complex for purchasing, servicing and trafficking defence merchants, and are absolutely independent from outside sourcing, in opposite small states without own defence merchant complex are too week and wounded from interventions to defend our self. Globalist regime presented solution to achieve peace and harmony between states under international order that regulated standard of living for states into global coalition. Regional centres of power on global level into multipolar world build up public transnational regimes that control aggressive states among them, getting balance military powers among regional superpowers and regulate arms control regime into defence regulations as to supervise, check and balance security at global level through confederation council and technocrat bodies those control security regulations accepted by a confederation council as supreme council. Globalists' failures were evident to stop sovereign states by resume aggressions or hostilities into international security system that did not work as was expected from affiliated nations in the world. Liberal EU globalists had followed the political idea that was forgotten after NATO was formed to constitute federalist implementation plan of the "United States of Europe" that included all European nations into a single state under international government. European citizens are protected individual-social rights under constitution of EU and administrative borders of sovereign are blurred. Globalists supported a humanitarian doctrine known as the Responsibility to Protect (R2P) Doctrine that was passed in the United Nations (2005). This doctrine promoted human solidarity in the face of the militarization of public life. Sovereigntists had been taken responsibility to protect their populations from mass violence and gives the "international community" the right to intervene through economic, coercive, and, as a final resort, military measures. This new articulation of sovereignty as membership in the "international community" saw a symbolic shift in discourses that articulated responsibilities to a global community as characteristic of a new era of moral and humanitarian protectionism (Thomas and Clarke, 2013: 317). Humanitarian intervention is possible to react against sovereign oppressions and suppressions on own citizens, but that the European Defence Union (EDU) has not stipulated mechanism how to intervene inside community by violating federal constitution, international agreements, protocols etc. Solidarity clause of the EDU does not match violation of human rights or humanity with the V. Article of the Brussels agreement, as long federal state of the EU will be not constituted, so long the appropriated institutions of the EU are unable to react. On the contrary, the EU-Neoconservative globalists supported protracted NATO-centric theory in Europe. They are aware that dissolution of NATO brings to the end of the transatlantic collective defence and nuclear deterrence under the US nuclear umbrella disappeared from Europe. The EU states with anti-Russian sentiments are scared that European NATO pillar states need to provide its own security without the US deterrence toward Russia. This is a major political blow for the so-called "free rider" states under the US defence protectionism those are supported the US hegemonism in Europe under pretext that transgression on national security from Russia would preserve NATO so long as needed to defend border states at red line of the Russian protective bastion line A2AD. Key points of anti-Russian conservative circles is turned around defence costs, sustained capabilities and protectionism under alliance. Those key points did not match within European defence that does not include European nuclear deterrent, while is not

important to follow nuclear escalation against Russia. In other words, the disappearance of NATO would call for a further deepening of European integration with the Russian cooperation inside converging Eurasian mainland to control the world mainland. Neoconservative circles neglected and opposed to deepening integration defence plan of neoliberal globalists. In opposite, the demise of NATO would dramatically increase Russia's position toward EU but does not mean that Russia shall exploit the EU's weakness for intimidation its European neighbours in grow up tensions with Baltic states. Consequently, the dissolution of NATO would translate into relatively small savings for the USA, if would lose allies and military bases in Europe. In sum, a world without NATO would be a bad deal for the USA and for some partners in Europe (Ruhle, 2019). Europe without NATO brought to the end of the collective defence in transatlantic ties, what in opposite direction will absolutely increase Russian power after revisionism of EU – Russian relations. European community will be put under Russian nuclear umbrella after the US withdrawal all military (nuclear shortrange) capabilities from harboured US bases and barracks in Europe. France after the UK's withdrawal from the EDU may play marginal role to protect the EU states with own nuclear umbrella. Interoperability into transatlantic ties will disappear from NATO's demise after increased defence integration of the EU states toward more sustained European sovereignty. The UK had sealed a fate that NATO-centric pole in Europe is melting like snow under the EU-centric integration of defence capabilities and priorities at the EDU toward common army and harmonization of the European defence complex. A bad deal for the US interests in Europe may run the EU integration and harmonization process to stronger regional defence cooperation as melting pot under Eurasian geopolitics. The United Kingdom is out of game on continent by pressing NATO-centric states to postpone or delay European defence and military ambitions. Pleven plan was a part of the UK game of despair for stopping regional EU globalists ambitions. The EU federalists presented a part of globalists groups in Europe and strongly opposed to sovereign ideology which tried to undermine the European integration process that had been stop afterwards European solidarity was loosed, then were affected by political and security disunity toward integration process for the Western Balkans states, diplomatic dissipation in effective struggle against migration crisis, terrorism and corona virus those had flooded geostrategic states inside European community. The UK was blamed for past political mistakes of the Common Security and Defence Policy (CSDP) that intentionally derogate common defence decisions with the main reason to keep annoying France on continent not to carry out federalist plans for European community. Federation like integration of EU militaries was a red line to the UK despite it vetoed to establish military HQ in Brussels.

3. EU REGIONALISTS' (FEDERALIST) AMBITIONS TOWARD MORE INDEPENDENT EUROPE

French President Macron had asserted publicly into public that "NATO is brain dead". He vindicated that NATO commitment in Article 5 on the collective NATO self-defence dragged France into a global nuclear war against Russia (Lantier, 2019). The French President had stressed into the public opinion seriously that the EU ought to rebuild European strategic autonomy and reconsider position towards Russia. Political frictions between European NATO states and the USA had been transmitted from security matters to economic struggles, that overhauled defence markets against the US leading capitalist states in the Europe to purchase the US defence products at the shelf. Europe feared that behind failed defence markets is covered the US financial collapse that may drag Europe downturn into financial abyss as to increase public debts. Why European NATO states shall invest our savings to buy the US debt. Trade war between Europe and the US purred oil on arson after suspended oil trade market for West capitalistic states momentary collapsed. What is actually behind this then? Neoliberal globalists plans included dissolving NATO and transforming them as the only part what Europe

was before, it meant that the European NATO pillar shall be converted into EU army and resumed defence cooperation with Russia. The US army pulled out own troops from European NATO pillar in Europe within deported nukes from Germany, Italy and the Benelux states. Other US army strategic infrastructure from fortressed Europe those cannot be removed entirely is the case of negation as to pay off for the accommodation domain the EU army troops into released the US bases across Europe. European states shall take care our self for defence and paid for it as fare share, no more free riders states on the pledges of the US taxpayers. In opposite, Neocon globalists plan that followed neorealist ideology, pushed intentionally the European NATO pillar further toward escalation with Russia during enlargement process on other states to join the transatlantic alliance. NATO troops approached to doorstep tried to enter in the former Soviet Union space. Well, the USA formed commanding group for European theatre of war that sketched out a master plan to attack Russia from Ukraine, is leading war operations from behind by pushing European army boots on the floor directly into confrontation. Pentagon paid campaign through NATO's budget to conduct war with Russia where was a plan to drag the EU-NATO states into devastated war with an outcome to kill two flies in one swing in mutual destruction of the two communities, especially planed the end for the EU defence community and totally destructed the Eurasian space from used at most advanced conventional and nuclear capabilities those were used from the US and Russia. The EU – NATO troops at first frontline played the crucial role of cannon fodder, this were seen before by the fifth column in the Syrian case. The Cold War hysteria beyond 75 years of ideological confrontation finally came to the end of hostilities. Strategic goal accomplished from Pentagon players by hiding in bunkers deepened into ground and survived from nuclear strikes. Reporting Europe in ashes is documented by players into post war review. NATO faces significant massive imbalance as disbursed military capabilities in quantity suffered no operative setbacks for European NATO pillar and Europe shall take care itself after the US President Trump had asserted that NATO became an outdated organization that needs to invest more money to become more autonomous for its own defence. Trump is wavering to the EU-NATO states that after departure of the USA from Europe they will pay more money for defence and European nuclear deterrent is not seen in sight. If we compare defence spending than we figured out that US spends nearly 4% of the GDP on the military; for NATO Europe, the figure is barely 1.6% of the GDP. That disparate economic burden is only one reason why we need to conduct a comprehensive review of whether the NATO commitment serves America's interests any longer, but it is an important one (Carpenter, 2016). European pillar NATO states spent twice less for defence like the USA and disproportionate defence spending inside alliance drove NATO on the stake. Which costs were included into burden sharing for common defence? We supposed that here are included the US nuclear deterrence spending as guaranty for Europe that needs a big sum of money. Europe, if being unprotected without NATO protective (nuclear) umbrella after reset post-American" balance of power in Eurasia (EU Bulletin, 2018) would be strategic disaster, while some EU states will seek their own deals with Moscow for bargain chip as to remain safety under Russia's sphere of influence. The US sphere of interests in Eurasia will be diminished, that is the point of debacle in the US foreign policy toward Europe. Eurasian regionalization puts out of control the US dominance. The EU may feel unpleasant if it going to be tailored the EU states by supporting or not supporting Russian part of integration into broaden the Euro-Asian community. Globalists ambitions are part of the old geopolitics game as to re-join world island in one centre of world power under thesis, who controlled world centre than it will control the entire world. That is the main point into gravitation where regional globalists are focused after NATO's demise.

4. THE USA IS PRESERVING NATO'S HEGEMONY IN EUROPE

Four essential proposals were shifted to the North Atlantic Council (NAC) into discussion. First, NATO should close its doors to new members. Second, the NAC would include a suspension or expulsion clause within NATO's founding document to hold member states to their promises. Third, systemic unaccountability, free-riding, and business-as-usual does no favours to NATO and is unfair to the US service members who would bear the brunt of any NATO military engagement and the US taxpayers who would fund it. Fourth, Washington should also encourage Europe's attempts to become more autonomous in its own defence (The Federalist, 2019). Two-sided EU–US political conditions had complicated further restructuring NATO plans in the third batch-decade of reforms as coded NATO 2030:

1) No further NATO enlargement toward East is acceptable by trespassing Russian red line while Russian army is able to strike back hard by activating A2AD shield in Ukraine and Kaliningrad region;
2) The US cannot keep promises for guaranty in European deterrence policy under the Article V of the North Atlantic Treaty, to repel any Russian conventional or unconventional frontal attack at frontal axis from Kaliningrad-Belorussian and Ukraine gateways to NATO protected territory;
3) The USA will not tolerate "freeriding states" in NATO by hiding behind the US taxpayers' wallets;
4) After previous three points followed the Trump effect that pushed European NATO states toward more autonomous decision making as to selfcare for European security and paid more money for European part of defence as a fair share for European part of NATO burden sharing.

Binnendijk (2019) had argued a path to NATO downturn in five consequences what happened if the USA pulled its own troops out of Europe, what implications may sustain at geopolitical and geo-economical damage to the US economy under hegemonistic pretext. European community after BREXIT due could be disbanded beneath NATO too if was pushed into disorder then the EU will be less safety and less interconnected European nations like before. The USA had always played on the trump card if the USA may leave Europe than the EU states will restore wartime by setting up ancient war coalitions and anti-coalitions grouped around two antagonistic poles France and Germany on the continent to confront each other like savages. Balkan states are the best example to compare them with bloody wars in Europe but those were ended by the US intervention. The UK went back to splendid isolation in geo-policy like before and it still wating behind corner cowardly what is happening during wartime period on the continent. China presented next target as mayor transgression to the US interests in the world if neoliberal model is endangered from China's aggressive anti-US sentiment in Asia uprising into world power:

1) NATO's retirement or demise would drastically decrease American political influence in Europe. American bases in Europe those provided the US army forces under the USEUCOM into war thorn region were never so closely in Europe to Russian border after the end of the World War II. The US geopolitical interest are hiding behind NATO and excuses the situation for the unlimited access of the USA, by entrenching them into ditches at eastern flank.
2) NATO's retirement would exacerbate security division within Europe as teared apart on old Europe and new Europe hubs. European NATO states were put in poor military conditions at most being un operative to fight without modern military forces and capabilities. All European defence forces were never submitted into disastrous situation when they had joint under NATO most unprepared and unorganized. They had invested less money for army modernization under the US security umbrella.

However, the USA doing the heavy lifting the resulted in the dismantling of the European militaries after the Second World War (Szilvai, 2017).

3) NATO's retirement would have drastic consequences for security at global aspects. American bilateral alliances in Asia would be shifted into defence treaty after the EU-US community was dissolved. If China determined to claim a dominant position in Asia, the collapse of NATO would cause America's Asian partners to seek defence accommodation against China that redirected anti-Russian sentiment toward Asia.
4) NATO's retirement had forced the US national defence spending by pruning its costs for NATO budget and other administrative costs for paid salaries to military personnel in USEUCOM staff, maintenance costs in the US army bases, bases, barracks etc. in foreign hosts countries and cancelled NATO military battle drill exercises on military polygons entire Europe. The US Army prepared tenders to sell of military properties on territory where the US forces were hosted in military immobilises. Other mobilities of the US military capabilities and nuclear weapons were moved out of Europe until deadline.
5) NATO's retirement could have negative implications on the US economic and financial hegemonic impacts in Europe to be more safety and secured for investment of the US capital under preface of partnership that relied on a "solid foundation of common values, including a commitment to the rule of law, the democratic process, free enterprise, respect for human rights, and alleviating poverty" (Galik, 2019: 11). The transatlantic partnership for free trade deal by lifting tariffs on imported US merchants to European food market had failed. The USA had imposed economic sanctions after Transatlantic Trade and Investment Partnership (TTIP, 2013) was refused from the EU as retaliation measures to European exporters of military capabilities to the US market that affected badly EU defence market. Geo-economic disputes had extended more deeper NATO non-solidarity what had speeded up to oust the US defence producers from the EU defence market, by starting up PESCO projects achieved more autonomy for self-desired supply chains with defence products off the shelf from domain producers.
6) The final impact of NATO's retirement would push down the "liberal international order." Neoliberal theories among international order that consists of treaties, alliances, agreements, institutions and modes of behaviour mostly created by the USA, in an effort to safeguard democracies in pretext for world domination under liberal emperor regime. This neoliberal regime had kept relative peace in the trans-Atlantic space for seven decades. Trump is going to implement isolationist theory under moto America first under pretext to return back American sovereignty.

The end of NATO would deprive Europeans and the US defence cooperation to the zero level that would exclude an important framework of legitimacy for the abusing military power. The USA cannot rely on European partners or force them for further implementing the US geopolitical interests under pretext of using NATO collective defence clause. The USA cannot impel European partners on the battle ground anymore within any conditions or circumstances of treaty if disappears NATO's common defence planning and exercise practices. Sooner rather than later the USA would lose their ability to cooperate militarily as a military enabler by leading from behind as cover dice military actions that would become far more difficult. Logistical supply was possible from behind as airwing support too, but did not physical expose to danger at contact fire line for the US infantry. Leading from behind military theory presents commodity and safety distance in wartime as to avoid the first cannon fodder line effect at atrocity aspects. All NATO strategies are based on the US safety war theories how to avoid casualties in own troops.

5. CONCLUSION

Geo-economic and geopolitical impacts from sovereigntists toward globalists made difficult strains by preserving neoliberal world order after the end of the Cold War, where NATO played a crucial role to postpone its demise. Globalists indication as to vindicate hegemonic grip at the USA to dominate over Europe, impacted on regional franchise of globalists who proclaimed itself as European sovereigntists for more Europe both into defence and military ambitions. Which trump card shall play the EU regionalists into defence integrations is another question on that need to be answered into next years ahead after political, economic etc. turmoil between Europe and the USA into transatlantic ties. If we bet on the traditional EU-US relations under NATO pretext, that had been deteriorating after sanctions against Russia were imposed, we expected that European pillar during long lasting vassal relations in NATO under the US hegemony cannot hold on previous stance and it will collapse soon. The optimal option for the European sovereigntists' model on defence and military ambitions was presented into this article.

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ADVANTAGES AND DISADVANTAGES OF TOURISM CRAFT BUSINESS IN THE REPUBLIC OF CROATIA

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ABSTRACT

The craft business is very specific, but also largely dependent on the sector in which the craftsman operates, i.e. it can be said that the advantages and disadvantages of doing business through crafts differ greatly in relation to the nature of business in question. Crafts bring certain advantages and disadvantages in relation to the opening of a company, which as a consequence has the specifics of the business of craftsmen. In order to show the specifics of craft business in the tourism sector, the paper will show the advantages and disadvantages of such a business on the example of a travel agency, with the conclusion which form of business suits tourism activities better. Encouraging craft development is necessary with the aim of developing the economy of any country, especially when it comes to the Republic of Croatia, where the development of crafts in tourism is one of the most important sectors. The objective of the paper is to show, with regard to the type of the tourism activity, what are the advantages and disadvantages of performing tourist business activity by establishing a craft, or whether it would be more viable to found a company to perform the specific tourism activity.

Keywords: *craft, craft advantages, craft disadvantages, tourism*

1. INTRODUCTION

Crafts as a way of doing business is very specific due to the identification of craftsmen as a business entity and a person (i.e. it is the same natural person), which results in numerous specifics in the business of crafts, i.e. advantages and disadvantages. When it comes to the business of crafts in tourism, it is noticeable that business is very specific depending on the activity in question and therefore crafts as a way of doing business is more acceptable for some activities, while for some activities the establishment of a company is significantly more desirable. Crafts are considered to be the independent and permanent performance of legal economic activities by natural persons, i.e. craftsmen with the aim of generating income or profit by producing products, trading goods or providing services on the market. Legal economic activities imply that a craftsman can perform any economic activity that is not legally prohibited (of course, subject to other conditions, depending on the specific types of crafts). Permanent performance of activities implies that the economic activity is performed for an unlimited period of time (although there are also seasonal crafts that are performed for a maximum of six months per year, but these crafts also do not have a limit for how many years the economic activity will be performed), therefore, the temporary suspension of economic activity is not considered to be a permanent closure of a craft, but it is still considered to be a permanent performance of economic activity.[1]

[1] Art. 2(4) Crafts Act, Official Gazette of the Republic of Croatia »Narodne novine«, No. 143/13, 127/19, 41/20

A craft is identified with a natural person, i.e. a craftsman who independently and permanently performs economic activity in his own name and for his own account with the aim of generating income or profit. A craftsman may perform the activity alone, in a joint craft or he may employ employees.[2] Crafts are very important for the development of the economy, especially when it comes to products or services that are very specific and personalized, which is greatly emphasized with the development of tourism and the need to meet the wishes of customers (especially very specific wishes). The importance of crafts in tourism can be shown on very simple examples and related to the topic of this paper, i.e. a travel agency as an example of a craft, a craft as a small business entity can offer a very specific service to its clients, or a type of service that is usually not provided by larger travel agencies and thus further encourage the development of tourism and the entire Croatian economy.

2. THE CRAFT BUSINESS ACTIVITY

In order for a craftsman to perform a craft activity, it is necessary for the craft to be opened, that is for the crafts licence to be issued. A crafts licence is necessary for performing activities in all types of craft businesses, while the specificity of a privileged craft is that a craftsman who wants to perform a privileged activity must also have the privilege certificate issued. The crafts licence, which is the basis for performing a craft activity, is issued by the competent Public administration Office in the county, i.e. the office of the City of Zagreb, while the privilege certificate is issued by the competent ministry or other competent body, thus the craft business is entered in the Crafts Register.[3] As with the establishment of a company, the craft business is registered under the name or company under which it operates. When establishing a craft business, the seat of the craft business is determined, which can be at the address of the usual residence of the craftsman (if craft need not be run on business premises) or at some other address (if craft is to be run on business premises).[4]

2.1. Crafts business taxation

Alike the performance of activities of legal entities, the performance of craft activities is subject to taxation, which is why the taxes that are most important for craftsmen are defined in more detail below.

2.1.1. Income tax

The taxpayer of income tax is any craftsman who earns income. Moreover, in the case of a joint craft business, such as the example given in the empirical part of the paper, then each natural person is a taxpayer separately. Furthermore, in practice, a situation may arise when a person is a craftsman in his craft, but also a craftsman in a joint craft, and it should be taken into account when calculating income tax and contributions.[5] Income tax can be determined on the basis of data from business books or as a lump sum. Both methods of determining income tax have their advantages and disadvantages, and which method is better depends on the characteristics of the taxpayer who is taxed. Income tax is determined on an annual basis and is paid according to the place of residence or usual residence of the taxpayer at the rates of 24% and 36%. It is important to point out that craftsmen do not pay income tax on the entire amount of earned income, but they are recognized for the loss and personal allowance, also, craftsmen can use various additional incentives and benefits.[6]

[2] Art. 4 Crafts Act
[3] Art. 14-15 Crafts Act
[4] Art. 19-20 Crafts Act
[5] Ott, K. (2016.): Porezni priručnik za obrtnike, Zagreb, Institut za javne financije, p. 6
[6] Tax Administration (2019.): Income Tax, https://www.porezna-uprava.hr/obrtnici/Stranice/Porez-na-dohodak .aspx (25.10.2019.)

The basic personal allowance for a natural person craftsman is HRK 4,000.00, while personal allowance for all other dependent members are the product of HRK 2,500.00 multiplied by factors according to the following table.

Basis for the increase of the basic personal allowance	**Factor**
Supported members of the immediate family	0,7
First supported child	0,7
Second supported child	1
Third supported child	1,4
Fourth supported child	1,9
Fifth supported child	2.5
Disability of a taxpayer, each supported member of the immediate family and each supported child	0,4
Disability established on one basis of 100% and/or the use, based on special regulations, of the right to allowance for assistance and care of the taxpayer, i.e. of the right to personal disability pension, of each supported member of the immediate family and every supported child.	1,5

Table 1: Personal allowance of supported members of the immediate family calculation factors
(Source: Data according Art. 14. Income tax)

A dependent member (immediate family member and dependent children) may be a natural person whose taxable receipts and other receipts that are not considered as income do not exceed the amount of HRK 15,000.00 per year.[7] In doing so, the same person can be used as a dependent member by several taxpayers in proportions as agreed. Taxation of income earned by performing a craft activity can be done on the basis of business books, in which case all receipts and expenses of the craftsman during the business year are recorded, which finally leads to the determination of earned income or loss.[8] It is important to note that only receipts and expenses that can be recorded in the books, i.e. for which there is documentation, can be recognized as operating receipts and operating expenses, while unrecognized expenses increase the income tax base.[9] The taxpayer or craftsman may determine the income tax in a lump sum if he was not a VAT payer in the previous business year and if the realized receipts do not exceed HRK 300,000.00. The Tax Administration determines the annual flat-rate income tax on craftsmen by a tax ruling. The rate is 12%, and is applied depending on the amount of income received on an annual basis, and is divided into five tax classes.

Total income	**Annual tax base**	**Annual income tax**
0,00 - 85.000,00	12.750,00	1.530,00 kn
85.000,01 - 115.000,00	17.250,00	2.070,00 kn
115.000,01 - 149.500,00	22.425,00	2.691,00 kn
149.500,01 - 230.000,00	34.500,00	4.140,00 kn
230.000,01 - 300.000,00	45.000,00	5.400,00 kn

Table 2: Determining the annual income tax
(Source: Data according Art. 3. Independent business activity flat tax Ordinance, Official Gazette of the Republic of Croatia »Narodne novine«, No. 1/20)

[7] The prescribed amount of HRK 15,000.00 does not include receipts prescribed by Article 17(2) of the Income Tax Act (Official Gazette NN No.115/16, 106/18, 121/19, 32/20)
[8] For more details on what is considered as receipts and expenditures on the basis of self-employment, see Art. 31-32 of the Income Tax Act.
[9] What is considered non-tax deductible expenditure see in Art. 33 of the Income Tax Act

Table 2 shows that, for example, for an income up to HRK 85,000.00, the annual income tax amounts to HRK 1,530.00, i.e. that 85% of expenses are recognized, and by applying a rate of 12% to the tax base of HRK 12,750.00, this amount is achieved. Determining income tax on the basis of business books is good for craftsmen who have large expenses and have estimated that at the end of the business year they will not generate a large income or that they will even make a loss. Also, such a method of calculating income tax is desirable for craftsmen who have more dependent members. Flat-rate taxation of craft businesses is desirable for craftsmen who do not have a large income, but who also do not have large expenditures, and thus estimate that they will pay a lower income tax in this way. In addition to income tax, a surcharge is determined, which in Split is calculated at the rate of 15% on the amount of calculated tax. The surcharge rate depends on the place of residence or domicile of the taxpayer, so there are municipalities and cities where the surcharge rate is still 0%, while the city of Zagreb has the maximum possible prescribed rate of 18%.[10]

2.1.2. Corporation tax

Craftsmen who determine income in the manner prescribed for self-employment according to the regulations on income taxation, may by operation of law become subject to corporation tax on the ground that they earned more than HRK 7,500,000.00 in the previous tax period or if they declare that they will pay corporate tax instead of income tax. Income tax at the rate of 12% is paid if the revenues are up to HRK 7,500,000.00 and at the rate of 18% if the revenues generated in the tax period are equal to or greater than HRK 7,500,000.01. There is also a withholding tax paid on the fee which is paid by the domestic payer to the non-resident and it is calculated at a rate of 15%, except for dividends and profit shares on which 12% is paid and exceptions on which the withholding tax is paid at the rate of 20%.[11] Although it seems that it would be more favourable for craftsmen to pay corporate tax rather than income tax, this is actually not the case due to the significantly higher amount of contributions that craftsmen who are also subject to corporation tax are obliged to pay.

2.1.3. Value added tax (VAT)

VAT is one of the forms of sales tax, and this tax is imposed on the sale of products and the supply of services for consideration. This tax, as its name suggests, is imposed on each of the phases of the production cycle, i.e. on the value added in each phase of the production cycle and the value of services provided. At the same time, VAT payers are also obliged to pay taxes, but they can also charge the input VAT on received invoices.[12] A craftsmen may become liable to pay VAT if, when opening a craft business, he voluntarily enters the VAT taxation system or by force of law, if he makes more than HRK 300,000.00 of taxable supplies of goods and services in the current year (this amount does not include the value of supplies goods and services that are non-taxable). In the case that a craftsman decides to voluntarily enter the VAT taxation system, then he is obliged to stay in the system for the next 3 years, whereas in the case when he enters the VAT taxation system by force of law, then in the year following the year in which he had value of taxable supplies of goods and services below HRK 300,000.00 he may leave the VAT system if he submits a request to leave the system to the Tax Administration within the prescribed deadlines.[13]

[10] Tax Administration (2019.): Overview of surtax rates on the income tax of cities and municipalities in the Republic of Croatia, https://www.porezna-uprava.hr/obrazac_joppd/Documents/PREGLED%20STOPA%20PRIREZA%20POREZU%20NA%20DOHODAK%20%20GRADOVA%20I%20OP%C4%86INA%20U%20REPUBLICI%20HRVATSKOJ%20ZA%202019_.pdf (24.02.2020.)

[11] Tax Administration (2019.): Corporate Tax, https://www.porezna-uprava.hr/HR_porezni_sustav/Stranice/porez_na_dobit.aspx (10.11.2019.)

[12] Šimović J., Šimović, H. (2006): Fiskalni sustav i fiskalna politika Europske unije, Zagreb, Sveučilište u Zagrebu, Pravni fakultet, p. 112–113

[13] Markota, Lj. (2018.): Izlazak iz sustava PDV-a 1. siječnja 2019. godine, Zagreb, RRIF, No 12, p. 163-165

In the case of a joint craft business, the total income in the craft may not exceed the amount of HRK 300,000.00, but also none of the natural persons involved in the joint craft may be liable for VAT on any other basis, otherwise the craft business is liable for the charging and payment of VAT.[14] Related to the flat-rate taxation of income earned in crafts, it can be concluded that the income earned in joint craft businesses cannot be flat-rate taxed in a situation when one of the natural persons is a taxpayer of value added tax based on performing another activity. VAT is one of the most generous taxes for the state budget, but in recent years there have been significant changes in the taxation of this tax, especially through raising the threshold for entering the VAT system and it is clear that the current threshold of HRK 300,000.00 leaves room for action for numerous craftsmen without the obligation to enter the VAT system. This is especially important for craftsmen who have no employees or have 1 to 2 employees and are based mainly on provision of services. In this way, those craftsmen become more competitive on the market and their work is encouraged. On the other hand, non-VAT craftsmen can offer prices that are lower than their VAT competitors and can thus contribute to lowering prices for the final consumer (which is extremely important, given the situation in the Croatian economy). Consequently, the end consumer has more resources at his disposal and is able to buy more products or services, which can ultimately have a multiplier positive effect on the entire economy. A large number of craftsmen choose to voluntarily enter the VAT taxation system if, at the beginning of their activity, they acquire property of higher value in order to exercise their right to reimbursement of value added tax. Many are also unpleasantly surprised when they want to leave the VAT system after 3 years, but then realize that they would actually have to make an adjustment of the input VAT charged. Thus, for example, if the taxpayer exercised the right to input tax when buying real estate, and was not later in the VAT system for 10 years, he is obliged to make an adjustment of input tax for the remaining years and consequently pay VAT to the state.

2.1.4. Other taxes

In addition to taxes such as income tax, corporate tax and value added tax, craftsmen are required to pay other taxes, the most common of which are:[15]

- Real estate transfer tax;
- Inheritance and gifts tax;
- Road motor vehicles tax;
- Tax on the use of public land and
- Tax on vacation houses.

2.2. Mandatory contributions

Craftsmen are obliged to pay mandatory contributions for pension and health insurance, but these amounts are very different depending on the characteristics of the natural person i.e. craftsman. Thus, for example, craftsmen who are employed and whose craft business is considered as second activity pay a significantly lower amount of contributions (which they pay annually) compared to craftsmen who pay contributions on a monthly basis or as a lump sum.

Table following on the next page

[14] Mahović Komljenović, M. (2017.): Paušalno oporezivanje samostalne djelatnosti u 2018. i obveze za 2017. godinu, Zagreb, RRIF

[15] Tax Administration (2019.): Craftsmen, https://www.porezna-uprava.hr/obrtnici/Stranice/Obrtnici2.aspx (15.10.2019.)

Contributions	Base	Pension insurance I pillar+II pillar	Health insurace	Total
Income taxpayers	5.682,30	852,35 + 284,12 1.136,47	937,58	2.074,05
Corporate taxpayers	9.616,20	1.442,43 + 480,81 1.923,24	1.586,67	3.509,91
Other – flat rate taxpayers	3.496,80	524,52 + 174,84 699,36	576,97	1.276,33

Table 3: Craftsmen mandatory insurance contributions
(Source: HOK (2019.): Nove osnovice za obračun doprinosa za obvezna osiguranja za 2020., Zagreb, HOK, p 1.)

Table 3 shows that it is clear what contributions and in what amount craftsmen are obliged to pay. It can be seen that the largest amount is paid by craftsmen who are liable for corporate tax, and the smallest amount by craftsmen who pay income tax in a lump sum. When it comes to performing a craft business as a second activity, then the highest bases for the assessment of mandatory contributions are prescribed. Thus, when it comes to taxpayers of income tax and corporate tax, the maximum amount of the base for assessment of mandatory contributions is HRK 68,187.60, and when it comes to taxpayers who pay a flat-rate tax, contributions are calculated in accordance with the following table.

Total annual revenue	Annual tax base	Mandatory contributions			Total
		Pension insurance I pillar 7,5%	Pension insurance II pillar 2,5%	Health insurance 7,5%	
0,00 - 85.000,00	12.750,00	956,25	318,75	956,25	2.231,25
85.000-115.000	17.250,00	1.293,75	431,25	1.293,75	3.018,75
115.000-149.500	22.425,00	1.681,88	560,63	1.681,88	3.924,38
149.500 - 230.000	34.500,00	2.587,50	862,50	2.587,50	6.037,50
230.000 - 300.000 kn	45.000,00	3.375,00	1.125,00	3.375,00	7.875,00

Table 4: Craftmen flat rate taxpayers mandatory contributions calculation in HRK
(Source: HOK (2019.): Nove osnovice za obračun doprinosa za obvezna osiguranja za 2020., Zagreb, HOK, p. 2)

Table 4 shows that taxpayers whose craft business is a second activity, and whose income is taxed at flat-rate, pay a significantly lower amount of contributions compared to other categories of craftsmen. It is also evident that they pay contributions at rates that are reduced by 50% than usual.

2.3. Differences between crafts and companies

The first, but also the key difference between a craft and a company is that a craft is a natural person[16], while a company is a legal person. Therefore, they have different responsibilities, i.e. the craftsman is unlimitedly[17] liable for craft obligations, while company owners are liable for

[16] Exceptionally, in accordance with Art. 2 para. 2 of the Crafts Act a craft may be performed by a legal entity, but for the purposes of this paper we will limit ourselves to a much more common situation when a craft is performed by a natural person.

[17] Until 15 July 2010, the craftsmen was liable for the obligations arising in the performance of rafts "with the entered property necessary for the performance of crafts". By the decision of the Constitutional Court of the Republic of Croatia, U-I-2771/2008, this provision was repealed on the grounds that it unjustifiably benefits natural persons. Namely, sole traders and companies

the obligations of the company only up to the amount of the underlying stake. There are also differences between taxes paid by a craftsman and a company, so the company is obliged to pay corporate tax at rates of 12% or 18%, while the craftsman can choose whether to pay income tax or corporate tax. Although it seems more favourable for a craftsman to be in the corporate income tax system, actually this is not the case because he is then obliged to pay significantly higher amounts of pension and health insurance contributions. Also, one of the key differences is the assumption that a craftsman performs the activity of a craft, while members of commercial companies can also be members only, without having to be employed in the company. Furthermore, a craftsman does not have limited working hours, while company employees have working hours defined by an employment contract or some other contract. A craftsman may be assisted in performing activities by family members without establishing a contractual relationship, while in the case of a company, family members cannot assist the owners in performing activities, which means that crafts have a significant advantage over companies. Although previously company board members could partially or completely avoid paying pension and health insurance contributions and thus had an advantage over craftsmen, due to amendments of legal regulations, this was prevented, so now board members are also obliged to pay contributions if they are not employed elsewhere or if they are registered for an amount lower than the amount prescribed for assessment of contributions for board members. On the other hand, craftsmen can almost completely avoid paying contributions if they register at another job for any number of working hours and then their craft business is considered as second activity and in that case contributions are calculated according to the annual income (corporate) tax return. Bookkeeping of craftsmen is significantly easier than that of a company, and in a situation where a craftsman has basic bookkeeping and tax skills, he can save significant amounts of money that he would otherwise pay for bookkeeping costs. Although it seems that a craft can be opened for any activity, this is usually not so and in most cases professional qualification of craftsmen is required. This is not the case when opening a commercial company which can be started in order to perform any legal activity. For example, in confectionery, when it comes to crafts, training of craftsmen is required, while in the case of a company, the owners of the company do not have to be qualified to perform confectionery. There are also obvious differences when it comes to opening and closing crafts and commercial companies. Although it used to be much harder to start a company than to start a craft, in recent years it has become much easier to start a company, but there are still significant difficulties when it comes to closing down a company and it is certainly easier to close a craft. Also, one of the advantages of crafts is certainly the possibility of performing crafts as a seasonal activity, while this is not possible when it comes to companies.

3. CRAFTS IN THE TOURISM SECTOR IN THE REPUBLIC OF CROATIA

3.1. Advantages of craft businesses in the tourism sector

When it comes to the tourism sector, crafts have proven to be one of the ways to pursuit an economic activity which has its advantages and disadvantages, but it can be concluded that they largely depend on the person or craftsman, the specifics of the activity, but also on revenues and income which the craftsman realizes. One of the first advantages of a craft business is the simplicity of opening and closing it, and also the significantly lower price of the entire process of opening a craft compared to the price of opening a company. The simplicity of opening a craft business, although defined as an advantage when starting a business, is also associated with the greatest disadvantage of craft businesses, i.e. the unlimited liability of craftsmen. One of the advantages of crafts is certainly the simpler change of data on crafts in the Crafts Register.

are liable for obligations with all their assets, so the state has violated the constitutional duty to ensure equal legal position on the market for all entrepreneurs.

One of the most significant advantages of crafts in the tourism sector is the possibility of performing activities by craftsmen during a larger number of working hours during the day, ie, if it is a company, an employee can be employed for a maximum of 8 working hours, while a craftsman can work independently during the entire working time of the craft. Other significant advantages of crafts in the tourism sector is the possibility of performing activities by craftsmen during a larger number of working hours during the day, but if it is a company, an employee can be employed for a maximum of 8 working hours, while a craftsman can work independently during the entire working time of the craft. In this way, the need to hire additional employees is reduced, which reduces the crafts operating costs and makes them more competitive in the market. Also, family members can assist a craftsman in performing activities, without the need to enter into a contractual relationship that would regulate their work. One of the reasons why a significant number of people decide to open a craft rather than a company is the possibility of making own resources in the giro account of the craft available, i.e. the craftsman can withdraw funds from the craft account and dispose of them as he wishes. Although this is considered an advantage for the craftsman, it can also become a disadvantage if the craftsman does not have a regular inflow of funds to the bank account, which can lead to business difficulties, and especially disrupt business relations with suppliers (if he does not respect the deadlines for payment). One of the advantages of crafts is the possibility of calculating and paying VAT after invoice collection, which avoids VAT taxation of craftsmen if the invoice is not collected, ultimately significantly reducing the burden on craft businesses. Also, the possibility of using personal deductions, or basic personal deduction and personal deductions for dependent members, due to which often the basis for income tax assessment is zero, and the craftsman has no obligation to pay income tax, proves to be one of the advantages of craft businesses. Additionally, one of the advantages of crafts is simpler bookkeeping and paperwork required by the Ministry of Finance, i.e. Tax Administration. Consequently, craftsmen with minimal bookkeeping knowledge can easily monitor their business and enter business data on the ePorezna[18] portal through the eCitizens[19] system, thus saving significant resources that would otherwise be spent on bookkeeping services. Amendments to the Value Added Tax Act introduce the possibility of using input tax for passenger cars purchase, which is why a significant number of craftsmen buy passenger cars through a craft, using the possibility of input tax (if they are in the VAT system) [20]. Particularly significant is the use of depreciation, which reduces income, and thus income tax (or profit if the craftsman is in the corporate tax system). The specifics of certain activities are emphasized thus in certain activities, such as catering, it is possible for craftsmen to present a significant part of personal costs as craft costs, while in other activities the costs of mobile phones and other similar costs are most often shown as craft costs. One of the advantages of crafts is the possibility of flat-rate taxation (under flat-rate taxation conditions) thus reducing taxes and contributions, but also the possibility of performing craft activity as second activity (if the craftsman is employed by another employer who pays his compulsory insurance contributions). In this way, significant savings are enabled in the form of reduced contributions for compulsory insurance, which are paid on the basis of realized income reported according to the annual income tax return. One of the advantages of crafts is the possibility of seasonal craft activities, which will be explained in more detail later in this chapter.

[18] The ePorezna system allows users to use the services of the Tax Administration online, without going to a Tax Administration branch.
[19] The eGrađani system enables citizens to obtain numerous services online, one of which is the use of the ePorezna system for citizens.
[20] Jankac, T. (2018.): Taxation of cars and other means of personal transport with VAT, http://www.ekonos.hr/porezi/oporezivanje-automobila-i-drugih-sredstava-za-osobni-prijevoz-pdv-om/ (25.02.2020.)

3.2. Disadvantages of craft businesses in the tourism sector

As previously stated in defining the differences between crafts and companies, although crafts are a way of performing economic activity and each craft operates under a company and has its owner, the craft is still a natural person and is identified with the owner or craftsman. Consequently, one of the first, but also the biggest shortcomings of the craft business arises, and that is the unlimited liability for the obligations of the craft. This is the reason why a significant number of individuals do not choose to perform economic activity through crafts, especially if they have significant assets. An additional reason why individuals were less likely to open a craft business in previous years is because by opening a company, and most often a simple limited liability company (j.d.o.o)., they were not obliged to pay contributions and taxes if they were not employed elsewhere (which was eventually noticed and changes were made to the legislation regulating the obligation of paying taxes and contributions of company board members on a certain basis, if not insured on another basis or insured on a lower basis), whereas in a craft they are obliged to it. Related to the previous, one of the disadvantages of crafts is certainly the obligation to pay taxes and contributions on a monthly basis. Although contributions largely depend on whether the craftsman is in the income tax or profit tax system and whether he performs a craft activity as second activity, it is often a significant amount in question and for this reason, individuals who generate less income through craft activity on a monthly basis than, for example, HRK 5,000.00 do not decide to open a craft. One of the disadvantages of crafts is the income tax rates (min. 24%), which are significantly higher than corporate tax rates (12% and 18%), which is why it is profitable for craftsmen who earn more income to enter the corporate tax system (voluntary entry, although not exceeding legally prescribed conditions for entering the corporate tax system) and at the same time pay higher contributions for pension and health insurance. One of the disadvantages when opening a craft are special conditions set before the craftsman, depending on the type of activity entered in the Crafts Register. Thus, for example, in the case of a joint craft, if a certain professional qualification is required and the craftsman does not have it he must employ full-time a person with professional qualifications (the same is not required in case of a company). Also, when opening a craft which is registered to perform activities such as construction, the appropriate health ability of craftsmen is required. Furthermore, another shortcoming of crafts is in the case of a privileged craft and that is the necessity to obtain a privilege certificate issued by the competent authority, which is actually considered a license to perform a specific activity. In addition to all the above, craftsmen are obliged to pay contributions to the Croatian Chamber of Trades and Crafts.

3.3. Seasonal crafts

Seasonal craft is actually a craft, but for certain activities which have a seasonal character, the possibility of performing the craft activity is allowed only during the certain season to perform these activities, which consequently brings many advantages for craftsmen. Seasonal crafts can operate for a maximum of 6 months during one business year, continuously or intermittently. One of the most significant advantages of seasonal crafts, which is why a certain number of craftsmen chose them, is no obligation to pay contributions for pension and health insurance when the craft is not operating.[21] Although it seems that the number of activities that can be performed seasonally is quite limited, this is not the case and it is possible to perform a number of activities seasonally.[22] The possibility of performing a wide range of activities through seasonal crafts is very important due to the seasonal nature of performing activities that are closely related to tourism and the tourist season.

[21] Tilio.hr (2020.): Seasonal craft, https://tilio.hr/sezonski-obrt/ (10.01.2020.)

[22] For more details on the types of activities that can be performed seasonally, see: Art. 3. of the Seasonal Business Ordinance, Official Gazette of the Republic of Croatia »Narodne novine«, No.60/10, 17/12

At the same time, it is useful for craftsmen to have this option, since many craftsmen would decide not to perform activities if they would have to pay contributions for compulsory insurance in the period when they do not perform economic activity and do not earn income.

3.4. Statistical data on craftsmanship in the Republic of Croatia

In order to get an insight into the business of craftsmen in the Republic of Croatia, it is necessary to present statistical data, the most important of which are data published semi-annually by the Croatian Chamber of Trades and Crafts.

ORGANIZATIONAL FORM	mark	subjects	share
joint stock company	d.d.	865	0,4%
limited liability company	d.o.o.	97.415	44,2%
simple limited liability company	j.d.o.o.	35.471	16,1%
general partnership	j.t.d.	196	0,1%
foreign companies or sole trader subsidiaries	podružnica	473	0,2%
others	ostali	150	0,1%
Craftsmen *	***OBRT***	***86.020***	***39,0%***
TOTAL		**220.590**	**100,0%**

Table 5: Legal entities in Croatia in 2019
(Source: HOK (2019.): Statističke informacije lipanj 2019, Zagreb, HOK, p. 5.)

Table 5 shows all entities that perform economic activity in the Republic of Croatia. It can be seen that the most numerous are limited liability companies (d.o.o.) with a share of 44.2%, followed by crafts with a share of 39%. In third place with a share of 16.1% are simple limited liability companies[23], as one of the newest business options. Out of the total number of crafts, 84,809 crafts are operating, 544 crafts have temporarily suspended activities and 667 crafts have not even started operating. 78,453 crafts operate throughout the year, while as many as 7,567 crafts operate seasonally. 84,272 crafts are non-privileged crafts, while 1,748 crafts are privileged.[24]

Table following on the next page

[23] A simple limited liability company was introduced into the Croatian business system by amendments to the Companies Act 2012, following the example of the German 1 Euro GmbH or Mini GmbH, for which a share capital of only HRK 10 is prescribed, but also much easier establishment and lower establishment costs compared to a classic limited liability company.
[24] HOK (2019.): Statističke informacije lipanj 2019, Zagreb, HOK, p. 18

No.	County	craft production	craft services	hosptality and tourism	trade	people and goods transportation	fish industry, maritime cukture, agriculture	hairdressers, cosmetologist, body care, fitness	TOTAL craft	*share crafts in HR*
1	Zagrebačka	825	2.536	438	456	450	119	440	**5.264**	***6,1%***
		15,7%	48,2%	8,3%	8,7%	8,5%	2,3%	8,4%		
2	Krapinsko-zagorska	432	1.181	240	233	210	59	207	**2.562**	***3,0%***
		16,9%	46,1%	9,4%	9,1%	8,2%	2,3%	8,1%		
3	Sisačko-moslavačka	230	994	249	225	178	104	175	**2.155**	**2,5%**
		10,7%	46,1%	11,6%	10,4%	8,3%	4,8%	8,1%		
4	Karlovačka	238	838	241	202	130	100	150	**1.899**	**2,2%**
		12,5%	44,1%	12,7%	10,6%	6,8%	5,3%	7,9%		
5	Varaždinska	366	1.257	193	241	334	110	244	**2.745**	**3,2%**
		13,3%	45,8%	7,0%	8,8%	12,2%	4,0%	8,9%		
6	Koprivničko-križevačka	187	693	117	123	76	70	115	**1.381**	**1,6%**
		13,5%	50,2%	8,5%	8,9%	5,5%	5,1%	8,3%		
7	Bjelovarsko-bilogorska	147	456	109	137	79	99	114	**1.141**	**1,3%**
		12,9%	40,0%	9,6%	12,0%	6,9%	8,7%	10,0%		
8	Primorsko-goranska	592	3.762	1.335	901	663	401	703	**8.357**	**9,7%**
		7,1%	45,0%	16,0%	10,8%	7,9%	4,8%	8,4%		
9	Ličko-senjska	78	380	299	141	129	92	65	**1.184**	**1,4%**
		6,6%	32,1%	25,3%	11,9%	10,9%	7,8%	5,5%		
10	Virovitičko-podravska	150	462	128	162	74	103	87	**1.166**	**1,4%**
		12,9%	39,6%	11.0%	13,9%	6,3%	8,8%	7,5%		
11	Požeško-slavonska	144	424	107	102	76	74	82	**1.009**	**1,2%**
		14,3%	42,0%	10,6%	10,1%	7,5%	7,3%	8,1%		
12	Brodsko-posavska	278	856	237	254	218	144	148	**2.135**	**2,5%**
		13,0%	40,1%	11,1%	11,9%	10,2%	6,7%	6,9%		
13	Zadarska	282	1.627	1.209	650	391	276	240	**4.675**	**5,4%**
		6,0%	34,8%	25,9%	13,9%	8,4%	5,9%	5,1%		
14	Osječko-baranjska	422	2.117	393	439	245	367	367	**4.350**	**5,1%**
		9,7%	48,7%	9,0%	10,1%	5,6%	8,4%	8,4%		
15	Šibensko-kninska	198	1.254	834	430	260	182	191	**3.349**	**3,9%**
		5,9%	37,4%	24,9%	12,8%	7,8%	5,4%	5,7%		
16	Vukovarsko-srijemska	221	861	249	278	131	278	193	**2.211**	**2,6%**
		10,0%	38,9%	11,3%	12,6%	5,9%	12,6%	8,7%		
17	Splitsko-dalmatinska	741	4.065	2.442	1.429	1.427	391	842	**11.337**	**13,2%**
		6,5%	35,9%	21,5%	12,6%	12,6%	3,4%	7,4%		
18	Istarska	575	3.298	1.316	992	560	596	475	**7.812**	**9,1%**
		7,4%	42,2%	16,8%	12,7%	7,2%	7,6%	6,1%		
19	Dubrovačko-neretvanska	231	1.225	972	390	839	297	182	**4.136**	**4,8%**
		5,6%	29,6%	23,5%	9,4%	20,3%	7,2%	4,4%		
20	Međimurska	205	695	82	95	83	70	93	**1.323**	**1,5%**
		15,5%	52,5%	6,2%	7,2%	6,3%	5,3%	7,0%		
21	Grad Zagreb	1.301	8.963	1.108	1.577	1.547	37	1.296	**15.829**	**18,4%**
		8,2%	56,6%	7,0%	10,0%	9,8%	0,2%	8,2%		
	TOTAL CRAFTS	**7.843**	**37.944**	**12.298**	**9.457**	**8.100**	**3.969**	**6.409**	**86.020**	**100,0%**
		9,1%	**44,1%**	**14,3%**	**11,0%**	**9,4%**	**4,6%**	**7,5%**		
	Zagrebačka županija + Grad Zagreb	2.126	11.499	1.546	2.033	1.997	156	1.736	21.093	24,5%
		10,1%	54,5%	7,3%	9,6%	9,5%	0,7%	8,2%		

Table 6: Number of craftsmen in Croatian counties by guild affiliation (Source: HOK (2019.): Statističke informacije lipanj 2019, Zagreb, HOK, p. 11.)

Table 6 shows that 11,337 crafts were opened in the Split-Dalmatia County, of which 2,442 (which is the highest number of craftsmen in the tourism sector per county making it significantly higher than the number of craftsmen in the tourism sector in the City of Zagreb and Zagreb County combined) or 21.5% of crafts in the catering and tourism sector. From these data it is evident that crafts as a way to perform economic activity is very important in the Split-Dalmatia County. The record holder in this category in terms of the share of tourism sector craftsmen in the total number of craftsmen is Zadar County with 25.9%. If craftsmen are analysed by gender, out of the total number of craftsmen, 29,859 are women and 58,110 are men.[25]

No.	EMPLOYEES	by gender			share		
		female	male	total	female	male	total
1.	Legal entities(excluded are craftsmen employed in legal entities having an additional craf)	590.709	612.088	1.202.797	49,1%	50,9%	100,0%
2.	CRAFTS (owners/partners and employees)	84.611	118.673	203.284	41,6%	58,4%	100,0%
3.	OWNERS/PARTNERS (3 = 4+5)	29.859	58.110	87.969	33,9%	66,1%	100,0%
4.	craftsmen – craft only business activity – pension insurance insuree	22.616	44.317	66.933	33,8%	66,2%	100,0%
5.	craftsmen – having craft and employed in legal entities (additional busines activity)	7.243	13.793	21.036	34,4%	65,6%	100,0%
6.	CRAFT EMPLOYEES	54.752	60.563	115.315	47,5%	52,5%	100,0%
7.	Independent professions	13.006	13.186	26.192	49,7%	50,3%	100,0%
8.	Agriculturers	6.292	12.976	19.286	32,7%	67,3%	100,0%
9.	**TOTAL (9=1+2+7+8)**	**694.618**	**756.923**	**1.451.541**	**47,9%**	**52,1%**	**100,0%**

Table 7: Total number of employees in Croatia, June 2019
(Source: HOK (2019.): Statističke informacije lipanj 2019, Zagreb, HOK, p. 18.)

Table 7 shows that approximately 1/7 employees out of the total number of employees are craftsmen and employees in crafts. Craftsmen are included in this calculation, since the performance of craft activities is considered one of the forms of self-employment. Almost a quarter of all craftsmen are employed by another natural or legal person (craft is their second activity), which is why they are certainly in a more favourable position compared to craftsmen who perform crafts as an only activity. Although it can be seen that when it comes to craftsmen, the share of women in the total number of craftsmen is significantly lower, compared to men, but when we look at the share of women employed in crafts, it is clear that it is close to the total share of women in total employment in June 2019. From all the above, the importance of crafts and craftsmen for the economy of the Republic of Croatia is visible. Significance is certainly evident through the number of employees, but also through the number of newly created jobs through self-employment of craftsmen. Crafts also fill gaps in the Croatian market, since it is often not worthwhile for certain legal entities to perform activities that will not make above-average profits, and in the absence of crafts, the quality of life of citizens in certain areas in Croatia would deteriorate and the risk of the disappearance of certain crafts would arise (especially traditional and artistic).

[25] HOK (2019.): Statističke informacije lipanj 2019, Zagreb, HOK, p. 18

4. CRAFT BUSINESS IN THE TOURISM SECTOR ON THE EXAMPLE OF A JOINT BUSINESS FOR TOURISM AND SERVICES SPLIT GETAWAY[26]

One of the significant advantages of a joint craft that was used at the very beginning of this craft's operation is the use of the Croatian Employment Service measure in the form of incentives for employment, so both craftswomen received HRK 55,000 each from the CES. [27] One of the advantages of this type of craft is the possibility of performing economic activity in the housing of one of the craftswomen, and it is possible to enter into a lease agreement with the owner of housing, resulting in a rent tax of only 12% (certainly lower income tax in relation to the tax rate at which income in a craft is taxed). Related to the lease, there is the possibility of displaying overhead costs as craft costs. Although, according to current legal provisions, household costs should be separated from craft costs, if they are performed in the same residential area it is very difficult to prove how much of the costs are spent on craft activities and how much of the costs relate to households. One of the benefits of joint crafts is certainly reduction of significant amounts of certain costs on a monthly basis, such as accountant costs, bank account maintaining, renting office space and certain overhead costs, so the craftswomen, through the joint craft, had lower costs compared to what they would have if they operated separately. Also, regarding a joint craft, the cost of the Croatian Chamber of Crafts contribution is paid as in the case of a single craftsman. At the same time, when several craftsmen operate through a joint craft and at the same location, there is a possibility of greater competitiveness compared to business when it comes to only one craftsman. As previously stated, one of the advantages of a craft is simpler data change in the Crafts Register, which in the example of this craft is demonstrated through the entry of another activity and the entry of withdrawal of the second craftswoman. After the withdrawal of the craftswoman, the author of this text, she got a job in a craft, and since she is younger than 30 and it is an indefinite contract, 16.5% of salary contributions, i.e. health insurance contributions, are not paid. An additional advantage of the craft is the possibility of switching to flat-rate taxation, resulting in a lower income tax, but most importantly, a significantly smaller amount of contributions is paid (shown in Table 3) and in this case the second craftswoman pays almost HRK 800 less contributions. One of the primary shortcomings of the joint craft business is the obligation to pay contributions for all craftsmen who are involved in the joint craft. In the example discussed in this paper, it can be seen that both craftswomen are required to pay pension and health insurance contributions every month. Hence in a situation where the craft would not generate sufficient income throughout the year, it would be more cost-effective to operate seasonally or for one of the craftswomen to withdraw from the joint craft and then the other one to hire her with a salary lower than the base by which contributions are calculated. One of the biggest disadvantages of joint crafts is the possibility that if one of the craftswomen has an independent craft or if she is included in another joint craft which is in the VAT system, then the joint craft for tourism and services Split Getaway should enter the VAT taxation system and issue invoices in which VAT will be calculated and reported. Since this is a very specific activity, in a situation where there would be no insurance and if there was a high risk of a harmful event, if the event would occur, the craftswomen would be liable for the harmful event with all their property. Unlimited liability and identification of craftsmen with crafts are also related when it comes to obligations to the state and third parties (for taxes and other obligations). One of the biggest shortcomings of joint crafts is if disagreements between craftsmen occur, as well as in the situation where there are several company owners and it is very difficult to reconcile all interests.

[26] The joint craft was founded 02/20/2018. by the author of this paper and another craftswoman from Split, whose predominant activity is the activity of travel agencies. Although the craft initially operated as a joint craft, since 19.08.2019. the craft has operated with only one owner, since the author of this paper withdrew from the joint craft on the basis of a partnership agreement.

[27] This is an incentive for employment that has changed greatly over the years and in 2020 it is possible to get up to HRK 100,000.00, depending on the residence of the measure applicant.

The problem is especially significant if disagreements relate to business decisions which may have a decisive impact on the craft business in the future.

5. CONCLUSION

The importance of tourism as an economic activity that occupies a significant share in GDP (almost 20%) is especially emphasized due to employment and multiplicative effects on the economy, since it is a money inflow into the Republic of Croatia. Although tourism has a positive effect on employment, as it is usually seasonal jobs during the season (often only 3 to 4 months), due to the inability to survive with these funds and the inability to find another job, a large number of tourism workers opted for other jobs or emigrated to other EU countries such as Germany, Ireland or Austria. Due to the growing shortage of manpower, the 2020 season and following seasons are becoming questionable for individual employers in tourism, although an increase in employment quotas in tourism is announced, the quality of such employees is questionable and may ultimately negatively affect tourism in Croatia. Also, it is necessary to note that some employers can not find employees, although other employers in their immediate vicinity have no such problems. This leads to the conclusion that some employers are partly to blame for the situation in the labour market, and as a consequence of insufficient recognition of value of touristic employees and their work, there has been an increasing relocation of workers. One of the reasons for the labour shortage in tourism is the possibility of using measures of the active employment policy of the CES, which were used by many former tourism employees who opened crafts. But at the same time, since a large number of potential employees have reduced trust in craftsmen compared to companies, their primary choice is employment in companies which perform some of the tourism activities (which consequently makes it difficult to find new employees for craftsmen). Crafts as a way of performing economic activity, like other forms of performing economic activity, have their advantages and disadvantages, which is why before starting a craft business it is necessary to carefully consider both the advantages and disadvantages of crafts. Crafts are a very favourable way of pursuing economic activity in tourism, especially if it is a seasonal craft, but at the same time it is a disadvantage when it comes to crafts for which professional qualifications are required, e.g. catering, while at the same time when it comes to a legal entity professional qualification is not a condition for performing the activity. The advantages of crafts and joint crafts are the simplicity of establishing and closing crafts, ease of entering changes to the Crafts Register, the possibility of withdrawing money from the account, if there is money in the craft account, which is also one of the most common reasons for opening crafts in Croatia. Also, one of the most common reasons for starting a craft is the possibility of presenting a significant part of personal expenses as craft business costs thus reducing the business income and avoiding paying income tax. Bookkeeping of crafts is simpler in relation to bookkeeping of companies, which is why craftsmen are often able to keep their own books leading to significant savings. One of the specifics of joint crafts is reducing a large part of costs, i.e. literally cutting costs in half (in joint crafts a significant part of costs is paid only once, whereas if both craftsmen would operate independently, the same costs would be paid twice) in the case of two craftswomen as in the example of the craft analysed in the empirical part of the paper. The disadvantages of crafts can be summarized as unlimited liability, the obligation to pay contributions for compulsory insurance (pension and health insurance), income tax is higher than corporate tax, and if the craftsman wants to pay corporate tax, he is punished with a higher amount of contributions for compulsory insurance, crafts are significantly limited when it comes to performing certain activities that require professional qualifications or a privilege certificate, which is why craftsmen are often at a disadvantage compared to companies.

In a joint craft it is specific that no matter how many craftsmen are involved in the craft, it is necessary to pay compulsory insurance contributions for each craftsman individually, but one of the biggest disadvantages of the joint craft is the loss of control over the craft (since it is always necessary to reach agreement among all craftsmen involved).

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ASSESSING FIRMS' COMPETITIVENESS AND TECHNOLOGICAL ADVANCEMENT BY APPLYING ARTIFICIAL INTELLIGENCE AS A DIFFERENTIATION STRATEGY - A PROPOSED CONCEPTUAL MODEL

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ABSTRACT

Artificial Intelligence (in continuation: AI) as advanced technology possesses a transformational power since it can reshape every aspect of a firms' operations ranging from business processes, workforce, technical infrastructure, to decision-making, recruiting, communicating, and advertising. Accordingly, executives in companies need to address AI in an informed way and recognize where AI can create differentiating added value and ultimately boost innovation outputs and revenue growth. The question arises, how do firms in catching-up economies can benefit from the AI use in their offerings and efficiency optimization? The accent is on companies operating in limited and highly regulated data access and usage environment. Thus, the purpose of this paper is to conceptualize an analytical model to assess prospects in firms' competitiveness and technological advancement by applying AI as a differentiation strategy. Results produced by this paper will assist scholars and business practitioners to construct tailored empirical research around the proposed model. Besides, it could offer policymakers a framework to conceptualize and operationalize specifically tailored instruments within national funding policy instruments that are aiming to support the diffusion of the AI within corresponding ecosystems.

Keywords: *artificial intelligence, strategic differentiation, firms' competitiveness*

1. INTRODUCTION

As one of the current technology diffusion megatrends, AI is nowadays transforming global industries. It brings significant changes to business operations fuelling the premise that it will profoundly impact all aspects of the business. Recent advances have led to the proliferation of new applications and use cases that help accomplish, automate, or speed up many business activities. Understanding the impact of AI, its strengths and weaknesses, and challenges that lie ahead is of pivotal importance, which this paper is aiming to address and discuss. Besides being used as a leading technology catalyser, AI will also be used in tackling global megatrends and societal challenges. Thus, scholars had recently published papers suggesting how AI technologies are applied in Coronavirus (Covid-19) pandemic outburst, using deep learning (Xu et al., 2020) or augmented intelligence (Long & Ehrenfeld, 2020). In addition to scholars, there are numerous other examples of AI use confronting the Covid-19 challenge (see more in

Forbes, Alibaba, Huawei). Rare are those, either scholars (Chui & Francisco, 2017), practitioners, or even politicians, who do not see significant benefits in the implementation of AI. However, AI is not diffusing fast enough in business; its proliferation, especially in the business segment, is still not dynamic enough. The question arises, how do firms in catching-up economies, these operating in restrictive and regulated data access and use environment, can benefit from the AI use in their offerings and the operative efficiency. Thus, the purpose of this paper is to conceptualize an analytic model to assess prospects in firms' competitiveness advancement in applying artificial intelligence and its related technologies as a differentiation strategy. The case will be elaborated in the post-transition economy, but it can simply be translated into other economies as well. Results produced by this paper will assist scholars and business practitioners in reconstructing and building-up tailored empirical research based-on and around the proposed model. Besides, it may assist policymakers in conceptualizing and operationalizing specifically tailored instruments within national funding policy instruments in supporting the diffusion of the AI corresponding economies. Following this introduction, a theoretical background based on current available AI literature and knowledge sources is presented. It includes the AI propensity and typology and latest development trends, including the articulations of the research challenges and targets. The third part offers the ideation, conceptualization, and model construction in the form of the proposed model, specially constructed to assess the AI diffusion in firms. The proposed model provides a structured contextual framework for the subsequent empirical and practical research work and its operationalization. Paper ends with a discussion on results and conclusions.

2. THE THEORETICAL BACKGROUND OF AI: TRANSFORMING AND (RE)SHAPING BUSINESSES AND ECONOMY

Although the fundamental concepts have been available for decades, it was not until recently when availability of (big) data, (cloud) storage, high-power computing, and increased (Internet) communication made the AI field blossom. In the modern age when 4.0 industries are becoming increasingly important (and in some countries already a 'rule not an exception') for stable economic growth and competitive advantage, an increasing focus is being placed on AI (Rampersad, 2020) and innovative application of advanced robots, cobots (so-called *embodied* AI) and chatbots. '*AI may be the most disturbing technology the world has ever seen since the industrial revolution'*, wrote Daugherty (Shabbir & Anwer, 2015), this technological advancement leads to the evolution of Industry 4.0 (Soni et al., 2019). It is the '*constellation of technologies*' as noted by Accenture (2018), that allows smart machines to support human capabilities and intelligence by sensing, comprehending, acting, and learning (see also: Lichtenthaler, 2019). It includes '*intelligent agents*' who should be able to carry out tasks of significant difficulty in a way that is perceived as '*intelligent*' (Swarup, 2012, as cited in OECD, 2017). Put merely, Trappl, ed. (1985) defined as '*making computers smart*'. AI HLEG (High-Level Expert Group on Artificial Intelligence, 2019, according to COM(2018) 237) refers AI to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. It is almost as an '*umbrella*' (The British Academy, 2018) of technologies that seek to perform tasks usually associated with human intelligence. A truly digital economy highlights Huawei and Oxford Economics (2017), which is one in which businesses from across the industrial spectrum are investing in digital and making the most productive use of it. Oxford Insights (2019) noted that AI is forecast to add US$ 15 trillion on the global economy by 2030. Predictions from Gartner (2017) are also close, they predicting that AI will be *'the most disruptive class of technologies during the next ten years'* and that AI augmentation will generate $3.9 trillion in business value by 2022 alone (for more, see: Gartner, 2017). Quite logically, as Medvedeva (2019) points out, the emergence and development of AI are directly related to the increase in the value of intellectual capital.

AI is a family of powerful technologies that are particularly well suited to provide innovative forms of business process re-engineering, noted Koehler (2018). Arrieta et al. (2020) have significantly pointed out how AI lies at the core of many areas closely correlated with new information technologies. As for the past ten years, keywords were '*disruption and cross-sector*', in the next ten years, it will be '*upgrade and transform*' (Huawei & Oxford Economics, 2017). Furthermore, from R&D (experimental AI), there has been a shift to the real-world application of AI (exponential AI) (Accenture, 2018). To better understand the range and complexity of AI, six disciplines can be singled out which compose most of AI (Russell & Norvig eds., 2010): 1) Natural Language Processing (NLP), 2) knowledge representation, 3) automated reasoning, 4) Machine Learning (ML), 5) Computer Vision (CV) and 6) robotics (but also see: Wisskirchen et al., 2017). AI methods achieve an impressive level of performance of increasingly complex tasks and become indispensable for the central development of human society. The so-called *Space Economy* inherited *Digital Economy* (see: Dirican, 2015), which is a new area for the advancement of the economy boosts multilevel fusions that help businesses to use new technologies, innovation, and solutions for commercial and trade applications. Huawei and Oxford Economics (2017) noted that the digital spill-over happens when technology accelerates knowledge transfer, business innovation, and performance improvement within a company, across supply chains and amongst industries, to achieve a sustainable development economic impact. The findings of Stanford HAI (Institute for Human-Centered Artificial Intelligence, 2019) team are incredibly significant for science (but also business and economy as a whole): between 1998 and 2018, the volume of peer-reviewed AI papers has grown by more than 300 percent, over 32 percent of world AI journal citations are attributed to East Asia, North America accounts for over 60 percent of global AI patent citation activity between 2014-18, Liu et al. (2018) analysed 2693 scientific papers about AI and Wamba-Taguimdje et al. (2020) analysed 500 case studies to provide significant and tangible evidence about the business value of AI-based projects and the impact of AI on firm performance. Liu et al. (2018) explore the evolution of AI at the beginning of the 21st century using publication metadata extracted from 9 top-tier journals and 12 top-tier conferences of this discipline but also inner structure in terms of topics' evolution over time. They observe a growing trend of collaboration and a decrease of self-references, indicating AI is becoming more open-minded. Furthermore, they identify leading institutions and researchers in the field and give a ranking of hot keywords based on the frequency during 2000-2015. Considering the above, it is not a surprising prediction of IDC (2019) that worldwide spending on AI systems will be nearly $98 billion in 2023. Also, according to UNCTAD (2019), the USA and China account for 75 percent of all patents related to block-chain technologies, 50 percent of global spending on IoT, and more than 75 percent of the world market for public cloud computing while the share of EU is 4 percent. Globally, according to Stanford HAI (2019), private investment in AI in 2019 was over US $70 billion, investment to start-ups raised from US $1.38 in 2010 to over US $40.4 billion. As many new AI start-ups emerged, and at the beginning of 2019, more than 30 of them were considered unicorns (valued over a billion dollars). The importance and impact of AI are nicely summarized by one of the field leaders Andrew Ng[1] when in 2016, he portrayed its transformational power on all industries with the statement '*AI is the new electricity*'. In Europe were invested approximately €3.2 billion in AI in 2016, almost twice less than in Asia and nearly four times less than in North America (COM(2020)65). More than 80 percent of the robots sold each year, according to Wisskirchen et al. (2017), are deployed in Japan, South Korea, the US, and Germany. Moreover, Chiacchio et al. (2018, as cited in Gries & Naudé, 2018) find that one additional robot per 1,000 workers) '*reduces the employment rate by 0,16 to 0,20 percentage points*'. The average required investment in AI should not be neglected either, for example, Medvedeva (2019) highlights the cost to an average of 18 percent IT budget

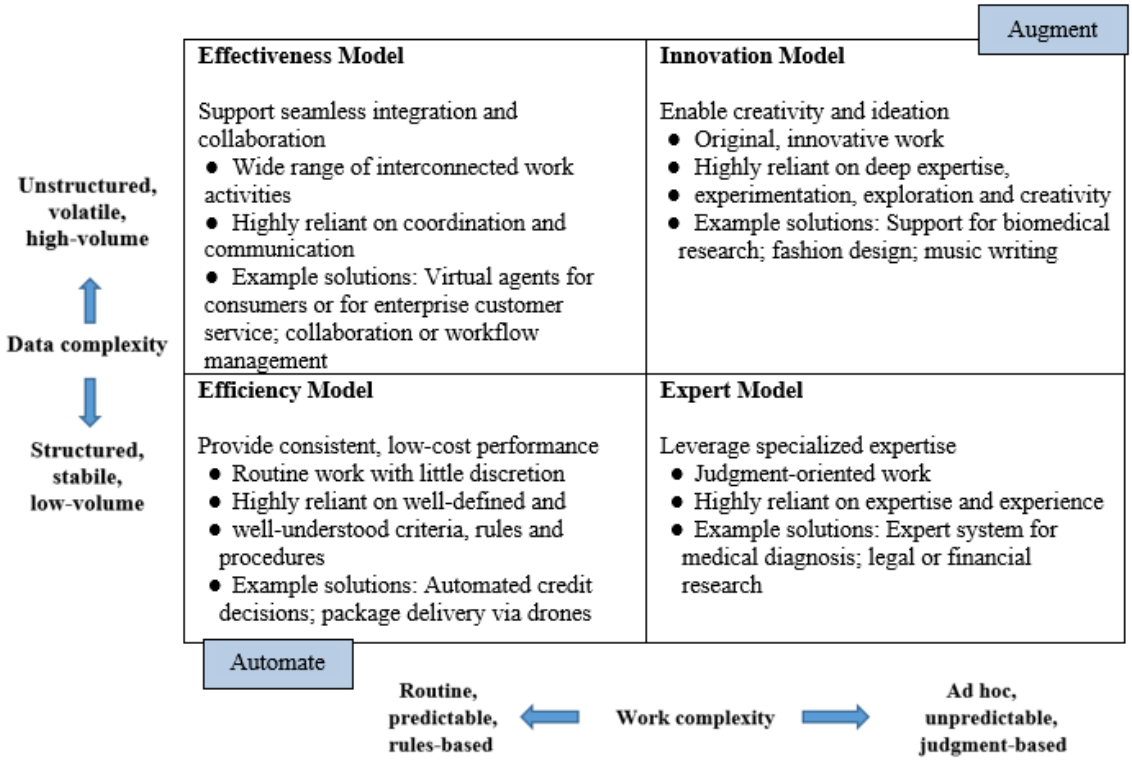
[1] Co-founder of Google Brain, Chief Scientist as Baidu, professor at Stanford University, co-founder of Coursera

in 2018 but with a tendency to grow, but Huawei and Oxford Economics (2017) analysis suggests that on average a US $1 investment in digital technologies had led to a US $20 rise in GDP (for every US $1 investment the average return on GDP is 6.7 times higher for digital investments than for non-digital). Regarding value-added in the ICT, the USA and China together account for almost 40 percent of the world total (UNCTAD, 2019). It is an unavoidable fact that China is a leading global force in a digital economy with 42 percent of the worldwide share of e-commerce and processes which are 11 time more mobile payments than the USA but also leads the implementation of 5G mobile communications (JRC COM, 2018).It is also interesting that, according to Accenture (2018), CB Insights estimated there was a 141 percent increase in AI start-ups in 2017 on 2016 figures, and more than 1,100 new AI companies raised equity funding since 2016. In the USA, the share of AI jobs grew from 0.3 percent in 2012 to 0.8 percent of total jobs posted in 2019 (Stanford HAI, 2019). Also, through analyses of 12 developed economies, Accenture (2018) found that AI has the potential to double their annual economic growth and boost labour productivity by up to 40 percent by 2035. Individually, for example, it means an increase of gross value added in Austria almost US $140 billion, Finland US $104 billion or Germany US $1,079 billion[2]. It is also necessary to point out that the R&D investment of companies like Amazon and Alphabet is at US$ 16.1 billion and US$ 13.9 billion, respectively, in 2017 (Knight, 2018, as cited in The British Academy, 2018) which is more than the civilian investment of the government. Oxford Insights (2019) create an Index of government AI readiness, and it is interesting to note, especially when we take into account earlier indicators that China's rank is only 20. Still, it is because of some problems with data. The main goal of the index is to help policymakers to take advantage of the benefits of AI, and also to be aware of potential risks. The methodology includes 11 input metrics grouped under four high-level clusters: governance, infrastructure and data, skills and education, and government and public services. The leading countries are Singapore, United Kingdom, Germany, the USA, and Finland. From global high-growth AI enterprises in the top 10, 7 is from the USA, and the other three from India, Israel, and China mostly in the segment of business services, finance, robotics, education, and data services (Deloitte, 2019). Chollet (2019) paraphrased the statement of Hández-Orallo that 'AI is the science and engineering of making machines do tasks they have never seen and have not been prepared for beforehand'. Nevertheless, AI is not just about technology and its application. Still, it is necessary to understand the multitude of related technologies and their complex integrations, which then represent a complete solution (Bataller & Harris, 2016). While both optimism and pessimism still surround AI, the field is undoubtedly advancing in all its subfields including *Computer Vision* (CV), *Machine Learning* (ML), *Natural Language Processing* (NLP) *Natural Language Generation* (NLG), *Robotic Process Automation* (RPA, focused on handling repetitive business processes). Technological AI advancements in turn fuel applications in different industries ranging from healthcare, gaming, finance, transportation and autonomous vehicles, manufacturing, agriculture, administration, military, advertising, telecommunication. Aristodemou and Tietze (2018) identify 11 priority technologies in which they included artificial intelligence (especially machine learning and deep learning) as that industry experts believe to be essential to be adopted at a higher rate in the patent analytics domain. Regarding artificial intelligence methods, four categories of artificial intelligence with intellectual property data are most commonly used: 1) knowledge management (patent evaluation and patent quality classification), 2) technology management (technology patentability, R&D planning within organizations and so one), 3) economic value of the intellectual property and its impact in other areas, 4) hybrid category. Further, Sharma Yadav and Chopra (2020) found areas of contact in 77 scientific papers.

[2] Still, it is significant indicator that 44% of European citizens between 16 and 74 years do not have basic digital skills according to European Commission Factsheet of October 2017 on Digital Skills.

They highlighted the AI framework: 1) healthcare, 2) information and communication technology, 3) environmental sustainability, 4) government law and policymaking, 5) transportation, 6) economic and financial applications and 7) other domains (e.g., education, smart & democratic governance and so one) (see also: The British Academy, 2018). But even for all 'smart' solutions like education, manufacturing, city, driving (Deloitte, 2019). Strelkova (2017) explained three levels of AI: 1) ANI – Artificial Narrow Intelligence (e.g., Google search, Facebook's Newsfeed) focused only on one sphere, 2) AGI – Artificial General Intelligence ('thinking machines') that can '*reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience*' (see also: Accenture, 2018), and 3) ASI – Artificial Super Intelligence which is much smarter than the best human brain in practically every field, including scientific creativity, general wisdom and social skills (see more in Strelkova, 2017). The adoption of AI resulting, as Soni et al. (2019) stand out, in a world that is smarter and innovative. In Figure 1, it can be singled out four types of AI by sorting tasks into activity models from a position of data complexity to work complexity (see also Bruun & Duka, 2018). Nevertheless, as AI Index Team from Stanford University noted (2017), the field of AI is still evolving rapidly, and even experts have a hard time understanding and tracking progress across the area.

Figure 1: By sorting tasks into four activity models, particular types of Artificial Intelligence solutions can be identified



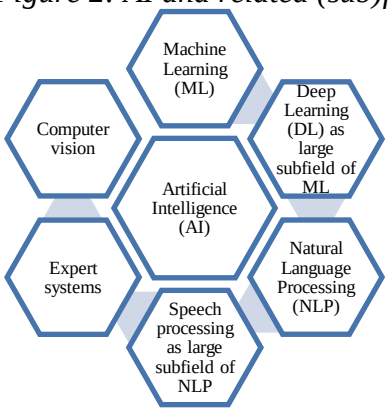
Source: adopted by Bataller and Harris, 2016

3. ARTIFICIAL INTELLIGENCE AS A GENERAL-PURPOSE TECHNOLOGY

As a branch of computer science, AI refers to systems (purely software-based or software and hardware-based) displaying intelligent behaviour by taking decisions and actions to achieve the desired goal. Since the term 'intelligence' is a vague concept, AI researchers often use the notion of rationality (as the ability to choose the best action to achieve a goal, given the available resources and criteria). Early AI researchers considered intelligence as a collection of tasks-specific skills until Turing (1950) introduced the concept of *learning* and argued that machines

could acquire new skills through a learning process (Russell & Norvig eds., 2010; Shabbir & Anwer, 2015; JRC COM, 2018; Liu et al., 2018; Chollet, 2019; Sharma Yadav & Chopra, 2020; Wamba-Taguimdje et al., 2020). To pass the Turing test, and to be said it possesses AI, the computer should be able to mimic human responses, according to Russel and Norvig (2010) the computer would need to maintain the following four capabilities: *Natural Language Processing* (NLP), knowledge representation, automated reasoning, and *Machine Learning* (ML). So, perception, thinking, and actuation (or acting) can be considered the main capabilities of the AI system. At the same time, AI as a field can be regarded as an umbrella for many related (sub) fields (as shown in Figure 2). ML, as a large subfield of AI, focuses on learning from data, finding (hidden) patterns, and making predictions. It is typically used on problems that are too complex and too dynamic for traditional programming techniques. ML generally is further divided into supervised (when humans are more involved and provide labelled training sets), unsupervised, sometimes also semi-supervised, and reinforcement learning (including model-based, value-based, and policy-based approaches). One recently prevalent subset of ML, called *Deep Learning* (DL), is inspired by human brain neurons and used for the analysis of complex and large datasets (such as videos, images, speech). However, the vision of early researchers is not dead. It nowadays can be often seen in marketing and commercial activities together with some other stretched definitions of AI where many systems are branded as 'AI systems.' The fact that there are different opinions and interpretations of what AI is, further fuels such practices. Chollet (2019) assessed historical conceptions of intelligence, concluding that the AI community still mostly benchmarks intelligence by comparing it to the *skill* exhibited by humans and AIs at specific tasks such as board games. He then articulates a new definition of intelligence describing it as *skill-acquisition efficiency*, proposes guidelines for general AI benchmark, and presents a new milestone to measure a human-like form of general fluid intelligence. A major division of the AI is into *Artificial General Intelligence* (AGI), also known as *stable* or *wide AI*, and *Artificial Narrow Intelligence* (ANI), also known as *applied* or *weak AI*. While AGI focuses on the wide ranges of cognitive functions, ANI focuses on one specific task. Most of the things we see today fall under ANI.

Figure 2: AI and related (sub)fields



Source: authors

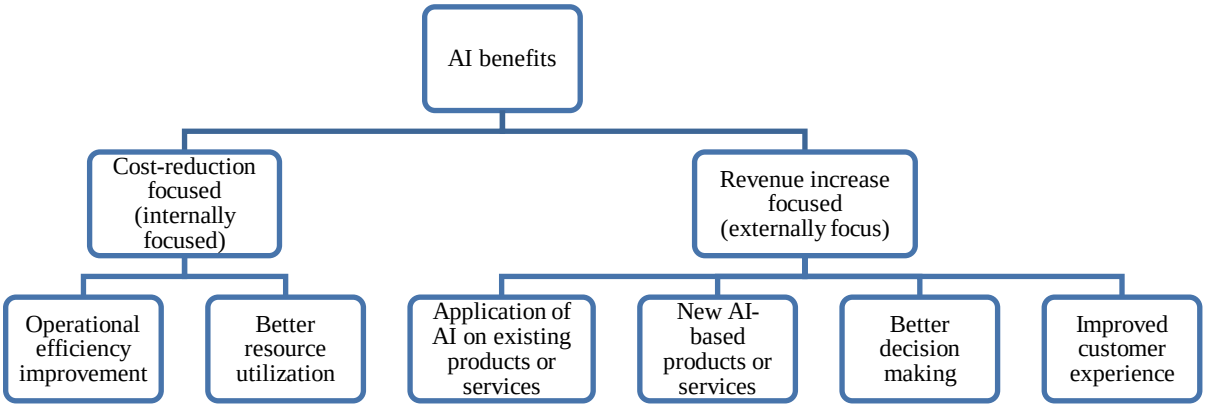
When discussing business domain, one cannot avoid the term *Data Science* describing a set of interdisciplinary techniques applied to extract insights and knowledge from data with the sole purpose of delivering (business) value. The input data on which statistics, domain, computer science, and other needed expertise and techniques are used can come in different forms and can be classified into structured, unstructured (nor organized via predefined schema) or semi-structured. AI paradigms and technologies may be classified differently. Agrawal, Gans, and Goldfarb (2018) define AI, and then argue that AI is likely to be the next general-purpose

technology (GPT) characterized by pervasive use across a wide variety of sectors and technical dynamism (for more, see: Bresnahan & Trajtenberg, 1995). Still, there is a trend for ethical AI (Arrieta et al., 2020) since some techniques are not always reliable. Bataller and Harris (2016) noted that AI could be self-learning from experience like 'bright students' based on educational materials. Arrieta et al. (2020) create the concept of Responsible AI both with eXplainable AI, a methodology for the large-scale implementation of AI methods in real organizations with fairness, model explainability and accountability at its core which includes four main goals: 1) trustworthiness causality, 2) transferability informativeness, 3) confidence fairness accessibility and 4) interactivity privacy awareness. Shabbir and Anwer (2015) pointed out that AI is highly progressing machines or systems should be in a position to perform the required tasks without exercising errors. However, as Strelkova (2017) noted, '*progress will lead us to create a new level of AI – Artificial Super Intelligence (ASI), which will surpass capabilities of human intellect*'. Furthermore, AI machines and systems are not able to control their process, or self-learning ability may cause that they learn destructive things (problems with lack of emotions) (see more in Shabbir & Anwer, 2015). Further, as Chollet (2019) concluded, in AI, it is necessary to take into account the fact that AI is a system that has taught transformation into experience and skill in unknown tasks, and AI has the ability for 'machine learning' (Bataller & Harris, 2016).

4. POLICIES ARE NEEDED: AI OPENS OPPORTUNITIES BUT ALSO CHALLENGES

AI is an important factor for economic growth and development through the growth of competitiveness, innovation, flexibility, effectiveness, and productivity of almost all economic sectors. The commercialization of AI is playing a decisive role in accelerating business digitalization, improving industry chain structures, and enhancing information use efficiency, noted Deloitte (2019). Despite the significant benefits of AI, there is a growing concern about existing jobs from optimistic to pessimistic point of view. For example, Gries and Naudé (2018) stand out that AI will put 10 million jobs at high risk, more than were eliminated by the great recession. Wisskirchen et al. (2017) noted that one production working hour costs the German automotive industry more than €40, the use of a robot costs between €5 and €8 per hour. AI is used worldwide for extending real working hours as '7/24' model, and it is responsible for increasing efficiency in the business processes and productivity (Dirican, 2015; Shabbir & Anwer, 2015; Wisskirchen et al., 2017; The British Academy, 2018; Wamba-Taguimdje et al., 2020). In the labour market, significant changes are driven by AI like augmented reality, gesture recognition, robotics, and emotion recognition (Deloitte, 2019). Inevitably, AI enables higher profitability and risk management, but also facilitates and more effectively contributes to standard managerial functions by making production, communication, marketing, finance, and distribution channel management significantly more transparent, accessible, and more uncomplicated. It allows business for 1) increase the efficiency of operations, maintenance and supply chain operations, optimize and improve the customer experience, improve products and services, 2) improve rapid and automatic adaptation to changing market conditions, create new business models, 3) detect fraud, 4) diagnose and treat pathologies and 5) automate quality management investigation and recommendation (for more, see: Wamba-Taguimdje et al., 2020). AI is gaining strong momentum in the business, and it triggers business process innovation and leads to novel business models (Koehler, 2018). However, in all stages of adoption, AI poses a challenge at the governance and operational levels. Still, once the business model, organization, and technology are appropriately set up, the benefits emerge. On a high-level, those benefits can be divided into two categories, namely cost reduction focused (internally focused), and revenue increase focused (externally focused). Both can be further divided, as shown in the following Figure 3.

Figure 3: AI benefits



Source: authors

Depending on the industry sector and concrete company, some benefits can have different weights and impacts on the business. While cost-reduction focused implementation of AI can be very beneficial, as there are numerous examples of the common application of Robotic Process Automation (RPA, where software (ro)bots emulate human interacting with a system to execute business process), the most significant competitive advantage and market differentiator should be looked for in the revenue-increase focused AI benefits such as a new and unique way of personalizing and improving customer experience. Companies that innovate and quickly deliver new capabilities (such as the ones enabled by AI) that exceed customer expectations win on the market. In the light of AI trends, awareness, and publicity, the window for searching CA with AI is shrinking rapidly. This often means that the problem is switching from 'whether to adopt AI' to 'how fast to adopt AI'. In a group of studies in the US pharmaceutical industry (Jun and Park, 2013, as cited in Aristodemou & Tietze, 2018), several scholars apply artificial neural networks to explore the influences of the quantitative and qualitative patent indicators upon corporate market value, showing that US pharmaceutical companies should not concentrate most of their R&D resources on one particular technological field, but create broader technical capabilities to avoid missing new technological opportunities. Bataller and Harris (2016) noted that it is necessary to perceived AI in terms of automating (routine tasks) and augmenting (in sensitive jobs and activities). For example, the application of AI in healthcare is possible mostly as an aid in scheduled examinations and some routine (simple) and supportive procedures. At the same time, the field of biomedicine and personal advice requires active experts. In banking, the application of AI is beneficial through transaction automation (see also The British Academy, 2018), insurance (OECD, 2017) security and identity sensitivity management, as well as some more straightforward solutions of essential financial services. Several factors inhibit the faster spread of AI in enterprises. As the main reason for the still slow-moving and restricted diffusion of AI technologies in firms, the environmental, organizational, and technology-related barriers are commonly stated (Alsheibani, Cheung & Messom, 2019). Lack of thorough understanding of AI technology benefits among decision-makers in firms, lack of a suitable and/or robust industry to which to apply it in cases of national endeavours, lack of technological capacities to create new or enhance an existing AI-based firms' offering, are all frequently put forward as dominating inhibitors for its broader and faster diffusion. In addition to that, the scarcity or lack of data as a fundamental prerequisite on which the AI can be developed, but also applied in business applications represents a particular problem. This is valid for both firms and countries (Makridakis, 2017; Li, 2017; Vempati, 2016) or their economies or ecosystems. Sharma Yadav and Chopra (2020) noted that the application of AI is still limited mainly because of limited

resources to fear of risk in the applicability. Nevertheless, if the interaction is enabled with wearables vehicles, industrial sensors, smartphones, surveillance cameras, then AI can act as a catalyst in the development of many innovative services for citizens, governments, and businesses (see more also in Dirican, 2015). Stanford University's study describes the progress and implementations of AI still as 'patchy and unpredictable' (see: AI Index Team, 2017). COM(2020)65 noted that AI entails several potential risks, for example, opaque decision-making, gender-based, or other kinds of discrimination, intrusion in private lives, or being used for criminal purposes. Nevertheless, for more complex financial advice, the human factor remains invaluable (see: Lichtenthaler, 2019). It is convenient to point out that Time magazine in 1965 noted that automation would bring about a 20-hour week according to the conjecture of IBM, Rifkin signal 'The End of Work' in 1995 (The British Academy, 2017), but no prediction came true. It is necessary to improve the explainability, accountability, and transparency (JRC COM, 2018) but also the 'ecosystem of trust' (COM(2020)65). Also, when applying AI, it has to consider priorities, but also potential problems. Still, AI should compare to human intelligence, and I should be based on similarly in-depth knowledge. Moreover, all information is relative to the corresponding field of its applications. Yet, as the reach and significance of the first industrial revolution to the economy and society could hardly have been foreseen, it may be advisable to be wary of pessimistic announcements of the changes that AI will bring. As JRC COM (2018) noted, 'the future is not yet written', and the impact of AI can be a concern, but it is also an opportunity. Numerous countries like the USA, China, Japan, have declared AI as a key technology and announced plans to facilitate AI research and investments. Initial European Union strategy to make the most of AI was outlined in 2018 to improve AI uptake across the EU economy to boost technological capacity, to modernize education, and prepare for AI-related labour market change, to develop proper AI-related legal framework and ethical guidelines. Thus, for example, at the EU level, a number of regulations and incentive strategies have been adopted, but also at the level of individual Member States. The USA has opened a kind of 'innovative invitation' for engineers to drive the American economy (Rampersad, 2020). Key editor of The Strategy of the Digital Transformation of the Russian Economy in the XXI century, Medvedeva (2019) warns of how necessary it is to set and solve large-scale tasks in the field of the development of science and education (for example, in 2018 over 60 percent of AI Ph.D. graduates went to industry according to Stanford HAI, 2019), create favourable conditions for the inventive activity and innovation and to move to the development of automated technical systems in many fields. The main plan of Japan is to become 'a super-smart society' (The British Academy, 2018) with significant government improvement through strategies and initiatives. As UNCTAD (2019) highlights, governments should focus a little less on high-profile projects (like technology parks), and direct more attention and effort more on encouraging the creation of 'quiet and unobtrusively' entrepreneurial knowledge through mentoring programs, vocational training, apprenticeships, and internships. Also, the digital area requires updating of competition and taxation policies (UNCTAD, 2019). For example, The Ministry of Industry and Information Technology of China is planning to put the nearly US $950 million per year into strategic AI projects for State-Owned Enterprises and the public sector (Accenture, 2018). With the technical development of production robots, many companies producing in low labour-cost countries will relocate their production sector to the countries where they originally came from (for more, see: Wisskirchen et al., 2017). It certainly matters two main types of policy-related priorities from The British Academy (2018): 1) ensuring that technology-enabled change leads to improved productivity, and 2) ensuring that the benefits of such variation are distributed through society. Namely, the fact is that (and already does) AI will change the labour market, and many industries and even sectors will disappear 'overnight'. The question is whether the growth of new AI solutions will provide so much economic growth that will be able to absorb the growing number of

unemployed and whether economic policy measures (but also scientific and educational) will be able to respond quickly enough. The situation on the horizon is almost similar to that with the transformation of the industry from deindustrialization to a growing service sector. But still, we need to be aware that the pen has not disappeared with the application of the computer. However, the question arises as to how quickly less developed countries will adapt and whether the spill-over effect will be sufficient.

5. AI PROPELLING INTENSITY AND INITIATIVES – THE CROATIAN NATIONAL CONTEXT

In attempts to analyse the AI diffusion in firms of smaller and lagging economies, particularly post-transition economies, the question is in which areas, sectors, or industries AI can develop to be internationally important. The leading example of the post-transition economy in an attempt to boost the use of AI technologies in Estonia, which dedicated €50 million in stimulating and increasing selected economic sectors (Government of the Republic Estonia, 2019). By Oxford Insights's (2019) Index of government AI, the Republic of Croatia is at the 62nd rank out of 194 countries, but it is worrying that she is the last CEEC of EU on the rank. In March 2020, the Croatian Ministry of Economy and Entrepreneurship activated the generation of a National Plan for AI Implementation. In this document, the national strategy, action plans, and critical steps shell be defined to boost the domestic AI technologies diffusion. From the practitioners' side, Croatia is witnessing several emerging start-ups that are engaged in specific industries. These are SW robots, insurance business, and financial sector with the new AI-based algorithms and predictive models, logistics, and human-centric solutions that are aiming to boost the AI technologies use, particularly in healthcare. Several nongovernmental initiatives were triggered to rump-up the AI diffusion scene (Croatian Employers Association CEA/HUP, the independent community AI2FUTURE[3] and recently established CRO.AI[4]). The diffusion of AI in firms is also influenced by the diffusion of AI in both the public sector and academia. Absorption level of digital technologies followed by the continuous AI knowledge absorption is one of the key preconditions for gaining new capabilities, creating synergies, and reaching the full potential. Centres of excellence are one of the examples where all sectors can unite and cooperate. Apart from AI strategy, an (open) data strategy and governance should be established and further supported to fuel the creation of new and innovative solutions.

6. THE RESEARCH CHALLENGES AND TARGETS WITH THE PROPOSED MODEL

In developing the more comprehensive AI diffusion strategy assisted by the Croatian National AI Plan,[5] the principal question is what the appropriate match between the available AI paradigms/technologies and firms' appropriateness to use them as a vehicle to advance their own competitiveness is? As a response, the overarching paper research challenge is to contextualize an analytical, conceptual framework that will serve researchers, practitioners, and policymakers in examining the prospect of AI technologies diffusion in firms. This will be accomplished in exploring the opportunities or drivers (e.g., does the past performance moderate the intensity of AI diffusion), but also by addressing and assessing the AI implementation barriers (e.g., lack of knowledge and understanding at leaders). The second research target is the generation of an empirical model that may be nearly applicable in other matching business environments, precisely the lagging-behind smaller post-transitional economies. Operational outputs will also be complemented with recommendations for its translation and generalization broader on a global scale.

[3] Official Website: http://ai2future.com/
[4] Official Website: https://www.croai.org/
[5] In preparation by the Ministry of Economy

Results of the empirically conducted research shall contribute to further enlargement of theoretical and practitioners' knowledge body in the observed field of AI economics and their managerial practices. Authors' are also looking forward to using produced results against assessing firms' technology innovation ability, innovation intensity, and innovation induced implications. These findings will be used to bridge, or eventually shorten, the differences in perceiving the firms' AI technology innovation critical success factors between firms themselves and the policymakers. The concept and the proposed operationalization of the model are focused on transnational universality and generalization in the sense that the proposed model with minor modifications can be applied in other similar operating environments. As from the prospect analysis of AI diffusion in the specific economy, as already mentioned, observed Croatian environment is characterized as a catching-up moderate innovator (EIS, 2019), highly service-oriented, strongly deindustrialized, industry fragmented with the low level of vertical integration. Summing, we are examining the ecosystem with somewhat limited data access among its business subjects. AI diffusion barriers are presented by three fundamental dimensions: organization related, environmental/ecosystem, and technology dimension. All three will be considered for the operationalization purposes of this paper, nevertheless with a different intensity and scope of use for each of them. Hence, the most definite accent will be given on the organizational aspect in its correlation with technology, while the environment component will be represented only by public financial instruments available to firms that are incentivizing national diffusion of AI. As a spill-over possibility, the future researches may be oriented towards going deeper and more specific into the correlations of AI technologies/paradigms vs. areas of CA sourcing, e.g., marketing (Campbell et al., 2020), AI and value creation (Canhoto & Clear, 2020), AI and innovation intensity (Kakatkar, Bilgram, & Füller, 2020) and similar. As per AI technologies/paradigms, they are considered in the proposed model according to the typology proposed by Corea (2018). Although technology categories segment the managerial understanding factor, this factor is weighed with unique composite value. Finally, the proposed model is complemented with AI diffusion incentivizing initiatives evaluation, primarily provided by the public sector financing instruments. These are considered bidirectional, the supply (funding instruments, incentives, etc.) and the demand side (public procurement for innovation). Summarizing the above, a multidimensional model has been conceptualized, which takes into consideration the taxonomy of AI technologies/paradigms as a technological dimension, the taxonomy of building blocks for achieving firms' CA, and the impact assessment of external incentivizing financing sources as an environmental/ecosystem dimension. The integrated proposed conceptual research model is presented in the following Figure 4.

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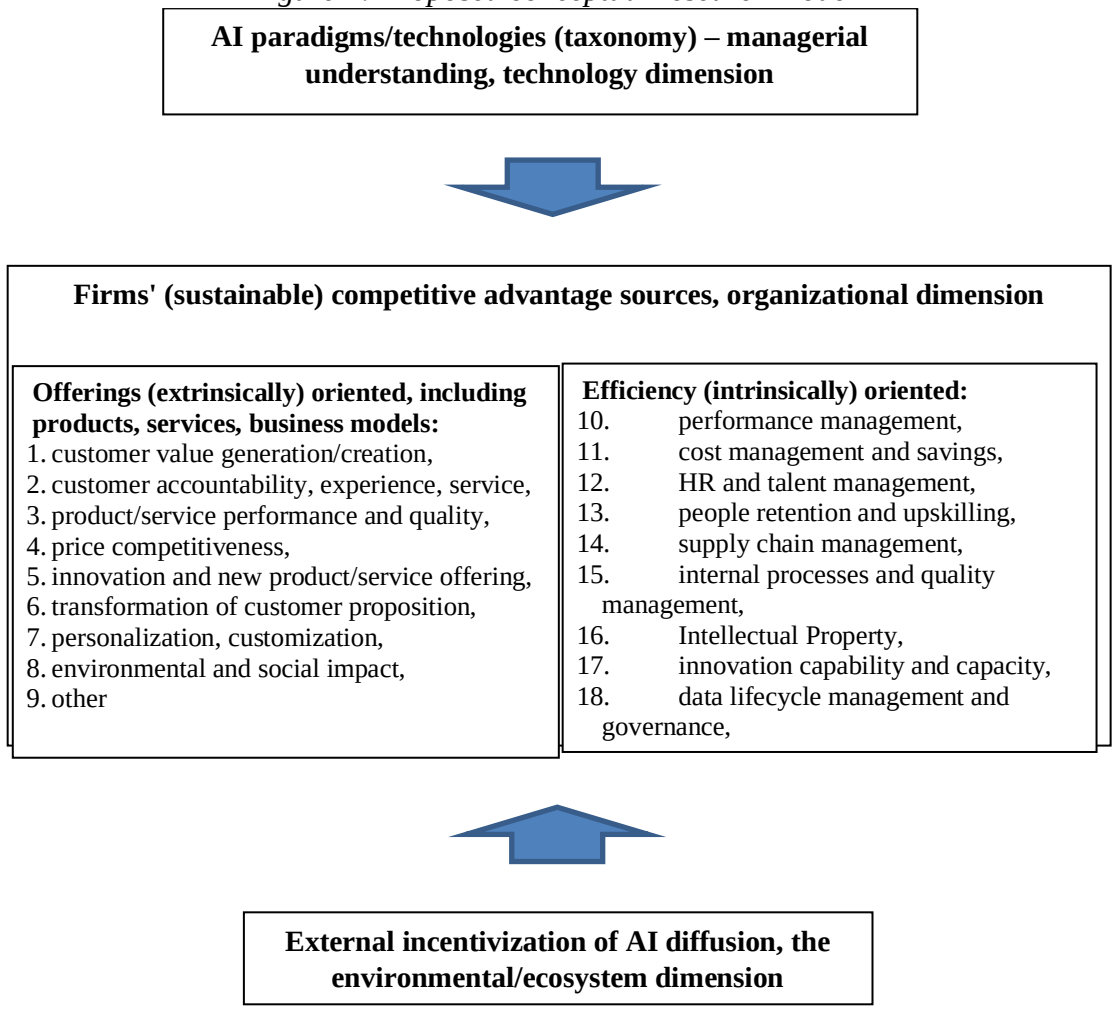
Figure 4: Proposed conceptual research model



Source: authors

Hence, founded on the authors' research interest and taking into consideration the previously elaborated theoretical background structured in the presented conceptual model (Figure 4), a set of five hypotheses is proposed and explained hereafter.

- *H1: Firms with a more profound understanding of AI technologies are more likely to use them with higher intensity and focus on enhancing their CA in the medium term.*

This hypothesis aims to sustain the thesis that companies that possess advanced acquaintance in terms of currently available AI technologies typology, their impact on business, and the level readiness to implement it are in a relatively better position than those who are lagging in one of several listed segments. Within the term of competitive advantage enhancement in this hypothesis, it is assumed; the application of AI technologies as a value creation vehicle embedded into new offerings (products/services/business models) and methods to their market successfulness, as well as AI, use to increase the level of its organizational efficiency and manage business costs process more effectively. The statistical testing method used was a simple linear regression/Structural Equation Modelling.

- *H2: Firms with a deeper understanding of AI technologies are more likely to use them with higher intensity to enhance their competitiveness through a market offering (existing or new products/services/business models) development and innovation in the medium term*.

Similarly, like H1, with this hypothesis, the intention is to test companies that possess advanced AI acquaintance intending to intensify the use/investments in AI to gain a higher level of competitive advantage in the offering segment, as an outward business aspect. By enhancing the offering segment of competitive advantage, we assume the introduction (or expansion) of AI technologies in the development of the existing and new product to achieve higher customer value generation and proposition, better and appropriate customer experience, and AI-enabled enhancements in innovative marketing/sales/business development of firms' offering. The statistical testing method used was a simple linear regression/Structural Equation Modelling.

- *H3: Firms with a deeper understanding of AI technologies are more likely to use them with higher intensity to enhance their competitiveness through advancing the internal operational efficiency in the medium term.*

H3 is highly complementary with H2, wherewith this hypothesis, the intention is to test the firms' AI acquaintance vs. their plan to enhance their competitive advantage in the business efficiency segment, as an intrinsic business aspect. By improving the offering segment of competitive advantage, we assume the introduction (or expansion) of AI technologies in the development of an existing and new product to achieve higher customer value generation and proposition, better and appropriate customer experience, and AI-enabled enhancements in innovative marketing/sales/business development of firms' offering. The statistical testing method used was a simple linear regression/Structural Equation Modelling.

- *H4: The existence of external incentives to invest in AI technologies will accelerate their diffusion and use in firms in the medium term.*

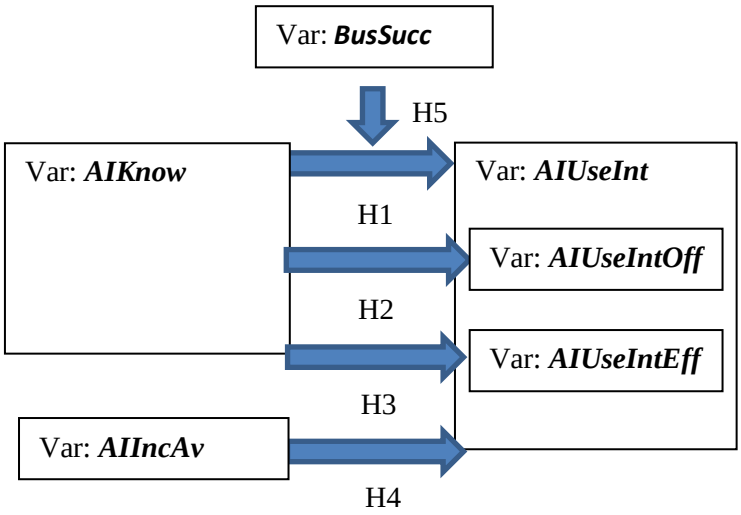
With this hypothesis, authors are aiming to demonstrate that the availability of external sources of AI technology diffusion financing is stimulating and enabling. Furthermore, the intensity of their use will be proportional to the quality of available proposed instruments. Such external usually governmentally offered instruments are particularly welcomed in the smaller and lagging national economies, where financing complex business innovation activities using their funding represents a significant and risky effort to mitigate potential market failures (Vlacic, Dabic & Aralica 2019). The outcomes of testing this hypothesis may also be used as guidelines for the conceptualization of appropriate national AI financing instruments. The statistical testing method used was a simple linear regression/Structural Equation Modelling.

- *H5: Business success level in the past medium-term will affect the relationship of H1 with a moderate effect.*

That is, companies that are expressing a better understanding of AI technologies will be willing to applying AI technologies aiming to increase their competitiveness in relation to their past successes. We are arguing that besides the AI technologies acquaintance, the moderating effect in their intended practical implementation is also obtained by their recent business success. This finding may undoubtedly be used in shaping internal but also external incentivizing policies and strategies towards more successful diffusion of AI in firms. The statistical testing method used was a simple linear regression/Structural Equation Modelling. The proposed model is predominantly based on statistical, qualitative research methodology with a quantitative interview-based section as a validation. All five hypotheses interaction, together with the offered description of the variables, are presented in Figure 5, which primarily reflects the quantitative segment of the research. In the practical empirical research operationalization, the intended qualitative research segment will be upgraded and embedded into the presented model

as well. To further analyse an integrated list of envisioned independent and dependent variables to be used in the empirical operationalization, including their descriptions, is presented in Appendix 1.

Figure 5: Proposed research operationalization model with hypotheses included



Source: authors

7. CONCLUSIONS AND LIMITATIONS

Countries are forced to respond systematically and promptly through appropriate policies as AI skips developmental stages and makes changes to standard (more traditional) business models with incredible speed. In doing so, it is necessary to find ways to ensure that the application of AI is ethical and does not violate fundamental human freedoms (especially in the area of ASI). In times of crisis (COVID-19), the application of AI has proven to be extremely useful and can overcome numerous obstacles in business and the ordinary course of economic processes. However, an application should always be taken 'with a grain of salt' due to, still, limited possibilities, sometimes poor adaptation of variables, and neglect of 'irrational decisions' that are occasionally right business decisions. The Republic of Croatia is a small open economy with an extremely fragmented economic structure. From this position, it is necessary to introduce AI into a wide range of industries as simply and quickly as possible. This could 'skip' the development challenges accumulated in prior periods and 'catch up' with advanced technologies. In doing so, economic policy instruments must respect horizontal requirements, but also enable vertically oriented initiatives that, in the short term, can ensure economic progress. Legislation and procedures necessarily need to be more efficient and flexible in adopting a framework for developing new business patterns, new activities, and new economic (but multilevel) networks. By facing complex changing environments as early, as noted Sharma Yadav and Chopra (2020) as possible and becoming resilient with the use of intelligent technologies that can act as drivers of innovation, sustainability, competitiveness and sustainability, implementation (and then results) can be rapid and satisfying. This is especially important to avoid or mitigate the so-called 'dark side' (Soni et al., 2019) of AI, which points to significant backwardness of already emerging countries and the deepening of inequality due to a kind of 'deprivation'. Recognizing China's significant progress and stable US leadership, the EU has launched several strategies, programs, and initiatives, and its results show that it is a significant global player in terms of AI. With proposals on the European Green Deal, AI is a critical enabler for attaining goals of the Green Deal through environmental solutions (COM(2020)65). This is where the opportunity for small countries like the Republic of Croatia lies primarily through involvement in 'above national' research and development networks (to

avoid 'scattering' of influence and priorities). But understanding and addressing the current challenges faced by businesses, according to Accenture (2018) will be vital to ensuring Europe fully realizes the economic potential of AI and taking into account the lag of the EU to the USA and China. There are several challenges for future research. Namely, the study so far mainly starts from the technological aspects of AI, which often isolate the state and public administration. Furthermore, the widespread use of AI, there is often a deficit in the system of access and recognition of the depth and breadth of the effect of AI. As an answer to the set research challenge, the concrete output out of this paper represents a concept of a tailored research model as a vehicle to test the AI-related established hypotheses through the subsequent comprehensive research empirical and operationalization phase. The presented methodology will be furthermore bespeaking in its operationalization to suit the example of still developing post-transitional economy or ecosystem. However, at the same time, it applies and transferrable to other operating environments. Identified limitations in the operationalization are primarily related to the projected questionnaire outputs, mostly in optics of responses quality and quantity. The minimum response number for the PLS-SEM implementation is somewhere above 100 valid responses, which is somewhat challenging for the Croatian environment. Next, researchers may face issues with responses segmentation and distribution, as well as the questionable profile of questioners. The other possible identified limitation lies in relative ambiguity in firms' precise composite performance determination. In conducting the subsequent second phase operationalization of this research, authors will seriously consider the mentioned limitations and confront them with upfront prepared mitigation actions. Additional value that the authors are endeavouring out of the proposed research model is pragmatic linkage to the national policy, whose results may be used in the tailoring of appropriate guidelines while designing national incentivizing instruments aiming to catalyse and accelerate the nationwide expansion of AI technologies. When implemented, by this work produced empirical outputs shell assist the national innovation triple helix performers; the business practitioners, the policymakers and the academic researchers, in better contextual approaching and boosting AI diffusion in the national economy, which is already in preparation through the National Plan for AI Implementation. Finally, this research produced findings that could also contribute to the EU strategic attempt to boost AI on the European level.

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APPENDIX

*Table 1: Research model, variable usage description**

Variable	Type	Description	Construction/Source
AIUseInt	Dependent, Composite, integer	The intensity of AI use at the general level of the firm, intended in the next 5 years	Questionnaire: Construct (3-4 questions) created by the aggregation of questions using Likert scale 1-8
AIUseInt Off	Dependent, Composite, integer	The intensity of AI use embedded in the existing or new development of the existing and new product in order to achieve higher customer value generation and proposition, better and appropriate customer experience, and AI-enabled enhancements in innovative marketing/sales/business development firms' offering.	Questionnaire: Construct (5-8 questions) created by the aggregation of questions using Likert scale 1-8 or extracted from available databases
AIUseInt Eff	Dependent, Composite, integer	The intensity of AI use diffused towards enhancing organizational efficiency/cost for the next 5 years	Questionnaire: Construct (5-8 questions) created by the aggregation of questions using Likert scale 1-8 or extracted from available databases
AIKnow	Independent, Composite, integer	Overall understanding level of AI technologies at management levels of firms, in the terms of knowledge and business impact potentials, and AI readiness use self-assessment	Questionnaire: Construct (5-8 questions) created by the aggregation of questions using Likert scale 1-8
AIIncAv	Independent, Composite, integer	Availability and appropriateness of incentivizing instruments, it represents a combination of grant intensity, complexness in application and use (public, private, or combined)	Questionnaire: Construct (3-4 questions) created by the aggregation of questions using Likert scale 1-8
BusSucc	Moderator, Composite, integer	Past business performances, business success mostly expressed in financial terms	Questionnaire: Construct (4-5 questions) created by the aggregation of questions using Likert scale 1-8, eventually extracted from available public data

** The questionnaire research will comprise inclined technology firms classified following the Croatian National classification code NKD2007, that is corresponding to NACE classification[6]. The targeted population represents a purposive sample of firms identified explicitly in their technological, offering, and efficiency innovation orientation. Using a Croatian Chamber of Economy (CCE) database, more than a thousand (n = 1000), firms will be selected and asked to respond to the questionnaire. To test the hypotheses, the combinative approach will be used. To test H1, 2, 3, and 4 a Partial Least Squares Structural Equation Modeling (PLS-SEM) variance-base performed by using SmartPLS software (Hair et al., 2017, Ringle, Wende, & Will, 2017). To test the H5, a multiple linear regression methodology by using the SPSS software will be applied. The first applied method shall be appropriate considering the research environment, an early stage of theoretical development, and a relatively small sample size expected (Hernández-Perlines, Moreno-García, & Yañez-Araque, 2016). PLS-SEM represents a multivariate modeling technique implemented in testing multiple dependent and independent latent constructs (Mathwick, Wiertz, & De Ruyter, 2008).*

[6] The Statistical classification of economic activities in the European Community

INTENTIONS AND PERCEPTIONS OF THE ENTREPRENEURIAL CAREER AMONG STUDENTS

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ABSTRACT

Entrepreneurship and the establishment and development of small and medium-sized enterprises represent one of the foundation stones of the development of both the economy and society in general. SMEs are the backbone of every economy; they are the crucial driver of advancement, innovation, competitiveness and employment. Education, and particularly, higher education, create human resources for future economic and social development, which is crucial for the national economies and societies on the ladder of competitiveness both in the region and the world in the future. Numerous EU and national strategic documents underline that entrepreneurship should be promoted and encouraged in educational institutions and curricula. Additionally, curricula should be adapted in a way that provides students with the necessary entrepreneurial competences, stimulate innovative and entrepreneurial spirit, and direct more young people to decide to start their business ventures. The primary aim of this research is to determine the entrepreneurial intentions of the student population and their correlation with entrepreneurship education and the perception of entrepreneurship. The research has been conducted at the University of Mostar from April to June 2020. For the research purpose, a questionnaire was used and delivered online to students of several faculties of the University of Mostar from different areas and fields of science and education, including the first, second and third educational cycle. The data were analysed in IBM SPSS Statistics 25.0. The results were expressed as number and percentage and mean and standard deviation. Regression analysis was performed to examine the contribution of individual dimensions to entrepreneurial intention. The limit of statistical significance was set at 0.05. The research results showed the entrepreneurial intentions of students, their entrepreneurial education and perception of entrepreneurship, as well as the connection of the two. The paper has also made a comparison with similar research and provided recommendations for future research.

Keywords: *Career, Education, Entrepreneurship, Intentions, Perception, Students*

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) represent more than 99% of all enterprises in the EU.[1] They provide two-thirds of jobs in the private sector and are responsible for more than half of the total added value realized by companies in the EU. Growth in Europe is unthinkable without SMEs, and they play a crucial role in delivering innovative products, strengthening competitiveness and creating new jobs. In the last decade, the European Union has placed a particular emphasis on the development of entrepreneurship and small and medium-sized enterprises. In support of SMEs, various action programs have been adopted, such as the Small Business Act, Horizon 2020 and COSME. They aim to increase the competitiveness of SMEs through research and innovation and provide them better access to financing. The Entrepreneurship Development Action Plan 2020 sets out a series of measures to be taken at

[1] European Parliament (2020). *Kratki vodič o Europskoj uniji-2020: Small and medium sized enterprises.*

EU level and in the Member States to support entrepreneurship. The action plan is based on three pillars. The first one is a development of entrepreneurial education and training, then, creating the right business environment and finally, promoting entrepreneurs as role models and reaching entrepreneurship to specific target groups.[2] Education, and principally, higher education creates the human resources for future economic and social development and is crucial for the dynamics of that development and the position that national economies and societies will have on the ladder of competitiveness and *development in the region and the world in the future.* Numerous EU and national strategic documents underline that entrepreneurship should be promoted and encouraged in educational institutions and curricula. Additionally, curricula should be adapted in a way that provides students with the necessary entrepreneurial competences, stimulate innovative and entrepreneurial spirit, and direct more young people to decide to start their business ventures. A survey conducted in the European Union among young people[3] showed that the majority of respondents think education and skills should be a priority topic for the EU (53%). The results of the GEM survey in 2018 confirm the findings from previous years that more educated people and entrepreneurs are more active. It is the case both in Croatia but also in the groups of countries that Croatia is compared to, i.e. EU countries, group of countries with high gross domestic income per capita (Singer et al., 2019). People with developed personal preferences for starting a business venture represent the starting point of the entrepreneurial process, which begins with identifying opportunities and shaping the intention to start a business venture. Personal preferences are conceptualized through the interaction of individual attributes of potential entrepreneurs and social values towards entrepreneurship. The difference in perception of opportunities also determines other components on which entrepreneurial activity depends (primarily the intention and decision to start a business venture). These differences show a significant difference in the potential that determines the entrepreneurial capacity of the country. While in Croatia only one-third of adults see business opportunities in their environment, in the EU it is 44% of adults (and in Sweden close to 82% of adults). Identifying prospects and assessing personal competence to start a business venture are prerequisites for shaping the intent to turn an opportunity into a venture. In the period from 2016-2018, the adult population in Croatia expressed the intention to start a business venture significantly more often than the average for EU countries that participated in the GEM survey. In 2017 and 2018, Croatia was in the first place, with a relatively stable level of fear of failure in 2018 than in 2017 (Singer et al., 2019). In the last few years, no one has conducted a GEM survey in Bosnia and Herzegovina.

2. THEORETICAL BACKROUND

Entrepreneurial intention records the state of mind that directs individuals to focus on achieving the goal or the like (Bird, 1988). The intention has been also defined as the effort of a person to carry out entrepreneurial behaviour (Liñán & Rodríguez, 2004). Individuals intending to start a business are very likely to do so (Ajzen, 1991; Fishbein & Ajzen, 1975), and it is reasonable to suggest that examining entrepreneurial intent is a considerable approach of studying actual entrepreneurial behaviour. The importance of examining entrepreneurial intent is evident from empirical studies in the field of entrepreneurship (Diaz-Garcia & Jimenez-Moreno, 2010; Lee et al., 2011; Shinnar et al., 2012; Siu & Lo, 2013). There are numerous approaches to the study of entrepreneurial intentions, and yet two are the most commonly used, namely the entrepreneurial event model (Shapero, 1982) and the theory of planned behaviour (Ajzen, 1991). According to Ajzen (1991), intentions are shaped as a result of three factors: attitudes toward certain behaviours, social norms and perceived behavioural control.

[2] European Parliament (2013). *European Parliament resolution of 21 November 2013 on the state of play of the Doha Development Agenda and preparations for the Ninth WTO Ministerial Conference (2013/2740(RSP)*
[3] European Union (2018) *Flash Eurobarometar 455 - Report European Youth*, 5.

Many researchers emphasize the need to consider concepts such as locus of control and self-efficacy when observing observed behavioural control (Eisen, 2002; Zellweger, Sieger & Halter, 2011). Some authors (Zhang, Wang & Owen, 2015) aim to build on the original model of the theory of planned behaviour by including two determinants: short-term risk-taking preference and psychological well-being. The Entrepreneurial Event Model (Shapero, 1982) views enterprise creation as an event. According to this model, the personal choice of an individual to start a business depends on three elements, perceived desirability, propensity to act and perception of feasibility (Morić Milovanović, Krišto & Srhoj, 2015). Shapero believed one critical behavioral determinant behind entrepreneurial intention is propensity to act (Shapero, 1982), and he has shown its significant impact on intention (Krueger et al. 2000). Using Ajzen's theory of planned behavior and Shapero's entrepreneurial event model as well as entrepreneurial cognition theory, Zhang, Duysters & Cloodt (2013) attempt to identify the relationship between entrepreneurship education, prior entrepreneurial exposure, perceived desirability and feasibility, and entrepreneurial intentions for university students. There is a significant negative impact of exposure and a significant positive impact of entrepreneurship education. Males and people from technological universities and/or backgrounds have higher entrepreneurial intentions than females and people from other universities and backgrounds. There are also significant positive interactive effects by gender, university type, and study major on the relationship between entrepreneurship education and entrepreneurial intentions. Turker & Selcuk (2009) examined factors that had affected the entrepreneurial intention of university students and proved that educational and structural support factors affected the entrepreneurial student intention. Yurtkoru, Acar & Teraman (2014) investigated willingness to take a risk and entrepreneurial intention of the university students in An empirical study comparing private and state universities. Results have revealed some differences between two groups and the partial effect of willingness to take a risk on entrepreneurial intention. Numerous other studies of student intentions in the world (Neneh, 2014; Pihie & Akmaliah 2009; Al-Jubari, Hassan & Liñán, 2019; Shook and Bratianu, 2010; Schwarz et al. 2009) have shown differences in students entrepreneurial intentions, including gender, age, the field of study, etc. Certain researches have been carried out in Croatia and Bosnia and Herzegovina. Morić Milovanović, Krišto and Srhoj (2015) investigated what distinguished students with entrepreneurial intentions among students at the University of Zagreb. Langer et al., (2016) investigated Intentions and Perceptions of the Entrepreneurial Career Among Croatian Students at the University of Split. In that paper, the authors analyzed the entrepreneurial intentions of the student population at the University of Split, Croatia and related them to general student perceptions of entrepreneurship and its social role/desirability. The entrepreneurial intentions of business students in Bosnia and Herzegovina at the University of Sarajevo were also investigated (Šestić et al., 2017). The primary aim of this research is to determine the entrepreneurial intentions of the student population and their correlation with entrepreneurship education and the perception of entrepreneurship at the University of Mostar in Bosnia and Herzegovina.

3. METHODOLOGY OF RESEARCH

3.1. Setting hypothesis

The defined problem has also defined the underlying objective of this research, which is to determine the entrepreneurial intentions of the student population and their correlation with entrepreneurship education and the perception of entrepreneurship. The problem and the objectives set for this study determined the content of the six hypotheses which state:

- H1 The perception of professional attractiveness of entrepreneurship influences the student entrepreneurial intent.

- H2 The perception of social acceptability of entrepreneurship influences the student entrepreneurial intent.
- H3 Assessment of own ability of entrepreneurial knowledge, abilities and skills influences the student entrepreneurial intent.
- H4 Entrepreneurial motives influence student entrepreneurial intent.
- H5 Entrepreneurial objective(s) influence(s) the student entrepreneurial intent.
- H6 Entrepreneurial education/training influences student entrepreneurial intent.

3.2. The scope of the research, methods of collecting and processing data model

The research has been conducted at the University of Mostar from April to June 2020. A modified questionnaire, used by Langer et al. (2016) investigating the entrepreneurial intentions of students at the Faculty of Economics, University of Split, was used for the purpose of this research. It was delivered online to students of several faculties of the University of Mostar from different areas and fields of science and education from all years of study of the first, second and third educational cycle. The questionnaire consisted of a few parts, which are the entrepreneurial intentions of students, their entrepreneurial education and perception of entrepreneurship, and the connection of the two was collected. The most important parts of the questionnaire are education and experience, knowledge of entrepreneurship, professional attractiveness of entrepreneurship, social acceptability, entrepreneurial ability/intention, entrepreneurial objective(s), entrepreneurial education /training and personal data of students. The data were analysed in IBM SPSS Statistics 25.0. The results were expressed as number and percentage and mean and standard deviation. Regression analysis was performed to examine the contribution of individual dimensions to entrepreneurial intention. The limit of statistical significance was set at 0.05.

4. RESEARCH RESULTS AND DISCUSSION

Most of the sample consists of female students, the first cycle of university studies. The household in which students live has an average of 5 members with a deviation of 2 members. Half of the students stated that the average monthly income of their household is up to 2000 BAM. Other half stated that it is over 5000 BAM. The mothers and fathers of the surveyed students usually have a high school diploma. The characteristics of the examined students are shown in Table 1.

Table following on the next page

Table 1: Characteristic of students

		Number of respondents	%
Cycle	I cycle	468	61.7%
	II cycle	235	31.0%
	Integrated (I and II cycle)	25	3.3%
	III cycle (specialist)	7	0.9%
	III cycle (doctoral)	24	3.2%
Study level	University study programme	707	93.1%
	Professional stury programme	52	6.9%
Gender	M	226	29.8%
	F	533	70.2%
Acquired (formal) education of the mother	Primary education	41	5.4%
	Secondary education	540	71.1%
	Higher education	172	22.7%
	Other	6	0.8%
Acquired (formal) education of the father	Primary education	32	4.2%
	Secondary education	509	67.1%
	Higher education	205	27.0%
	Other	13	1.7%
Average monthly family income (total income)?	Up to 1000 KM	135	17.8%
	Between 1000 BAM and 2000 BAM	286	37.7%
	Between 2000 BAM and 3500 BAM	209	27.5%
	Between 3500 BAM and 5000 BAM	87	11.5%
	More than 5000 BAM	42	5.5%

Source: Research of the Author

As reasons for studying, students stated the following: 87% study because they want to, 85.4% of students think that studying is a good opportunity for professional success, only 34.7% state that they study on the recommendation of family or friends and 16.5% of students state that it is for some other reason. Half of the students state that they have work experience, they worked before the start of their studies or are currently working (393; 51.8% yes vs. 366; 48.2% no). Almost ¾ students with a work experience state that they have up to three years of work experience (one year 40.8%, from 1 to 3 years 33.2% of them). Most of the students (79%) haven't performed any management jobs and are/were employed in micro or small enterprises (49.7% in micro and 30.3% in small enterprises). Only 10% of students stated that at the time of the survey, they were employed in their business entity (self-employed) where they were (partly, mostly or full) owners of the business entity (craft, company or something else). More than half of these students (61.1%) state that they work for up to three years, 20.8% work between three and five years, and 18.1% for more than five years. How students assess the acceptability of individual goals after graduation is shown in Table 2.

Table following on the next page

Table 2: Eligibility of individual goals after graduation

	Number and% of students					M (SD)
	1	2	3	4	5	
To be employed in a state institution	321 42.3%	296 39.0%	87 11.5%	13 1.7%	42 5.5%	1.89 (1.05)
To get a job in a large company, state-owned or privately owned	234 30.8%	364 48.0%	102 13.4%	25 3.3%	34 4.5%	2.03 (0.99)
To get a job in a small privately owned business	116 15.3%	321 42.3%	199 26.2%	75 9.9%	48 6.3%	2.50 (1.06)
I will get a job in a family business	65 8.6%	113 14.9%	192 25.3%	280 36.9%	109 14.4%	3.34 (1.15)
To start an independent business	42 5.5%	64 8.4%	129 17.0%	259 34.1%	265 34.9%	3.84 (1.15)
I plan to start an independent business after preparation and training	53 7.0%	80 10.5%	177 23.3%	239 31.5%	210 27.7%	3.62 (1.19)
1 – completely unacceptable; 2 – unacceptable; 3 – neither acceptable nor unacceptable; 4 – acceptable; 5 – very acceptable; M (SD) – mean (standard deviation)						

Source: Research of the Author

It is very positive that a large number of students found the starting of their own business very acceptable and acceptable.The average grades for students are the highest for the acceptability of starting their own business, which is also positive. Their status in the future, assessing the pros and cons of possible professional development, students rank as follows:

1) to be an entrepreneur, start an independent business and run it: it is acceptable for 74.4% of students; M = 3.99; SD = 1.05,
2) to engage in one of the liberal professions (advisor, assessor….): it is acceptable for 7.6% of students; M = 2.22; SD = 0.9,
3) to be an employee, have a paid job: it is acceptable for 4.2% of students; M = 1.64; SD = 0.90.

How students assess their own abilities in relation to entrepreneurial knowledge and skills show Table 3.

Table following on the next page

Table 3: Assessment of own ability of entrepreneurial knowledge and skills

	Number and% of students					M (SD)
	1	2	3	4	5	
recognizing business opportunities and possibilities	6 0.8%	46 6.1%	259 34.1%	337 44.4%	111 14.6%	3.66 (0.83)
creativity	6 0.8%	35 4.6%	178 23.5%	309 40.7%	231 30.4%	3.95 (0.89)
problem solving	3 0.4%	7 0.9%	160 21.1%	379 49.9%	210 27.7%	4.04 (0.75)
leadership / communication	7 0.9%	30 4.0%	187 24.6%	298 39.3%	237 31.2%	3.96 (0.89)
negotiation skills	9 1.2%	59 7.8%	210 27.7%	274 36.1%	207 27.3%	3.81 (0.96)
recognizing and taking risks	8 1.1%	53 7.0%	235 31.0%	295 38.9%	168 22.1%	3.74 (0.92)
development of existing / new products (services)	15 2.0%	59 7.8%	272 35.8%	290 38.2%	123 16.2%	3.59 (0.92)
networking, business networking	11 1.4%	68 9.0%	249 32.8%	287 37.8%	144 19.0%	3.64 (0.94)
1 – I don't feel capable at all; 2 – I am mostly not capable; 3 – I am mostly capable; 4 – I am capable; 5 – I am very capable; M (SD) – mean (standard deviation)						

Source: Research of the Author

In the assessment of their entrepreneurial knowledge, abilities and skills needed to start and run their own business in the conducted research, the students evaluated them quite positively. Students rated problem-solving (4.04), leadership and communication (3.96) and creativity (3.95) with the highest marks. Similar results were obtained in a study conducted at the University of Split (Langer et al., 2016) where leadership and communication were best rated, followed by problem-solving and in third place creativity. Half of the examined students (398; 52.4%) have seriously considered entrepreneurship and starting an independent business, 118 (15.5%) do not think about it, while 243 (32.0%) do not know how to answer this question. Compared to the research conducted at the University of Split (Langer et al., 2016) the results are somewhat better since 45.5% of the surveyed students in Split expressed a firm intent to start a new business venture. The motives that would motivate students to entrepreneurship are shown in Table 4.

Table 4: Motives for starting own business and entrepreneurship

	Number and% of students					M (SD)
	1	2	3	4	5	
Take advantage of an opportunity that arises in the market and that I recognize	5 0.7%	10 1.3%	70 9.2%	349 46.0%	325 42.8%	4.29 (0.74)
It's my only job opportunity	55 7.2%	126 16.6%	300 39.5%	204 26.9%	74 9.7%	3.15 (1.05)
Profit - earnings	6 0.8%	12 1.6%	101 13.3%	394 51.9%	246 32.4%	4.14 (0.76)
Independence - the feeling of freedom of independent action and managing your own business	3 0.4%	11 1.4%	79 10.4%	311 41.0%	355 46.8%	4.32 (0.75)
Pleasure - a feeling that is caused by creating and realizing your own business	5 0.7%	5 0.7%	63 8.3%	302 39.8%	384 50.6%	4.39 (0.72)
1 – completely unimportant; 2 – unimportant; 3 – neither important nor unimportant; 4 – important; 5 – very important; M (SD) – mean (standard deviation)						

Source: Research of the Author

The motivation of students for a possible entry into an entrepreneurial venture could be assessed as positive. A much larger number of students are those who would embark on an entrepreneurial venture because they want to take advantage of an opportunity they have recognized in the market (4.29) than those who would start a business out of necessity, ie to get a job (3.15). The social acceptability of entrepreneurship was explored through several questions, i.e. statements. For example, through the acceptability of entrepreneurial activities within the family; among friends, peers and colleagues. Also, it was explored in the field of acceptability of entrepreneurship and entrepreneurs in society and culture; attitudes towards entrepreneurs and entrepreneurial activities; the contribution of entrepreneurship and entrepreneurs to the development of society and appreciation of the economy etc. More than 80% of students know someone who is engaged in entrepreneurship, and as an entrepreneur, they evaluate him as successful (31% very successful, 46.1% successful). Almost 40% of students didn't know how to rate the statement "culture and social environment in my country are prone to entrepreneurial activity". They gave a grade of 3 while 37.7% of students agreed with the statement. Despite this, more than half of students believe that the role of entrepreneurs in the country is generally not underestimated but also that the role of entrepreneurship in economic development is not sufficiently recognized. The average score for the social acceptability of entrepreneurship is very low (2.99), and it is the second-lowest in a score of all the surveyed variables. Means for individual dimensions of entrepreneurship are shown in Table 5.

Table 5: Means for dimensions of entrepreneurship

	M (SD)
Professional attractiveness of entrepreneurship	2.79 (0.46)
Social acceptability	2.99 (0.38)
Entrepreneurial intention	3.60 (0.56)
Entrepreneurial knowledge, abilities and skills	3.58 (0.58)
Entrepreneurial motives	4.06 (0.55)
Entrepreneurial objective(s)	4.23 (0.50)
Entrepreneurial education / training	4.03 (0.66)
M (SD) – mean (standard deviation)	

Source: Research of the Author

Through the analysis of the obtained results for the average grades of the observed variables, it is noticed that the lowest-rated were the professional attractiveness of entrepreneurship (2.79) followed by the social acceptability of entrepreneurship (2.99). The highest grades were given for entrepreneurial goals (4.23), entrepreneurial motivation (4.06) and entrepreneurial education and training (4.03). Entrepreneurial intentions have an average score of 3.60. In order to examine the impact of certain dimensions of entrepreneurship on students' entrepreneurial intentions, a multiple regression model was set up, in which Entrepreneurial intention of students is a dependent variable, while the independent variables or predictors are professional attractiveness of entrepreneurship, social acceptability, entrepreneurial ability, entrepreneurial motives, entrepreneurial objective(s), entrepreneurial education/training. The obtained results showed that the regression model with the stated predictors was statistically significant for the assessment of students' entrepreneurial intention ($F = 74.866$; $p < 0.001$), professional attractiveness of entrepreneurship, social acceptability, entrepreneurial ability, entrepreneurial motives, entrepreneurial objective(s) proved to be significant predictors of Entrepreneurial intention, while entrepreneurial education/training, according to this research, does not have a significant impact on students' entrepreneurial intention (Table 6). Among the significant predictors, the professional attractiveness of entrepreneurship and entrepreneurial ability have the greatest contribution to the forecast of Entrepreneurial intention.

The low value of the VIF indicator and values of tolerance implies the absence of multicollinearity (table 6). The multiple correlation coefficient is 0.617; and predictors explain 37.5% of the entrepreneurial intention variance, indicating moderate predictive strength of the model.

Table 6: Results of regression analysis with entrepreneurial intention as dependent variable

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	-0.122	0.225		-0.542	0.588		
professional attractiveness of entrepreneurship	0.540	0.036	0.442	14.949	0.000	0.969	1.032
social acceptability	0.112	0.044	0.076	2.578	0.010	0.985	1.015
entrepreneurial knowledge, abilities and skills	0.226	0.031	0.238	7.380	0.000	0.817	1.224
entrepreneurial motives	0.082	0.036	0.080	2.291	0.022	0.686	1.458
entrepreneurial objective(s)	0.190	0.044	0.170	4.353	0.000	0.556	1.799
entrepreneurial education / training	-0.016	0.030	-0.019	-0.538	0.591	0.678	1.474

Source: Research of the Author

According to the results obtained in this study, considering the hypotheses set for this study, the following can be stated:

- Hypothesis H1 "The perception of professional attractiveness of entrepreneurship influences the students entrepreneurial intent" is accepted.
- Hypothesis H2 "The perception of social acceptability of entrepreneurship influences the student entrepreneurial intent" is accepted.
- Hypothesis H3 "Assessment of own ability of entrepreneurial knowledge, abilities and skills influences the student entrepreneurial intent" is accepted.
- Hypothesis H4 "Entrepreneurial motives influence the student entrepreneurial intent" is accepted.
- Hypothesis H5 "Entrepreneurial objective(s) influence(s) the student entrepreneurial intent" is accepted.
- Hypothesis H6 "Entrepreneurial education/training influences the student entrepreneurial intent" is not accepted.

5. CONCLUSION

Entrepreneurship and the development of small and medium-sized enterprises represent a significant segment of the development of the economy and society. Growth in Bosnia and Herzegovina but also Europe is inconceivable without SMEs, and they play a crucial role in delivering innovative products, strengthening competitiveness and creating new jobs. In the last decade, the European Union has placed a very strong emphasis on the development of entrepreneurship and small and medium-sized enterprises. The Entrepreneurship Development Action Plan 2020, which established a series of measures to be taken at EU level and in the Member States to support entrepreneurship, is based on three pillars. The first one is the development of entrepreneurship education and training, then, creating the right business environment and finally, promoting entrepreneurs as role models and reaching entrepreneurship to specific target groups. People with developed personal preferences for starting a business venture represent the starting point of the entrepreneurial process, which begins with identifying opportunities and shaping the intention to start a business venture.

Personal preferences are conceptualized by the interaction of individual attributes of potential entrepreneurs and social values towards entrepreneurship. The difference in the perception of opportunities also determines other components on which entrepreneurial activity depends (primarily the intention and decision to start a business venture). The results of the research indicate the facts that the image of entrepreneurship and entrepreneurs as acceptable and desirable, as well as the social acceptability and the image of entrepreneurship and entrepreneurs that students have, has an impact on students' entrepreneurial intentions. It indicates that it is necessary to work consciously and methodically on the promotion of entrepreneurship and entrepreneurs in society. Additionally, it is crucial to work on creating a positive image and desirability of the entrepreneurial profession among young people, to encourage their entrepreneurial intentions and the likelihood that this intention will turn into a concrete entrepreneurial venture. A business venture, motivated by the desire to take advantage of a business opportunity recognized in the market, has a much higher chance of success than those initiated out of necessity. The research results showed that this motive prevails among students and confirmed that entrepreneurial motivation influences student entrepreneurial intentions. This fact indicates that entrepreneurial intentions will turn into a business venture in the future and that it has a better chance of being successful. The disadvantages of this research are that there it wasn't the analysis of entrepreneurial intentions of students conducted with regard to differences in gender, different field of study, different study cycles. Also, the analysis could be conducted with the first-year students in the first cycle and students of higher years as well as second and third cycles to make a comparison among them and find possible differences. It would also be a recommendation for further research to investigate the above to create a complete picture and be able to give more precise guidelines in which direction and towards which to direct future activities and which ones.

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ECONOMIC ASPECTS OF THE COVID 19 PANDEMIC ON EXTERNAL TRANSPORT COSTS

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ABSTRACT

A report from the UN's Department of Economic and Social Affairs state that by 2050, 68% of the entire world's population will live inside cities. Unfortunately, the transport system around the world has evolved preferring motorized traffic, mostly to the use of private cars, which reduces traffic safety and increases pollution and congestion. It was for these reasons that the big cities began to switch to sustainable transport systems. It's a system that will come with reasonable costs, that will operate efficiently and that will offer all populations a choice between different transport alternatives. In this way, it is possible to create equality between the three most important components related to transport, namely economic, social and environmental. At the time of the COVID 19 pandemic, mobility decreased, especially in large urban areas. In their daily migrations, many commuters began to use sustainable forms of movement, such as cycling or walking. Also, indirectly they reduced external costs of transport such as accident costs, air pollution costs, noise cost and congestion costs, to name a few. By implementing sustainable mobility measures and deployment of Cooperative Intelligent Transport Systems (C-ITS), it is possible to reduce the mentioned costs even after the end of the pandemic, and thus a healthier life, reduction of congestion in large cities and greater traffic safety. For this reason it is possible to believe that the aforementioned negative effects, as well as other external costs, will decrease over the years, thus enabling a more sustainable life for future generations.

Keywords: *sustainable mobility, external costs of transport, C-ITS, COVID 19*

1. INTRODUCTION

At least three components have always been indirectly linked to traffic. These are the economy, the environment and the social component. Without developed traffic, there is no developed economy, while an economy cannot develop without a well-developed traffic system. Unfortunately, over the years, the traffic system around the world has evolved in the wrong direction, preferring motorized traffic, mostly to the use of private cars, which is caused by the lobbying of major motor factories and oil or fossil fuels producers. Road designers thought that extending the roads, or adding lanes, would solve the problem of congestion, but the opposite happened. New traffic lanes brought new cars to those lanes. But in spite of everything, mistakes still happen today.

With introducing electric cars, there is the strongest desire to reduce pollution in large cities, ban the operation of fossil fuel cars and promote electricity. But the problem of congestion and parking remains the same, because one diesel car is the same as one electric car in terms of traffic jams. A report from the UN's Department of Economic and Social Affairs state that by 2050, 68% of the entire world's population will live inside cities. That's a 24% increase from the amount we have today (United Nations, 2019). Therefore, something needed to be done and salvation was found in sustainable urbanization and the concept of "sustainable mobility", where the term mobility is identified with the terms traffic and transport.

2. WHAT IS SUSTAINABLE MOBILITY?

Back in 1987, the so-called Bruntland Report defined the term sustainability as „development that meets the needs of the present without compromising the ability of future generations to meet their own needs". (Brundtland, 1987) Although there is no uniform definition of sustainable mobility, based on definition of sustainability, we can say that this is a system where different means of transport produce less polution and consume least energy per kilmetre traveled with the complete safety for passengers. It's a system that will come with reasonable costs, that will operate efficiently and that will offer all populations a choice between different transport alternatives. The economic dimension of sustainable mobility should enable efficient movement of passengers and goods, enable regionally balanced development while controlling financial capacity and future burdens for present and future generations. The social dimension should ensure that people's needs are met with fair and equitable access to education, health services, jobs and the market, on an intra- and intergenerational basis. In the ecological dimension, a decrease is expected in emissions of greenhouse gases, air pollution, noise and minimise land consumption by transport infrastructure. Based on these three dimensions, indicators for achieving sustainable mobility have been proposed. (Bongardt et al, 2011) Environmental indicators measure transport greenhouse gas emissions per capita (carbon footprint), land consumption by transport infrastructure, and the percentage of the population affected by local air pollutants. Social and economic indicators measure, inter alia, the number of road fatalities, the share of transport costs from total household expenditure, and sustainable transport investments at the national and local level. Good governance is the fourth dimension: it measures the level of stakeholder involvement in the planning and decision process for transport policies and projects. In order to implement these criteria successfully, a coherent set of measures is required. This should comprise, firstly, regulatory and economic measures, known as "push measures", based on disincentives in order to discourage less sustainable patterns of behaviour. The main aim is to reduce the use of private vehicles. Regulatory and fiscal measures to limit heavy goods traffic, and taxes on air travel, are other effective mechanisms to encourage a shift to more efficient and sustainable modes of transport. Secondly, incentive measures ("pull" measures) should be introduced on a broad basis with the aim of making sustainable modes of transport more attractive. Mobility policies in urban areas should clearly prioritise pedestrians, cyclists and local public transport over private cars – in urban planning, infrastructural development and traffic management. The minimum objectives that are set for each city are:

- Ensure all citizens are offered transport options that enable access to key destinations and services;
- Improve safety and security;
- Reduce air and noise pollution, greenhouse gas emissions and energy consumption;
- Improve the efficiency and cost-effectiveness of the transportation of persons and goods;
- Contribute to enhancing the attractiveness and quality of the urban environment and urban design for the benefits of citizens, the economy and society as a whole. (Wefering et al, 2014)

However, it is not only sufficient to give a measure, but it is also necessary to measure them at a given moment. Therefore, before setting goals and measures, it is necessary to make a good analysis of the current situation and at the end, to be able to classify what's being measured, to see if it's something that can be acted upon, or can be modified by introducing a strategy. (Morency, 2013) The most valuable and important indicators for sustainable transport (Bongardt et al, 2011) are greenhouse gas emissions per capita from the transport sector, percentage of the population affected by local air pollution, road fatalities, modal share of public transport/non-motorised transport and passenger kilometer/tonne kilometer per unit GDP.

3. EXTERNAL COSTS

External costs, also known as externalities, arise when the social or economic activities of one (group of) person(s) have an impact on another (group of) person(s) and when that impact is not fully accounted, or compensated for, by the first (group of) person(s). In other words, external costs of transport are generally not borne by the transport user and hence not taken into account when they make a transport decision. Cars exhausting NOx emissions, for example, cause damage to human health, imposing an external cost. This is because the impact on those who suffer damage to their health is not taken into account by the driver of the car when deciding on taking the car. (De Bruyn et al, 2019) There are different types of external costs:

- Total external costs refer to all external costs within a geographical boundary caused by transport.
- Average external costs are closely related to total costs, because they are calculated by dividing the total costs by the total transport performance. They are usually presented in €-cent/pkm, €-cent per tkm and/or €-cent/vkm.
- Marginal external costs are the additional external costs occurring due to an additional transport activity.

In this paper, based on facts from the latest Handbook on the External Costs of Transport (De Bruyn et al, 2019), total external costs of all modes of transport are provided at the EU28 level and 33 largest airports and 34 ports in EU. All input and output values in this Handbook are presented for 2016. If some data was not available for 2016, data for the most recent year (preferably 2015) was used. Based on Figures 1 & 2, it is possible to conclude that road transport is the predominant mode that causes the most external costs. Cost categories that are most important are accident costs and air pollution, which incur more than fifty percent of the total costs, unless congestion costs are calculated, which can only be calculated in road transport.

3.1. Accident costs

Accidents occur in all forms of traffic and result in substantial costs, consisting of two types of components: material costs (e.g. damages to vehicles, administrative costs and medical costs) and immaterial costs (e.g. shorter lifetimes, suffering, pain and sorrow). Market prices can be used to calculate material costs, however, no such market prices exist for immaterial costs. External accident costs can be defined as the social costs of traffic accidents that are not covered by risk oriented insurance premium. (De Bruyn et al, 2019) There are five main components of accident costs:

- **Human costs**: This is a proxy for estimating the pain and suffering caused by traffic accidents in monetary value.
- **Medical costs**: These are the costs of the victim's medical treatment provided by hospitals, rehabilitation centres, general practitioners, nursing homes, etc. as well as the costs of

appliances and medicines. In many cases a part of these costs is already internalised through health insurance premiums.[1] It is assumed that 50% of the medical costs are external.

- **Administrative costs**: These are the costs covering the expenses of the deployed police force, fire service and other emergency (non-medical) services that assist at the crash location site, costs of administration of justice and insurances. The most commonly used information is that 30% of the administrative costs are external.
- **Production losses**: After an accident victims are not directly capable of returning to work, and in some cases may never return to work. These costs consists of the net production losses due to reduced working time and the human capital replacement costs. Based on (ARE, 2018), it is assumed that 55% of the gross production loss can be regarded as external.
- **Material damages**: This consists of the monetary value of damages to vehicles, infrastructure, freight and personal property resulting from accidents. This component is assumed to be fully internalised by traffic participants through insurance.
- **Other costs**: This category covers the costs of congestion resulting from road crashes, vehicle unavailability and funeral costs. Iti s assumed that this part is not significant, beacuse it is included in other accident costs.

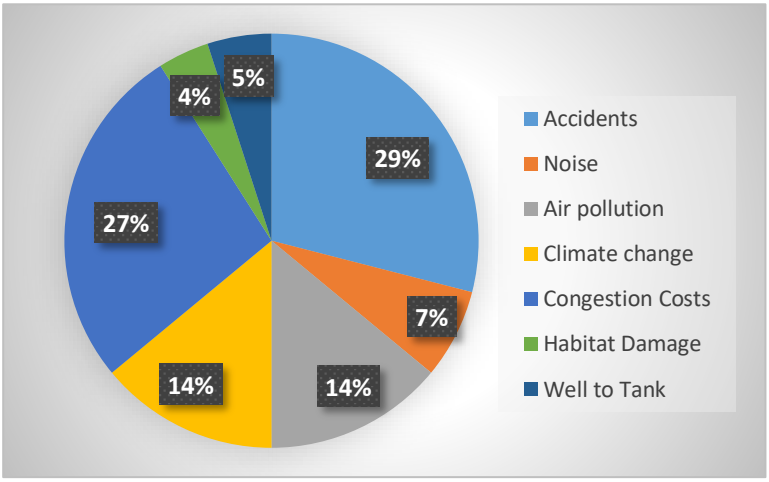

Figure 1: Share of the diferent cost categories on total external costs 2016 for EU28 (Source: De Bruyn et al, 2019)

3.2. Air pollution costs

There are many different types of damages caused by emission of air pollutants. Most relevant are:

- **Health effects** – the inhalation of air pollutants such as micro particles and nitrogen oxides (NO_x) leads to a higher risk of respiratory and cardiovascular diseases (e.g. bronchitis, asthma, lung cancer). These negative health effects lead to medical treatment costs, production loss at work (due to illness) and in some cases, even to death.
- **Crop loses** – ozone as secondary air pollutant (mainly caused by the emission of NO_x and VOC) and other acidic air pollutant (e.g. SO_2, NO_x) can damage agricultural crops. As a result, an increased concentration of ozone and other substances can lead to lower crop yields (e.g. for wheat).
- **Material and building damage** – there are two types of damage to buildings and other materials: a) pollution of building surfaces through particles and dust; b) damage of building

[1] There are large differences in health insurance across EU.

facades and materials due to corrosion processes, caused by acidic substances (e.g. nitrogen oxides NO_x or sulphur oxide SO_2).

- **Biodiversity loss** – the most important damages are: a) the acidification of sol, precipitation and water (e.g. by SO_2, NO_x) and b) the eutrophication of ecosystems (e.g. NH_3, NO_x). Damages to ecosystems can lead to decrease in biodiversity (flora & fauna). (De Bruyn et al, 2019)

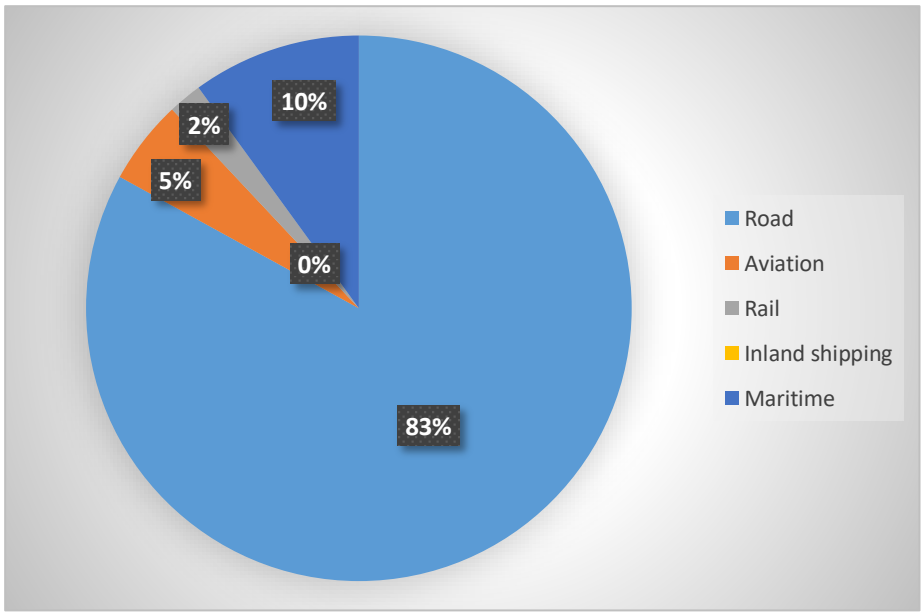

Figure 2: Share of the diferent transport modes on total external costs 2016 for EU28 (Source: De Bruyn et al, 2019)

3.3. Climate change costs

The emission of greenhouse gases into the atmosphere leads to global warming and climate change. Such radical change will have an important and largely irreversible impact on ecosystems, human health and societies. Climate change costs are defined as the costs associated with all of the effects of global warming, such as sea level rise, biodiversity loss, water management issues, more and more frequent weather extremes and crop failures. The climate change costs are calculated for all five transport modes. For road, (diesel-powered) rail, inland waterway and maritime transport, the global warming impacts of transport are mainly caused by CO_2, N_2O and CH_4. For aviation, there are other aircraft emissions such as water vapour, sulphate and soot aerosols which are harmful to the climate when emitted at high altitudes.

3.4. Noise costs

Noise costs depends on population density (how many people are exposed to noise), existing noise levels (depending on traffic volume, traffic mix and speed) and time of the day (health effects during the night are higher than during the day as a consequence of sleeping disturbance). Noise emissions from traffic represent a growing environmental problem due to a combination of a trend towards greater urbanization and increased traffic volumes. As a result, the costs of traffic noise are expected to grow in the future despite potential noise-reducing improvements in vehicles, tyres and roads. Road, rail and aviation are taken into account. Noise costs for inland waterway transport and maritime transport are considered negligible or non-existent as they usually take place in sparsely populated areas and the noise emission factors for those transport modes are relatively low.

3.5. Congestion costs

Road congestion can be defined as the impedance that vehicles impose on each other, as the traffic flow approaches the maximum capacity of the network (adapted from (Goodwin, 2004)). In particular, a congestion cost arises when an additional vehicle reduces the speed of the other vehicles of the flow and hence increases their travel time. This approach cannot be extended to other modes of transport, such as rail or air, as basically scheduled services are planned based on the allocation capacity of networks and nodes. For example, commuters in Mumbai can expect to spend an average of 65 percent extra travel time stuck in traffic. (Tom Tom, 2019) After Mumbai, highest congested city in the World, on second and third place are Bogota and Lima. Moscow is on fifth place and first from Europe, followed by Istanbul and Bucharest. The congestion costs of a **rail network** can be estimated starting from the information on the actual reactionary delays of trains, multiplied by the number of affected passengers and by a suitable average value of time. For **air transport**, congestion can be associated with a lack of sufficient capacity to accommodate the required demand of aircraft movements for landings and take-offs. As far as **inland waterway and maritime transport are concerned**, no illustrative quantification of marginal congestion costs could be identified.

3.6. Costs of habitat damage

Transport has different effects on nature, landscape and natural habitats. The main effects reported in literature are habitat loss (ecosystem loss), habitat fragmentation and negative effects on ecosystems due to the emission of air pollutants (e.g. biodiversity loss).

3.7. Other external costs

There are many other external costs, such as costs of soil and water pollution, costs of up- and downstream emissions of vehicles and infrastructure, external costs in mountainous regions, etc. However, they have not been discussed at length in detail as before, so they are considered to be irrelevant in summing up external costs.

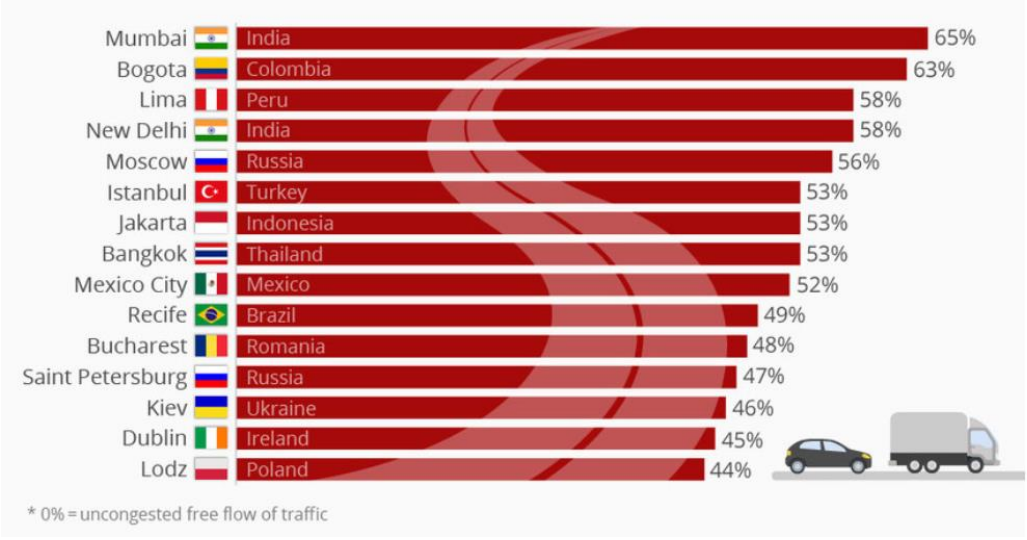

Figure 3: The Cities with the Worst Traffic Congestion (Source: Tom Tom, 2019)

4. SUSTAINABLE TRANSPORT SYSTEMS IN TOWNS

Better use of existing infrastructure, even without unnecessary expansion and construction, can encourage sustainable mobility. Mobility is greater than just public transportation. It encompases efficiency, quality and reliability of entire journey. There are different versions of

MaaS and different interpretations around the world. In Europe, it means thinking green and rethinking the cost of actually owning a car. Size of population means there are big volumes of people relying on shared mobility. In China, they are committed to connecting all transportation modes. It is expected that 83% of global trips will be MaaS. The ability of constantly adapt a journey to real-time conditions may result in more multimodal trips, especially in locations where there's greater modal choice. (Donlevy, 2019)

4.1. Public transport

The best transportation in big cities, certainly, is public passenger transport. Cities that have a well-maintained "ppt" can "throw out" private cars from parts of cities and design those sections of roads for biking or pedestrians. In addition to standard transport modes such as trams, subways, high-speed urban rail or conventional buses; electric buses and modern trolleybuses also appear. In addition to reducing congestion on the roads, this also have a positive effect on air pollution and noise reduction. There are several types of buses that are possible solutions for sustainable mobility. In a transitional period, it is certainly a hybrid bus. It combines a conventional internal combustion engine propulsion system with an electric propulsion system. Then there are the trolleybuses, which are, in fact, electrically powered buses that get electricity from an overhead power line. They are problematic because of the narrowing radius of motion caused by the troll. At the end, electric buses with a stored battery can be used most commonly in urban public transport because they have a range of up to 200 km. (Josipović, 2019) According to some research (Bloomberg, 2019), about 17% city busses are electric. Most of these runs on the streets of Chinese cities. The rest of 2.5 million others, are still powered by diesel and natural gas. City buses are ideal for switching to electricity, because they are clean, quiet, with less vibration and odorless.

4.2. (Public) Bicycles

Although the term "bike sharing" has been known for over 40 years, it became widely accepted with the development of the concept of sustainable mobility. Public bicycle systems have been improved over the years, so that the fourth generation (Custom Bikes, Mobile Usage, User Identification - Registration Required, Fixed Terminals) will revolutionize and expand the system worldwide. Today in more than 500 cities and over 50 countries combined fleet systems (ordinary, hybrids and e-bikes) of over 2.3 million bicycles are used, of which nearly 2 million are in China (Richter, 2018). Research has shown that the introduction of public bicycle systems in cities leads to an increase in the proportion of cyclists in traffic by 20-40% (Wilmington, 2018). With the increase of cyclists, the awareness of other road users about the existence of cyclists also increases, thus increasing traffic safety. It has also been shown that with the introduction of the public bicycle system, more investment is made in cycling infrastructure, which in turn indirectly increases traffic safety (Brlek et al, 2018). Having an established public bicycle system in the city has become a matter of prestige. Thus, the mayor of the French city of Lyon has stated that there are two types of mayor - those who have a public bicycle system and those who want to have one (De Maio, 2009).

4.3. Walkability

The term walkability can be interpreted differently depending on the situation. In our case this term makes a combination for:

- Compact places provide short distances to destinations for those who are walking for utility.
- A way to achieve the environmental preservation and social equity components of sustainable urban form providing sustainable transportation options.
- A way of talking about environments that are simply better slower paced, more human scaled, healthier, and happier (Forsyth, 2015)

4.4. What will future brings?

In the near or distant future, urban commuters will increasingly face new challenges in everyday travel. Barely 5% of the world's annual city rides take place using car-sharing, ride-hahiling or taxis. But these services are evolving rapidly. It is expected that by 2040, such services will be used by over 19% of regular daily commuters (Bloomberg, 2019). The so-called micromobility vehicles (MMV) are introduced into our lives by big steps. Already now, there are many different types of MMV, but well-known are e-scooters and e-bikes. Less known are e-unicycles and e-skateboards. E-scooters and e-bikes are designed for short distances (8-15 km) and they and can drop off their passengers to work or university. In the public transport zone, the so-called "levitating self-driving trains", despite their futuristic name, are not so distant future. With all of the above, development of Cooperative Intelligent Transport Systems (C-ITS) which use technologies that allow road vehicles to communicate with other vehicles, traffic signals and road infrastructure, as well as other traffic participants, has a strong potential to improve road safety and road traffic efficiency (Brlek et al, 2019).

5. REDUCTION OF EXTERNAL COSTS DUE TO THE COVID-19

With the declaration of a pandemic and global lockdown, many people were left at home, and thus, the otherwise congested streets as the biggest producers of air pollution, became empty. That lack of passenger cars on the streets caused a drop in emissions of carbon dioxide, nitrogen dioxide and fine particulate matter. From the very beginning of the pandemic, Google has been publishing a Population Mobility Report. The reports show trends over time according to location, for different categories of places such as retail and recreational facilities, shops and pharmacies, parks, public transport stations, and business and residential facilities (Google, 2020). According to these data, during lockdown, population mobility in many countries decreased by more than 50% compared to the same period last year, which certainly affected the reduction of external transport costs. Thus, in China, during the first months of 2020., carbon emissions fell by 25%. In Delhi, the city with the worst air quality in the world, pollution caused by PM2.5 particles was reduced by approximately 75% as traffic congestion fell by 59%.

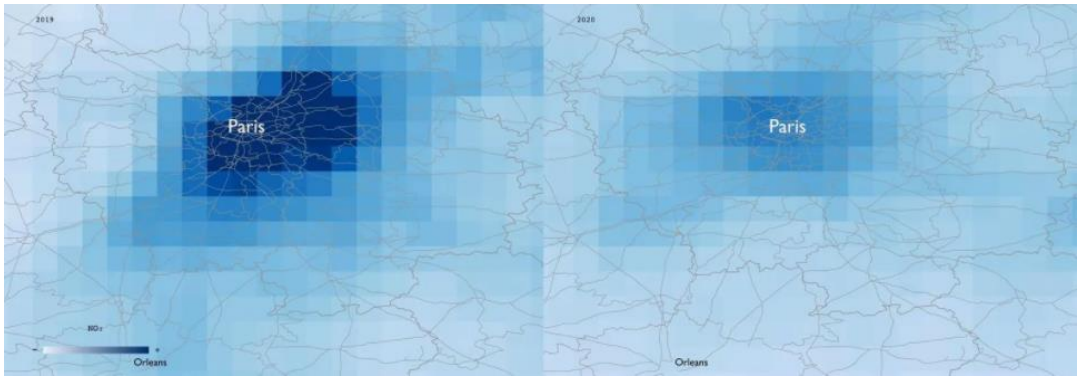

Figure 4: NO2 emissions in Paris in March 2019 and 2020, photo from the ESA (Source: Reuters)

A 70% reduction in toxic nitrogen oxides was recorded in Paris (fig.4) and on major roads and junctions all over United Kingdom toxic emissions fell by almost 50%. Many cities during the pandemic began to expand spaces for cycling or walking, first as temporary surfaces, to gradually turn them into permanent ones, where possible. European cities and national governments have set aside more than € 800 million for active mobility and announced over 1,200km of cycling infrastructure since the start of the coronavirus recovery phase. Brussels and Paris are in the lead.

In this way, locking imposed strict measures on citizens of the world, but on the other hand citizens and decision-makers were given the opportunity to live in cities without air and noise pollution, with safer streets and more spaces for people.

6. CONCLUSION

Despite the increasing inclusion of sustainable modes of transport in transport systems, major investments to increase traffic safety and other actions being undertaken for a better and more sustainable life, external transport costs are not diminishing at the speed that would be expected. Therefore, the expectations of possible internalization of costs as well as future investments in the development of transport systems are high. With internalization, externalities are expected to be recognized in the market decision-making process in the form of price impacts or through intervention through a regulatory mechanism. Also, many new forms of mobility are becoming increasingly important and with deployment of Cooperative Intelligent Transport Systems (C-ITS) on Europe's roads will become even more significant. These new technologies will allow vehicles to 'talk' to the road infrastructure and to other road users and to each other. Vehicles, traffic signs and motorways will be equipped with technology to send standardized messages to all traffic participants around them (European Comission, 2019). With that in mind, we could hope that we will have „sustainable transport future" with low(er) external costs.

ACKNOWLEDGEMENT: *Population in cities, motor vehicles and commercial transport will increase by the year 2050. This will have a negative impact on, among other things, air pollution, traffic congestion, traffic safety, and other external traffic costs. Many experts see a way out in shared-use mobility. It is a term used to describe transportation services shared among users. The goal of shared-use mobility is to reduce the problems of urban mobility such as mentioned above and make cities more sustainable.*

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SECURITY AS A DETERMINANT OF MIGRATION

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ABSTRACT

It is common knowledge that migrations have been a part of human civilization since the beginning. However, due to globalization processes such as increased mobility, improved communications and the like, migrations are increasing. Globalization has actually contributed to existing migrants to make it easier to connect with their families in their countries of origin and to be able to travel more often, and to make it easier for new migrants to cross the border and more opportunities to go to another country. Migrations have a big impact on the people and the place they inhabit. They contribute to the development of inclusive and sustainable development in the country of origin and the host country while at the same time creating benefits for migrants and their families. Although migration is portrayed as a process that takes place solely for economic reasons and for the sake of education it is ultimately not so. The decision to migrate is most often associated with creating a sense of insecurity in the country of origin. Security is one of the fundamental determinants of migration and is one of the basic human needs. There are many reasons for migration, but security is a fundamental "trigger" in this process, which is why people decide to make such a move. Security and migration are strongly interlinked, and just as security has a large impact on migration, so does migration have a large impact on security.

Keywords: *migration, security, globalization*

1. INTRODUCTION

We live in a society marked by great changes taking place under the influence of globalization. Advances in technology, mobility and communication have influenced the development of the whole world and encouraged the mobility of the exchange of goods and services, capital and labour. However, when researching and teaching international economics, only international exchange and investment as two parts of international economic activity are adequately covered, while the third part, migration, is very superficially represented. (Bodvarsson, Van den Berg, 2013). Great human movements stem from the process of global integration. Migration as a process is not an isolated process. The movement of capital, goods and ideas encourages the movement of people, but also vice versa. Migrations do not only mean movement itself but must contain the following criteria: movement across the administrative border, whether internal or external migration, they are of a permanent or more permanent character, and mean a recognizable social change for the individual who migrates (Varnek et al., 2018). At the same time, international migration is one of the most important and influential factors of global change, and the time in which we live has been named the "Age of Migration" because migration has increased its political importance over the years (Castles, De Haas, Miller, 2014).

In 2019, the estimated number of international migrants, worldwide, was 272 million out of which two-thirds being labour migrants (IOM, 2019). 3.5% of the world population lives outside their place of birth compared to 2.9% in 1990. (UNDESA, 2019). While speaking in absolute terms the number of migrants increased, but the relative value of migration trends remained relatively stable. Many determinants affect migration, but one of the most important determinants is security (Dohlman et al., 2019). In the context of this study, it should be noted that economic models of migration are guided by maximization of utility, which can very easily take a secondary place if the human need for security is threatened (Maslow, 1943; Huitt, 2004). Given that this is the second one need in the hierarchy of human needs, satisfying this need is a prerequisite that the individual must achieve in order to meet other human needs. The connection between security and migration can be viewed from two aspects: the impact of migration on security and security as a determinant of migration. The aim of this research is to look at security as a determinant of migration, but to keep in mind the potential impact of migration on security. This paper is divided into 5 parts. After the Introduction, the theoretical aspect of the basic determinants of migration is presented. The third part of the paper reviews the existing research related to the issue of security and migration. The fourth part presents the results of the research and synthesizes security-migration nexus. Finally, the conclusion of the research follows.

2. THEORETICAL ASPECT OF BASIC DETERMINANTS OF MIGRATION

The migration process itself is most easily described using the push / pull model. The two most important factors of this model are the factors related to the area of origin and the factors related to the area of destination. However, every migration process includes personal factors and obstacles that migrants encounter. Figure 1 shows the factors of area of origin and area of destination that influence the migration process.

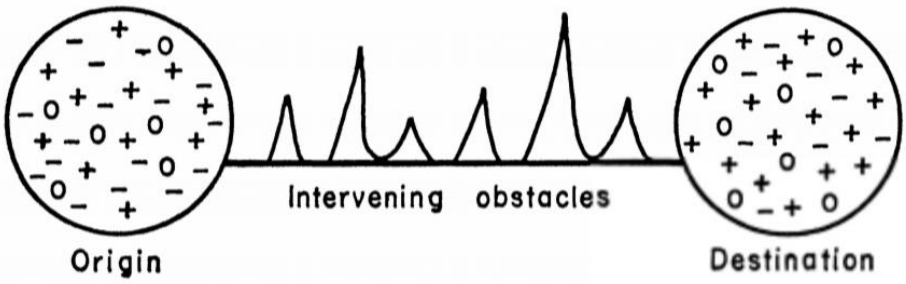

Figure 1: Factors of area of origin and area of destination and obstacles in the migration process
(Source: Lee E. S. (1966.): A Theory of Migration, Demography, Vol.2, No.1, str.50)

In each area, there are many factors affecting or attracting people to stay, and there are also those that tend to reject or neither attract nor retain people. Migrants want to start a new life in a new environment combined with business opportunities, new professional experience, experience career advancement or achieve ideals that a person believes they cannot achieve in their country of origin. In Figure 1, these factors are marked with pluses and minuses while the circles refer to personal factors that differ for each person. It is very difficult to pinpoint the factors for each person; however, general reasons and factors influencing the migration process can be defined. It is precisely for these reasons that security as a determinant of migration can be explained. Due to certain conflicts in the country, people do not feel safe and leave the country (push factors). In addition, some countries are more developed, providing more opportunities, are safer and therefore attracting migrants (pull factors).

It is certainly necessary to point out that, although push / pull models are most often used as a basis for understanding migration processes; there are many other theories that deal with the subject. For example, Massey et al., (1993), in their constructing of comprehensive theory of international migration, cite eight theoretical models to explain why international migration begins: neoclassical macro and micro theory, the new economics of migration, dual labour market theory, world systems theory, network theory, institutional theory and cumulative causation. Nevertheless, according to Bodvarsson and Berg (2013), neither the theoretical models developed so far nor their empirical evidence are entirely accurate in order to build effective immigration policies on them and suggest how economists should turn to a holistic approach to understanding migration.

3. STATE-OF-THE-ART: CONNECTION BETWEEN SECURITY AND MIGRATION

The desire to meet human needs is the foundation of migratory movements (Johnson, 2016). Man's need for security is one of the fundamental human needs. As such, it represents the absence of threats whether of a health, financial, or social nature (Maslow, 1970). Moreover, security is now considered a competitive advantage, which contributes to the realization of profits. As there are more and more precarious areas in the 21st century, i.e. the presence of various threats in the world that threaten human and national security is getting bigger, constant changes are needed, which include reflection, and analysis of security challenges and threats in order to respond to them in a timely manner. According to Maslow (1970), the pyramid or hierarchy of human needs consists of five categories: physiological needs, needs for security, love and belonging, respect and self-actualization. This model can be used to explain the process of migration or arrival in a new country and departure from the country of origin (Dohlman et al., 2019). Arriving in a new country, immigrants may experience an identity crisis. All migrants in the new country, i.e. the host country, first want to meet their physiological needs (health, survival, shelter) and security needs. (Adler, 1977). Security needs can be met the moment a person feels safe from negative events (Johnson, 2016). After satisfying these needs, there is a desire to realize the third need or the need to belong, including social needs. This is where the problem arises because migrants who are not initially accepted (due to racial, religious or cultural differences) need a certain amount of time to adjust to the situation. The last step in the hierarchy of needs is reached after all previous needs have been met. Self-actualization can cause a person to migrate because it feels it has better opportunities to achieve personal goals in the destination it has chosen. Every person has a certain risk that it has to deal with in life. This risk depends on the severity, i.e. whether it can be tolerated or not. The person considering migration takes into account the magnitude of the risk. If ones stays in the country of origin, it is possible that his security is endangered due to certain conflicts, that he cannot meet the needs of self-actualization or that he cannot achieve his goals in the field of business or education. At the same time, one is aware that if he migrates to another country, he has to deal with an identity crisis, rejection, loss of the comfort of her home, leaving his family and the like. The problem of the connection between migration and security may also be approached from another aspect. Migrations are sometimes directly or indirectly related to conflicts. Events such as attacks on Twin Towers, the Pentagon, attacks by Islamic radicals at airports, subways, city streets in Spain, Belgium, France and other countries have linked migrants to terrorist attacks. The attack on Twin Towers in 2011 marked migration as a threat to the security of the state and its population and led to negative consequences due to xenophobic and racist thinking, exclusion of immigrants from society and viewing them as enemies (Tallmeister, 2013). This association of immigrants with conflicts has led to the creation of anti-migration parties whose main role is to present immigrants as threats to the security and culture of the state. For this reason, other conflicts can occur, such as attacks on immigrants, as in Norway in 2011, when there was a mass shooting of immigrants (CBC News,

2011). Already insecure when leaving their country of origin, immigrants are faced with problems and uncertainty in the host country for these reasons. On December 18, 1990, the UN General Assembly adopted the Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families. In 2000, by the decision of the United Nations, that day was declared the International Day of Migrants (CBS, 2016). Thus, the very act of moving does not guarantee safety until the person feels safe in the new place. The table below provides an overview of existing research focused on the issue of security as a trigger for migratory movements, but also migration as a cause of insecurity.

	Authors	Sample and Period	Results
Security => migration	Reichlova, 2005	Simulation models based on the Maslow hierarchy	Migration reasons, at the same level of wages, stem from an individual assessment of social ties and security.
	Dontsov, Zotova, 2013	Polling techniques and mathematical statistics methods	The main reasons for migration lie in the lack of security.
	Vietti, Scribner, 2013	Review of existing research	The authors point to the need to prevent situations where migration reasons continue to include the search for conditions that would allow them to live safe and dignified lives.
	Patnaik et al., 2014	Review of existing research	Migration reasons stem from the desire to improve social conditions, fear of hunger, conflicts in their own country, for economic reasons, education.
	Johnson, 2016	190 historical migration events	Dominant migration reasons stem from the satisfaction of physiological, security and economic needs.
	Shymanska, 2017	Survey questionnaire	Migration reasons primarily stem from groups of economic and political-security determinants
Migration => security	Kicinger, 2004	Review of existing research	Migration is inevitable; all European countries must strive to reduce the negative consequences of migration and the security threats that are possible with migration by reducing irregular migration and human trafficking.
	Commander, O'Neill, 2006	Review of existing research	Instead of recognizing migrants and integrating them into society, the EU has created stronger border controls, causing irregular migration.
	Mehyar, 2014	Essay	Countries most often neglect the human rights of migrants. It is important to raise the awareness of states about human rights so that they can act differently when adopting rules and controls at borders.
	Wohlfeld, 2014	Essay	Migrations are thought to affect the security of people and the country, and are in fact illegal migrations that undermine the security of the country, the population and the migrant.
	Meltzer et al., 2017	Review of existing research	The media can play a key role in shaping the attitudes of EU citizens. This is especially the case when the media portrays migration as a threat to the local population.
	Gamerman, 2019	Review of existing research	The link between migration processes and regional, national and international security is direct. These phenomena carry with them the threat of security and opportunities for further economic and socio-cultural development.

Table 1: State-of-the-art on the security-migration nexus (Source: Authors' research)

A review of existing research shows that security as a determinant of migration has been very sparsely researched, while the aspect of the impact of migrants on security is a more frequently represented subject of research. There is also an extremely modest share of empirical research. It is possible to conclude that, although migration occurs for various reasons such as poverty, education, economic opportunities and the like, the fundamental trigger when deciding on migration is the feeling of insecurity in the country of origin. In the context of the development of the human dimension of security, the characteristics of modern security threats and processes are emphasized, which primarily include persecution of people on national, religious, ethnic and racial grounds, which results in a large number of refugees and displaced persons (Smajić, 2017).

4. RESEARCH RESULTS: CONCEPTUALIZING THE PROBLEM OF SECURITY IN THE MIGRATION PROCESS

Globalization processes, new technologies, climate change, poverty, war conflicts, growing inequality among developed and underdeveloped countries on the one hand, and population aging, declining birth rates and labour shortages on the other, are just some of the reasons why mass migration occurs (Varnek et al., 2017). However, at its core, migration processes are based on meeting human needs (Johnson, 2016). However, just as people migrate from meeting security needs, those needs are also one of the reasons most stay in their state. Namely, the territory in which they live is known, they have many acquaintances and friends, they have reached a social status associated with some rights and obligations, they can communicate with others in the language of origin, they are well acquainted with their own culture and know the rules of conduct. (Reichlova, 2005). On the other hand, going to another country means facing many barriers and unknowns and facing new insecurity, i.e. facing the so-called 'stay away' factors (Bodvarsson, Berg, 2013). A review of existing research confirmed the thesis that security is one of the fundamental determinants of migration, but also that there is a strong intertwining between these two variables. The figure below shows the connection between security and migration.

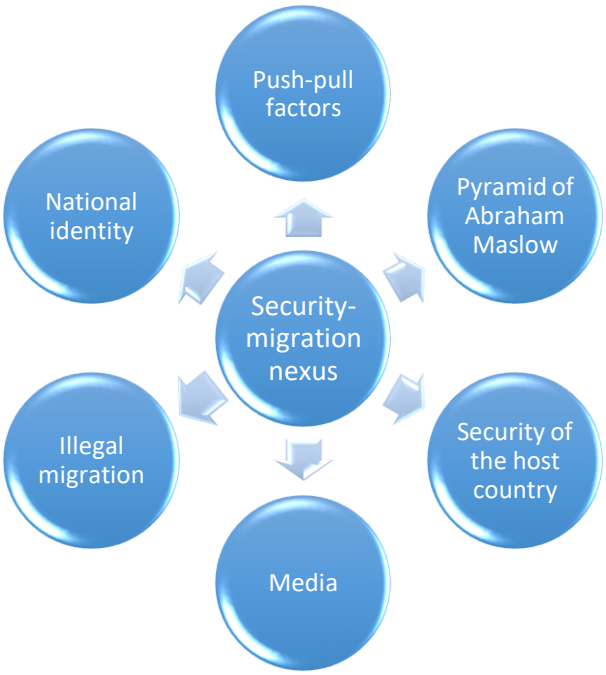

Figure 2: Security-migration nexus
(Source: Authors' research)

Figure visualizes how security affects the migration itself, but also points to the impact of migration on security. The first aspect of security as a determinant of migration can be seen through the *push and pull model* of migration. So push factors refer to the reasons for leaving an area, and pull factors refer to the reasons for attracting migrants to a country. It is also possible to explain safety with these reasons. Due to certain conflicts in the country, people do not feel safe and leave the country (push factors). Besides, some countries are more developed, provide more opportunities, are safer and therefore attract migrants (pull factors). *The Pyramid of Abraham Maslow* is another aspect of security as a determinant of migration. In addition to basic physiological needs, the second most important is the need for security. Security as one of the basic human needs greatly influences the migration process itself. Due to various conflicts in the country of origin, people choose to migrate because they do not feel safe in their country. Although economic determinants are commonly cited as a fundamental impetus for migration, a review of existing research indicates that the most important reason for leaving a country is the uncertainty that prevails in it. The third aspect related to security concerns the creation of a *sense of security in the host country*. First of all, migrants seek security, that is, security needs can only be met if a person feels safe from violence. People who migrate to other countries are afraid of non-acceptance and the emergence of an identity crisis. Migrants often lead to tensions in the community they enter, especially if they do not integrate into the society of the host country and challenge social standards (Rogers et al., 2009). This third aspect is closely related to the fourth aspect, i.e. the role of the *media*. As already mentioned, migrants seek security in the host country as well and are afraid of non-acceptance. The media create a negative image of migrants by showing only negative events in terms of violating the security of the state. By creating such a perception (for example, the cause of terrorist attacks are migrants) migrants are portrayed negatively and their security in the host country is violated. Five security aspects relate to *illegal migration*. Due to the increased mobility caused by globalization, there are more and more migrants in the world. It is for this reason that individual countries, most often more developed countries, have set up various security aspects that affect migrants. Various restrictions and deportations of migrants can affect the safety of migrants by forcing them to seek an "another way" of border crossing using more dangerous routes that actually result in illegal migration. This compulsion to use routes that are more dangerous also leads to the emergence of human trafficking, which is one of the biggest problems of illegal migration and affects their security, and reduces their chances of moving to safe countries. The fastest-growing form of organized crime is considered the illegal transportation of people across state borders (Bouche, 2017). Illegal transport affects not only the security of migrants but also the security of countries and populations because they cannot follow individual people and do not know the exact number of migrants who have entered the country. The last aspect of security-migration nexus is related to *national identity*. A large flow of people, i.e. a large number of people who migrate, can greatly affect the security of a particular country and population. Immigration may be seen as a threat to the national identity of a state because many states, as well as its members, are generally tied to a common sense of cultural and ethnic identity. In this case, immigration is considered a threat to social security because it calls into question the traditional national identity of the basic value of the state. Although the public considers immigration to be a threat to public safety, it is a complex threat, not based on empirical facts (Tallmeister, 2013).

5. CONCLUSION

As already mentioned, the time we live in is at the same time an age of globalization and migration, so there can be no pure ethnic states. Some countries are contradictory in their globalization development, advocating the free movement of capital, goods and services on the one hand while on the other hand considering closing borders for the sake of immigrants.

The perception of international migration in the world as a security threat has developed in recent years, parallel with the sharp increase in the number of immigrants around the world. According to Glick Schiller (2015) there is a certain amount of courage in today's time to take the position of recognizing the benefits of transnational immigration links. Furthermore, migrations are recognized as a factor of sustainable development. Although the 2000 United Nations Millennium Declaration did not recognize the importance of international migration in its development provisions, the new The 2030 Agenda for Sustainable Development recognizes the contribution of migration to sustainable development and considers them as a driver of sustainable development (UN, 2015). The feeling of security and the need for safety in humans is a fundamental human need. Despite the fact that we have already stepped deep into the 21st century, people still migrate not only for economic reasons, but very often migrations occur due to a lack of security in the country of origin. A number of elements can create a sense of insecurity however, one of the fundamental elements is conflicts in the country of origin. Not only does security affect migration but migration also affects security. It can be concluded that migration poses a number of challenges for many countries around the world. Given the view of security through the prism of economic, social and public security, it is certainly inevitable to understand migration as a threat to society as a whole, but also to the state economy, and internal and public security and order. However, many studies, including this one, view migration as a perceived threat rather than an objective one. The political implications arising from this research are primarily related to the educational component because only relevant, inclusive and quality education of young people can properly shape their objective views on migration (UNESCO, 2017), regardless of media exposure. The political implications also relate to pointing to the need for a holistic approach to the treatment of migration, bearing in mind the security aspiration of migrants, and last but not least a reminder of the fundamental principle of The 2030 Agenda for Sustainable Development "leave no one behind" including migrants. And to cite on the end Niksic Radic et al. (2019): „Experiencing new cultures, other nationality customs, socializing with locals who are not originally from the same country, is a privilege enjoyed by residents whose neighbours came in seek of a better life opportunity."

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THE ADVERTISING ATTITUDES OF INTERNET ADS: A STUDY AMONG CROATIAN GENERATION Z

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ABSTRACT

Generation Z is starting to occupy an increasingly significant place in the market, thus dictating the ways in which the market operates according to their needs. This paper aims to determine the importance and impact of online advertising on the youngest consumer group- Generation Z, by testing the Ducoffe advertising value model. According to the testing model, informativeness, entertainment, irritation, and credibility were considered as antecedents of direct influence on the perceived value and attitude about internet ads. The results show that the informativeness, entertainment, and credibility of internet ads have an immediate positive impact on the perception of their value. The perception of irritation for Generation Z does not appear to have a relevant impact on the value of internet ads. In addition to influencing the perception of the importance of ads, entertainment also has a direct positive effect on forming an internet advertising attitude while credibility has not. According to previous research, a direct positive correlation between the perception of value and attitude about Internet advertising has been established.

Keywords: *Generation Z, advertising value, attitude towards Internet advertising*

1. INTRODUCTION

The rapid development of new information and communication technologies affects the entire social life, and marketing being a kind of barometer of social events has accepted and applied them among the first in its activities. Nearly 30 years have passed since the first WWW site appeared, and naturally, internet marketing has evolved during this period. With the development of technology, new digital media are being used to support marketing activities, and today the term digital marketing is being discussed (Chaffey & Ellis-Chadwick, 2019). Currently, 4.54 billion people worldwide use the Internet on average of 2.23 hours a day (Statista, 2020). Almost every aspect of people private or business activities is tied to the Internet. Most purchasing processes include the Internet in all its implementation stages. This inevitably requires the introduction and implementation of the Internet, web, or digital marketing that supports the overall marketing processes. Internet marketing occupies a significant place in the enterprise communication mix (Magnaglobal, 2013) and is of great importance for online advertising. The benefits of online advertising are multiple, ranging from brand, product, or service awareness (Aktan, et al., 2016) to effective user targeting and personalization of ads (Chaffey & Ellis-Chadwick, 2019).

The demands of Internet advertisers are strengthening in the area of content control to which they are exposed and thus avoiding irritating uncontrolled ads. Customers want information that will help them navigate their purchasing process. For this information to attract their attention, it is necessary to present it in an appropriate context (Abernethy, 1991). The large number of ads that are exposed to internet shoppers that are not in line with their needs evokes the banner blindness phenomenon, where all ads are cognitively avoided (Kaspar, Weber & Wilibers 2019). In their study, Drèze & Hussherr, (2003) state that at least half of banners ad users ignore or avoid watching. In order to prevent this, it is necessary to adapt this type of communication to the consumer's needs. Online advertising is becoming a dominant form of advertising, with significant resources being spent, with projections that $ 384 billion will be spent worldwide on internet advertising in 2020, and in 2023 it will grow up to $ 517 billion (Statista, 2020). The dominance of this form of advertising requires for particular attention to be paid to its effectiveness and acceptance by the audience. As emphasized in earlier research, it is necessary to avoid the problem of generally negative perceptions of annoying banner ads (Le & Vo, 2017) The Internet is a distinctly goal-oriented medium (Burns & Lutz, 2006) through which customers seek to achieve their specific goals within the purchasing process, and any interference with the process can cause adverse reactions. Negative reactions to ads that interfere with this process are manifested through various forms of avoidance (Baek & Morimoto, 2012). Guardia & Lopez, (2014) report on the findings of previous research, which cites users' belief that the Internet is predominantly a tool for completing planned tasks and less a medium for entertainment, as the leading cause for avoiding online ads. On the other hand, goal-directed consumers respond to the information they are interested in at that moment (Wang, Wang & Farn, 2015). On the track of that, well-designed personalized ads can initiate the transition to the next stage of the purchasing process (Zhang, 2002); (Fan & Poole, 2006). Accordingly, the goals of this research are to define the factors influencing the perception of the value of Internet ads in Generation Z, to define the factors influencing the formation of attitude toward Internet advertising in Generation Z and to establish the relationship between Internet advertising value and the attitudes towards Internet advertising. The results can help tailor advertising to the Generation Z audience and increase their effectiveness and acceptability. The paper is divided into five parts. After the introduction, section two provides a literature review followed by section three that describes the research methodology. Section four reports the methodology used in the research and results of the statistical analysis. Section five provides discussion and implications, while in section six are given limitations and future direction.

2. LITERATURE REVIEW

2.1. Customer values and attitudes regarding internet advertising

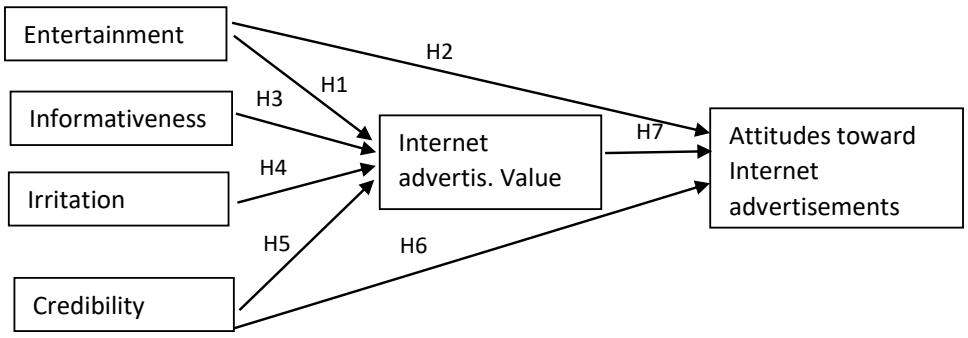
Significant resources spent on Internet advertising also require ensuring the effectiveness of such advertising, and so-called "banner blindness" and avoiding ads and using adblockers are not things that can contribute to this. In order to avoid or at least minimize them, it is necessary to investigate the factors that influence the perception of the value of online advertising. A large number of irrelevant, uninteresting, and unnecessary ads that often cannot be avoided also create negative emotions and results in their avoidance or negligible click-through rates (Cho & Cheon, 2013). Many previous types of research have identified the influence of certain factors on the formation of attitudes about online advertising, ie, advertising through various online media. (Rajesh et al., 2019); (Yasin et al., 2013); (Huq et al., 2015); (Arora & Agarwal, 2019). Previous research has found that customer attitudes towards advertising are the basis for improving advertising effectiveness and have an impact on their behavior. (Mehta, 2000); (Tsang & Liang, 2004) According to Srull, (1990) and Brown & Staymen, (1992) attitude toward advertisements, as an effective response to advertising, is a good indicator of the

effectiveness of advertising itself. In addition to users' views on advertising, Ducoffe (1995) introduces the notion of ad value, stating that it is a kind of customer satisfaction index for both the overall promotional communication and the enterprise itself. Ducoffe (1995) develops a framework for predicting consumer value and attitude toward advertising (Zhang, 2005). In his model, he defines entertainment, informativeness, and irritation as three basic elements of influencing the perception of the value of web ads. Entertainment, in its model, has a direct impact on both the perception of the value of the ad and the attitude towards advertising. Brackett & Carr, (2001) complement the Ducoffe model by adding credibility as the fourth factor influencing the perception of the value of web ads. Defined elements of altering the perception of the value of ads and the attitude about advertising are the basis in various models of research into benefits and attitudes in advertising. (Loganet al., 2012); (Murillo et al., 2016); (Haghirian & Madlberger 2005); (Hamouda, 2018). In addition to these fundamental factors of influence, researchers complement their models with other relevant factors. (Khasawneh & Sumaya, 2013); (Zhang & Wang, 2005); (Quosa & Wady, 2018)

2.2. The conceptual model and research hypotheses

The conceptual (structural) model used in this paper (Figure 1) relies on the updated of Ducoffe (1995) model for measuring the perception of ad values and web advertising attitudes. The model measures (A) the direct impact of entertainment, informativeness, irritation, and credibility on the perception of the value of web ads, (B) the influence of entertainment and credibility on the attitude about web advertising, and (C) the relationship between the perception of the value of ads and attitude about web advertising. A review of previous research has found that entertainment, informativeness, and credibility have a positive influence on the perception of the value of web advertising while irritation has a negative impact on the understanding of the value of web advertising, and there is a significant positive relationship between the perceived value of web advertising and attitude towards web advertising. (Arora & Agarwal, 2019); (Lin & Bautista, 2018) A positive influence of entertainment and credibility on attitude towards web advertising was also found. (Brackett & Carr, 2001); (Gangadharbatla & Daugherty, 2014)

Figure 1: A Conceptual model



2.2.1. Entertainment

In 1899 E. St. Elmo Lewis presented AIDA Model (Attention, Interest, Desire, and Action) - a model for gaining awareness of a product or brand which was modified by Derek Rucker into A's model (Aware, Attitude, Act, and Act again). Later Kotler turned it into 5 A's (Aware, Appeal, Ask, Act, and Advocate) (Kotler et al., 2017). Regarding the advertising, the first phase in all models is considered to be the most important one, as it seeks to grab the attention of the intended audience in a split second. As there are a lot of messages being sent to the individual within a specific time frame, advertisements must stand out and attract attention; otherwise, they are ignored, avoided, or deleted.

Mondan et al. (2013) state that people are looking for something new, fun, something that will get their attention. For ads to attract attention, they must be concise and entertaining. (Zia, H., 2009). Interesting and fun ads are clearer and remembered longer. (Spotts et al., 1997). Ducoffe (1996) defines the fun of adverts as "its ability to fulfil audiences' needs for escapism, diversion, aesthetic enjoyment, or emotional release." Previous research has identified how ad entertainment affects customer satisfaction and increases ad performance (Madden et al., 1982) as well as the perception of their value (Zhang & Wang, 2005). In addition to influencing the value of ads, Ducoffe (1996) explores the direct impact of entertainment on the formation of attitudes about web advertising. Most research finds that entertainment has a positive impact on the perception of the value of web ads. (Ducoffe, 1996); (Zhang & Wang, 2005); (Dar et al., 2014); (Gaber, et al., 2019) Contrary to most research, Aktan et al., (2016) find that entertainment has no effect on the perception of the value of the web ad. Based on the findings from previous research, hypotheses H1 and H2 were formed.

- H1: There is a significant positive impact of the entertainment factor of an advertisement on consumers' perceived value of Internet ads.
- H2: There is a significant positive impact of the entertainment factor of an advertisement on consumers' attitudes toward Internet advertising.

2.2.2. Informativeness

Advertising, as part of a promotional strategy, aims to inform, provide specific knowledge, and raise consumer delusions about the product (Manickam, 2014). These goals directly affect the purchasing process in which information seeking and evaluation of alternatives rely heavily on relevant information that is obtained. Smith et al., (2013) conclude that, for the most part, the purchasing process is influenced by emotions, and by the effective part of the attitude based on liking or repulsion towards the product. In that sense, the role of ads is to provide relevant information at a specific point in time. According to Siau & Shen (2003), the information provided through online media should be accurate, relevant, timely, and useful to the potential customer. Informativeness is defined by Ducoffe (1996) as a way of informing about a product and its possible alternatives in order to achieve maximum customer satisfaction. In his research Ducoffe (1996) finds a significant and positive correlation between informativeness and advertising value. Several papers confirm the importance of being informed as a factor influencing the perception of value and the formation of attitudes in advertising. (Aaker & Stayman, 1990); (Lee & Hong, 2016); (Dehghani et al., 2016) Significant positive impact of awareness on the values and attitudes of advertising using various online media (e-mail, SMS, video advertising, web, social media advertising) is confirmed by earlier works. (Zhang & Wang, 2005); (Rajesh at al., 2019); (Wang, et al., 2009); (Gangadharbatla & Daugherty, 2014) Considering the results of previous research on the influence of information on the perception of the value of internet advertising, hypothesis H3 was formed.

- H3: There is a significant positive impact of the informativeness of advertisements on consumers' perceived value of Internet advertising.

2.2.3. Irritation

Hsin et al., (2013) define ad irritation as discomfort caused by ads, while Aaker & Bruzzone, (1985) define irritating ads as "one that is provoking, causing displeasure and momentary impatience." Saxena & Khanna (2013) cite a variety of factors that provoke a sense of irritation from the design and placement (location) of the advertisement itself to the frequency of announcements, while Samji & Jackler (2008) place particular emphasis on causing irritation to their uncontrolled repetition.

According to HubSpot (2020), too many ads, annoying or irrelevant ads, and intrusive ads are the top three motivations for ad-blocking. According to the same survey, more than $ 35 billion in 2020 will be lost due to the use of adblockers. Singh, & Potdar (2009) state that the very first appearance of intrusive, annoying ads has resulted in the evolution of their avoidance technology. Guardia & Lopez (2014) state that there are three primary reasons for avoiding ads: perceived intrusiveness, irritation, and a perceived lack of navigation control. The influence of irritation on the perception of the value of web ads is determined by Ducoffe (1995) and a number of other researchers who have focused their research on other online media. (Zhang & Wang, 2005); (Rajesh at al., 2019); (Wang, et al., 2009) The definitions above suggest that irritation causes discomfort or negative associations and feelings about online or online ads. (Aktan et al., 2016) Research finds a significant negative impact of irritation on the perception of ad value. (Brackett & Carr, 2001); (Aktan et al., 2016); (Rajesh at al., 2019); (Gangadharbatla & Daugherty, 2014) In other words, irritating ads directly contribute to reducing perceived ad value. Several studies investigating the impact of irritation on ad value and attitude on advertising (related to social media advertising and smartphone advertising) have found that there is no significant relationship between the advertising value variable and the irritation variable (Dar et al., 2014); (Murillo & Merino, 2016); (Kim & Han, 2014). In accordance with the literature review and previous research, hypothesis H4 was formed.

- H4: There is a significant negative impact of advertising irritation on consumers' perceived value of Internet advertising.

2.2.4. Credibility

The available literature, through different modes and approaches, defines the credibility of the advertisement (Hilligoss & Yung, 2008). Definitions, taking into account the characteristics of various media, identify the credibility of ads/information as a subjective assessment of their integrity, accuracy, clarity, reliability, honesty ... by their consumers - potential customers. This estimate depends on a number of factors depending on the medium. (Wathen & Burkell, 2002). Of the 4.54 billion internet users (Statista, 2020), 47% use some of the adblocking programs (Forbes, 2019). Forty-five percent of them cite their utter irrelevance and boring as an important reason for avoiding ad, while 44% cite their intrusiveness as a reason for avoiding. It is precisely the intrusiveness and relevance that Zha & Wei, (2014) cited as factors that influence the perception of the ad's credibility. Earlier research has identified the direct correlation and impact of ad credibility on their perceived value and on overall attitude towards advertising. (Braket & Carr, 2001) Based on previous research, hypotheses H4 and H5 were formed.

- H5: There is a significant positive impact of ad credibility on consumers' perceived value of Internet advertising.
- H6: There is a significant positive impact of the entertainment factor of an advertisement on consumers' attitudes toward Internet advertising.

2.2.5. Perceived advertising value

Advertising value, according to Ducofe (1995), represents "subjective evaluation of the relative worth or utility of advertising to the consumer." Ducoffe & Curlo (2000) refer to advertising value as an assessment of an individual advertisement as well as advertising as a whole. Reflecting that, Zha et al. (2015) define the value of advertising as an estimate of the value of advertising and the overall presentation. This is also in line with the definition of value given by Zeithaml (1988), where, from a service perspective, the value is "the customer's overall assessment of what is received and what is given." Given that, according to Zha et al. (2015), web advertising can be considered as a type of internet service, the definition is also applicable

to the value of web advertising. Docoffe (1996), based on previous research (Bauer et al., 1968; Mackenzie & Lutz, 1989), develops a model that cites perceptions of informativeness, entertainment, and irritation as important factors influencing the perceived of the value of web advertising. Later works confirm this influence (Tsang & Liang, 2004); (Aktan et al., 2016). The assumption is that if customers find web ads to be informative, entertaining, credible, and non-irritating, the perception of their value will be positive and high. (Tahereh & Zahra, 2012) According to Haghirian et al. (2005), ad value is a kind of customer satisfaction index for the promotional activities a company conducts against them. The assumption is that the positive value of the ads will have a positive effect on the attitude about them. Previous research confirms the positive relationship between perceived value and attitude towards the advertisement. (Ducoffe, 1995); (Brackett & Carr, 2001); (Aktan et al., 2016); (Arora & Agarwal, 2019) Based on previous research, hypothesis H7 was formed.

- H7: Perceived value of internet ad positively impact customers' attitude towards Internet advertising.

2.2.6. Attitude towards web advertising

Establishing an attitude about someone or something is key to explaining or predicting behaviour. (Qin & Yan, 2017) Lutz (1985) defined an attitude toward the ad "as a predisposition to respond in a favoured or unfavourable manner to a particular advertising stimulus during a particular exposure occasion." Aziz & Ariffin (2010), according to Wood (2000), emphasize that evaluating something that is the subject of an attitude can range from extremely negative to extremely positive. In this sense, the determination of attitude towards web ads and advertising can range from positive, negative, or neutral (Aktan et al., 2016). In order to measure the attitude in this research, a degree of agreement with the statement "I love internet ads" was requested.

3. RESEARCH METHODOLOGY

3.1. Scale development

The main objective of this research is to determine the factors influencing the perceived value of online ads and the impact of ad values on the formation of the overall attitude on Internet advertising. In the context of this objective, the impact of entertainment, information, credibility, and irritation on the perceived of ads, the impact of entertainment and credibility on attitudes toward Internet advertising, and the relationship and influence of perceived value on the formation of Internet advertising attitudes will be explored. Measuring scales used in this paper (Appendix A) were adopted from previous research shown in Table 1. The 5-point Likert scale, which ranges from 1 = strongly disagree to 5 = strongly agree, was used to measure variables from the model.

Table following on the next page

Table 1: Sources – measuring scales

Construct	***Source***	***Number of items***
Informativeness	Ducoffe,(1996), Zhang, (2002), Wang & Sun, (2010), Liu et al.,(2012), Gangadharbatla & Daugherty, (2014)	3
Credibility	Zhang, (2002), Liu et al. (2012), Yang & Yoo, (2013)	3
Entertainment	Ducoffe (1996), Wang & Sun (2010), Yang et al., (2013), Gangadharbatla & Daugherty, (2014)	3
Irritation	Hairong et al., (2002), Varnali et al., (2012), Yang et al., (2013), Gangadharbatla & Daugherty, (2014)	3
Advertising value	Ducoffe (1995), Zhang, (2002), Liu et al., (2012)	3
Attitudes toward web advertising	Zhang, (2002), Yelkur, R. (2005), Chakrabarty & Rama (2005), Aktan et al., (2016)	1

3.2. Data collection

The population in this research is Generation Z in the Republic of Croatia. The sample consists of undergraduate and graduate students from a different county in the Republic of Croatia. By random selection, students were asked to complete a survey questionnaire. Two hundred fifty-six questionnaires were collected. As the age of the target population and the sample itself is between 20 and 24 years, that is, participants were born after 1996 according to Dimock, M. (2019), we can talk about Generation Z. As Generation Z already accounts for more than 30% of the world's population, it strengthens its importance as a consumer in the market and thus the interest of different industries to adapt to their needs and requirements. (Miller & Lu, 2018)

3.3. Participants

The sample in this study is 256 participants. Pituch & Stevens, (2016) state that "many of the popular rules suggest that sample size is determined as a function of the number of variables being analysed, ranging anywhere from two participants per variable to 20 participants per variable. Accordingly, a sample of 256 participants (6 variables) can be considered adequate. In the sample, men were 131 (51.2%) and women 125 (48.8%). All participants are between the ages of 20-24. More detailed information on participants can be found in Table 2.

Table 2: Survey Respondent Profile (n=256)

Measure	***Item***	***Frequency***	***Percentage***
Gender	Male	131	51.2
	Female	125	48,8
Age group	20-25 years	256	100
Internet usage	At least once time a day.	252	98,4
	At least once time a week	4	1,6

3.4. Data analysis

Exploratory factor analysis (EFA) through SPSS 23 was used for the analysis of the data. In order to test the validity and reliability of the measurement model, a confirmatory factor analysis (CFA) was performed. For testing the hypotheses and relationships between the observed variables, SPSS AMOS 26 software was used.

3.5. Exploratory factor analysis (EFA) and reliability

The internal consistency and reliability of the construct were measured by establishing a Cronbach's alpha that ranged from 0.747 to 0.865, which was above the recommended value of 0.7 (Field, 2013) and at the same time compared to the results of previous studies (Aktan, et al.,

2016); (Arora & Agarwal, 2019) Table 3 shows the internal consistency and reliability of the construct. The Kaiser-Meyer-Olkin measure (KMO) and Bartlett's test of sphericity were performed to determine sampling adequacy and suitability for factor analysis results of both tests show satisfactory values (KMO = 0.875, p = 0.000 <0.05). According to Yong & Pearce (2013), values above 0.6 indicate that the data are acceptable for conducting factor analysis. Exploratory factor analysis was conducted on 16 construct items from the questionnaire. Principal component analysis and varimax rotation were used. Furthermore, the analysis extracted five factors with eigenvalues above 1.0 and loadings above 0.5. These five factors explained 76,366 percent of the total variance. The distinguishing factors are shown in Table 3.

3.6. Confirmatory factor analysis (CFA)

In order to determine the validity and reliability of the measurement model, confirmatory factor analysis was performed using structural modelling software (AMOS 26). The validity of the measurement model includes convergent validity, construct validity, and discriminant validity. (Ahmad, et al., 2016) Convergent validity is determined by a composite reliability coefficient (CR) whose value should be greater than 0.6 and by an average variance extracted (AVE) whose recommended value is 0.5 or higher. (Ahmad, et al., 2016). The values obtained (shown in Table 3) indicate that they fall within these recommendations. Discriminatory validity testing is conducted to confirm that variables within a given factor do not correlate strongly with variables in another factor. To confirm this, it is necessary that the square root of the AVE value of each construct is higher than the correlation of that construct and any other construct. (Hair et al., 2010) According to Ahmad et al. (2016), "for discriminant validity is the correlation between each pair of latent exogenous constructs should be less than 0.85," Tüzünkan & Altintas, (2019). According to Anderson & Garbing D (1988) note that correlation more than 0.85 indicates poor discriminant validity. The results in Table 4 showed strong discriminatory validity.

Table 3: Internal reliability and convergent validity

		Internal reliability			***Convergent validity***			
Construct	Item	Cronbach's alpha	Item-total correlation	Factor loading	Composite reliability	AVE	Mean	SD
Informativeness	IN1	0,847	0,739	0,877	0,852	0,659	3,246	0,977
	IN2		0,747	0,814			3,160	0,904
	IN3		0,671	0,739			3,464	1,073
Entertainment	EN1	0,847	0,726	0,807	0,848	0,652	2,355	0,959
	EN2		0,686	0,749			2,511	1,077
	EN3		0,739	0,863			2,070	1,074
Irritation	IR1	0,744	0,397	0,424	0,771	0,549	2,730	1,074
	IR2		0,660	0,872			3,550	1,094
	IR3		0,677	0,842			3,730	1,117
Credibility	CR1	0,865	0,698	0,760	0,848	0,652	2,769	0,755
	CR2		0,801	0,898			2,750	0,826
	CR3		0,739	0,827			2,722	0,919
Attitudes toward advertisement	ATT						1,972	1.053

Table 4: Discriminant Validity

	Informativeness	***Entertainment***	***Irritation***	***Credibility***	***Advertising value***
Informativeness	**0,812**				
Entertainment	0,520	**0.807**			
Irritation	-0,505	-0,651	**0,740**		
Credibility	0,608	0,460	-0,405	**0,807**	
Advertising value	0.626	0,492	-0,500	0,602	**0,755**

3.7. Structural model fit

The conceptual model was verified using the AMOS 26 statistical program using the maximum likelihood estimation method. The relationships between the variables between constructs were tested by measuring the goodness of fit. Chi-Square $\chi 2$, Normed Fit Chi-Square ($\chi 2$ / df), CFI, TLI, GFI, RMSEA, and SRMR fit indices were examined for this purpose. The structural model is shown in Figure 2. Test results (Table 5) show a good model fit. (Park, & Kim, 2014)

Figure 2: Structural model for Internet advertising

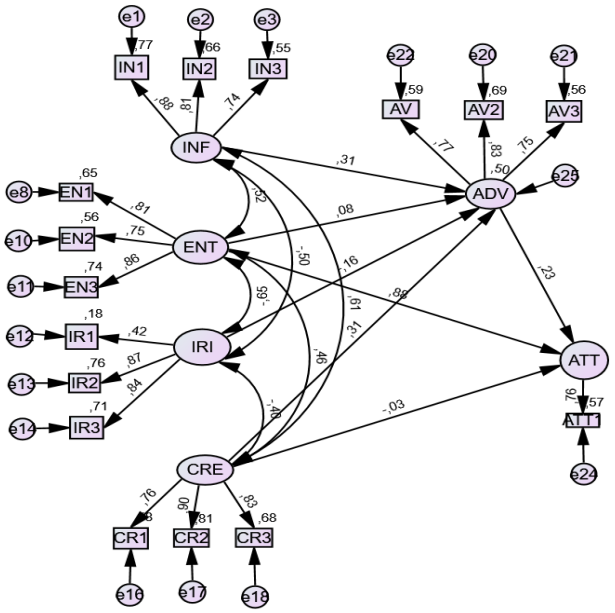


Table 5: Fit indices

Fit index	***Research model***	***Recommended value***
Chi-square	156,3, df=92, p<.0001	
χ^2/df	1,699	< 3
GFI	0,930	>0,9
AGFI	0,896	>0,8
IFI	0,971	>0,9
TLI	0,962	>0,9
CFI	0,971	>0,9
RMSEA	0,052	<0,06
SRMR	0,046	<0,08

3.8. Hypothesis tests

Table 6 shows the results of the hypothesis test. Hypothesis H1 results were not supported, no positive effect of entertainment on perceived value was found (β = 0.080, C.R. = 0.904, p> 0.05). As predicted by the Hypothesis H2 entertainments have a significant positive effect on attitudes toward internet advertising (β = 0.882, C.R. = 10.011, p <0.001). Furthermore, a significant positive effect of informativeness on perceived value was found, thereby supporting H3 (β = 0.314, C.R. = 3.585, p <0.001). No significant negative impact of irritation on the perceived value of internet advertising was found as predicted by hypothesis H4 (β = −0.164, C.R. = −1.822, p> 0.05). The significant positive effect of credibility on perceived value predicted by hypothesis H5 was confirmed (β = 0.308, C.R. = 3.793, p <0.001). Hypothesis H6 predicts a positive effect of credibility on attitude toward internet advertising that is not supported by research findings (β = - 0.028, C.R. = - 0.319, p> 0.05). It is estimated that the perceived value of internet advertising has a significant positive effect on attitude towards internet advertising. (β = 0.229, C.R. = 2.461, p <0.001). The results of hypothesis testing are shown in Figure 3.

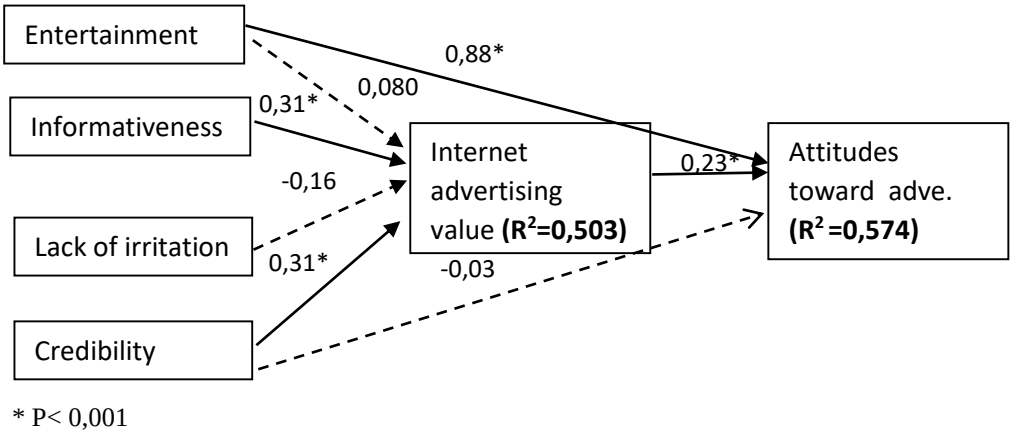
Table 6: Summary of the hypothesis testing results

Hypothesis	***Independent variable***	***Dependent variable***	***Standard estimate***	***CR***	***P-value***	***Supported***
H1 (+)	ENT	AV	0,080	0,904	**0,366**	N/S
H2 (+)	ENT	ATT	0,882	10,011	0,001	Supported
H3 (+)	INF	AV	0,314	3,585	0,001	Supported
H4 (-)	IRR	AV	-0,164	-1,822	**0,068**	N/S
H5 (+)	CRE	AV	0,308	3,793	0,001	Supported
H6 (+)	CRE	ATT	-0,028	-0,319	**0,749**	N/S
H7 (+)	AV	ATT	0,229	2,461	0,014	Supported

CR-Critical value

INF- Informativeness, ENT – Entertainment, IRI – Irritation, CRE- Credibility, AV- Advertising value, ATT – Attitude toward int. advertising, N/S – Not supported

Figure 3: Results of a hypothesis test



* P< 0,001

Table 7 shows the variance of the construct (R^2). As seen, entertainment, informativeness, lack of irritation, and credibility explained 50.3% of the variance in consumer perception of internet advertising value. Informativeness and credibility have the most substantial effect. On the other hand, 57.4% of the variance in consumer attitude towards internet advertising was contributed by entertainment, credibility, and Internet advertising value. Entertainment has the strongest effect on attitude towards Internet advertising.

Table 7: Squared multiple correlation of the proposed research model

Construct	***Values***
Internet advertising value	50,3
Attitude towards the Internet advertisement	57,4

4. DISCUSSION AND IMPLICATIONS

As part of determining the validity and suitability of the model, the paper presents the results of a study of the impact of entertainment, informativeness, irritation, and credibility of internet ads on the consumer's perceived value and the formation of attitude toward Internet advertising. The study covered Generation Z, which is specific and distinct from Generation Y or so-called Millennials (Grow & Yang, 2018). Generation Z is slowly entering the labour market and, as such, is becoming an increasingly interesting market group. From the above, there is also an interest in determining the importance of the basic elements influencing their views on advertising, both through offline and online media. Empirical data show that consumers' perceptions of informativeness and credibility are fundamental factors in influencing the perceived value of internet ads. The results are in line with previous research. (Ducoffe, 1995); (Brackett & Carr, 2001) Unexpected consumers' perceptions of irritation and entertainment have no direct effect on the perceived value of internet advertising. As shown in Table 3, the highest mean irritation score was 3.73 (on a 5-point scale), indicating that there is some agreement that the ads are irritating, but the degree of irritation is not sufficient to affect the perceived value. The obtained result is inconsistent with most previous studies. A prominent study by Dar et al. (2014) also found that irritation did not affect the perceived value of Facebook ads. Related to social media advertising (Twiter) Murillo & Merino (2016) find that irritation has no effect on the perceived value for those who have experience using it and use it more often. Related to the perception of entertainment, the highest mean was 2.51 (on a 5-point scale), which shows that there is a degree of agreement that internet ads are not fun but insufficient to affect the perceived value of Internet advertising. The result is inconsistent with most previous research. A standout study by Aktan et al. (2016) is that consumers' perception of entertainment does not have a direct impact on the perceived value of internet ads. All these studies were conducted on the student population. Although irritation and entertainment do not directly influence the perception of ad value, they remain in the model because of the covariation relationship with other antecedents of internet advertising value. Furthermore, the study also aimed to determine the impact of entertainment and credibility on the attitude toward internet advertising. Entertainment has been found to have a direct positive effect on attitude toward internet advertising, which is in line with previous research. (Ducoffe, 1995); (Brackett & Carr, 2001) Unexpected credibility, according to the research result, has no direct effect on attitude, which is not in line with previous research. Modifying the structural model by omitting credibility does not significantly improve the model fit (Table 8).

Table 8: Fit indices for the models

Fit index	**Structural model**	**Modification model**	**Recommended value**
Chi-square	156,3, df=92, p<.0001	156,4, df=93, p<0,001	
χ^2/df	1,699	1,682	< 3
GFI	0,930	0,930	>0,9
AGFI	0,896	0,897	>0,8
IFI	0,971	0,971	>0,9
TLI	0,962	0,963	>0,9
CFI	0,971	0,971	>0,9
RMSEA	0,052	0,052	<0,06
SRMR	0,046	0,046	<0,08

In line with previous research, a significant positive relationship between the perceived value of internet advertising and the attitude toward internet advertising has been confirmed (Ducoffe, 1995); (Brackett & Carr, 2001). The research findings can help marketers understand the antecedents of the impact of Generation Z-driven internet advertising. Creating a positive perception of the value of internet ads requires ads to be informative and credible. Their entertainment is also essential to forming an overall positive attitude towards Internet advertising. The so-called "online" generation, by using digital media, strives to manage communication with them fully, and the ability to avoid unwanted communication (unwanted ads) requires marketers to create ads that will provide simple, timely, and accurate information.

5. LIMITATIONS AND FUTURE DIRECTION

The conducted research has certain limitations in the generalization of the obtained results. The first is the sample selection. A convenience sample of graduate and undergraduate students from the Republic of Croatia was used. The survey results cannot be generalized because the student population does not necessarily have to be the exclusive representative of Generation Z in the Republic of Croatia. The study did not separately look at the various online advertising media but sought a general opinion on online media advertising, which may be considered as a limitation. The assumption is that the results may vary depending on the type of media that is preferred and used more. The following studies can go further in this direction without excluding the comparison with the so-called offline media. Given the large percentage of adblockers used to avoid ads, it is necessary to include them in models and investigate their impact both on the implementation of online advertising and on the formation of attitudes.

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APPENDIX

Measurement items

Construct	***Measurement items***	
Informativeness	IN1	Internet ads are good sources of product information.
	IN2	Internet ads supply relevant product information.
	IN3	Internet ads provide timely information.
Entertainment	EN1	Internet ads are entertaining.
	EN2	Internet ads are pleasing.
	EN3	Internet ads are exciting.
Irritation	IR1	Internet ads insult people's intelligence.
	IR2	Internet ads are annoying.
	IR3	Internet ads are irritating.
Credibility	CR1	Internet ads are credible.
	CR2	Internet ads are trustworthy.
	CR3	Internet ads are believable.
Advertising value	VA1	Internet ads are useful.
	VA2	Internet ads are valuable.
	VA3	Internet ads are important.
Attitudes toward advertisement	ATT	I like Internet ads.

COMPARISON OF BUSINESS MODELS OF THE STREAMING PLATFORMS SPOTIFY AND NETFLIX

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ABSTRACT

The aim of this paper is to point out the similarities and differences of the business models of the streaming platforms Spotify and Netflix. Corporations belong to the segment of new media industries that emerge as a result of digitalization and digital transformation of production processes. The core business model is the same for both corporations. Spotify allows you to listen to music in the subscription model, while Netflix allows you to watch video content in the subscription model. The platforms use the platform and two-sided market economy model, and operate in a zero marginal cost model. The development of streaming platforms is associated with the development of postmodern society, and especially with the habits of Generation Z. The subscription model has become dominant in relation to the possession of music or video content. By comparing financial performance indicators, we will analyse the advantages and disadvantages of corporate business models.

Keywords: *Netflix, Spotify, subscription, platform economy, zero marginal cost*

1. INTRODUCTION

Spotify and Netflix are part of a new media industry that has emerged in parallel with the digitalization of production processes and the convergence of media production and distribution systems. The changes that have affected the media industry have had strong consequences for the music and video industry, as part of the media industry. The old media industry generated most of its revenue from the sale of physical sound carriers in brick-and-mortar stores. Revenues from the sale of recorded music and video content on physical audio media were the core revenue of the media industry until fifteen years ago. The new music and video industry has moved away from the old model of business process management under the pressure of changes that have affected postmodern society as a whole. Instead of selling physical sound carriers, the new music and video industry turned to selling copyrights. The changes were dictated by Generation Z, who grew up with the Internet and began listening to music on the go instead of the classic way of listening to music at home. The very digitization and distribution of music on the Internet was just an introduction to the fundamental changes that have affected the media industry.

2. LITERARY REVIEW

The end of the twentieth century was marked by the digitization and distribution of music content in a new form. The transformation took place in several different but related phases: gramophone records, replaced by CD soundtracks; CD audio carriers were slowly replaced by MP3, after which streaming platforms took over the dominance in the distribution and consumption of music content (Simon 2019; Fuentes et.al. 2019). With the development of smartphones, MP3 audio players, PDAs, laptops and other technologically advanced devices, users have easy access to music and other media content. What marked the fundamental change was the ability for users to access music while on the go. Such a change in habits, based on the development of music infrastructure, marked a complete change in habits of listening to music (Denegri-Knott 2015). The digitized form of the music content provided some advantages over the classic analog recording in terms of its quality and the length of the recording that could be stored on some analog audio carrier.

However, what was once a sociological / cultural aspect of listening to music has been challenged by accessing large databases of on-demand music content (Arditi 2017). Werner (2020), in his research, seeks to prove the connection between gender and the type of music recommended as a "list" by users of the platform. The development of music technology has directly affected the increase of mobility and availability of music content and has gradually increased user control over music content. A large number of changes that have taken place in the music industry have preceded changes in other branches of industry (Irene 2014; Dholakia et.al. 2015). Listening to music, turned from an activity in which the user listened to music himself, into a daily activity that accompanied all the daily events (Hagberg, Kjellberg 2017). Digitized music and streaming service allow you to listen to music during all activities, especially free activities outside the home (Kerrigan et.al. 2014). Choosing and listening to music ("soundtracking") was made possible in everyday activities such as traveling to work, work, socializing and driving vehicles (Fuentes et.al. 2019). Consumption of music becomes a personalized activity, and the construction of individual musical tastes is separated from the connection with class affiliation (Wright 2015). The development of music streaming services marked the final end of the old music industry. Streaming services Spotify, Deezer and Apple Music have influenced the complete transformation of listening and enabled listening to music in the movement (Sinclair, Tinson 2017). Technological solution for real-time streaming used in the processing of a large number of data, and found its first application in online betting, data on stock exchanges, processing of sports results, weather forecasts and others (Maheshwari 2019). Streaming services have changed the way we consume music or music content. Access to the content that is broadcast is not permanent and ends when the subscription to the music service expires (Hiller, Walter 2017). Ekberg and Schwieler (2020) point out that Spotify is a form of "transactional archive" that you can access on your own for the duration of your subscription, after which you can no longer launch the home screen. Sun called Spotify the "heavenly jukebox" that users have always been looking for. The same could be applied to Netflix for the film industry (Sun 2019). At the very beginning of its business, in the late 20th century, Netflix was not a streaming platform. The corporation's business strategy is based on the distribution and rental of CD media. The young company sought to position itself as a competitor to global vertically integrated media corporations that produced and distributed films for broadcast in cinemas. The business strategy was based on renting and distributing CDs that were mailed (Tryon 2009). In 2007, the iPhone appeared and changed the geometry of the media industry. Not only did the media industry begin to change radically, but the changes affected all social processes. Netflix already had a collection of 100,000 CDs and was slowly moving into the streaming industry. This was a "tipping point" for the entire media industry (Curtin 2009). What Lotz characterized as the "post-network era," Cutrin called the television "matrix era." In support of his claim, Curtin stated that the time of linear television is over and that the time is coming for interactivity in the monitoring of television content that has enabled the digital transformation of content production and distribution (Curtin 2009). The biggest changes in the way of consuming media content were made by Generation Z. The fundamental change in the way of consuming is directly related to the "Netflix effect". Generation Z, grown up with the Internet, is abandoning the model of owning media content in favor of subscribing to media content or streaming platform (Seemiller, Grace 2019). Waldfogel (2019) calls them the "all-you-can-eat" generation without paying for an additional service or paying as little as possible for an additional song or film (Waldfogel 2018). Another equally important process, in the context of abandoning the classical television paradigm, is related to the decline in demand for cable television, which accounted for the dominant share of revenues associated with the television industry. Streaming services took over the audience of cable television precisely because of the "Netflix effect". The metaphor of "cable" abounds in a very strong connection with modern technology.

Not only that, but a coaxial cable that runs through the walls and allows access to the signal in the central room determines a very strong presence of technology in everyday life (Burroughs 2019). Jenkins (2006) in *Convergence culture emphasizes the excessive* influence of "cable" in everyday life (Jenkins 2006). Generation Z and the development of technology in the form of streaming platforms began with the deconstruction of this form of technological presence in everyday life. Unsubscribing from cable television is symbolically called "cord-cutters", ie those who cut the cable. The situation, which was even more dramatic for classic television corporations, is marked by the term "cord-nevers", ie those who will never subscribe to cable television. This group primarily includes members of Generation Z. As early as 2014, Jenner studied the way in which Netflix formed its own television program and emphasized that the broadcasting model, ie the managerial model, is completely different from cable and classic television (Jenner 2014).

3. SPOTIFY AND NETFLIX STREAMING PLATFORM

The streaming service provides users with the possibility of creating their own music lists or using already compiled music lists, created by music editors according to the preferences of individual user groups (Webster 2019). Digitization and dematerialization of music archives, in the model of streaming platforms, but also the efforts of streaming platforms Spotify, Deezer, Apple Music and Netflix in conquering the global market, resulted in the growth of global popularity of streaming platforms and sales of subscriber relationships in the global market (Burkart, Leijonhufvud 2019). Building your own lists on the Spotify platform changes the way you interpret the classic value chain because in the "peer-to-peer" exchange model, music lists are created by the users themselves, not the music content editors (Kask, Oberg 2019).

Table 1: Similarities and differences between platforms

	Spotify	**Netflix**
Organizational form	Streaming platform	Streaming platform
Content distribution	Music	Video content
Monetization	Subscription	Subscription
Business form	Platform economy	Platform economy
Cost model	Zero marginal cost	Zero marginal cost
Ownership of content	Without ownership	Mostly own content
Audience	Mostly Generation Z	All generation

Source: own illustration

With the development of postmodern societies, a strong habit of subscribing to steaming services instead of owning physical sound carriers has developed (Hagen 2015). Music streaming services are technologically advanced corporations. They use and develop new software and applications, but cannot be classified in the software industry (Parker et.al. 2016; Lozić et.al. 2017). Music streaming services have disrupted social relations and social dynamics. Free or in exchange for a subscription, streaming services Spotify and Apple Music, provide access to music content or formed music lists on platforms, with minimal external costs, using mobile phones (Morris, Powers 2015). Streaming platform services have made it possible to listen to music tracks that have long been neglected in various music niches (Webster 2019). In the streaming platform industry, Spotify and Netflix use a platform economy model and operate in a zero marginal cost model (Rifkin 2015; Lozić 2019). The dominant form of income is generated from user subscriptions. What differs is the ownership of the content that is distributed and the age of the users who are the dominant users of each platform.

4. METHODOLOGY AND HYPOTHESES

We will compare the operations of Spotify and Netflix corporations on the basis of financial reports in the form of Form 10-K. We will also use other relevant data from the Form 10-K form, such as the number of subscribers and by chance. As external sources, we will use data from specialized agencies that monitor trends in the media industry. In the process of comparing corporations, we set two basic hypotheses:

- H_1 – The business model of the platform economy and zero marginal cost allow Spotify and Netflix corporations high business profitability
- H_2 – The Covid19 pandemic significantly affected the business results of corporations.

The basic goal of the research and the set hypotheses is focused on directing further research in this area of the media industry.

5. DATA ANALYSIS

The data analysis was divided into two basic data groups, namely the Spotify analysis and the Netflix analysis. Within each data group, data on the financial result and the trend in the number of users will be analysed. For both corporations, the analysis covered a period of six years.

5.1. Spotify

Table 2 shows the financial results of Spotify. The data were taken from the Form-10K form, and were adapted to the research in the paper. Spotify's revenues, in the analysed period of six years, increased from 1,085 million Euros to 6,764 million, ie they increased by 523.41%. In the same period, the cost of revenue increased from 911 million Euros to 5,042 million, an increase of 453.46%. Cost of revenue includes all costs associated with paying copyright for music selected by users. As the number of users and listeners increase, so does the cost of revenue. Gross profit increased from 174 million euros to 1,722 million euros, or 889.66%. However, in the same period, total operating expenses increased from EUR 365 million EUR to 1,795 million, an increase of 391.78%. Operating expenses, which do not include the cost of revenue, are higher than gross profit for all six analysed periods. In each period, Spotify had negative EBIT. In 2018, Spotify moved towards the profit zone (Lozić 2020), but the trend returned in the next period. Referring to the first hypothesis, we can say that Spotify is not a very profitable corporation, although it uses the platform model and zero marginal cost. Cost of revenue is too high, ie gross profit is too low and EBIT is negative. In 2018, Spotify drastically reduced losses, but in the following period, losses began to rise again. The share of gross profit in revenues ranges from 16% at the beginning of the analysed period to 25.5% at the end of the analysed period. Gross profit is growing, but it should also be emphasized how other circumstances have affected it as well. Spotify has changed its ownership stake to acquire copyright, generating advertising revenue and podcasts and other revenue. At the same time, gross profit growth slowed and stabilized at around 25% relative to revenue. The largest increase in cost of revenue was recorded in 2015, after which costs decreased until the last period when they increased by 9 percentage points compared to the previous period.

Table following on the next page

Table 2: Spotify finance report (mill. Euro)

	2014	2015	2016	2017	2018	2019
Revenue	1.085	1.940	2.952	4.090	5.259	6.764
Cost of revenue	911	1.714	2.551	3.241	3.906	5.042
Gross profit	***174***	***226***	***401***	***849***	***1.353***	***1.722***
Research and development	114	136	207	396	493	615
Sales and marketing	184	219	368	567	620	826
General and administrative	67	106	175	264	283	354
Total cost	365	461	750	1.227	1.396	1.795
Operative loss	***-191***	***-235***	***-349***	***-378***	***-43***	***-73***

Source: Own illustration

Table 3: Spotify gross profit trend

	2014	2015	2016	2017	2018	2019
Cost of revenue	84,0%	88,4%	86,4%	79,2%	74,3%	74,5%
Gross profit share	***16,0%***	***11,6%***	***13,6%***	***20,8%***	***25,7%***	***25,5%***
%	-	88,1%	48,8%	27,0%	20,5%	29,1%

Source: Own illustration

Table 4: Spotify regression items

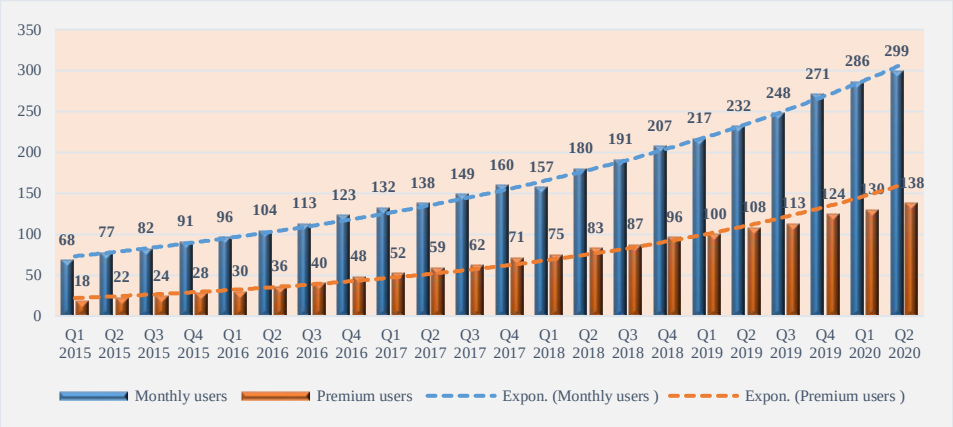
	Trend quotation	R^2	**s**
Revenue	$y = 1276{,}2e^{0{,}3562x}$	0,9702	42,8%
Cost of revenue	$y = 1077{,}2e^{0{,}3549x}$	0,9389	42,6%
Gross profit	$y = 159{,}83e^{0{,}5023x}$	0,9780	65,3%
Total cost	$y = 368{,}16e^{0{,}3366x}$	0,9699	40,0%

Source: own illustration

Spotfy's total revenue grew at an average rate of 42.8% per year, but the cost of revenue also followed this growth and grew at an average rate of 42.6% per year. Gross profit grew at a rate of 65.3% per annum which was not sufficient to cover other total costs growing at a rate of 40% per annum. The results of the regression analysis indicate that the expansion of the corporation has directly affected the increase in technology investment costs, system maintenance and other administrative costs, and that the number of users that would guarantee financial stability has not yet been reached. The results of the analysis are shown in Table 4. Spotify streaming users are divided into monthly users and premium users. Monthly users are all those users who use the services of the platform at least once a month. They do not pay a subscription and have very limited access. In contrast, premium users are subscribers and use the full service of the platform. The results of the analysis showed that the number of monthly users grew at an average rate of 32.3% per year with an interpretation coefficient of 99.41%. The number of premium users grew at an average rate of 49.9% with an interpretation coefficient of 98.21%.

Picture following on the next page

Picture 1: Spotify users (2015-2020; mill.)



Source: Own illustration

Table 5: Spotify financial regression items

	Trend quotation	R^2	**s**
Monthly users	$y = 70{,}783e^{0{,}2801x}$	0,9941	32,3%
Premium users	$y = 20{,}163e^{0{,}4046x}$	0,9821	49,9%

Source: own illustration

The trend analysis in Figure 1 indicates a deviation of the increase in the number of premium users from the regression curve. The interpretation coefficient of 98.21% gives us a remarkably high certainty of accuracy, but it should be emphasized that in the last two analysed periods the growth rate falls below the regression curve. The average growth rate in the first quarter of 2019 was 33.3%, and in the first quarter of 2020, compared to the previous first quarter, it was 38%. Both increases are below the average growth limit. From the results of the analysis, we can conclude that Covid19 did not significantly affect the increase in the number of users, nor the revenue of the streaming platform Spotify.

5.2. Netflix

The financial results of Netflix's business are shown in Table 6. The results are taken from the Form 10-K form and adjusted to the needs of the analysis. The analysis covers a period of six years. In the analyzed period, Netflix increased revenues by 266.17%. In the same period, the cost of reveneues increased by 231.5%. The result of such business was that gross profit increased by 340.45%. Significantly more than the rate of increase in income. Increasing the rate of gross profit above the rate of increase of the cost of revenue has built a stable quantitative income to other operating expenses. Unlike Spotify, which had a negative EBIT throughout the analysed period, Netflix had a positive EBIT in all analysis periods. In the period from 2014 to 2019, operating income grew from $ 402,648 million to $ 2,604,254 billion. In the analysed period, operating income increased by 546.78%. Net income rose from $ 266,799 million in 2014 to 1,866,916. million dollars in 2019. In total, it increased by 599.74%. In 2015, Operating income and net income were lower than in the previous period, but after 2015, income growth stabilized. The share of gross profit, at the beginning of the analysed period, was about 32% of total revenue. In the last two analysed period, the share of gross income began to grow significantly. Cost of revenue grew until 2017, after which they stabilized at an increase of about 24%. The results of the analysis are shown in Table 7. Netflix's revenue grew at an average rate of up to 30.5% per annum with a degree of interpretation of 99.72%. Cost of revenue grew at an average rate of 27.9% per year with a degree of interpretation of 99.73%.

An increase in the cost of revenue less than an increase in revenue allowed for an increase in gross profit. The average increase in gross profit was 35.4% per annum with a degree of interpretation of 98.48%. In the same period, the increase in operating income was 53.9% with a degree of interpretation of 85.84%. Net income recorded a significant decline in two of the six periods analysed. This is the reason why the interpretation rate has fallen below 80% so we cannot accept it in the data analysis. Using the chain index method, we obtained an average increase in net income of 73.7% per year. The largest percentage increase was in 2017, after which revenue growth slowed. The results of the analysis are shown in Table 8. The analysis of the trend in the number of subscribers in the analysed period shows a continuous growth in the number of subscribers.

Table 6: Netflix financial report ($mill.)

	2014	2015	2016	2017	2018	2019
Revenues	5.504.656	6.779.511	8.830.669	11.692.713	15.794.341	20.156.447
Cost of revenues	3.752.760	4.591.476	6.029.901	8.033.000	9.967.538	12.440.213
Gross profit	***1.751.896***	***2.188.035***	***2.800.768***	***3.659.713***	***5.826.803***	***7.716.234***
Marketing	607.186	824.092	991.078	1.436.281	2.369.469	2.652.462
Technology and development	472.321	650.788	852.098	953.710	1.221.814	1.545.149
General and administrative	269.741	407.329	577.799	431.043	630.294	914.369
Operating income	***402.648***	***305.826***	***379.793***	***838.679***	***1.605.226***	***2.604.254***
Net income	***266.799***	***122.641***	***186.679***	***558.929***	***1.211.242***	***1.866.916***

Source: Own illustration

Table 7: Netflix gross profit trend

	2014	2015	2016	2017	2018	2019
Cost of revenue share	68,2%	67,7%	68,3%	68,7%	63,1%	61,7%
Gross profit share	31,8%	32,3%	31,7%	31,3%	36,3%	38,3%
%	-	22,3%	31,3%	33,2%	24,1%	24,8%

Source: Own illustration

Table 8: Netflix regression items

	Trend quotation	R^2	s
Revenue	$y = 5E+06e^{0,2659x}$	0,9975	30,5%
Cost of revenue	$y = 4E+06e^{0,2458x}$	0,9973	27,9%
Gross profit	$y = 2E+06e^{0,3034x}$	0,9848	35,4%
Operating income	$y = 251592e^{0,4314x}$	0,8584	53,9%
Net profit	$y = 125611e^{0,5056x}$	0,7728	-

Source: Own illustration

The number of subscribers increased from 21.6 million in the fourth quarter of 2011 to 193 million in the second quarter of 2020. The average growth rate from the fourth quarter of 2011 to the fourth quarter of 2019 was 28.9% with a degree of interpretation of 99.2%. The analysis of the trend in the number of subscribers from year to year records a declining growth in the number of users. In the last analysed period, the percentage increase in the number of users was the smallest of all analysed periods and amounted to a 20% increase compared to the previous period. The results of the analysis are shown in Figure 2 and Table 9.

Picture 2: Netflix subscribers (mill)

Source: Own illustration

Table 9: Netflix subscribers (mill.)

	Q4 2011	Q4 2012	Q4 2013	Q4 2014	Q4 2015	Q4 2016	Q4 2017	Q4 2018	Q4 2019
Subscribers	21,6	30,36	41,43	54,58	70,84	89,09	110,64	139,26	167,09
%		40,6%	36,5%	31,7%	29,8%	25,8%	24,2%	25,9%	20,0%

Source: Own illustration

Netflix produces its own media content that it distributes to the platform's subscribers. Once the content is placed on the platform and fixed costs are paid, the variable costs of each subsequent broadcast are close to zero, which means using the zero marginal cost model. According to the results of revenue analysis and revenue trends, Netflix is a very profitable platform and we can confirm the first hypothesis. The increase in the number of users in 2019 was 20% higher than in the previous year, but this is the lowest percentage increase in the number of users of all analysed periods. Consequently, we cannot confirm the second hypothesis.

6. DISCUSSION

The analysis of the business results of the two corporations in the field of platform economics showed very different results. We will list six key points that will make it easier for us to interpret the hypotheses:

- Spotify is growing revenue, but is still insufficient for positive business. In all six analysed periods, it had a negative EBIT.
- Gross profit Spotify is small to create enough funds for a positive financial result.
- The first hypothesis cannot be confirmed in the case of Spotify because it has not generated positive operating income in the last six years. We cannot confirm the second hypothesis because the Covid19 crisis did not significantly affect financial operations or the movement of the number of users.
- Netflix is continuously increasing revenue and gross profit and is extremely profitable.
- The growth in the number of Netflix subscribers is slowing down.
- Despite the Covid19 crisis, the growth trend in the number of users continued as before the crisis.

Spotify is expanding in the global market and investing in the development of technology, which makes its financial situation more difficult. Investing in technology and expanding in the global market allows it to increase the number of subscribers, but continuously creates new losses. The growth of users is continuous despite Covid19 and there was no significant increase or decrease in the number of users.

We cannot confirm either the first or the second hypothesis. Netflix is extremely profitable, but the growth in the number of users is slowly slowing down. We can confirm the first hypothesis, but in the second it is necessary to conduct additional research because the number of users is growing in a slow trend, regardless of Covid19.

7. CONCLUSION

The analysis of the results of the two corporations operating in the platform economy model showed quite different results. Both corporations are streaming platforms and the biggest revenue comes from subscribing to content. Research has shown that using a zero marginal cost model does not have to be highly profitable. Spotify is unprofitable, unlike Netflix which increases profits from year to year. The reason can be found in the ownership of the content being broadcast. Netflix produces its content and does not have to pay for copyright. We can only accept the first hypothesis with Netflix. The second hypothesis shows how postmodern societies have changed user habits and how the global pandemic has little impact on the operations of corporations in the media industry. New research should focus on the correlation between habits in postmodern society and managerial strategies of media corporations.

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THE IMPACT AND IMPORTANCE OF THE PROFESSIONAL ETHICS OF ACCOUNTANTS ON THE ACCOUNTING PROFESSION

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ABSTRACT

Today's market and today's business, conditioned by sudden and constant changes, poses great challenges in front of the companies in which companies are looking for ways and models to operate in a quality and competitive manner. In the modern business world it is unthinkable to do business and function without respecting the code of business ethics and behaving in accordance with rules, procedures and norms. Doing moral or ethical deeds is something that every person should face every day. The operations of large corporations is unthinkable without respecting the rules of ethical code. Whether it is the private or business world, ethics is something that has been present and recognizable for centuries and even millennia. Over the years, the form of application of ethics has changed, but the core meaning has remained quite similar, and that is that a person should make the right or moral decisions. Being honest, fair and a good man are essential qualities that every person should have, but especially a businessman. Through this paper, a short research was conducted on the importance of business ethics in performing accounting and auditing tasks and the impact of business ethics itself on the accounting profession.

Keywords: *business, accounting, ethics, business ethics*

1. INTRODUCTION

Doing business on the market today without quality and timely information and managing it is unthinkable. When a company has the right information, it can make more rational and correct business decisions. In order for a company to be able to make but also have access to quality and reliable information, it needs to have an available source of information inside and outside the company. One of the main sources of information's necessary for making quality business decisions but also for quality business management in the company is filed of accounting. When we look at the concept of accounting, it includes the processes of planning, control, analysis and informing that are the key business processes necessary for the quality business managing. Like any profession, including the accounting profession, it carries with it certain rules of behavior, the so-called professional ethics. Proper application of professional ethics, rules, norms, laws, principles and codes of ethics contributes to success, quality and competitive business. In the accounting world and practice, the goal of accountants and auditors is to properly guide the organization through their professional knowledge and skills, all of course with respect and adherence to all ethical principles and codes of professional ethics of accountants and auditors. The aim of this paper was to investigate and examine among accountants of Croatian companies the importance of applying moral and ethical principles in performing accounting and auditing tasks.

2. PROFESSIONAL ETHICS OF ACCOUNTANTS

In today's business world, more and more attention is focused on ethics, especially professional ethics, in order to protect a certain profession. For this reason, certain laws, regulations, rules, norms and codes of professional ethics are enacted. Acting and doing moral or ethical acts is something that every person should face every day, whether it is a private life or the business world. “Ethics has a pronounced practical dimension that represents a framework for grounded ethics in various fields, especially in the field of business behavior” (Hunjet and Kozina, 2014:193). “Therefore, business ethics implies a correct attitude towards associates, customers and competitors” (Hunjet and Kozina, 2014:195). Further, the authors Hunjet and Kozina (2014: 192) state that business ethics is “a system of business principles or values aimed at reconciling business efficiency and the ethical dimension of business”. Likewise, business ethics can be defined as “the ability to think about values in the decision-making process in corporations, to determine how those values and decisions affect different stakeholder groups, and to determine how managers can take advantage of these observations” (Certo and Certo, 2006: 66). Today, it is inconceivable that large corporations do not apply and do not respect the rules or the code of ethics of the company, where its non-compliance and even non-existence can lead to a number of negative consequences for the business of the organization. The way accountants and auditors operate and act influences their work and the work of the organization itself, which creates certain images (positive or negative) as well as confidence in their work. Accountants are the persons in charge of providing and presenting accurate and reliable information to the organization and the general public, and therefore certain ethical standards that must be followed in performing the accounting profession are important for judging the credibility and quality of their work. In order to ensure confidence in the accounting profession, accountants and auditors themselves are required and expected to behave in accordance with certain rules. "In addition to the technical knowledge and competencies of employees, today more than ever, it requires the possession of certain moral qualities and the acceptance and adherence to appropriate rules and norms of ethical behavior" (Žager et al., 2015: 382). The main task of any modern organization with the aim of creating added value should be learning about ethical and moral behavior as an integral part of the corporate culture of each organization. Therefore, we can claim that business ethics, as well as the introduction and respect of moral and ethical principles, is one of the key concepts of modern business. Adhering to ethical principles, the organization itself and its employees are protected, while the managers of the organization should act in accordance with personal morality and thus influence the added value of the company (Dujanić, 2003: 53). Considering ethical and moral behavior, we can say that it primarily starts from certain values and attitudes that nurture individual and society, whereby this particular value system of the individual is developed and acquired within the family. We can say that there are a number of factors that affect the ethical and moral behavior of an individual such as: gender, age, level of education, work experience, etc. With respect for moral and ethical principles of behavior, an ethical dilemma is often associated and mentioned. Doubting a situation or decision is called a dilemma, and if we are talking about a moral decision, we are talking about an ethical dilemma. There are several models that can be used to analyze the ethical dilemma, where the reason for their existence is simpler and that is that some ethical issues are more complex than others. Facing employees, ie accountants and auditors, with an ethical dilemma can lead to wrong, incorrect and illegal decisions, which endangers the business of the organization itself and employees agree to be participants in dishonest and illegal activities. Doing business and conducting business operations of poor quality and thus unethical can result in a series of actions and activities that can lead to ruin of organization. In this way, trust is lost with and among employees and associates, but also other stakeholders, all because of unethical behavior.

Therefore, organizations should strive to respect and promote the code of ethics in order to create a positive reputation in the market but also to ensure quality business.

3. PRINCIPLES OF PROFESSIONAL ETHICS IN BUSINESS

Professional ethics plays an extremely important role in the business world. It ensures and enables the organization to hold not only to itself but also to people, both inside and outside the organization. Business ethics has become an indispensable tool for organizations that have recognized its importance and realized that it contributes to better and quality relationships within and outside the organization and makes them more responsible in the long run in the market. When a company is ethical, it inspires loyalty and trust and also helps promote their services and products" (Tremain, 2013:37). There are actions and activities that are legal and have a negative (unethical) effect while there are activities that although unethical are not considered illegal, so the overall success of an organization depends on the strength of its business ethics. Codes of professional ethics play a key role in maintaining the quality of the work itself. When we talk about accountants and the accounting profession, the most famous but also the most important code is issued by IFAC (International Federation of Accounting). IFAC was established in 1977. with the goal of serving the public interest and strengthening the accounting profession by enacting standards and written rules of behavior for accountants. The principles set the standard of behavior expected of any professional accountant and includes the principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior.[1] IESBA (The International Ethics Standards Board for Accountants) develops and issues, within its own standards-making authority, the International Code of Ethics for Professional Accountants (IESBA, 2018). The latest and current version of the Code of Ethics Manual for Professional Accountants was issued in June 2018. Its amendments came into force in June 2019 for parts Part I (General Application of the Code,) Part II (Professional Accountants in Business), Part III (Professional Accountants Public Practice) while the new version of the manual has a supplement and that is part IV.A (independence for audit and review engagements) and part IV.B (independence for assurance engagements) which come into force after June 2019, while their earlier application was allowed. The accounting profession and accountants have a great responsibility towards the organization but also towards the public, especially from the aspect of presenting information's that needs to be reliable and accurate. In addition to accountants, there are auditors who have the responsibility to express to the general public an opinion on the reality and objectivity of the financial statements and the information arising from them. All this should be done in accordance with the highest standards and rules of moral and ethical behavior in order to have confidence in this profession at a satisfactory level. If an organization (or accountant) is ethical, it not only builds a successful reputation but gains the trust and loyalty of its employees, customers, and all other market stakeholders. Conversely, an unethical organization (accountant) will ultimately cause a bad reputation and failure and will not be able to gain the loyalty and trust of all stakeholders. Therefore, the purpose of a code of ethics is simply to fulfill professional obligations.

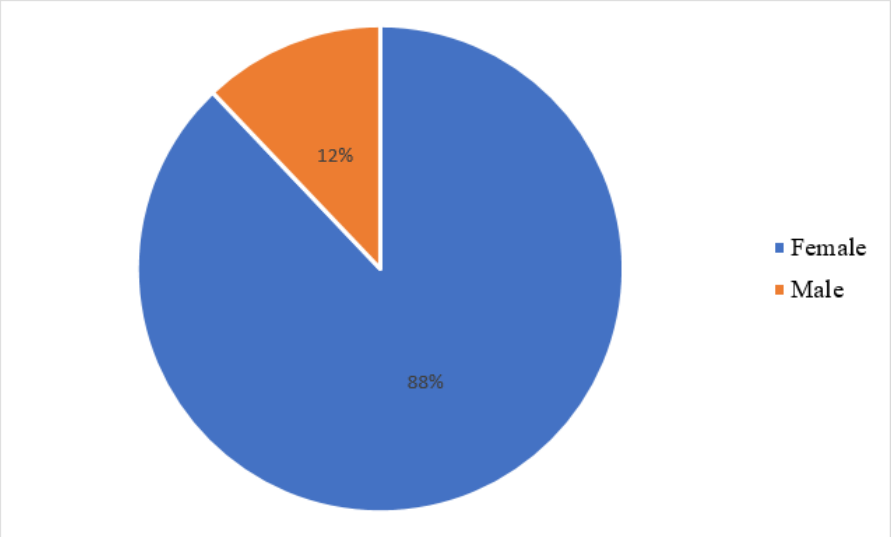
4. CONDUCTED RESEARCH

Empirical research on the importance of applying moral and ethical principles in performing accounting and auditing work was conducted on a sample of employees in the accounting profession. The survey method was used for data collection purposes. The target population were employees in accounting where 50 of them (research population) completed the survey questionnaire. The survey consists of 12 questions and further states each question and the results of the respondents' answers to the same.

[1] Official Gazette 65/2020, 1304, p. 41. Code of Ethics for Professional Accountants, Zagreb: Official Gazett d.d.

In the research population females predominate in relation to men. This relationship is not surprising if we take into account that the accounting profession in the Republic of Croatia has been dominated by women for decades. The first question to be answered was to which gender the respondents belonged. As can be seen in the chart, 88% of respondents belong to the female gender, while a modest 12% belong to the male gender. This leads to the conclusion that women still dominate in the field of accounting.

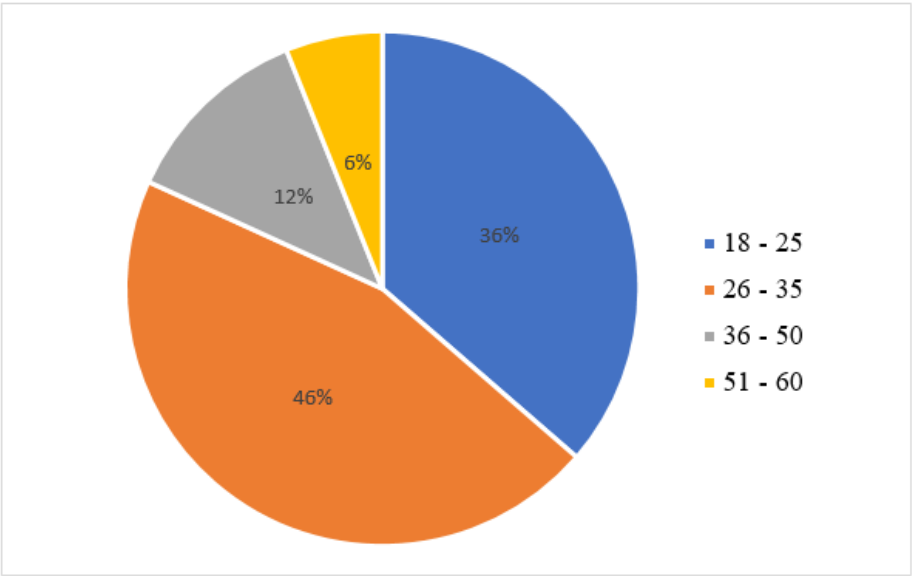
Figure 1: Graphic representation of the gender of the respondents



Source: Author, according to the results of empirical research

The next question referred to the age group to which each respondent belonged. According to the chart, it can be seen that almost half of the respondents 46% belong to the age group of 26-35 years. A slightly lower percentage is occupied by the age group of 18-25 years with 36%. The third place is taken by the age group of 36-50 with 12%, while the last place is taken by the respondents of the age group 51-60 with 6%.

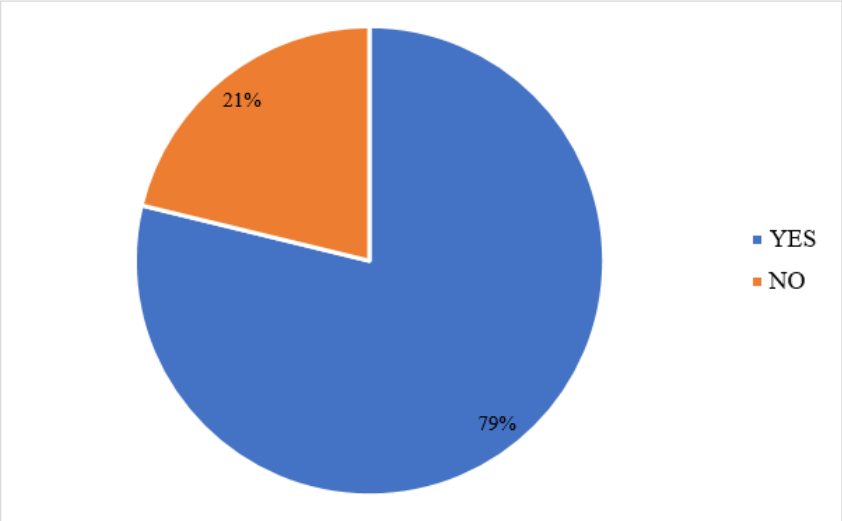
Figure 2: Graphic representation of age of the respondents



Source: Author, according to the results of empirical research

The third question asked to the respondents was whether there is a code of ethics in their workplace. According to the chart, it can be seen that 79% have a code of ethics in their workplace, while 21% do not. This information shows that there are still work places (companies) that for various reasons do not have or believe that they should not have a code of ethics.

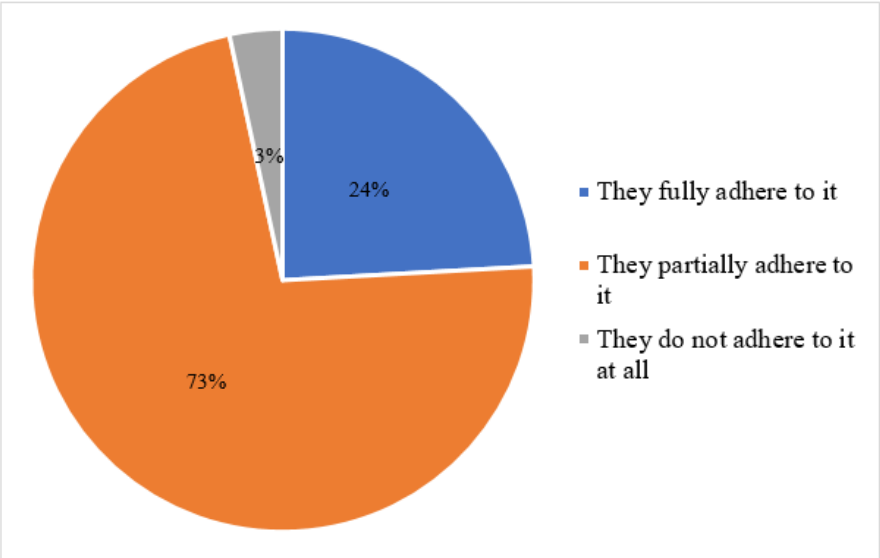
Figure 3: Graphic representation of the existence of a code of ethics in the workplace



Source: Author, according to the results of empirical research

The next question in the survey was whether colleagues of respondents adhere to the code of ethics. Only 24% of respondents said that their colleagues in the workplace fully adhere to the code of ethics. On the other hand, an incredibly low percentage 3%, said that their colleagues do not adhere to the code at all. Respondents who feel that their colleagues partially adhere to the code of ethics is 73%. The assumption is that the vast majority adhere to written rules, but often do something that is not entirely ethical. Nonetheless, it is good to know that an extremely large majority (in part) adheres to a code of ethics.

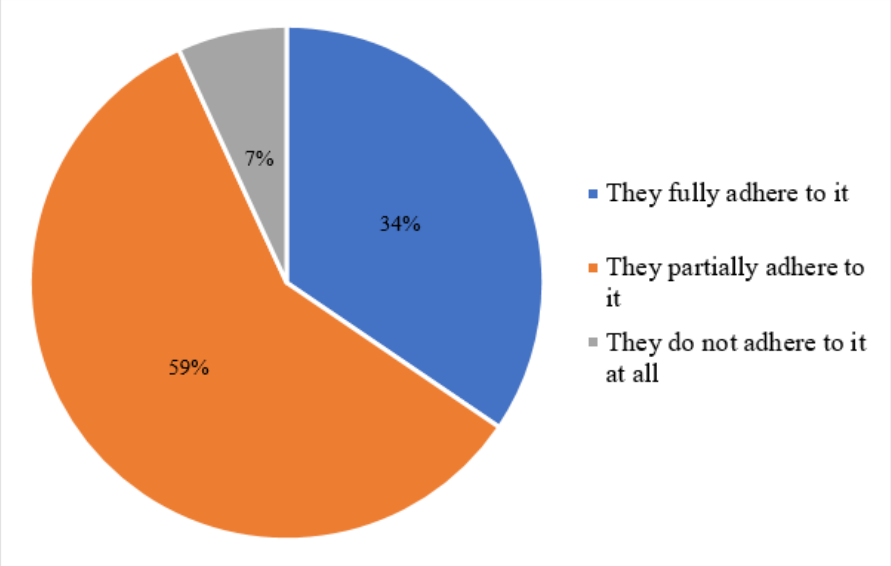
Figure 4: Graphic representation if colleagues of respondents adhere to the code of ethics



Source: Author, according to the results of empirical research

The fifth question was very similar to the previous one, but it referred to whether the superiors of the respondents adhere to the code of ethics. Slightly more than half of the respondents 59% of them claim that their superiors partially adhere to the code of ethics, 34% claim that their superiors fully adhere to it, while 7% do not adhere to the company's code of ethics at all.

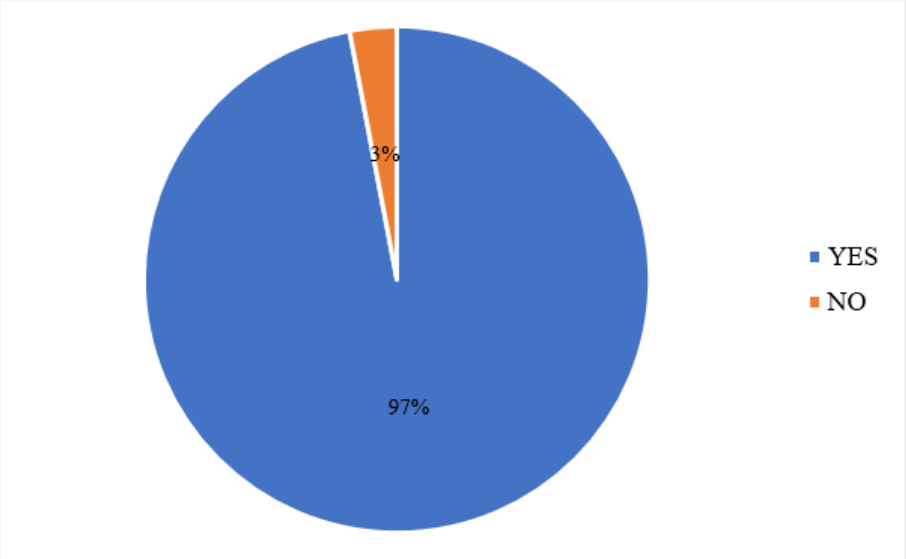
Figure 5: Graphic representation if superiors of respondents adhere to the code of ethics



Source: Author, according to the results of empirical research

When asked if they think that the code of ethics is of great importance for (every) business, almost all respondents 97% of them answered positively, while 3% do not consider the code of ethics important to do the job.

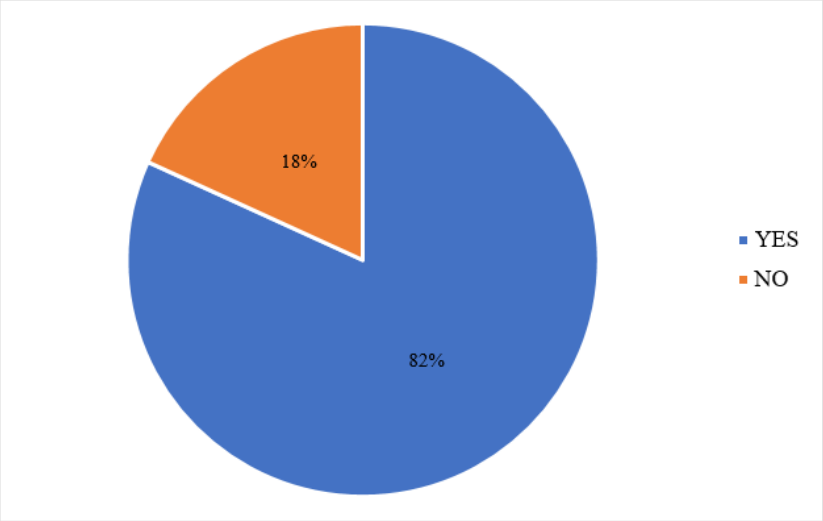
Figure 6: Graphic representation of the importance of the code of ethics for business



Source: Author, according to the results of empirical research

When asked if they have ever acted unethically in doing their job, 82% of respondents answered "yes", while 18% answered "no".

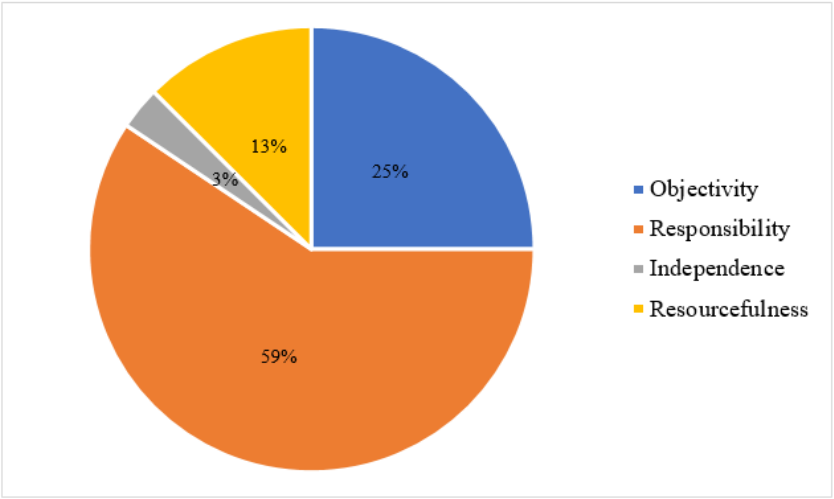
Figure 7: Graphic representation of the importance of the code of ethics for business



Source: Author, according to the results of empirical research

For the question which is the most important characteristic of the accountant, ie the auditor, the respondents were offered 4 characteristics. Objectivity, which 25% of respondents think is the most important, then responsibility 59%, in the penultimate place is independence with 3% and finally resourcefulness with 13%. Of course, this question was subjective, meaning that each respondent could answer based on their opinion and beliefs, and there is no "wrong" answer. Most respondents chose responsibility as the most important characteristic of an accountant. The data is not surprising, because in order for a person to be a reputable accountant, that is, an auditor, he needs to have a very large dose of responsibility. Of course, having the highest percentage of responsibility in no way diminishes the importance of the other characteristics of any accountant.

Figure 8: Graphic presentation of the most important characteristics of an accountant / auditor

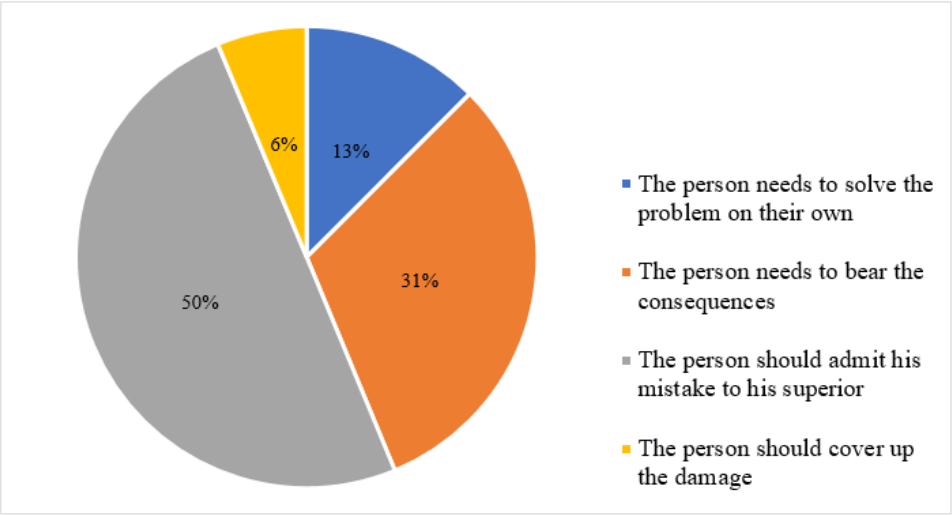


Source: Author, according to the results of empirical research

When asked if the accountant violates the code of ethics and if so what should happen next, one of the answers was that the person should solve the problem on their own where 13% of respondents agreed with this.

That a person should bear the consequences was chosen by 31% of respondents, while the third offered answer was that a person should admit his mistake to a superior and that answer was chosen by most respondents 50% of them. The last choice was that the person should cover up the damage, and the percentage of response was 6%.

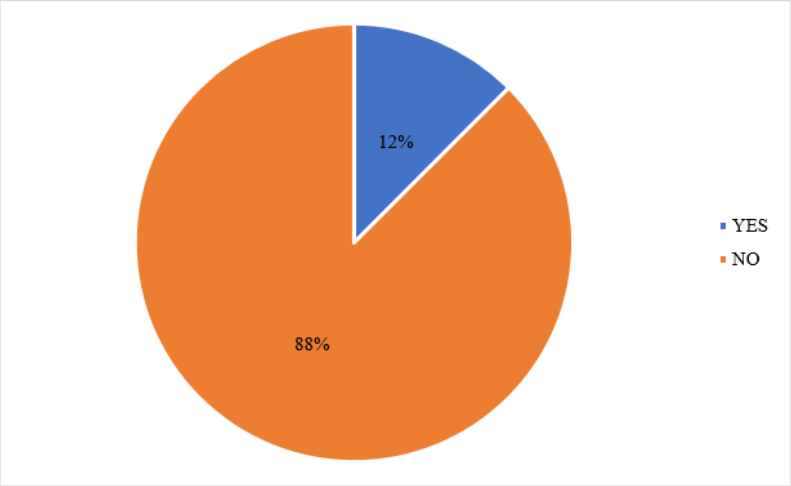
Figure 9: Graphic representation if the accountant/auditor violates the code of ethics, what next?



Source: Author, according to the results of empirical research

The following graph shows that when asked whether respondents were required to behave unethically in the workplace, 88% of them answered "no", while 12% answered "yes".

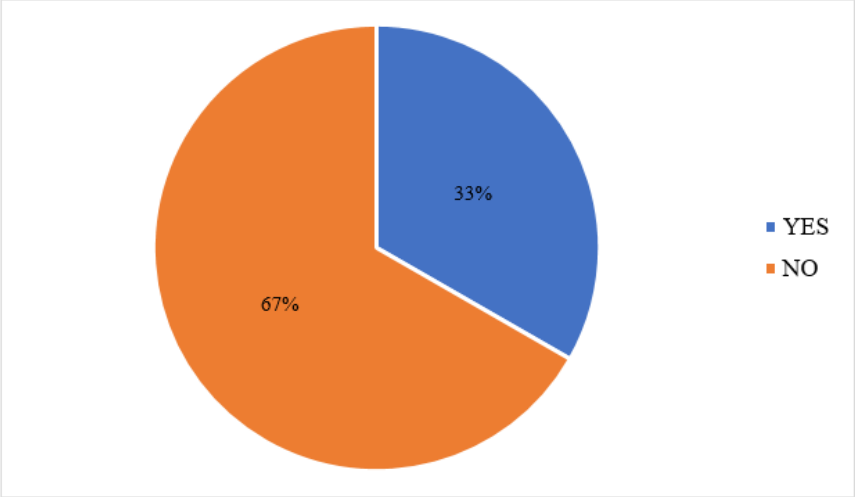
Figure 10: Graphic representation of the search for unethical behavior in the workplace



Source: Author, according to the results of empirical research

When asked whether they agree to perform unethical tasks (if the answer to the previous question was "yes") 67% of respondents answered "yes", while 33% answered "no". If they found themselves in a situation to perform an unethical task, respondents were asked to state what they would do (assuming they had not faced the situation so far). Some respondents said they would report the situation to their superiors, a higher instance, but in short, all respondents said they would not perform this type of task.

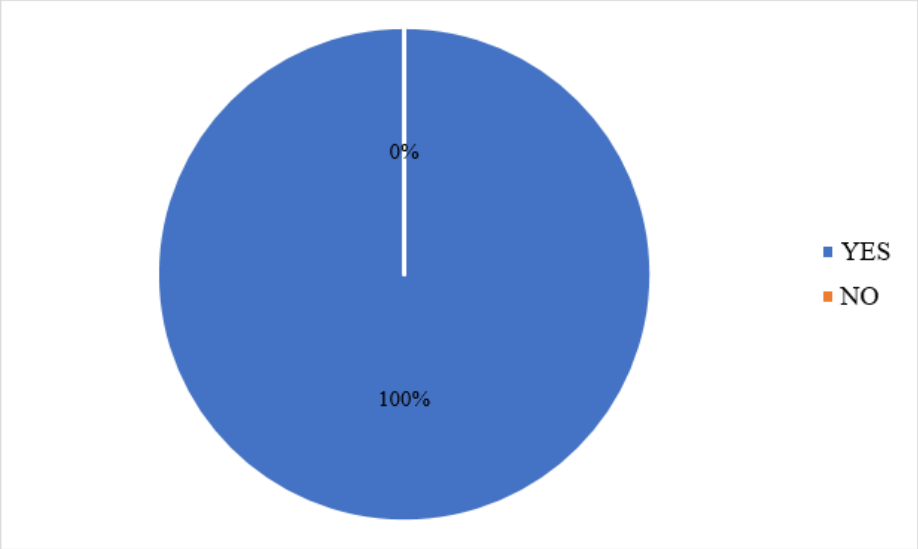
Figure 11: Graphic representation of consent to perform an unethical task



Source: Author, according to the results of empirical research

When asked whether every company should have a quality code of ethics, all respondents answered affirmative.

Figure 12: Graphic representation should every company have a quality code of ethics?



Source: Author, according to the results of empirical research

In accordance with the results of the empirical research, it is evident that the respondents consider the code of ethics to be a very important factor and a key determinant of achieving quality business. All respondents believe that the company should have a quality code of ethics, but still several respondents claim that they were exposed and participated in unethical behavior in their workplace, which gives space for management to influence its employees with their actions and ethical behavior to reduce this percentage to a minimum. Also, a small number of respondents show the lack of a code of ethics in the workplace, which is a warning signal to companies about the necessary introduction and adherence to ethical principles in today's business. It is through respecting the code of ethics that the organization creates a positive reputation and a positive image of the organization in the market that respects ethical and moral principles in its business.

5. CONCLUSION

Workplace ethics is not a new or unknown concept and professional ethics itself plays an extremely important role in the business world. In order to build and for an ethical culture in an organization to be effective, it is essential that managers and employees have the same attitudes and understanding of what ethics is and what it represents and ensures for the organization. Adherence to and application of the code of business ethics within an organization, moral and fair conduct of business activities, guarantees and ensures a positive image of the company in the market, which creates long-term and loyal relationships with company stakeholders. The code of ethics includes all the rules that need to be followed, and at the same time they are based on the values, rules and principles of responsible business, ie the behavior of the organization itself. Every company that cares about promoting organizational culture and work, has or should have its own code of ethics. Business ethics and respect for moral and ethical principles are one of the key concepts of modern business.

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AUDITOR'S GOING CONCERN ASSESSMENT IN THE REPUBLIC OF CROATIA

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ABSTRACT

Going concern (GC) is a basic assumption of accounting theory and practice. In the Republic of Croatia, the application for the GC assumption is within the framework of Croatian Financial Reporting Standards and International Financial Reporting Standards. In accordance with accounting standards, the applicability of the GC assumption in financial statements must be assessed by the company management, whereas, based on International Auditing Standard 570 (Revised), the auditor has to assess the truth and the objectivity of the management's evaluation. In scientific research GC reporting is considered to be a direct measure of audit quality and usually is defined as a likelihood of the auditor to express doubts about GC to financially distressed companies. This research provides a comprehensive overview of the published scientific and professional papers in which the audit quality is considered. Additionally, a primary research has been conducted on a sample of 102 certified auditors in the Republic of Croatia with the aim of examining the experience of auditors assessing GC and the financial and non-financial factors they depended on during the process. The results of the research carried out show that the auditors who have more than 10 years of work experience engage in assessing GC. Most respondents agreed that the assessment calls for a high level of the auditor's competence and that they are aware of potential consequences of the wrong decision. Regarding financial factors, they rely upon when assessing GC, they rated debt ratio, current ratio and the share of working capital in total assets as the top three factors for this assessment. Non-financial factors are overall considered less important. They only stressed the factor of bank account blockade. The results of this research have the potential to help auditors and management focus on the most relevant factors in a GC assessment.

Keywords: *audit quality, auditing reporting, external audit, going concern (GC) assessment*

1. INTRODUCTION

An entity or organization is considered going concern (GC) if it will continue its operations into the foreseeable future at least, or in perpetuity. GC implies that the entity is not at risk of bankruptcy or even significantly reducing the scale of its operations, whether voluntary or involuntary. Although the theoretical concept of GC is relatively easy to understand, it is often problematic in practice to determine whether the entity is GC. In accordance with International Accounting Standards 1 – Presentation of Financial Statements (IAS 1), in preparing financial statements for each annual reporting period, managements must evaluate whether there are conditions and events (e.g. COVID-19 crisis) that raise substantial doubt about an entity's ability to continue as a GC within one year after the date the financial statements are issued. Managements should consider a wide range of features, such as current and expected profitability, debt repayment schedules and potential sources of replacement financing. When the GC basis of accounting is used, assets and liabilities are recorded on the basis that the entity will be able to realize its assets and discharge its liabilities in the normal course of business. If management concludes that the entity may be liquidated, the GC assumption would not be appropriate and the financial statements may have to be prepared on another basis, such as a liquidation basis. If there is material uncertainty about the entity's ability to continue as a GC, the entity should include GC disclosure in the notes to its financial statements. In accordance with accounting standards, the applicability of the GC assumption in financial statements must

be assessed by the company management, whereas, based on International Auditing Standard 570 (Revised), the auditor has to assess the truth and the objectivity of the management's evaluation. Given the increased likelihood of material uncertainties and the possibility that some accounts will be prepared on a basis other than GC, auditors are likely to view GC as a significant risk area. Auditors will need to ensure they obtain sufficient, appropriate audit evidence when testing the management's assumptions and forecasts. This paper discusses audit evidence in the periods of uncertainty. For this purpose, a primary research was conducted in the Republic of Croatia on a sample of 102 certified auditors with the aim of examining the experience, competence and independence of auditors in assessing GC and the financial and non-financial factors they rely on during this process.

2. LITERATURE REVIEW

2.1. The role of external auditors in the going concern assessment

Auditors have the responsibility to identify and assess the overall risk of material misstatements of the entity's financial statements. This also includes any chances of errors, frauds, or incorrect declaration by the entities. Furthermore, the auditor is also responsible to assess if there is a material uncertainty about the company's ability to continue as a GC. The auditor's responsibility regarding the GC is a two-stage process. "*First, the auditor has to obtain sufficient appropriate audit evidence to be able to conclude if the management's use of the GC basis of accounting is even appropriate for a specific company. Second, if the assumption is appropriate, the auditor still has to investigate if there are material uncertainties about the entity's ability to continue as a GC"* (ISA 570 (revised), Para. 6). The process of financial statement audit incorporates certain inherent limitations which means even when the auditor has properly planned the audit and performed it in accordance with relevant auditing standards, there is the risk of not detecting a material misstatement. "*The auditor is not expected to, and cannot, reduce audit risk to zero and cannot therefore obtain absolute assurance that the financial statements are free from material misstatement due to fraud or error*." (ISA 200, Para. A25). Regarding the GC reporting, the potential inherent limitations of the audit process are even more evident when future events and conditions, that may cause problems for the client, are in question. "*Accordingly, the absence of any reference to a material uncertainty about the entity's ability to continue as a GC in an auditor's report cannot be viewed as a guarantee as to the entity's ability to continue as a GC*" (ISA 570 (revised), Para. 7). If the auditor identifies factors that may cast doubt about GC assumption, he or she should determine if these factors constitute a material uncertainty (ISA 570 (revised), Para. 16). The term material uncertainty refers to *"events that, based on auditor's judgment and due to their potential impact and the likelihood of occurrence, have to be properly disclosed in order to prevent financial statements from being misleading"* (ISA 570 (revised), Para. 16). In doing so, the auditor should cover the same period that the management used in his or her assessment. ISA 570 (Revised) identifies a series of factors that, individually or collectively, may cast significant doubt on the entity's ability to continue as a GC. The standard distinguishes between (ISA 570, para. A.3) financial factors, operating factors and other factors (Table 1).

Table following on the next page

Table 1: Factors that may cast doubt about GC assumption

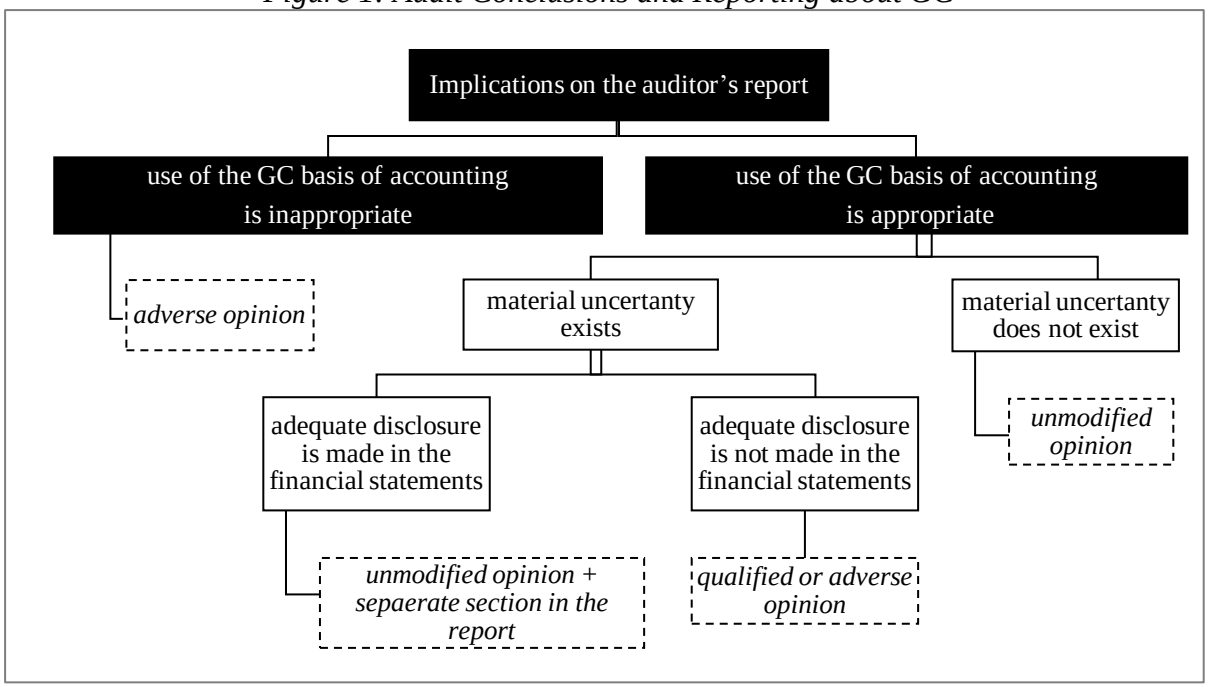
Financial factors	Operating factors	Other factors
• net liability or net current liability position, • adverse key financial ratios, • substantial operating losses or significant deterioration in the value of assets used to generate cash flows, • areas of discontinuance of dividends, • inability to pay creditors on due dates, • inability to obtain financing for essential new product development.	• management intentions to liquidate the entity or to cease operations, • loss of key management without replacement, • loss of major market, key customer(s), franchise, license, or principal supplier(s), • labor difficulties, • shortage of important supplies, • emergence of highly successful competitor.	• non-compliance with capital or other statutory requirements, • pending legal or regulatory proceeding against the entity that may, if successful, result in claims that the entity is unlikely to be able to satisfy, • changes in law or regulation expected to adversely affect the entity, • uninsured catastrophes when they occur.

Source: ISA 570 (revised) Para. A2

When the auditor identifies signs that cast doubt on the entity's ability to continue as a GC, ISA 570 requires that "*additional audit procedures be performed, including an evaluation of management's plans for future actions in relation to its GC assessment, the extent to which the outcome of these plans is likely to improve the situation, and whether these plans are feasible in the circumstances"* (ISA 570 (revised), para. 16). Where the company has prepared a cash flow forecast, the auditor must evaluate the reliability of the underlying data. The crucial element in forming a correct opinion about whether the GC assumption applies to a company's financial statements is thus the credibility of the plans management has drawn up to keep the company in business. The effect of GC audit decision on the auditor's report depends on the appropriateness of the GC assumption for the company's financial statements. For example, if the management intends to liquidate the company, then its financial statements should not be presented on a GC basis. If they still are, the auditor should express an adverse opinion. However, if the management used a liquidation basis and the auditor concludes that financial statements assembled on this basis give a true and fair view of a company's position and financial performance, the auditor's opinion will be unmodified. On the other hand, if the GC basis of accounting is appropriate and there are no material uncertainties about the future events, the auditor gives a clean or unmodified opinion. The types of the auditor's opinion depending on the GC issues that have been identified during the audit are represented in Figure 1.

Figure following on the next page

Figure 1: Audit Conclusions and Reporting about GC



Source: Sever Mališ & Brozović (2018)

2.2. Audit quality and going concern assessment

GC assessment is a rich area of research. The scientific and professional community has been dealing with this topic for a long time, but still with limited scope. Especially in the field of auditing, a number of studies have been conducted in which the quality of the auditors is associated with the accuracy of their GC assessments. For example, previous studies show that there are two types of misclassifications with respect to GC assessment (Geiger & Rama, 2006; Geiger & Blay, 2011; Nogler & Young, 2012; Carson et al., 2013; Yeh et al., 2014, Björkstrand & Nordholm, 2014). A type I error occurs when a company receives a GC modified report but subsequently remains viable and does not fail. The first scenario is that after receiving such an auditor's report, the client's financial situation fails rapidly, due to the termination of cooperation of their business partners, and they are therefore forced to file for bankruptcy (Mutchler, 1983, 1997; Pryor, 1996; Vanstraelen, 2003). The second scenario is that the client, after receiving such an auditor's report, will change the auditor (Vanstraelen, 2003). A type II error occurs when a company that enters bankruptcy did not receive a GC modified report (Altman and McGough, 1974). The resulting accounting and auditing scandals have stimulated the interest of the scientific community in investigating type 2 error, especially in the part of examining the predictive ability of audit reports. In the literature, type 2 auditor error investigations can be divided into three subtypes: 1. Studies to determine whether the presence of the auditor's assessment that the firm will not continue as a GC provides incremental predictive power when viewed as an independent variable in a multivariate bankruptcy prediction model. (Citroen & Taffler, 2001; Raghunandan & Subrananyam, 2003; Martens et al., 2008); 2. Studies comparing the accuracy of bankruptcy predictions between prognostic statistical models and the auditor's GC assessment (Altman & McGough, 1974; Chen & Church, 1992; Raghunandan & Subrananyam, 2003; Caserio et al., 2014) ; 3. Studies examining whether there is a correlation between the presence of the auditor's GC assessment and going bankrupt (Guiral et al., 2011; Feldmann & Read, 2013; Myers et al., 2014). Likewise, the above explained two scenarios of type I error, in the case of a type II error (when a client files for bankruptcy without a prior going-concern modified opinion) the auditor is more likely to face litigation-related costs and suffer a loss of reputation (Geiger & Rama, 2006).

According to above explained scenarios, it can be concluded that both types of errors create costs for auditors, clients and others. Investors rely on the auditor's reports, so it is important that the auditors base their GC assessments on complete and reliable evidence. Mutchler (1985) describes the GC decision as a two-stage process: the first stage is the identification of a company with a potential GC problem while the second stage is to decide whether a GC opinion is appropriate. Both stages are very closely related to the issues of audit quality. Identifying a client as a potential receiver of a GC opinion will depend on the client's financial health and on the level of the auditor competence needed to detect it, while deciding to disclose the GC uncertainty is a clear question of independence. Finally, it can be concluded that the definition of these two stages supports better understanding of the context in which the auditor's opinion is formulated, as well as the separation of the audit evidence evaluation from the actual decision made by the auditor. The auditor's independence and competence are the topic of this research.

3. RESEARCH METHOD AND DATA ANALYSIS

Following the methodology of a previous research conducted in the Republic of Croatia (Zenzerović 2007), which found that auditors base their GC assessment largely on financial ratios, this study further investigates usefulness of other factors for this assessment. Additionally, similar research has recently been conducted in Italy (Bava & Gromis di Trana, 2019). The aims of this study were to identify the most important factors used to assess whether an entity may not be able to continue as a GC. The factors are those pursuant to auditing standard ISA 570. They have found that financial factors are still mostly used in the auditors' GC assessments. With the aim to examine the current situation in GC assessment, from the point of view of certificated auditors in the Republic of Croatia, this study considers factors which are useful for GC assessment. The survey was conducted on the basis of a questionnaire, during the Annual Conference of Certified Auditors organized by the Croatian Audit Chamber. Date of survey was 28 November 2016. The questionnaires were completed by 102 auditors, which represent approximately 20% of the total population in the Republic of Croatia, and were considered to be relevant for this type of research. The questionnaire consists of two sections. The first section is intended to collect data about the auditor's experience, independence and competence in GC assessment. In this part of the questionnaire, respondents were asked personal questions about their experiences with the GC assessment. To test the auditor's competence and independence in GC assessment, certain statements are given. For each statement the auditors should have picked the level of agreement with that statement, using the Likert scale. The second section of the questionnaire is intended to identify financial and non-financial factors in the auditor's GC assessment. The two tables offer selected factors that the auditors should have ranked depending on how important these factors are in their GC assessment. The factors presented to the auditors were identified during empirical research of audit reports of unstable entities with GC problems in the Republic of Croatia. Also, these factors were selected based on the analysis of previous relevant research (Mutchler, 1983; Chen & Church, 1992; Lenard et al., 1995; Zenzerović, 2008; Žager et al., 2008; Krishnan & Sengupta, 2011; Caserio et al., 2014; Sever Mališ & Keglević Kozjak, 2016).

3.1. Evaluation of the auditor's experience, competence and independence in the going concern assessment

A summary of collected data on work experience, type of company to which the respondent belongs and experience that he/she has with the GC assessment is enclosed in Table 2.

Table following on the next page

Table 2: Information about the work experience of the certified auditors from the sample

Data about respondents experience	Absolute number of received responses	Relative number of received responses
Time spent on the position of certified auditor		
less than 5 years	8	8%
5 – 10 years	24	24%
11 – 15 years	31	30%
more than 15 years	38	37%
not responded	1	1%
Total number of respondents	102	100%
Type of auditor's company		
the Big Four	9	9%
audit company (more than 5 certified auditors)	21	21%
audit company (less than 5 certified auditors)	60	59%
only one certified auditor	8	8%
not responded	4	3%
Total number of respondents	102	100%
Auditor's experience with going concern assessment		
less than 5 years	12	12%
5 – 10 years	33	32%
11 – 15 years	25	25%
more than 15 years	28	27%
not responded	4	4%
Total number of respondents	102	100%

Source: Author

As Table 2 shows, 102 auditors participated in the survey. The majority of the auditors from the observed sample (68% of them) spent more than 10 years as certified auditors. Data on the type of company to which the respondent belongs show that 59% of auditors work in smaller audit companies. In GC assessment, a total of 52% of auditors have more than 10 years of experience. By observing data in Table 2 it can be noticed that 68% of total respondents have spent more than 10 years as certified auditors, however, observing this same period, 52% of them have experience with the GC assessment. It follows that the respondents in the initial years of work as auditors do not perform GC assessment. Based on the above, it can be concluded that the GC assessment in the Republic of Croatia is most often made by auditors with more experience. In the following part of the questionnaire, respondents were offered certain statements related to their procedures for GC assessment. Figure 2 shows a graphic illustration of the collected auditors' statements.

Figure following on the next page

Figure 2: Graphic illustration of the collected auditors' statements

Source: Author

Figure 2 shows that most of the auditors agree or strongly agree with the proposed statements. The possible reason for this is that the selected statements in this research are realistically set.

According to Figure 2, it can be concluded:

- 74% of the respondents perform the GC assessment in accordance with International Auditing Standard 570 (answers 4 and 5)
- 39% of the respondents stated that they rely more on their own opinion when performing GC assessment rather than on the given regulatory framework (answers 4 and 5)
- 92% of the respondents agree with the statement that the GC assessment is an important part of the audit and requires a high level of competence from the auditor (answers 4 and 5)
- 78% of the respondents base the GC assessment on the analysis of financial statements and on the financial ratios (answers 4 and 5)
- 51% of the respondents do not use advanced mathematical and statistical techniques when performing GC assessment (answers 1 and 2)
- 70% of the respondents are aware of the potential consequences that may arise from their wrong decisions about GC reporting (answers 4 and 5)
- 70% of the respondents consider that there is an increased risk of issuing an inappropriate audit opinion to financially unstable companies (answers 4 and 5)
- 54% of the respondents consider that International Auditing Standard 570 (Revised) does not provide precise instructions for GC assessment of unstable companies in the Republic of Croatia (answers 4 and 5)

Table 3 presents a systematized review of collected data on potential consequences of type I and type II audit error.

Table 3: Summary of potential consequences for the auditors' misclassifications with respect to going concern assessment

	No. answers	%
Possible consequences of the audit error type I		
a) The potential loss of clients	7	7%
b) Adverse market reactions for the clients	14	14%
c) Both scenarios are possible (a and b)	62	61%
d) No consequences	14	14%
Possible consequences of the audit error type II		
a) Potential litigation	3	3%
b) Possibility of losing reputation	21	21%
c) Both scenarios are possible (a and b)	66	65%
d) No consequences	7	7%

Source: Author

According to Table 3 the majority of the respondents (61%) agree with the statement that in the situation of a type I error, adverse market reactions may occur for the clients and they may lose engagement with the clients. In the situation of a type II error, 65% of the respondents indicated that the potential consequences could be litigation and possible loss of reputation.

3.2. Analysis and identification of financial and non-financial factors in the auditor's going concern assessment

In order to identify which are the most relevant financial factors for GC assessment in unstable entities according to auditors, in Table 4 are presented the results of the collected auditors' responses. In the table, rank 1 represents the most relevant factor for the auditors, and as the rank increases, the relevance for the GC assessment gradually decreases.

Given that the survey offered eight financial factors, which proved to be relevant by previous research, auditors were asked to choose five factors and rank them in order of importance for their GC assessment. An overview of the auditors' statements is provided in Table 4.

Table 4: The auditors' opinions on the relevance of financial factors to the GC assessment

FINANCIAL FACTORS	RANK					TOTAL
	1	2	3	4	5	
Current assets / current liabilities	33	39	13	4	3	92
	32%	38%	13%	4%	3%	90%
Working capital / total assets	13	19	35	12	7	86
	13%	19%	34%	12%	7%	85%
Total liabilities / total assets	43	23	10	9	1	86
	42%	23%	10%	9%	1%	85%
Retained earnings / total assets	-	3	7	12	11	33
	-	3%	7%	12%	11%	33%
Cash flow from operating activities / total liabilities	11	5	22	22	20	80
	11%	5%	22%	22%	20%	80%
EBIT / total assets	4	2	6	9	10	31
	4%	2%	6%	9%	10%	31%
Profit after tax / total assets	2	-	5	11	20	38
	2%	-	5%	11%	20%	38%
Total revenue / total expenses	4	5	7	11	15	42
	4%	5%	7%	11%	15%	42%

Source: Author

Table 4 shows the ranked responses distribution expressed in absolute and relative values. The auditors' responses in which the auditors rank financial factors above rank 5 or did not answer are excluded from further analysis. Due to that, the totals for each factor cannot be 100%. Based on Table 4, it can be noticed that the auditors mostly declared the first three proposed financial factors. Also, by looking at Table 4 it can be seen that, for example, the factors retained earnings / total assets and profit after tax / total assets miss one rank each. The next part of the research, through a questionnaire, refers to the identification of non-financial factors in the GC assessment. Analogously to financial factors, the auditors ranked five non-financial factors that, in their opinion, are most influential on creating doubts regarding GC. Their statements are listed in Table 5.

Table following on the next page

Table 5: The auditors' opinions on the relevance of non-financial factors to the GC assessment

NON-FINANCIAL FACTORS	RANK 1	2	3	4	5	TOTAL
Inability to pay creditors at maturity	15	17	13	21	19	85
	15%	17%	13%	21%	19%	85%
Inability to collect due receivables	14	13	16	16	10	69
	14%	13%	16%	16%	10%	69%
Inability to obtain funding	14	10	18	22	11	75
	14%	10%	18%	22%	11%	75%
Blockade of transaction account	35	14	15	7	7	78
	35%	14%	15%	7%	7%	78%
Pre-bankruptcy proceedings	10	19	18	6	8	61
	10%	19%	18%	6%	8%	61%
Loss of important market, key customer	14	17	13	11	12	67
	14%	17%	13%	11%	12%	67%
Legal proceedings against the subject	8	8	4	5	17	42
	8%	8%	4%	5%	17%	42%
Changes in regulation that will adversely affect the entity	4	3	1	1	4	13
	4%	3%	1%	1%	4%	13%

Based on Table 5, it can be seen that the respondents most often opted for the following non-financial factors: inability to pay creditors at maturity (85%), inability to obtain funds (75%), and blockade of transaction account (78%). Only 13% of respondents consider changes in regulation that is expected to adversely affect the entity as a factor of relevance for GC assessment.

4. CONCLUSION

In accordance with accounting standards, the applicability of the GC assumption in financial statements must be assessed by the company management, whereas, based on International Auditing Standard 570 (Revised), the auditor has to assess the truth and the objectivity of the management's evaluation. Although the main responsibility of external auditors is to report on the true and fair presentation of financial statements, this responsibility to some extent also includes reporting on GC issues. Since many users of audited financial statements perceive non-reporting on GC uncertainties as audit failure, in the literature the accuracy of the GC opinions is often used as a measure of audit quality. Following the methodology of Zenzerović (2007) and Bava & Gromis di Trana (2019), this study further investigates the usefulness of financial and non-financial factors for GC assessment. The study was conducted during the Annual Conference of Certified Auditors organized by the Croatian Audit Chamber and 102 auditors participated in this research (approximately 20% of the total population of certificated auditors in the Republic of Croatia in the year 2016). The questionnaire consisted of two sections. The first section was intended to collect data about the auditor's experience, independence and competence in GC assessment, while the second section of the questionnaire was used to identify financial and non-financial factors in the auditor's GC assessment. The results of the research carried out show that the auditors who have more than 10 years of work experience engage in assessing GC. Most respondents agreed that the assessment calls for a high level of the auditor's competence, and that they are aware of the potential consequences of the wrong decision. Regarding financial factors they rely upon when assessing GC, they rated debt ratio (total liabilities / total assets), current ratio (current assets / current liabilities) and the share of working capital in total assets as the top three factors for this assessment. Non-financial factors

are overall considered less important. They only stressed the factor of bank account blockade. The main aim of this research was to identify, from the point of view of Croatian auditors, which specific financial and non-financial factors were considered to be relevant in the GC assessment. Although the auditors stressed which factors were fundamental for their GC assessment, this study does not claim that these are the only factors which signal GC problems. The assessment of the organization as a GC is complex and such an assessment must simultaneously consider many types of factors: financial, operating, and others. Finally, the findings of this research contribute to expanding the literature by offering an insight into Croatian auditors' viewpoints. In addition, the results have the potential to help auditors and management focus on the most relevant factors in a GC assessment.

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MARITIME CONTAINER TERMINAL SERVICE QUALITY – METHODOLOGICAL ISSUES

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ABSTRACT

Modern economy is an extremely complex structure of different links between globally located participants across the supply chain. In the last decade, the global containerized trade has noted growth of approximately 55,5 per cent, with an average pace of growth of about 5 per cent yearly. The role of maritime container terminals, as an integrator and facilitator of global trade, in the global supply chains is undisputed. The role of services provided by maritime container terminals have grown in importance. Each type of terminals' customer perceive the quality of received service subjectively although they are using similar criteria of evaluation. Even though, in the modern economy service quality is an essential feature of achieving competitive advantages, the literature does not cover the problem of maritime container terminal service quality with respect to different stakeholders. Therefore the purpose of this paper is, based on literature review concerning research of maritime container terminals service quality, to provide more suitable methodology for evaluating terminal's service quality.
Keywords: *AHP, DEMATEL, maritime container terminal, service quality, service quality evaluation method*

1. INTRODUCTION

The supply chains, which are the main part of the global trade, are very complex network-like structures with different links between various participants (Pryke et al., 2009). Within these chains an essential role is played by maritime transport (UNCTAD, 2018). Containerization had great impact on the global trade and nowadays most of the high-value goods are transported in containers, therefore the significance of maritime container transport in the maritime trade is undisputed (UNCTAD, 2018; WTO, 2018). The maritime container terminals can be perceived as an integrator and facilitator of maritime transportation. In this transshipment point meet various stakeholders with different business models, needs and impact on the terminal. The attractiveness and competitiveness of the terminal is dependent on many elements, such as e.g.: location, hinterland connections, quality of infrastructure, provided services etc.(Charlampowicz & Mańkowski, 2020). Most of above mentioned features are created, developed and managed outside of the terminal and the terminal operator has little or none impact on developing this aspects. One of few features, which can be managed and developed by the terminal are provided services. In recent years, the role of services provided by the terminal has grown in importance. Various services are offered to different customers, mainly to shippers, shipping lines and carriers. Each type of customer has different needs and impact on the terminal. The received service is evaluated subjectively. During the evaluation few factors are essential, such as: quality, cost and time. It can be said that all above mentioned criteria are connected to each other. The lower quality of service can be justified if the cost is proportionally low, similar situation is with time aspect related to the cost or quality. Evaluation of cost, or time, is a relatively simple matter due to quantitative nature of data, contrary to the quality. Even though, the relation between quality and cost and/or time is logical, there is a need to verify what is the relation between various features of quality of the service. This information could be useful for terminal operator to have more knowledge concerning future development of services dedicated for different stakeholders. The literature does not cover the problem of service quality evaluation for various stakeholders, especially in the matter of relation between

different quality features. Therefore the purpose of this paper is to, based on literature review, develop more suitable methodology for maritime container terminals service quality evaluation for different stakeholders, which is the first step to better know the impact and relation between quality features and terminal competitiveness. Paper is structured as follows:

- Section 2 presents the brief characteristics of the maritime container market
- Section 3 includes the maritime container terminals' management and ownership structure
- Section 4 contains review of service quality evaluation methodology
- Section 5 provides current state-of-the-art in the field of maritime container terminals service quality evaluation
- Section 6 presents final conclusions

2. BRIEF CHARACTERISTIC OF MARITIME CONTAINER SHIPPING MARKET AND MARITIME CONTAINTER TERMINALS

Nowadays economy is a highly complex structure with various links between different stakeholders. In this network transport, especially maritime transport, has undisputed role (UNCTAD, 2019). In 2018 maritime trade volumes has grown by 2,7% yearly, with volumes of 11 billion tons. However in 2020 the growth pace might slow down, mostly because of the heightened uncertainty, such as: environmental concerns, trade tensions, shifts in globalization patterns and pandemic. Nevertheless in 2018 the global container port traffic has noted growth of 4,7%, with comparison to the 6,7% in 2017 (UNCTAD, 2018, 2019). Worldwide, in the container terminals, more than 793 million of TEU's were handled. The majority of the container traffic was in Asian ports (64%), European terminals had 16% of the market share. Although the number of deployed vessels has dropped yearly and the tonnage on order slightly decreased, due to the fact of placing higher orders for container ships in recent years and introducing mega container vessels, supply side of the market is characterised by an oversupply (*MDS Transmodal Container Shipping Bulletin November 2017*, 2017; Charlampowicz, 2018c; UNCTAD, 2019). Containerization had great impact on the global economy (Bernhofen et al., 2016) enabling to accelerate globalization and developing new markets. In this new situation new participants could join and develop this market. The opportunity to gain and strengthen market position was seized by the shipping lines. This was expressed in developing specialized container vessels or specialized terminals: container terminals. Shipping companies adjusted their activity and became the beneficiary of above mentioned market changes (Charlampowicz, 2018b). In order to further increase their market share, enterprises started to establish strategic alliances, that led to risk sharing, knowledge sharing and increased efficiency of the provided services (Charlampowicz, 2017; Rau & Spinler, 2017). These circumstances led to the more concentrated market, where few operators will dictate the conditions for other participants (Hirata, 2017; Charlampowicz, 2018a, 2018b). The volatile market conditions leads to cooperation among participants of the alliances (Balci et al., 2018). However participants are competing with each other (Lee & Song, 2017). Despite the importance and role of the strategic alliances, the maritime container shipping markets remains globally unconcentrated, however there is a trend of increasing concentration (Charlampowicz, 2018a). The market concentration of the supply side, with a respect to membership in the strategic alliance and operated trade route (Atlantic Ocean or Pacific Ocean) presents as follows: Pacific trade lane is still competitive and Atlantic trade route is moderately concentrated (Charlampowicz, 2018b). Under these circumstances operating in this market has become difficult for entities that are not a part of shipping alliance. Maritime container terminals are crucial part of the multimodal transport systems and international supply chains. Terminals engage in various activities: loading/discharging containers onto/from the vessel, providing value added services and acting as a warehouse and distribution centres. More value is added through further integrating cargo into value chains (Charlampowicz & Mańkowski, 2019).

The role of terminals in the smooth information and product flow is undeniable. Any failure and disruption in the provided services influences on the disturbed and agitated flow of the cargo to the next link of the supply chain (Yeo et al., 2015). At the maritime terminal there are two main types of risk, which influence on the smoothness of cargo flow. One is connected with maritime transportation and the other is connected with seaport operations – both have few aspects in common, however they are also unique enough to distinct from each other (Cho et al., 2018). Risk of any failure in the terminal operations can be identified (Pallis, 2017), furthermore the impact of the disruptions on the terminal and supply chain efficiency can be described (Charlampowicz, 2019c). The appearance of above mentioned disruptions can result in the decrease of the stakeholders satisfaction which influences negatively to the attractiveness and competitiveness of the terminal. Impact of the maritime container terminal on the overall supply chain efficiency is undeniable. Therefore there is a need of implementation of the proper management system, which can be useful in improving terminal activities at strategical, tactical and operational level (Charlampowicz, 2019a; Charlampowicz & Mańkowski, 2020). Moreover it is essential to have a feedback from terminals customer in terms of service quality. There are many factors of terminals' competitiveness (Charlampowicz, 2019b; Kaliszewski et al., 2020) such as e.g.: location of the terminal, nautical infrastructure expressed in the berth depth, the ability of terminal to expand or service quality. It is worth noted that some of these factors can be developed by the terminal, like service quality, and others, like nautical access, cannot be change directly by the terminal authorities. The quality of the provided services is one of the major factors that can impact terminal competitiveness and can be developed directly by the terminal. The literature does not cover the problem of service quality evaluation for various stakeholders.

3. MARITIME CONTAINER TERMINAL SERVICE QUALITY EVALUATION METHODOLOGY

3.1. Literature review

Delivering superior quality has always been a prerequisite of successful business. Obviously there is a difference between capturing quality in different business segments – in the production industry, quality can be measured by the number of defects (Deming, 1982) or as a compatibility with the customer requirements (Juran et al., 1999). In the literature, the universal approach to the definition of quality in various industries has never been occurred, even though the interested in this area has existed for quite some time. The concept of service quality can be perceived subjectively, therefore in the literature large emphasis has been taken to the issue of service quality in various industries e.g.: (Doorn & Verhoef, 2008). The most common tool for measure service quality is SERVQUAL tool (Parasuraman et al., 1988) which consists of five dimensions: tangibles, reliability, responsiveness, assurance and empathy. Tangibles includes physical facilities and equipment. Reliability is understood as an ability to perform the promised service. Responsiveness is a willingness to help customers and provide prompt service. Assurance is a knowledge of employees and their ability to inspire trust and confidence. Empathy is defined as an individualized attention the firm provides its customers (Parasuraman et al., 1988). This tool refers to the difference between customer expectations and product perception (Stoma, 2012). The service quality, measured by the SERVQUAL, involved perceived quality, which is understood as a customer judgment about overall excellence of the entity. On the other hand there is an objective quality, which is a form of attitude related to the customer satisfaction (Parasuraman et al., 1988). Basic rule in the SERVQUAL method is to define the service quality as a difference between expected service quality and received service. This assumption is valid due to the fact that customer imagine the potential service quality before receiving one. The SERVQUAL model has been widely pervasive in the service quality area in various industries, however some researchers criticized this tool, and others presents

different models and tools for measuring the service quality e.g. (Ladhari, 2008). Many researchers who discuss about the suitability of SERVQUAL to any industry, suggested that industry-specific requirements need to be adapted to provide more accurate measurement. In the most recent literature the SERVQUAL model has been pointed out as an insufficient tool for measuring service quality in every industry. In specific contexts, such as in B2B services, supply chains and others, SERVQUAL model does not fit the bill (Benazić & Došen, 2012).

3.2. Methods of service quality evaluation in the maritime industry

Despite numerous studies on service quality in the various industries, little space has been devoted to the maritime industry in general and container terminal in particular. Rather than focusing on the service quality measurement, most of research concerning maritime business focused on the issues of carrier and port selection. Among a few relevant studies in this respect, some factors contributing to overall port quality has been identified as: efficiency, timeliness and security (Lopez & Poole, 1998). In the recent literature (Hemalatha et al., 2018) used SERVQUAL tool for service quality evaluation of container terminal operators. The weight of each criteria was determined based on AHM method presented in the standard AHP method. To evaluate service quality and composite rank the TOPSIS and GRP methods was used. They examined 25 customers of 12 terminals. Although SERVQUAL is not suitable method for properly measuring service quality in the B2B services (Benazić & Došen, 2012). The ROMPIS method developed by (Thai, 2008) was dedicated to measure the quality of service in the maritime industry in general. This tool is a six-dimensional construct consisting items related to the resource, outcomes, management, process, and image and social responsibility. Each dimension is measured by a number of explaining factors. In this research this method was tested only with service providers. (Yeo, Thai, & Roh, 2015) utilized ROMPIS model to measure the quality of port service. The results of their analysis indicates that the management and image and social responsibility are the only dimensions that affect positively on the customer satisfaction. The main limitation of ROMPIS method is lack of differentiation of importance of each criteria and factors for each group of stakeholders. Although all service receivers are eager for service quality improvement, not all will effect with the same level of change of the satisfaction. Different groups of stakeholders have various types of priorities so improving one category of service would not result in improve of the satisfaction. Moreover in the ROMPIS model there is small place devoted to the environmental issues which nowadays have higher importance. The environmental issues are considered in the image and social responsibility criteria, although the emphasis on this issue is not strong enough. Nowadays ports and terminals take special attention to the environmental issues which is expressed in environmental policy and strategy. In the literature there is a gap of knowledge concerning the different levels of importance of various criteria and sub-criteria for each stakeholder group. Possibility to assess this importance level would be helpful in more accurate research concerning terminal service quality. The knowledge regarding the importance of each criteria and accurate influence of service quality improvements for customer satisfaction would result in a possibility for terminal operators for gaining competitive advantage and more accurate investment strategy resulting in increase of terminal attractiveness. To achieve this purpose research methods suitable for service quality in the maritime container terminal need to be adapted with respect to main quality criteria for terminal service evaluation.

4. METHOD FOR SERVICE QUALITY EVALUATION OF THE MARITIME CONTAINER TERMINAL WITH RESPECT TO VARIOUS STAKEHOLDERS

Various types of customers meet in the terminal, although it is possible to distinguish the main three groups of them, namely: shipping lines, carriers, freight forwarders. Each group has different goals and slightly disparate requirements for received service and its quality.

To better know their needs and have ability to evaluate the received service, it is essential to define the features of quality. The main quality criteria for terminal service evaluation are QASRCE, which is an acronym stands for (Grzelakowski & Matczak, 2006; Klimek, 2010):

- Quickness of the service.
- Availability – offering services that the customer is able to purchase at specified time and place.
- Security – no damage to cargo and transport means.
- Reliability – certainty of the service in the specified quantity and time.
- Commonness - access to the service for each potential customer.
- Environmental issues – terminal impact on the environment.

The evaluation framework of service quality of maritime container terminal is presented in the figure 1. In order to evaluate service quality and know which type of quality criteria is important for each type of customer it is crucial to utilize proper research methods. Each customer, based on its type (shipping lines, carriers, freight forwarders) needs to evaluate importance of each of the six quality criteria. The most suitable way to configure the importance among factors influencing the quality is analytical hierarchic process (AHP) technique (Ha et al., 2019), in which importance weights guarantee the evaluation reliability between quality attributes. Respondents need to, using pairwise comparison grounded on the Saaty's nine –point scale ranging from 1 (equal) to 9 (extreme) (Saaty, 1987), respond to the question concerning importance of each of the criteria in relation to each other. Moreover respondents will be asked for evaluation of each service based on the QASRCE criteria. It is essential to define what is the correlation between the criteria – what is the influence of one criteria to the others. Therefore utilizing decision making trial and evaluation laboratory tool (DEMATEL) (Shafiee et al., 2014; Ha et al., 2017) will be helpful in finding these relations. The above mentioned research framework should result in the evaluation of the maritime container terminal services quality with respect to the importance of each criteria and correlation between each criteria. Above mentioned research process should be performed for all three types of customers: shipping lines, carriers and freight forwarders. Aftermath of this research will be an information concerning few important operational aspects connected with service itself, as well as quality criteria of the service.

Figure following on the next page

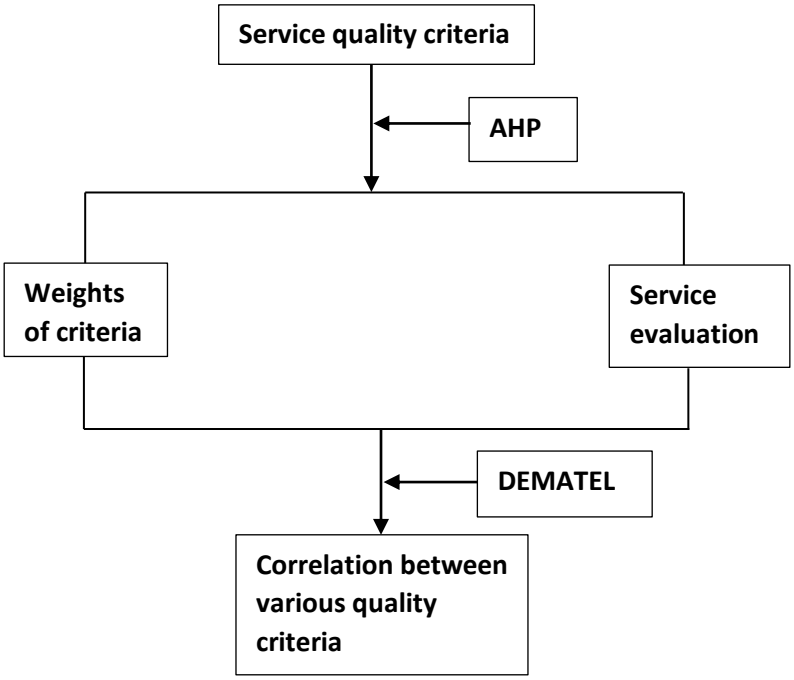

Figure 1: Evaluation framework of service quality of maritime container terminal

5. CONCLUSIONS

Service quality is one of the main features of competitiveness of the maritime container terminal. Moreover this feature can be directly developed and designed by the terminal. Therefore knowledge concerning level of provided service, their evaluation by the main customers, can be perceived as a pre-requisite of gaining the competitive advantage. In the literature there is some place devoted to the evaluation of the service quality (Yeo, 2015; Yeo et al., 2015; Hemalatha et al., 2018), although researchers use invalid methodology, which is not dedicated to the maritime industry (Hemalatha et al., 2018) or research is not dedicated to the various groups of stakeholders (Thai, 2008, 2015), which are shipping lines, carriers and freight forwarders. The purpose of this paper was, based on literature review, develop more suitable methodology for maritime container terminals service quality evaluation for different stakeholders with respect to various quality criteria, which are: quickness, availability, security, reliability, commonness and environmental issues. Performing evaluation of maritime container terminal service quality based on presented methodology could be useful in managerial, operational and research areas. Information concerning correlation between various quality criteria might be used in developing investing strategy. Distinction on different types of customer gives more information concerning needs of these customers, therefore terminals' authorities might have better data for their development strategies and answer on essential questions, such as e.g.:

- What is more important for our customers – quickness of service or reliability of the service?
- What is the relation between different quality criteria and what will happen if one of the criteria will be changed?

Above presented methods for evaluating the maritime container terminal service quality need to be implemented in business environment to verify empirically the utility of this methodology, which is the main further research direction.

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SYNTHESIS OF BASIC INDICATORS FOR PUBLIC SAFETY IN ORDER TO PREVENT AND SUPPRESS CRIME IN THE REPUBLIC OF CROATIA

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ABSTRACT

The paper presents the results of the survey of basic safety indicators and results of the work of the Ministry of Interior of the Republic of Croatia in the period from 2004 to 2019 on the basis of publicly available statistical surveys. The subject of the research was the criminal offences for which criminal proceedings are initiated ex officio, in accordance with Titles IX to XXIX of the Criminal Code of the Republic of Croatia. The study sought to determine whether there was a functional link between reported[1] and resolved[2] criminal offences from 2004 to 2019, but also is there a functional connection between the resolution coefficient of criminal offences and the year the criminal offence appears, what is the nature of this connection (linear or nonlinear) and what is the strength of this connection? The results of the research showed that there is a strong (firm) functional connection, but they also indicated the presence of autocorrelation and heteroscedasticity, indicating that evaluations of certain parameters remain unbiased, but are unreliable and inefficient. The authors conclude that such a model is not suitable for predictions, that the regression model has to be transformed and propose the use of the Box-Jenkins residual analysis method, i.e. the WLS regression method (Weighted least squares).
Keywords: *criminal offences, functional connection, regression, security indicators*

1. INTRODUCTION

The paper investigates basic safety indicators and results of the work of the Ministry of Interior of the Republic of Croatia in the period from 2004 to 2019, based on statistical surveys published on the website[3] of the Ministry of Interior[4]. These statistical surveys offer a range of diagrams, analytical reviews and calculated indicators for synthesis implementation. The aim of this paper is to contribute to the overall efforts of the Ministry of Interior to combat criminality and public support for such activities, in accordance with the report[5] that stated: "The construction of public security architecture of society is not only the work of a police organisation, it is necessary to continually initiate the creation of a social security network in which citizens can be involved through various forms of public social activity".

[1] Reported offences are all offences reported to the police or discovered by the police by their own activity
[2] Resolved criminal offences are those for which police identified the suspect in the reporting year, regardless of when the offence was reported
[3] https://mup.gov.hr/pristup-informacijama-16/statistika-228/statistika-mup-a-i-bilteni-o-sigurnosti-cestovnog-prometa/283233, reviewed: 21. 08. 2020.
[4] https://mup.gov.hr/statistics-121/121, reviewed: 21.08.2020
[5]https://sabor.hr/izvjesce-ministra-unutarnjih-poslova-o-obavljanju-policijskih-poslova-u-2018-godini-podnositelj?t=114205&tid=208435, reviewed: 21.08.2020.

This paper belongs to one of the forms of such social activity of scientists in the Republic of Croatia who work in the scientific field of security and defence sciences, and through such activities they wish to contribute to achieving a high level of public safety in the Republic of Croatia. The aim of the survey was, based on the available statistics, analytical reviews and calculated indicators of the Ministry of Interior of the Republic of Croatia, two-sided:

a) on the basis of the method of structural synthesis to discover unknown links and relations, i.e. the tendencies and directions of changes that have not yet been investigated and
b) on the basis of the method of proof to establish the significance or accuracy of such findings.

The subject of the investigation was the criminal offences for which criminal proceedings are initiated ex officio, in accordance with Titles IX to XXIX of the Criminal Code of the Republic of Croatia. The research questions were as follows:

- Is there a functional connection between reported[6] and resolved[7] criminal offences from 2004 to 2019, is this connection linear or nonlinear and what is the strength of this link?
- Is there a functional connection between the resolution coefficient of criminal offences and the year the criminal offence appears, is this connection linear or nonlinear and what is the strength (strength) of this connection?

The functional connection was determined on the basis of regression analysis, while the strength of the connection was determined using the coefficient of determination, and the proof was done on the basis of testing statistical hypotheses.

2. CORRELATION OF STATISTICAL DATA

In 2020, the Ministry of the Interior od Croatia drafted a document[8] entitled "Review of basic safety indicators of public safety in the Republic of Croatia 2010-2019" which included quality quantitative data on criminal offences for which the procedure is initiated ex officio, data on the distribution of criminality by police administrations, data on misdemeanours as well as other data extremely important for assessing the state of public safety in the Republic of Croatia. As the new Criminal Code entered into force in January 2013, statistical data from 2010 to 2012 were separately processed in relation to data for the period from 2013 to 2019. Data from the document "Review of the basic indicators of public safety in the Republic of Croatia 2009-2018", which contains data on reported and resolved criminal offences in the period 2004-2009, have been further processed. On the basis of the above data, appropriate diagram was presented in figure 1. The diagram shows that it is a two-dimensional process (X, Y) between whose variables there is a possibility of correlation (X – number of reported criminal offences; Y – number of solved criminal offences). Since these are statistical data, then the arranged pair (X, Y) can be called a two-dimensional random variable of a discrete type and there is a countable set of points in the plane: $r_{(x,y)} = \{(x_i, y_j),\ i,j = 1,2,3 \dots n)\}$ so there is also a probability function of a discrete variable: $p(x_i, y_j) = P(\{X = x_i\} \cap \{Y = y_i\}\ ;\ \sum_i \sum_j p(x_i, y_j) = 1.$

Figure following on the next page

[6] Reported crimes are all offences reported to the police or discovered by the police in their own activity.
[7] The terminated crimes are those for which police identified the suspect in the reporting year, regardless of when the crime was reported.
[8] https://mup.gov.hr/UserDocsImages/statistika/2020/Pokazatelji%20javne%20sigurnosti/Pregled%202010.-2019.%20web%20hrv.pdf, reviewed 21. 08. 2020.

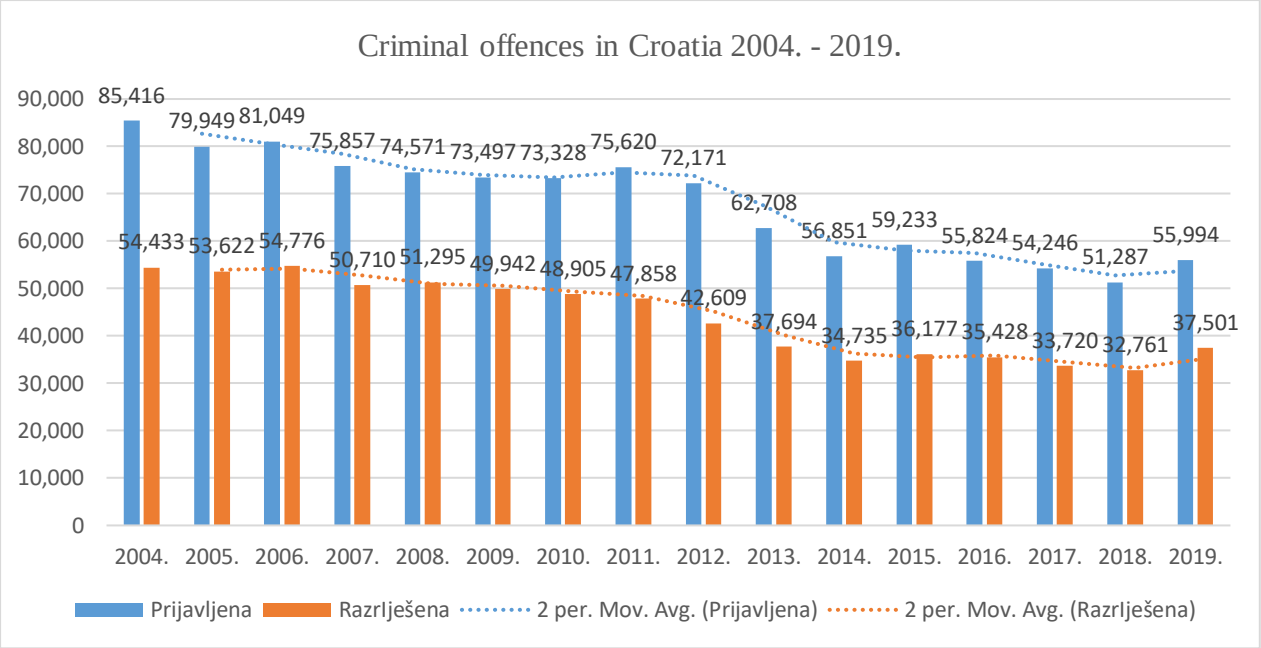

Figure 1: The trend of criminal offences before the adoption of the new Penal Code (Source: authors)

According to Udovičić, M. et al. (2007; 11), the linear variable relationship can be read from the dot diagram (Scatter diagram) and implies that points are followed and dispersed around a straight line, i.e. direction. Figure 2 shows the scatter diagram of two-dimensional variables (X, Y), based on the data shown in Figure 1.

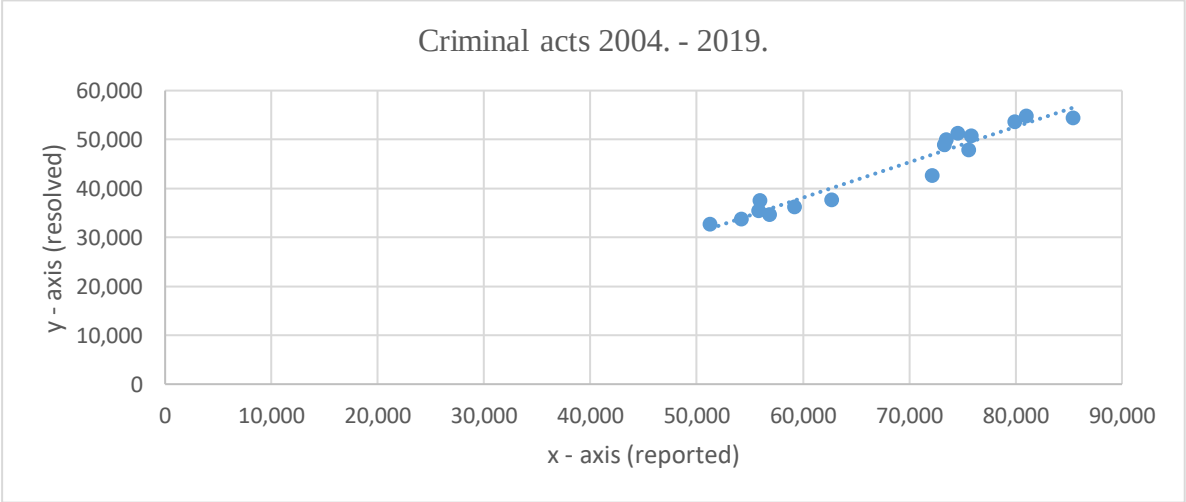

Figure 2: Scatter diagram two-dimensional variables (Source: authors)

If the dependence of characteristics X and Y is determined, the correlation coefficient of the ρ (X, Y) is a variable that measures the degree of linear dependence of the characteristics (X, Y) and is determined as follows: $\rho(X,Y) = \frac{cov(X,Y)}{\sqrt{Var(X)\cdot Var(Y)}}$ where: cov (X, Y) - covariance of characteristics X and Y Var (X) – variance of characteristics X Var (Y) - variance of characteristics Y. As it is a two-dimensional sample (Xi, Yi); i = 1,2, 3,.. n, correlation coefficient ρ (X, Y) was estimated using Pearson correlation coefficient (Rebekić A., and all.,2015: 50)

$$R = \frac{\frac{1}{n-1}\sum_{i=1}^{n}(X_i - \overline{X})(Y_i - \overline{Y})}{S_X \cdot S_Y}$$

where

$$S_X = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(X_i - \overline{X})^2} \text{ i } S_Y = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(Y_i - \overline{Y})^2}$$

that is $\bar{X} = \frac{1}{n}\sum_{i=1}^{n} X_i$; $\bar{Y} = \sum_{i=1}^{n} Y_i$

Starting from the above mentioned relations, as well as the data given in Tables 1, 2 and 3, or shown in Figure 2, the Pearson correlation coefficient R, which is: R = 0.9715, was calculated. It points to a very good to excellent correlation between variables X and Y. Since this is a positive correlation because R > 0, this means that there is a corresponding growth and decrease in the values of both groups. Simply put, if the number of reported criminal offences increases, the number of solved criminal offences will increase, and vice versa, if the number of reported criminal offences decreases, the number of resolved criminal offences will decrease.

3. STATISTICAL DATA RELIABILITY INTERVAL

Figure 3 shows the resolution coefficient for criminal offences in the period from 2004 to 2019 as a percentage of the relationship between resolved and reported criminal offences.

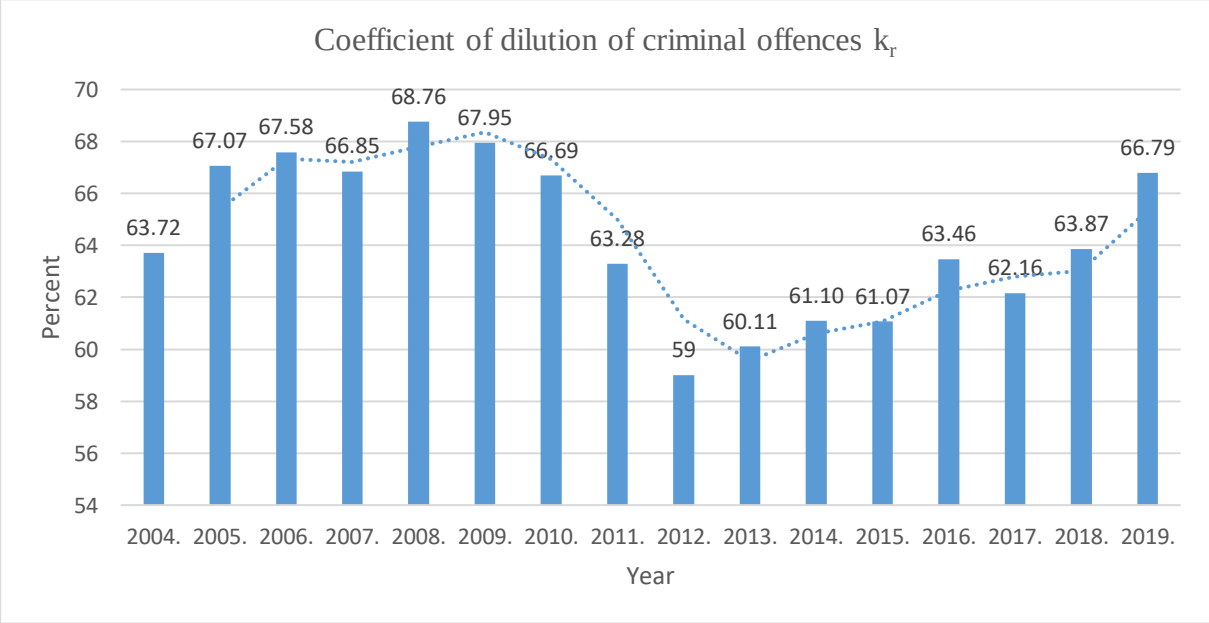

Figure 3: Coefficient of resolution of criminal offences
(Source: authors)

The average value of the resolution coefficient of the penal $\bar{k}_r$ and the estimate of the standard deviation with the $\bar{S}_{k_r}$ can be calculated based on the following relations:

$$\bar{k}_r = \frac{1}{n}\sum_{i=1}^{n} k_{r_i} \qquad \bar{S}_{k_r} = \frac{1}{n-1}\sum_{i=1}^{n}\left(k_{r_i} - \bar{k}_r\right)^2$$

Based on the data presented in Figure 3, the average value of the resolution sufficient for criminal offences is $\bar{k}_r = 64{,}34$ and the estimate of the standard deviation with $\bar{S}_{k_r} = 2{,}17$. Tables 1 and 2 show the differences in $\boldsymbol{k_r - \bar{k}_r}$, and question whether these differences are significant.

Year	2004.	2005.	2006.	2007.	2008.	2009.	2010.	2011.
k_r	63,72	67,07	67,58	66,85	68,76	67,95	66,69	63,28
$\bar{k}_r$	64,34	64,34	64,34	64,34	64,34	64,34	64,34	64,34
$k_r - \bar{k}_r$	-0,62	2,73	3,24	2,51	4,42	3,61	2,35	-1,06

Table 1: Coefficient of the resolution of criminal offences 2004-2011 (Source: authors)

Year	2012.	2013.	2014.	2015.	2016.	2017.	2018.	2019.
k_r	59	60,11	61,10	61,07	63,46	62,16	63,87	66,79
$\bar{k}_r$	64,34	64,34	64,34	64,34	64,34	64,34	64,34	64,34
$k_r - \bar{k}_r$	-5,34	-4,23	-3,24	-3,27	-0,88	-2,18	-0,47	2,45

Table 2: Coefficient of the resolution of criminal offences 2012. - 2019. (Source: authors)

Based on Pearsen's χ 2 test (Massey A., Miller J. S.,2006: 5-18) it will be verified according to which the distribution is equal to the resolution coefficient of criminal offences k_r. The assumption is that it's a normal distribution, therefore, hypotheses are valid : H0: Coefficient k_r is measured by normal distribution N (μ, σ) ; H1: Coefficient k_r is not equal to normal distribution N (μ, σ). We calculate the χ variable 2 n-1-m according to the following relationship $\chi^2_{d_f} = \sum_{i=1}^{n} \frac{\left(k_{r_i} - \bar{k}_r\right)^2}{\bar{k}_r}$ where N = 16 — number of observed years 2004-2019; m = 2 — number of parameters calculated from the sample ($\bar{k}_r$ and $\bar{S}_{k_r}$) d_f= *n -1-m* = 16-1-2= 12 number of freedom degrees. The criterion for accepting the hypothesis H0 is as follows: $P_{H_0}\left\{\chi^2_{d_f} \geq \chi^2_{d_f;\alpha}\right\} = \alpha$ Therefore: a) If $\chi^2_{d_f} \geq \chi^2_{d_f;\alpha}$ we reject hypothesis H0, b) If $\chi^2_{d_f} < \chi^2_{d_f;\alpha}$ We accept the hypothesis H0 with the threshold of significance α = 0.05. As a result of the above, the calculated value is $\chi^2_{d_f} = \chi^2_{13} = 0{,}99994$. Based on χ 2 distribution tables, the value is: $\chi^2_{d_f;\alpha} = \chi^2_{13;0,05}$ =5. As $0{,}99994 < 5{,}982$ the hypothesis H0 is accepted. Consequently, the confidence interval for mathematical expectation of μ coefficient of resolution of criminal offences can be calculated k_r when variance σ^2 is unknown. For this purpose, t-distribution will be applied as follows: $t_{n-1} = \frac{\bar{k}_r - \mu}{\bar{S}_{k_r}}\sqrt{n-1}$. The confidence interval is determined on the basis of probability $P\{|t_{n-1}| \leq t_{n-1,1-\beta}\} = \beta$ where $\beta = 1 - \alpha$ - level of trust (β = 0.95). Consequently, the confidence interval is $\left\{\bar{k}_r - t_{n-1,1-\beta} \cdot \frac{\bar{S}_{k_r}}{\sqrt{n-1}} \leq \mu \leq \bar{k}_r + t_{n-1,1-\beta} \cdot \frac{\bar{S}_{k_r}}{\sqrt{n-1}}\right\}$. Based on the t-distribution tables, the value $t_{n-1,1-\beta}$ amounts $t_{n-1,1-\beta} = t_{15;0,05} = 1{,}7531$. It's valid that $t_{n-1,1-\beta} \cdot \frac{\bar{S}_{k_r}}{\sqrt{n-1}} = 1{,}7531 \cdot \frac{2{,}17}{\sqrt{16-1}} = 0{,}982$. The following confidence interval for mathematical expectation of $\mu = k_r$ amounts: $\{64{,}34 - 0{,}982 \leq k_r \leq 64{,}34 + 0{,}982\} = \{63{,}358 \leq k_r \leq 65{,}322\}$. The confidence interval of σ^2. variance can also be calculated. The variance shows the homogeneity of a characteristic, which is why the upper limit of the interval is important in the applications $[0, \hat{\sigma}^2]$. For this purpose, the χ^2 distribution will be used: $\chi^2_{n-1} = \frac{(n-1)\cdot \bar{S}_{k_r}{}^2}{\sigma^2}$. The confidence interval shall be determined on the basis of the probability: $P\{\chi^2_{n-1} \geq \chi^2_{n-1,\beta}\} = \beta$ where $\beta = 1 - \alpha$ -level of trust (β=0,95). Consequently, the confidence interval is: $\left\{0 \leq \sigma^2 \leq \frac{(n-1)\cdot \bar{S}_{k_r}{}^2}{\chi^2_{n-1,\beta}}\right\}$.

Based on χ^2 distribution tables, the value of $\chi^2_{n-1,\beta}$ is: $\chi^2_{n-1,\beta} = \chi^2_{15;0.95} = 7{,}261$ It's valid that $\frac{(n-1)\cdot \bar{s}_{k_r}{}^2}{\chi^2_{n-1,\beta}} = \frac{(16-1)\cdot 2{,}17^2}{7{,}261} = 9{,}7278$. The following confidence interval of the σ^2 variance amounts to $\{0 \leq \sigma^2 \leq 9{,}7270\}$ that is, standard deviations σ: $\{0 \leq \sigma \leq 3{,}12\}$. The confidence interval is an objective assessment of the precision and size of a sample of a research that can be indirectly viewed as well as to the quality of the sample and research (Šimundić,A., 2008: 1-2).

4. REGRESSION OF STATISTICAL DATA

Figure 2 in Chapter 2 shows the scatter diagram of two-dimensional variables with a correlation coefficient R = 0.9715. Based on linear regression and sample (Xi, Yi), i = 1,2, 3,.. n the estimation of the direction coefficients should be determined $\hat{a}_1$ i $\hat{a}_0$. The assessment shall be determined on the basis of the following equations (Rawling O. J. and all., 1998: 3-16): $\hat{a}_1 = S_{10} \cdot \sum_{i=1}^{n} Y_i + S_{01} \cdot \sum_{i=1}^{n} X_i \cdot Y_i$; $\hat{a}_0 = S_{00} \cdot \sum_{i=1}^{n} Y_i + S_{11} \cdot \sum_{i=1}^{n} X_i \cdot Y_i$ where $S_{10} = S_{01} = -\frac{\bar{X}}{n \cdot S_X^2}$ $S_{11} = \frac{1}{n \cdot S_X^2}$, $S_{00} = \frac{\sum_{i=1}^{n} X_i^2}{n^2 \cdot S_X^2}$, $S_X = \frac{1}{n}\sum_{i=1}^{n} X_i^2 - \bar{X}^2$ $\bar{X} = \frac{1}{n}\sum_{i=1}^{n} X_i$

In order to make a reliable statistical estimation of the accuracy of the coefficients $\hat{a}_1$ and $\hat{a}_0$ it is necessary to determine the statistics for impartial estimation based on the variance analysis equation. The variance analysis equation is: ST = SP + SR where: $ST = \sum_{i=1}^{n}(Y_i - \bar{Y})^2$ – Total Suma Squares; $SP = \sum_{i=1}^{n}\left(\hat{Y}_i - \bar{Y}\right)^2$ –Estemated Suma Squares; $SR = \sum_{i=1}^{n}\left(Y_i - \hat{Y}_i\right)^2 = \sum_{i=1}^{n} e_i^2$ – (Residual Suma Squares or Sum Squares Errors, SSE). Based on the variance equation, the following statistics are determined for the estimation of linear regression: $\hat{\sigma}_{\hat{y}}^2 = \frac{SR}{n-(k+1)}$ – impartial assessment of variance or representativeness measures (where: k - degree of polynomial regression) $V_{\hat{y}} = \frac{\hat{\sigma}_{\hat{y}}}{\bar{Y}} \cdot 100\%$ - relative representativeness (coefficient of regression variation); $R^2 = \frac{SP}{ST}$ - determination of regression coefficient; $SEE(\hat{a}_i) = \hat{\sigma}_{\hat{a}_i} = \hat{\sigma}_{\hat{y}} \cdot \sqrt{S_{ii}}$ – standard error. The closer the regression coefficient to the unit, the more representative the model is, and the Chaddock significance scale is used (Chaddock, 1925; 248-303) according to which it is valid that R^2=0 is absent, for $0 < R^2 < 0{,}25$ the link is weak, for $0{,}25 \leq R^2 < 0{,}64$ the mean strength connection, for $0{,}64 \leq R^2 < 1$ the link is strong and for R^2=1 the link is complete. The linear regression of data given in Figure 2 shows the following results (Figure 4).

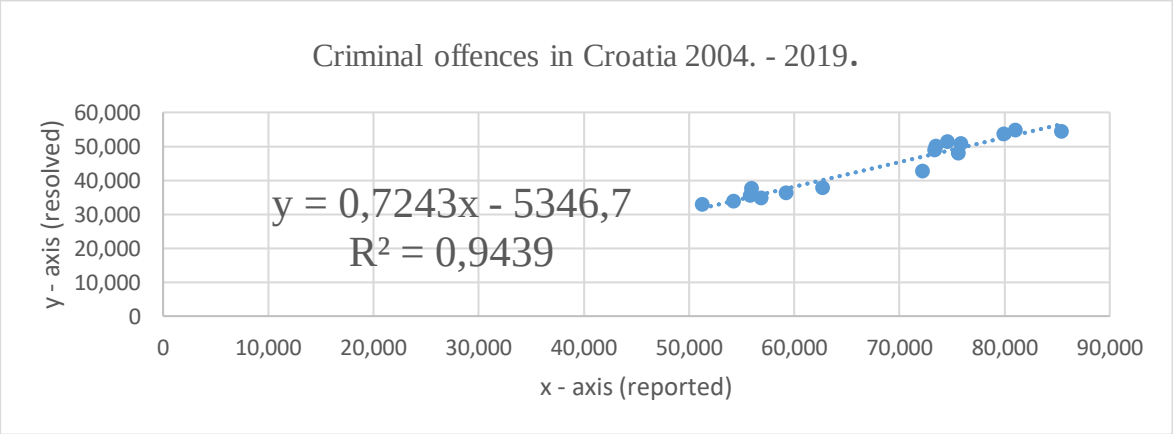

Figure 4: Linear regression results
(Source: authors)

A strong link between the number of reported criminal offences (X) and the number of resolved criminal offences (Y) is observed. The estimations of the coefficients are: $\hat{a}_1 = 0{,}7243;\ \hat{a}_0 = -5346{,}7$. The data needed to determine the parameters of the variance analysis equation are presented in the tables 3 and 4.

Godina	**2004.**	**2005.**	**2006.**	**2007.**	**2008.**	**2009.**	**2010.**	**2011.**
x	85.416	79.949	81.049	75.857	74.571	73.497	73.328	75.620
$\boldsymbol{Y}$	54.433	53.622	54.776	50.710	51.295	49.942	48.905	47.858
$\widehat{\boldsymbol{Y}}$	56.520	52.560	53.360	49.600	48.670	47.890	47760	49.420
$\boldsymbol{Y} - \widehat{\boldsymbol{Y}}$	-2.087	1.062	1.416	1.110	2.625	2.052	1.145	-1.562
$\boldsymbol{Y} - \overline{\boldsymbol{Y}}$	10.547	9.736	10.890	6.824	7.409	6.056	5.019	3.972

Table 3: Variance analysis equation parameters 2004-2011
(Source: authors)

Godina	**2012.**	**2013.**	**2014.**	**2015.**	**2016.**	**2017.**	**2018.**	**2019.**
x	72.171	62.708	56.851	59.233	55.824	54.246	51.287	55.994
$\boldsymbol{Y}$	42.609	37.694	34.735	36.177	35.428	33.720	32.761	37.501
$\widehat{\boldsymbol{Y}}$	46.930	40.070	35.830	37.560	35.090	33.940	31.800	35.170
$\boldsymbol{Y} - \widehat{\boldsymbol{Y}}$	-4.321	-2.376	-1.095	-1.383	338	-220	961	2.331
$\boldsymbol{Y} - \overline{\boldsymbol{Y}}$	-1.277	-6.192	-9.151	-7.709	-8.458	-10.166	-11.125	-6.385

Table 4: Variance analysis equation parameters 2012-2019
(Source: authors)

Following the data presented in the tables, it follows that: $ST = \sum_{i=1}^{n}(Y_i - \bar{Y})^2 = 1.026.885.267; SR = \sum_{i=1}^{n}\left(Y_i - \hat{Y}_i\right)^2 = \sum_{i=1}^{n} e_i^2 = 57.520.624; SP = ST - SR = 969.364.643$. The coefficient of determination of regression amounts: $R^2 = \frac{SP}{ST} = \frac{969.364.643}{1.026.885.267} = 0{,}94398$. That is, the correlation coefficient is: $R = \sqrt{0{,}94398} = 0{,}971$. The same corresponds to the information referred to in Chapter 2 of this paper as well as to the image data. Other parameters for the regression assessment are as follows: $\hat{\sigma}_{\hat{y}}^2 = \frac{SR}{n-(k+1)} = \frac{57.520.624}{16-(1+1)} = 4.108.616;\ \hat{\sigma}_{\hat{y}} = 2026{,}972;\ V_{\hat{y}} = \frac{\hat{\sigma}_{\hat{y}}}{\bar{Y}} \cdot 100\% = \frac{2026{,}972}{43.885{,}38} = 4{,}618\%;\ SEE(\hat{a}_1) = \hat{\sigma}_{\hat{a}_1} = \hat{\sigma}_{\hat{y}} \cdot \sqrt{S_{11}} = \frac{\hat{\sigma}_{\hat{y}}}{\sqrt{n \cdot S_X^2}} = \frac{\hat{\sigma}_{\hat{y}}}{\sqrt{n} \cdot S_x} = \frac{2026{,}972}{4 \cdot 11.091{,}74} = 0{,}0456;\quad SEE(\hat{a}_0) = \hat{\sigma}_{\hat{a}_0} = \hat{\sigma}_{\hat{y}} \cdot \sqrt{S_{00}} = \hat{\sigma}_{\hat{y}} \cdot \sqrt{\frac{\sum_{i=1}^{n} X_i^2}{n^2 \cdot S_X^2}} = \frac{\hat{\sigma}_{\hat{y}} \cdot \sqrt{\sum_{i=1}^{n} X_i^2}}{n \cdot S_x} = \frac{2026{,}972 \cdot 275.272{,}85}{16 \cdot 11.091{,}74} = 3.144$. Based on the data obtained, the following dispersion of linear dependence described in the equation is possible: $Y = \left(\hat{a}_1 \pm \hat{\sigma}_{\hat{a}_1}\right) \cdot X - \left(\hat{a}_0 \pm \hat{\sigma}_{\hat{a}_0}\right)$.The equations are as follows: Average: $Y = \hat{a}_1 \cdot X - \hat{a}_0 = 0{,}7243 \cdot X - 5346{,}7$; Upper limit: $Y = \left(\hat{a}_1 + \hat{\sigma}_{\hat{a}_1}\right) \cdot X - \left(\hat{a}_0 + \hat{\sigma}_{\hat{a}_0}\right) = 0{,}7699 \cdot X - 2202{,}7$ Lower limit: $Y = \left(\hat{a}_1 - \hat{\sigma}_{\hat{a}_1}\right) \cdot X - \left(\hat{a}_0 - \hat{\sigma}_{\hat{a}_0}\right) = 0{,}6787 \cdot X - 8490{,}7$; Upward trend: $Y = \left(\hat{a}_1 + \hat{\sigma}_{\hat{a}_1}\right) \cdot X - \left(\hat{a}_0 - \hat{\sigma}_{\hat{a}_0}\right) = 0{,}7699 \cdot X - 8490{,}7$; Downward trend $Y = \left(\hat{a}_1 - \hat{\sigma}_{\hat{a}_1}\right) \cdot X - \left(\hat{a}_0 + \hat{\sigma}_{\hat{a}_0}\right) = 0{,}6787 \cdot X - 2202{,}7$.

Consequently, the confidence interval is: $\left\{\hat{a}_1 - t_{n-1,1-\beta} \cdot \frac{\hat{\sigma}_{\hat{y}}}{S_x\sqrt{n-2}} \leq a_1 \leq \hat{a}_1 + t_{n-1,1-\beta} \cdot \frac{\hat{\sigma}_{\hat{y}}}{S_x\sqrt{n-2}}\right\}$; $\left\{\hat{a}_o - t_{n-1,1-\beta} \cdot \frac{\hat{\sigma}_{\hat{y}} \cdot \sqrt{S_x^2+\bar{X}^2}}{S_x\sqrt{n-2}} \leq a_0 \leq \hat{a}_o + t_{n-1,1-\beta} t_{n-1,1-\beta} \cdot \frac{\hat{\sigma}_{\hat{y}} \cdot \sqrt{S_x^2+\bar{X}^2}}{S_x\sqrt{n-2}}\right\}$. Based on the t-distribution tables, the value $t_{n-1,1-\beta}$ amounts: $t_{n-1,1-\beta} = t_{15;0,05} = 1{,}7531$. It's valid that $t_{n-1,1-\beta} \cdot \frac{\hat{\sigma}_{\hat{y}}}{S_x\sqrt{n-2}} = 1{,}7531 \cdot \frac{2026{,}972}{11.091{,}74 \cdot \sqrt{16-2}} = 0.0856$; $t_{n-1,1-\beta} \cdot \frac{\hat{\sigma}_{\hat{y}} \cdot \sqrt{S_x^2+\bar{X}^2}}{S_x\sqrt{n-2}} = 1{,}7531 \cdot \frac{2026{,}972 \cdot \sqrt{11.091{,}74^2+69.975^2}}{11.091{,}74 \cdot \sqrt{16-2}} = 6066{,}27$. Below is the confidence interval for regression coefficients a_1 *i* a_0: $\{0{,}7243 - 0.0856 \leq a_1 \leq 0{,}7243 + 0.0856\} = \{0{,}6378 \leq a_1 \leq 0{,}81\}$; $\{-5346{,}7 - 6066{,}27 \leq a_0 \leq -5346{,}7 + 6066{,}27\} = \{-11.413 \leq a_0 \leq 720\}$.

4.1. Process comparison

As already mentioned in Chapter 2, the new Criminal Code is presented in separate tables. It is justifiable to question whether there has been a change in processes before and after the entry of the new law? For this purpose, the F-distribution[9] will be applied and the variety of the σ^2processes before and after the adoption of the new law will be tested, and the following hypotheses are set: **H₀:** $\frac{\sigma_2^2}{\sigma_1^2} = 1$ - no process change occurred; **H₁:** $\frac{\sigma_2^2}{\sigma_1^2} \neq 1$ - process change occurred where: σ_1^2- variant of the process 2004 – 2012; σ_2^2 — process variance 2013 - 2019 Consequently, on the basis of Tables 1, 2 and 3, the following applies: $S_{x_1;8} = 4300$ i $S_{x_2;8} = 2588{,}5$; $S_{y_1;8} = 11.438{,}86$ i $S_{y_2;8} = 3612$. As n_2 = n_1it is valid that: $F_{n_2-1;n_1-1} = F_{7;7}^x = \left(\frac{S_{x_2;8}}{S_{x_1;8}}\right)^2 = \left(\frac{2588{,}5}{4300}\right)^2 = 0{,}362$; $F_{n_2-1;n_1-1} = F_{7;7}^x = \left(\frac{S_{y_2;8}}{S_{y_1;8}}\right)^2 = \left(\frac{3612}{11.438{,}86}\right)^2 = 0{,}0996$

Based on Table F - distribution, the value is: $F_{n_2-1;n_1-1,\alpha} = F_{7;7;0,05} = 3{,}79$. As 0.362 < 3.79 and 0.096 < 3.79, the hypothesis H0 is accepted.

4.2. Autocorrelation in regression

Based on data from tables 1, 2 and 3, the value of d-statistics[10] is as follows: $d = \frac{\sum_{t=2}^{n}(e_t - e_{t-1})^2}{\sum_{t=1}^{n} e_t^2} = \frac{40.807.406}{57.520.624} = 0{,}7094$. The criteria for accepting or rejecting hypotheses are as follows:

- The H0 hypothesis is rejected if $d < d_L$ or if $d > 4 - d_L$
- The H0 hypothesis is accepted $d_U < d < 4 - d_U$
- The test is indeterminate if $d_L \leq d \leq d_U$ or if $4 - d_U \leq d \leq 4 - d_L$

Values for d_L and d_U are determined on the basis of Durbin-Watson tables. The data for d_L and $d_U$at the level of significance of 0,05 are as follows: d_L =0,982; $d_U = 1{,}539$

Since $0{,}7094 < 0{,}982$ the H1 hypothesis are accepted according to which there is an autocorrelation among the remaining e_t i e_{t-1}, and the residuals are aligned according to the autoregressive first order model. This shows that deviations from the regression direction are correlated at different times. The same has negative consequences on regression analysis results and points out that certain significant factors are left out.

[9] http://www.just.edu.jo/~haalshraideh/Courses/IE347/The%20F%20distribution.pdf, reviewed: 21. 08. 2020.
[10] https://www3.nd.edu/~wevans1/econ30331/Durbin_Watson_tables.pdf, reviewed: 21. 08. 2020.

On the basis of the following relationship, the correlation coefficient of the residual ρ, which is: $\hat{\rho} \approx 1 - \frac{d}{2} = 1 - \frac{0{,}7094}{2} = 0{,}6453$. According to this, in the case of autocorrelation, evaluations of individual parameters are impartial but unreliable. Such a model is not suitable for predictions because variance and standard deviation are not minimal. Therefore, the question arises whether the estimates of regression parameters are underestimated or overestimated?

4.3. Heteroskadasticity[11]

Tables 5 and 6 provide data for the calculation of variables.

l	Y	$Y - \hat{Y}$	$(Y - \hat{Y})^2$
1.	32.761	961	923.521
2.	33.720	-220	48.400
3.	34.735	-1.095	1.199.025
4.	35.428	338	114.244
5.	36.177	-1.383	1.912.889
6.	37.501	2.331	5.433.561
		SR_1	9.631.640

Table 5: Group with lower values
(Source: authors)

l	Y	$Y - \hat{Y}$	$(Y - \hat{Y})^2$
1.	49.942	2.052	4.210.704
2.	50.710	1.110	1.232.100
3.	51.295	2.625	6.890.624
4.	53.622	1.062	1.127.844
5.	54.433	-2.087	4.355.569
6.	54.776	1.416	2.005.056
		SR_2	19.821.897

Table 6: Group with higher values
(Source: authors)

On the basis of the tables it is valid that: $F_{4,4} = \frac{SR_2}{SR_1} = \frac{19.821.897}{9.631.640} = 1{,}019$. According to the tables F of distribution, the following applies: $F_{l,l;\alpha} = F_{4,4;0,05} = 6{,}39$ As $1{,}019 < 6{,}39$ the H0 hypothesis that there is heteroscedasticity is accepted[12]. The consequence of heteroscedasticity is that the parameter estimates are inefficient, and it is necessary to transform the regression model and determine which parts behave homoscedastically and which are heteroscedastically.

Figure following on the next page

[11] https://www.xlstat.com/en/solutions/features/heteroscedasticity-tests, reviewed: 21. 08. 2020.
[12] Richard Williams, Heteroskedasticity, University of Notre Dame, https://www3.nd.edu/~rwilliam/ Last revised January 10, 2020

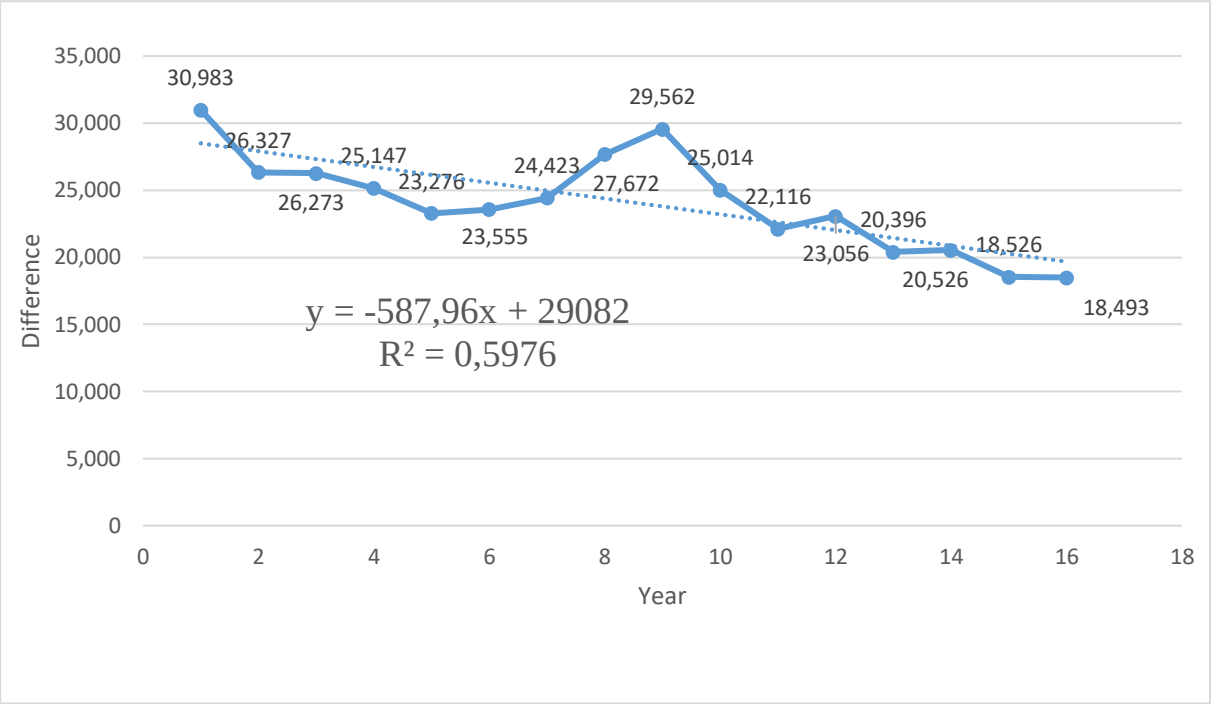

Figure 5: The differences between reported and resolved criminal offences in the period 2004-2019 - a 16-year period regression results
(Source: authors)

Differences between reported and resolved criminal offences in the period from 2004 to 2019; the coefficient of determination R^2 shows that the relationship is medium strong, while Durbin-Watson statistics are d = 0.9536, which means that autocorrelation with the correlation coefficient of residuals is present $\hat{\rho} \approx 0{,}5132$

5. CONCLUSION

The results of the research presented in this article have shown that there is a functional connection between reported and resolved criminal offences from 2004 to 2019, i.e. there is a functional connection between the resolution coefficient of criminal offences and the year of occurrence of a criminal offence. The expected value of the resolution coefficient of criminal offences k_r is equal to the estimated value of the autocorrelation coefficient of the $\hat{\rho}$. The same points out that residual deviation are interrelated in time. Based on regression analysis, a linear connection was established $Y = 0{,}7243 \cdot X - 5346{,}7$ with determination coefficient $R^2 = 0{,}94398$ and confidence interval $\{0{,}6378 \leq a_1 \leq 0{,}81\}$ and $\{-11.413 \leq a_0 \leq 720\}$respectively, and for the coefficient of resolution of criminal offences it amounts to $\{63{,}358 \leq k_r \leq 65{,}322\}$. Research has also shown the presence of autocorrelation and heteroscedasticity. This further suggests that evaluations of certain parameters remain unbiased, but are unreliable. Such a model is not suitable for predictions because variance and standard deviation are not minimal. The consequence of heteroscedasticity is that the parameter estimates are inefficient, and it is necessary to transform the regression model and determine which parts behave homoscedastically and which are heteroscedastically. Starting from the established research results, it is suggested that the use of the Box-Jenkins residual analysis[13] and WLS methods (Weighted least squares) regression[14] be continued.

[13] https://ncss-wpengine.netdna-ssl.com/wp-content/themes/ncss/pdf/Procedures/NCSS/The_Box-Jenkins_Method.pdf, retrieved: 21. 08. 2020.
[14] https://towardsdatascience.com/when-and-how-to-use-weighted-least-squares-wls-models-a68808b1a89d, retrieved: 21. 08. 2020.

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MARKET RESEARCH INFORMATION SYSTEM FOR THE BRICK INDUSTRY WITH BRAND DEVELOPMENT AIM

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ABSTRACT

For centuries, brick products have been the main inputs in the construction of buildings. Despite the emergence of new products and materials, brick products are still doing well in the construction materials market with their innovations. Therefore, the paper deals with the method of production and organization of the business process with special attention to market research. This applies to determining the specificity of brick products due to which they are particularly recognizable and wanted. The set of several special features of the product is the brand, so the basic goal of the paper is to manage the brand of brick products. Different approaches to defining the product brand have been explored and the need to dynamize brand management in accordance with new market requirements and other possibilities and limitations has been identified. In this sense, an information and communication process has been defined with the aim of establishing and managing the brand, all for greater competitiveness.

Keywords: *Brand, Brick, Communication, Informing, Market research*

1. INTRODUCTION

Construction, especially the production of building materials, has followed the development of society and humanity since ancient times. Very early on, various building materials were discovered according to the types of terrain in an area. The production of bricks and other products for which clay is the basic raw material is suitable for the plains. In addition, brick products have other special features such as static properties, simple production of various shapes, but also increasingly high-quality solutions in terms of various types of insulation and environmental requirements. Due to that, brick production developed in accordance with the needs and requirements of the market, so even today it represents a very wide offer and consumption in the construction of buildings. Given that new materials and products are being developed very quickly for the construction of buildings, the production of bricks must follow the demands of the market, but more and more investment should be made in market research. In this sense, it is important to inform about all the features of the product, and the use of other marketing mix tools such as price, promotion and distribution.

The basic element of the marketing mix is promotion with its tools such as advertising, public relations, brand and publicity. As part of promotional tools, this research paid special attention to product brands. The price of brick products is extremely related to the offer of similar products. The distribution itself can be an element of the mix but also a price regulator. Namely, the offer like other products of this type remains, but benefits are included in the delivery modalities. In any case, brick products must strive for standardization and typification for a product or group of similar products to be particularly recognizable on the market. In modern times, the basic feature of special product recognition is the product brand. A company that achieves the recognition of its product by the name or brand, can expect a multi-year synergy with customers and thus long-term security of placement. Product recognition has been attracting research attention for a long time and is becoming a strategic issue in all industries, including the production of brick products. Some research shows that product branding is becoming a vital part of a strategy for long-term customer relationships[1]. The product brand should be part of the company's identity because a strong brand identity is a key factor in competitive advantage and leads to better financial results[2]. In addition, the product brand must be associated with some elements of the company's characteristics. Namely, due to previous positive experiences with a certain recognizable product, customers react emotionally in order to buy[3]. According to some research, a product brand must also express the following dimensions, such as: honesty, excitement, competence and, in some products, sophistication[4]. The aim of this paper is to explain and define the importance of the product brand and to determine the process and method, i.e. the way of creating and maintaining the basic characteristics of the brand of brick products. Thus, brand management becomes an important factor in long-term cooperation with customers and successful business. Establishing a product or group of products in terms of a brand is a very complex development, production and marketing process. After the basic definitions related to brick products and the brand, in the teaching text, attention is paid to the information process of market research in order to determine the wishes or needs of the market. The next stage is the production of products in accordance with market requirements, respecting various types of recommendations and restrictions. The establishment of the brand is followed by further management of the brand using the marketing mix tool with the aim of creating even greater synergy between manufacturers and users of brick products.

2. BRICK PRODUCTS

As already mentioned, brick products have been the basic material in the construction of buildings for centuries. Regardless of the development of technique and technology and the production of a large number and types of construction products, brick products are still in great use. There are several reasons for this, especially the low price of raw materials and relatively low production costs.Quality brick has a regular shape, regular edges and straight sides, and the dimensions are usually 250/120/65 mm. The surface can be smooth and grooved (furrow depth maximum 5 mm). Cracks in the direction of thickness are allowed if they are not opposite each other. In addition, brick products should have other features such as[5]:

- Density 800 g / m3
- Strength mark M-75
- Thermal conductivity 0,17 W / m ° C
- Frost resistance up to 100 freeze and thaw cycles

[1] (Khan, I., Rahman, Z., 2015), pp. 1.
[2] (Sabin Mindrut, S., Adriana Manolica, A. , Cristina Teodora Roman, C.T., 2005), pp. 393.
[3] (Shiva, N., 2005), pp. 265.
[4] (Lombard, A., 2007), pp.10.
[5] (DecorexPro., 2020)

- Vapor permeability up to 0,14 mg / (mch · Pa)
- Water absorption up to 6%
- 51 dB sound insulation (meets requirements SNiP 23-03-2003)
- Fire resistance up to 10 hours

In addition, other positive properties should be emphasized, such as the heat transfer coefficient (U), static quality and an increasingly simple method of installation, as well as lower mortar consumption. Brick products today are produced for different types of construction and in different forms for example as follows[6]:

1) For external load-bearing walls; Dimensions 250/380/238 mm, 250/300/238 mm, 375/250/238 mm and 500/190/238 mm
2) For ceiling fillings; Dimensions 250/430/140 mm
3) For partition walls; Dimensions 500/115/238 mm, 500/100/238 and 500/80/238 mm
4) For load-bearing partition walls; Dimensions 500/290/190 mm, 500, / 250/190 mm, 500/500/190/190 mm, 500/115/190 mm and 500/100/190 mm
5) For external and internal load-bearing walls; Dimensions 250/190/190 mm, 290/190/190 mm and 290/95/190 mm
6) Facade bricks; Solid brick measuring 250/120/65 mm and hollow brick measuring 250/120/65 mm

All the above brick products have the appropriate characteristics in terms of brand, packaging method, minimum weight, consumption and consumption of mortar, as well as thermal and sound insulation properties and U-value. In addition to these types, there are also their modifications as refractory bricks used for buildings where processes with high temperatures take place. The process of production of brick products consists of the following stages[7]:

1) Exploitation of clay in clay
2) Transport of clay to the production plant
3) Clay storage
4) Clay processing
5) Cladding of raw products
6) Transport of raw and dried products
7) Drying of raw products
8) Baking of dried products
9) Selection of finished products and packaging

As mentioned, the production of brick products is relatively simple as shown in Figure 1. The figure shows that the production technology is the same for all types of brick products except the phase of cutting or shaping. The figure shows an automated and computerized production in which marketing activities synergistically fit into the production and business of the company. One of the known systems that can be used to control a complex production or service process is a programmable logic controller (controller) generally known as a PLC. According to the cited association, a programmable logic controller is defined as “A digital electronic device that uses programmable memory to remember commands requiring the performance of specific functions, such as logic functions, counting, timing, computing, to control different types of devices and processes via digital and analogue input-output modules”. Programmable logic controllers (PLCs) are industrial computers whose hardware and software elements are specially adapted to work in industrial conditions, and which can be easily programmed and installed in existing industrial systems.

[6] (Ciglana Cerje Tužno d.o.o., 2019)
[7] (Netinger, I. Vračević, M. Bačkalić, 2014), pp. 33.

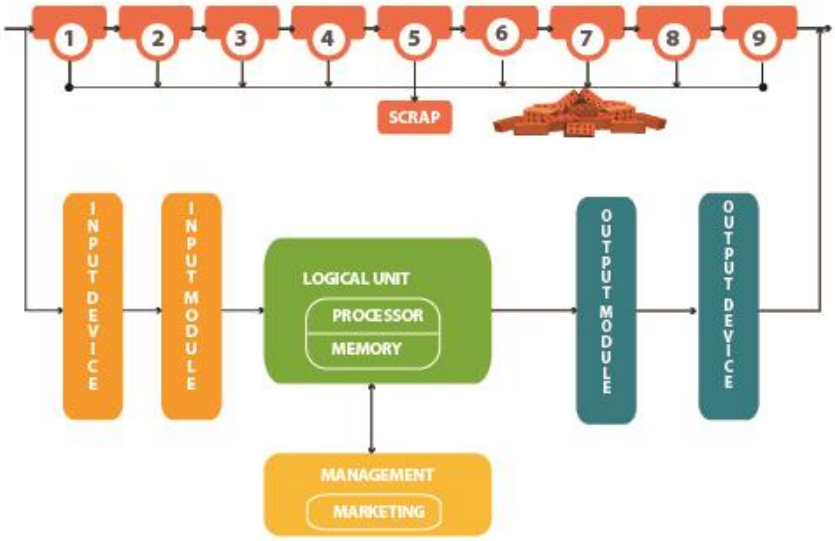

Figure 1: Brick production process

Regardless of the large number of types of brick products, there is a need for further development as market demands are increasingly diverse. This applies in particular to the static properties, various types of insulation, consumption of bricks and mortar, but especially in the case of facade bricks appearance or design. Therefore, effective market research is needed in order to develop the product, and in particular this is brought to one marketing feature such as the brand. That is why market research of brick products in modern conditions has the main goal of brand development and how the products and companies. Such an approach gives brick products a better chance in a global and increasingly selective market.

3. MARKETING PROCESS

Global warnings indicate very dynamic market trends, so this also applies to construction operators. In this sense, marketing should first be accepted as a process established in the second half of the twentieth century. With further development, marketing permanently changes its structure and dynamics. Market research is a basic marketing activity and derives from the very definition of marketing which can be seen from the following definitions:

- This approach defines marketing as a process that plans and implements the creation of ideas, goods and services, pricing, promotion and distribution, goals of individuals and organizations[8]
- Marketing is focused on planning and conducting marketing activities to meet consumer demands[9]
- Marketing is not just a business concept but, more importantly, a way of doing business and, if we expand the focus of observation significantly, and life thinking, and therefore a way of a kind of philosophy of living[10]
- Modern marketing means a business activity that connects production with consumption so that the needs of a society that appears on the market as demand are maximally and profitably met[11]

It follows from the above definitions that marketing is a business activity where the bidder-manufacturer aims to meet the wishes and / or needs of the customer.

[8] (Bennet, P., 1988), pp. 155.
[9] (Ferrell, O.C. Lucas, G.) pp. 17.
[10] (Meler, M., 1999), pp. 20.
[11] (Rocco, F., 1994), pp. 19.

The activity takes place in an increasingly dynamic globalized market in a way that the path of promotion, appropriate product, affordable price and distribution of products sold to meet the needs or desires of the customer. This means that the bidder achieves success by combining promotion, products, prices and distribution, i.e. already known elements of the marketing mix. In modern conditions, market research is part of an integrated marketing process. Figure 2. shows one marketing process that can be implemented in the production of brick products[12].

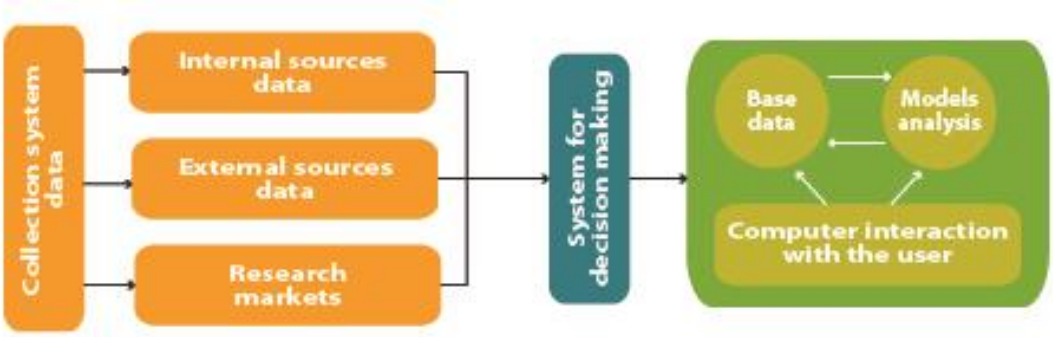

Figure 2: Marketing process

Figure 2 shows that the marketing process begins with market research and data collection. In this sense, there is the possibility of using data from previous research and production itself. In addition, individual institutions and other information centres are also a specific source. But the most efficient and useful source of data is the result of market research. After the researched and systematically edited data, the next step is the decisions that are made based on the researched data with the application of the stored information in the internal databases. In the case of the need for modern information technology, they also enable constant interactions with the user, all with the aim of making better and better decisions. Given the specificity of brick products, special attention should be paid to the objectives, process or stages of research, methods and procedures, as well as quality control and analysis in order to make the best decisions. Making decisions about the brand of a company or product in the brick industry is an irreversible marketing process that requires an appropriate information system.

3.1. Product brand as a factor of marketing mix

Every company tries to impose its specifics on the market, and one of the ideas comes from a product brand that represents special value for achieving strategic goals. A product brand is a kind of fixed asset of a company with the following characteristics for the company[13]:

- Companies may have legal ownership of trademarks
- Ownership may be protected by trademark registration
- Stamps can be transferred to another
- Stamps are registered for a fixed period that can be repeated

The American Marketing Association defines a brand as a name, term, design, symbol, or any other feature that differs as a good or service from the goods or services of other companies[14]. The product brand, according to the following definition, represents the name, term, symbol or their combination, as well as differentiation from the competition[15]. The brand should contain recognizable special features in relation to similar products.

[12] (Vranešević,T. Marušić, M., 2001), pp. 12.
[13] (Trevillion, R. P., 1999), pp. 405.
[14] (Peterson, A.R. Smith,C. Zerrillo, P., 1999), pp. 255.
[15] (Kotler, P. Wong, V. Saunders, J. Amstrong, G., 2006), pp. 549.

In addition, the brand should guarantee the recognizability of quality. Of all the features of the product brand, the image should be singled out, which is a way of decoding the stimuli that recipients receive in the communication process. Based on a certain brand identity, a communication campaign emerges which seeks to communicate the defined identity to consumers. The brand of each product is an essential factor that enhances the value of the elements of the marketing mix. This is especially true of promotion where the brand is a powerful visual promotion tool. Due to the strategic importance of the brand for its establishment, it is necessary to conduct very comprehensive research in a dynamic interaction with the market.

4. MARKET RESEARCH INFORMATION SYSTEM FOR THE PRODUCT BRAND DEVELOPMENT IN THE BRICK INDUSTRY

The market research process, especially when it comes to an extremely sophisticated and company-specific goal such as a brand, needs to be approached systematically. This means that everything should take place in one systematic process which, according to Figure 3, includes the following stages:

- Setting goals and in this case, it is the brand of the product and the image of the company
- The process will be effective if appropriate methods are used to collect and analyse the data
- In particular, the data collection process needs to be systematically developed
- Data analysis aims to determine all the important factors that can determine the elements of product brand quality or company image

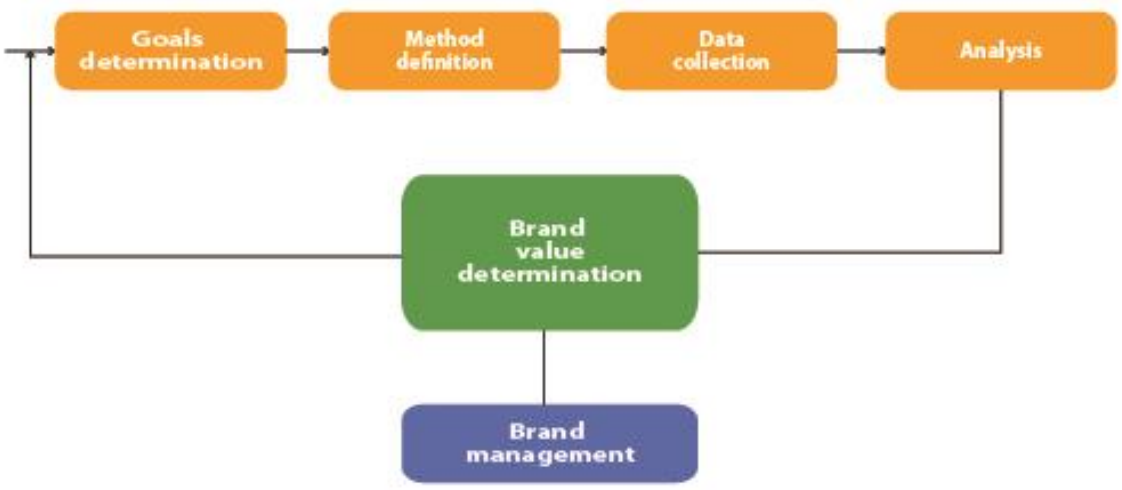

Figure 3: Research phases

4.1. Research goals

The development of construction techniques and technology and the globalization of the market, companies are forced to constant research because customers expect new qualities in the company's business and especially new products. Defining the problem is a critical stage in the market research process and therefore attention should be paid to the following facts[16]:

- The problem should be expressed by the relationship of the factors
- The problem should be stated clearly in the form of a question
- The presentation of the problem should be such as to indicate the possibility of empirical subsequent testing

[16] Požega, J.

According to the same source, the objectives of the research must be clearly defined and, if possible, must not leave room for different interpretations, so when setting the objectives, the following issues should be considered:

- What do you want to explore?
- What are all the factors causing the problem?
- Are these the factors that really affect the problem?
- Are they measurable?
- Can they be influenced?
- What is the impact of individual factors on the problem?
- Is there a mutual influence of factors?

When defining the goals of market research in the brick industry, considering the previous remarks and questions, it is necessary to precisely define the framework and within it the main goal. In this sense, and in this case the main goal is to determine the brand of the product, and the framework goal is a recognizable image of the company. Market research should cover already existing market segments. In the case of brick products, these are geographically defined areas where the company places or has placed its products, to which newly explored segments are added. In order to identify market segments for the purpose of collecting brand-related data, it should be borne in mind that the market consists of the following categories[17]:

- Absolute non-consumers
- Relative non-consumers
- Actual consumers

In the right phase of research, absolute non-consumers are eliminated first. This applies to all individuals and companies from the part of the economy and infrastructure where no significant investment activity is expected. According to these parts of the market segment, no research activity should be undertaken. Thus, absolute non-consumers are those who undertake almost no investment interventions from which the need for construction products or services could arise. After determining the objectives of the research, it is necessary to define the methods and procedures of market research in order to determine the brand.

4.2. Data collection methods and procedures

Data collection is one of the most important phases in market research. Given the development of information technology today, information is easily accessible and can be accessed in several ways. In order to make the necessary data easier to collect, several data collection methods and procedures should be used. By observing, examining, analysing, significant data can be obtained necessary for brand research, and more importantly for making the right conclusions. Without data, or rather without sufficient quality data, research is ineffective. Figure 4 shows some data collection options known as survey reconnaissance[18].

Figure following on the next page

[17] (Rocco, F., 2000), pp. 72.
[18] (Vranešević,T. Marušić, M., 2001)

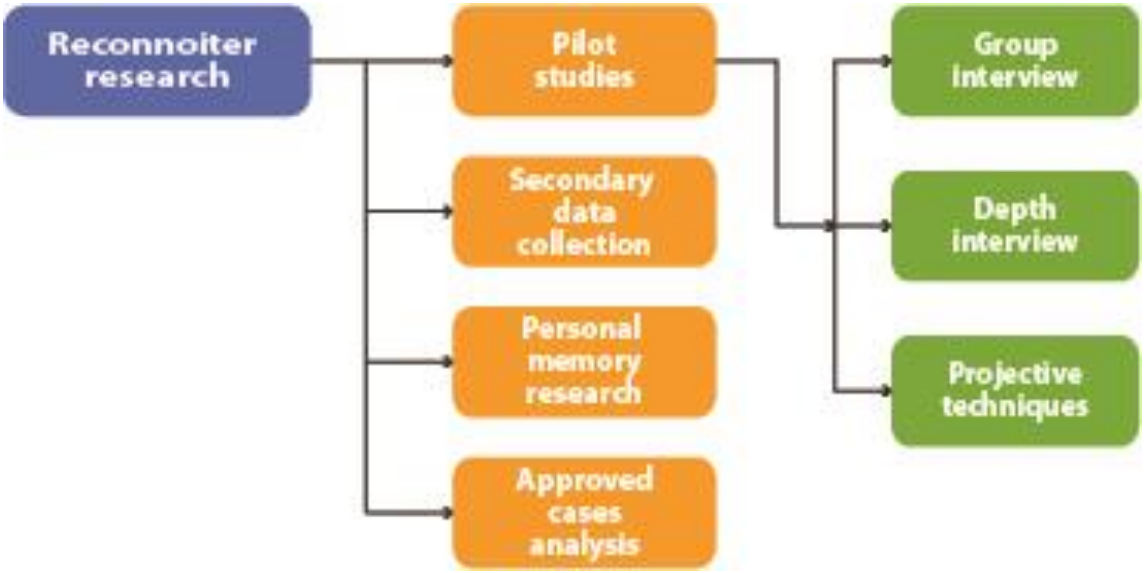

Figure 4: Research methods and procedures

According to Figure 4, secondary data is in sources inside and outside the company. Outside the company, these are already researched data in various publications published by institutions, publishers, newspapers and weeklies, as well as on websites. The company can obtain data from previous market research conducted for similar purposes. Special emphasis should be placed on the need to analyse those data that are necessary for brand development. If necessary, pilot studies can be organized using group and in-depth interviews or other data collection techniques can be used.

4.3. Control, analysis and data processing

Once the relevant data has been collected, the next stage is to analyse and draw conclusions. In this sense, selected cases related to a similar type of research are analysed. Conclusions can be made on the basis of analysis and comparison with already known cases, i.e. good and bad experiences should be taken into account. The method of analysis of selected cases has certain advantages, but also disadvantages as follows[19]:

- The main advantage is the connection of all factors
- A specific case is analysed in relation to statistical indicators
- In such an analysis, very precise relevant data are obtained
- The main drawback is that they may be biased by the researcher because they use informal methods
- A particular problem may be the lack of objectivity and the tendency of researchers to generalize extremely successful or unsuccessful procedures

5. BRAND DEVELOPMENT AND MANAGEMENT

It follows from the very definition of a product brand that it can refer to one specific product or to a group that has similar special features. In this case, they are all brick products because they have the same type of raw material, similar characteristics related to heat flow, moisture and static properties. In addition, they are produced in the same way, only the difference in shapes. Figure 5 shows the factors that determine a brand's characteristics in a product or group of products[20].

[19] (Vranešević,T. Marušić, M., 2001), pp. 114.
[20] (Vranešević,T. Marušić, M., 2001), pp. 521.

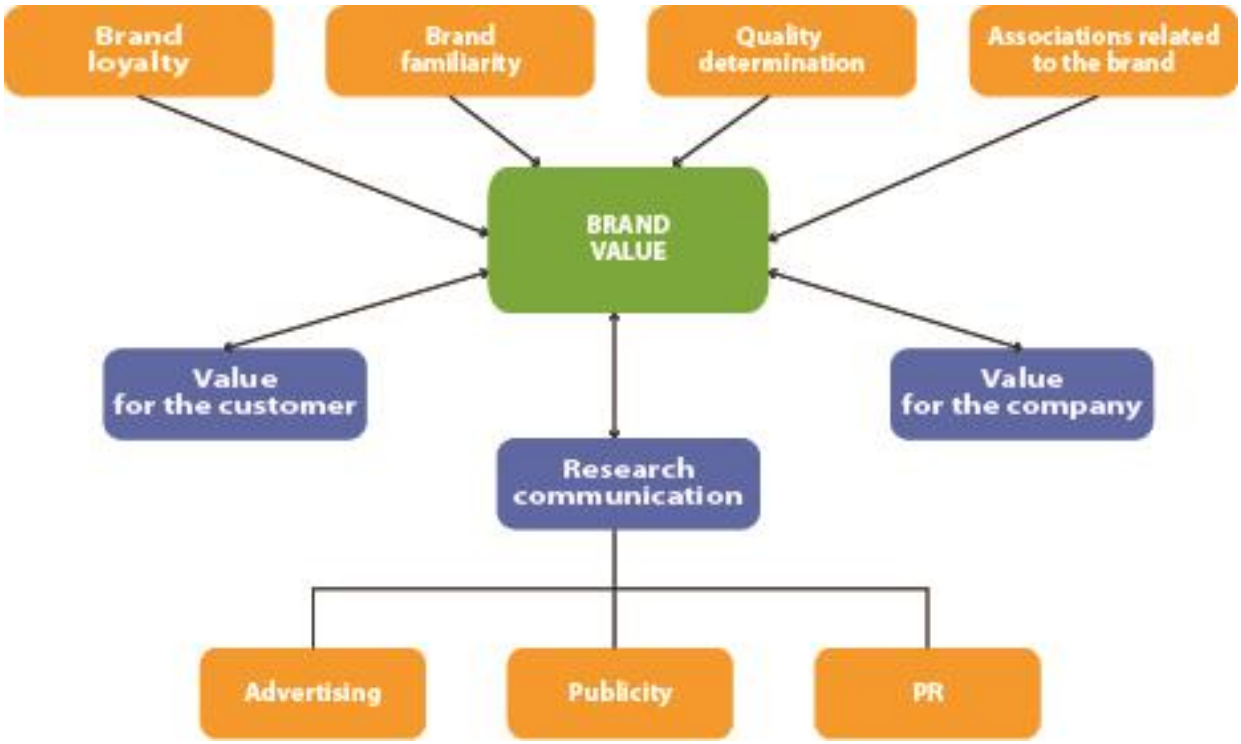

Figure 5: Brand management

This refers, firstly, to the long-term customer loyalty to the product due to the established quality. The product of the established brand is already recognizable on the market by its name and its name is already associated with the company that produces it, thus creating a lasting interest of customers. Brand management means constantly determining the benefits of the brand for the company, but also especially for customers. In this sense, different advertising channels can serve, but also other tools of the marketing mix, especially publicity and public relations. Namely, customers must be constantly in focus because the value of the brand is maintained through their perception of all its benefits. The brand is managed through marketing tools but during experience. The company must continue to research product development to monitor all market demands and restrictions arising from various safety, environmental and other reasons. It is necessary to constantly perform brand quality audits in accordance with competition and market and environmental requirements. Figure 5 shows that the basic marketing tools for further development and maintenance of the brand are advertising, public relations and publicity. Advertising stimulates the demand for products, provides information about the company, but also creates information for taking views on the company or products. In this regard, there are the following four reasons for advertising[21]:

1) Stopping the fall in demand and achieving possible new growth
2) Overcoming negative publicity
3) Stopping the substitute effect
4) Suggesting new forms of use

In this case, daily newspapers, magazines, TV and especially the Internet can be used as means or channels for advertising. Regardless of the advertising channel, you should always keep in mind the appropriate mix, current channel value and advertising time. Public relations are a two-way communication between the organization and its internal and external public, in order to achieve mutual understanding, build social responsibility and pursue common interests.

[21] (Kesić,T., 2003), pp. 238.

Public relations have a long-term marketing function that includes the following[22]:

- Determining and evaluating the attitudes of a particular segment of the audience
- Identifying the strategies and procedures of the organization in accordance with the interests of the audience
- Development and implementation of a communication program designed for influence and acceptance by the audience

Publicity is a particularly important marketing tool in product brand development. Publicity in marketing is one of the tools that, unlike propaganda, is not paid for, but it can also create (or maintain) a positive image of something or someone, as well as a company, organization and all other things and phenomena. It is carried out through the mass media, books, but also by all other means and events that bring together more people, from press conferences, lectures, seminars and other events. Although often overlooked by entrepreneurs, publicity can be an important marketing tool. Its purpose is to draw attention to the company and its products without having to pay media costs. The following tools can be used to create and maintain a positive product brand image[23]:

1) Novelty - This is short information about the brand of products in different channels that contains less than 300 words
2) Press conference - Represents informing journalists, clients and others interested in a targeted conference where you can talk about the product brand but also other achievements and plans of the company
3) Interview - Addressing special current and future customers especially when some negative information about products or companies occurs
4) Community Involvement - This form aims to inform the local and wider community about the different effects of a company for the general good of society
5) Internet - This is the fastest way to inform today, especially for the presentation of various innovations related to the development of the company
6) Institutional advertising - This form of publicity is the organization of thematic conferences where the general public is informed about the success of the company, investments, new products, various post-sales activities, all in order to create a more positive image of the company

All previous activities must be permanently supplemented and supplemented with new methods and channels of information, and all modern and more efficient possibilities of information technologies should be used.

6. CONCLUSION

The previous considerations point to several conclusions because the starting point is an information and communication process consisting of a technical and a commercial work, or a combination of them. Firstly, it is a highly automated and computerized business and production process. The results of such a process are brick products that have been the main material in construction for centuries. Regardless of the development of new products and materials, brick products successfully compete with their innovative features. The aim of the review is to set up an organization and process that encompasses activities from development and production to market research. A special task within this is to propose methods for creating a special image or brand of the product. This approach represents a constant dynamic interaction between brick product manufacturers and the market. For this, different forms of tools are used to maintain the specificity of the brand.

[22] (Kesić,T., 2003), pp. 436.
[23] (Kesić,T., 2003), pp. 459.

In this regard, an information market research process and effective marketing mix tools are proposed. This ensures a constant increase in all the qualitative properties of the brand and it is then a method that represents a certain scientific contribution, especially in applied research. In addition, the IT-communication process enables further dynamic research in order to improve the brand of brick products with the teaching requirements of the market and possible limiting factors.

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MEASURING SCIENCE AS A WAY TO INDICATE ITS IMPORTANCE

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ABSTRACT
Special emphasis is put on the differentiated effect on higher education institutions, depending on the field in which universities carry out teaching and research activities, as well as on the peculiarities of the university business model in the changing environment for development of the higher education institutions. The challenges of seeking answers to questions in terms of their usefulness, efficiency and effectiveness are related to a definite and accurate knowledge of these processes and their impact on the entire social process in which they take place, or, to be more precise, are part of it. The impact of science on our development is a process that itself does not need to be proven, because its results are obvious to all. Perceiving science as something abstract and incomprehensible would rather harm the process of its understanding and evaluating.
Keywords: *Science, Development, Social Economy, Education, Universities*

1. INTRODUCTION

Over the last years a lot has been said and recorded about "measuring" science, about its quality and criteria for determining its importance and value, i.e. determining its social efficiency. It is an interesting initiative both from a professional and research point of view. The process includes at least two parties: those who create science and those who evaluate it or, to be more precise, who use it. It is highly probable that the attitude of the parties towards the result will differ. In order not to make it seem too primitive and consumerist, we should consider it as a process that is too complicated, both for its reporting and assessment. Historically, the benefits of various scientific discoveries came much later, even after the death of their creators. This presents researchers of this process with a number of complex tasks that are difficult to define, measure and analyze. Taking into account both the historical factors and the strong dynamics of our current social development, we should look for an appropriate assessment form, as well as a way to reflect this scientific and research process in an appropriate and best possible way. Such process cannot be separated or defined independently, becase it has become integrated into our existence and its accomplishments have become part of our lives.

2. SCIENCE AS A TOOL FOR SOCIAL DEVELOPMENT

The challenges of seeking answers to questions in terms of their usefulness, efficiency and effectiveness are related to a definite and accurate knowledge of these processes and their impact on the entire social process in which they take place, or, to be more precise, are part of it. The impact of science on our development is a process that itself does not need to be proven, because its results are obvious to all. Perceiving science as something abstract and incomprehensible would rather harm the process of its understanding and evaluating. Numerous state and public institutions, Ministry of education and science of Bulgaria being one of them, are devoted to this task as part of their obligations. By developing and implementing different models and techniques in this directions there always will be support and opposition. However, in no way should this frighten, offend or discourage any of the parties. Achieving maximum justice is already a strong motivation to keep on going in the direction of objectifying the

essential processes related to the scientific and research activities. Moreover, over lifelong existence it has been proven that the progress is related to scientific breakthroughs that are part of human experience (Petrov, Georgiev, 2019; Georgiev, 2019a). Very often people perceive things quite pragmatically and are satisfied with the explanation that their present state is acceptable enough. The changes are rather unwanted or frightening because we associate them with ourselves. The academic community is quite conservative in its pointviews and is perceived as self-sufficient. This acceptable way may be relatively good for a certain period of time, but it is by no means acceptable and progressive for the development of these processes.
The term "process" is complicated enough in the sense we use it, because on the one hand, it is continuous and has a number of characteristic features, complexity and even contradictions. It should be considered, defined and analyzed by all its participants, but mostly by those who will benefit from it, i.e. the people. Other way it will be just a pseudoscience that will bring satisfaction to a man himself without being useful to others. You will agree that the main benefit in this direction is the applicability of everything that scientists and researchers do. Historically, this has been repeated many times over the years, and in many cases scientific discoveries have been accepted and valued much later. Accepting or denying a certain scientific activity demands its understanding and approval by the society, which is not always an easy and achievable task from any point of view and sometimes impossible for a scientist. Usually, scientific discoveries, researches or scientific projects are published in specialized publications that are available to a limited number of users who are engaged in this activity or these publications have limited access which in most cases is paid. This additionally complicates the process of their approval. Due to the need of scientific research to be published in databases with reviewed content, i.e. those that contain scientific information of high value and are peer-reviewed, they have become publications with closed or limited access to this information. This is understandable, considering the effort and hard work of respective teams or specific researchers to get feedback and be assessed in an appropriate and acceptable manner. On the other hand, the scientists` work should reach larger number of people, since it is them who will potentially benefit from scientific achievements. For this reason, the scientists and researchers have no other choice but to constantly present their thesis statements, projects and discoveries on various forums in order to reach the consumer through different online information channels. This explanation sounds pretty simplistic, but it is relatively true. Sometimes one scientific research is presented, promoted and shown at a number of scientific conferences, round tables, symposia and exhibitions, which makes its validation rather a complicated and continuous process. This is especially true for social sciences. The resistance of the scientific community in such cases is very strong, because the search for non-traditional approaches in the validation of research violates the generally accepted slowliness of the process. This "irritates" the scientific community, which is quite introverted and even rigid in its understanding of the promotion of scientific works. In our opinion, almost all ways of presenting scientific work are acceptable, providing that they ensure satisfactory results and reliable and true feedback and useful information. The relationship between authors (creators) and users needs to be more than just warm and sincere in order to identify omissions, drawbacks or imperfections in a sufficiently accurate and correct manner (Terziev, Solovev, 2020-a). The amendments to the Academic Staff Development Act and the Regulations of its implementation in Bulgaria are aimed at finding answers to these questions, by creating a system of criteria that is measurable for the respective field of higher education and professional field. This system is managed by the National centre for information and documentation at the Ministry of education and science. Whether the quantitative measures embedded in this model can provide the required quality coverage is difficult to say and the answer would rather be no. Nevertheless, this system creates a certain order and visibility of the results, but it is difficult to talk about objectivity. Especially considering that different assessment and acceptability systems and different requirements take

place at different times. Meeting certain up-to-date criteria sometimes leads to the inability of some scientists to provide adequate information, an additional difficulty being the information on paper from older periods, which can not be ignored or denied. This does not diminish the efforts made in this direction to introduce uniform requirements for habilitation period to obtain academic positions "Associate Professor" and "Professor", as well as academic degree “Doctor” and “Doctor of Science”. Scientific works are divided in compliance with certain professional fields and several main areas are of particular importance. These include articles and reports published in scientific journals, peer-reviewed and indexed in world-known scientific databases; articles and reports published in non-peer-reviewed journals with scientific review or published in edited collective volumes; citations in monographs and collective volumes with scientific review; citations or reviews in non-peer-reviewed journals with scientific review; supervision of a student who has successfully defended their PhD dissertation; published university or school textbook, etc. Scientific works published in Web of Science and Scopus databases of peer-reviewed literature are of particular value. The requirements for such publications are high and the assessment of the published works is excellent. Naturally, the assessment is a matter of perception of the scientific work by the relevant evaluating (registering) body as one of the main criteria in determining the quality of the scientific activity of the individual and the institution as a whole. All this is directly connected to various rating systems that take into account certain articles in certain publications and rank the institution according to these indicators, including citations to these scientific reports, articles or communications. Such method seems quite acceptable and adequate as an assessment technique, but the result does not always match the reality. The scientific community of Bulgaria regularly performs such assessment and at the end of each year it presents the results of the previous one. The assessment period is not chosen by chance. The indexing of the relevant publications in the two main databases is a long period, in some cases lasting more than a year. Sometimes there is a chance that part of the publishing activity of some scientists is not correctly and accurately reported. Some universities owe their progress to one or several scientists who have become a team and have established themselves in the scientific community and are therefore free to publish their works in such publications. This to some extent distorts the presented information and leads to quantitative accumulations that do not correspond to the overall assessment of the institution. In some cases, if we exclude these few scientists from the relevant higher education institution or scientific organization, the obtained data will be insignificant. The "detachment" of research from social development in general is also a major and important issue. The questions we should ask ourselves are: what is this for? When and how will it be useful to us? Will it be useful to us at all? We should exclude purely theoretical developments, which themselves have a different meaning and necessity. In recent years, the Ministry of education and science in connection with the Implementation of the national policy related to regular monitoring and assessment of research activities (State Gazette, issue 54 dated 29/06/2018) performs an Assessment of the research activities carried out by universities and research organizations and the Research fund. Assessment is made on the basis of individual cards of each institution that contain: objective information received from international databases and verified by the assessed organizations and universities; financial statement for the funds spent on research projects, under agreements with industrial manufacturers, etc. and those reflecting the exploitation of scientific results, as well as data from the national register of PhD students and doctors of science who has successfully defended their dissertation during the year. The biggest share in the overall assessment based on the system of criteria and indicators belongs to the Bulgarian academy of sciences (BAS), which objectively reflects the real situation. We should take into account the main purpose and activity of the institution itself, which provides an answer to its defined, leading and dominant position.

Regarding the other leading institutions: St. Kliment Ohridski Sofia University, Medical University of Sofia, University of Chemical Technology and Metallurgy of Sofia and Technical University of Sofia together with BAS, they determine almost 2/3 of the total contribution to the overall assessment. The scientific research activity is mainly concentrated in the capital in the largest universities. This practically defines Sofia as a primary and most important centre of all areas of this assessment. Given the uneven territory distribution of the assessed institutions, caused by various reasons, the historical development is also significant. Outside the capital, there are several other research centres with a defined contribution to the overall assessment, located in the cities of Plovdiv, Varna, Ruse, Stara Zagora and Burgas. In fact, even the largest universities outside the capital are located in these cities. The overall assessment lacks a considerable contribution of one of the largest Bulgarian universities – University of national and world economy of Sofia. The research defines separate scientific areas using criteria and indicators and the same is done in terms of distribution of scientific publications to the respective scientific field by Scopus and Web of Science databases. These databases distribute scientific works based on criteria and indicators that do not always correspond to our assessment system, thus the information is incompatible. This can sometimes distort or change the ranking in scientific fields. In most cases the distribution of scientific works is determined by the journal or the publications of the scientific conference in which they are included. It does not always reflect the essential standpoints of scientific work. However, such change does not affect the overall assessment of the higher education institution. Thus, the ranking by scientific fields includes higher education institutions that do not perform such scientific research in these fields. It is possible for scientists who perform certain scientific activity to conduct a research in other or several scientific areas. This complements and provides more information on the areas of interest of the scientists and researchers of the particular organization. Quantitative indicators for different scientific areas are quite different in absolute values, thus their direct comparison is impossible and in most cases inaccurate and even incorrect. For instance, some universities are still on top of the rankings even though their key areas of research and education differ from the specific area by which they are ranked. Generally speaking, we can conclude that financial resources are being invested in these activities, this way supporting and encouraging them. Detailed analysis helps establish that one or two prominent scientists specialized in the specific area can drastically change the overall results, which to some extent distorts the assessment in the relevant scientific area. Excluding the data from this overall assessment radically changes the ranking of institutions. An interesting detail is that leading scientists in certain areas form over 65% of the overall results for the institution, sometimes even reaching 90%. This raises the question of whether these institutions could "claim" scientific capacity in this area or whether these exceptions should be presented separately and not be included in the overall assessment. The relatively poor performance of higher education institutions of economic studies is rather worrying. Only the University of National and World Economy of Sofia is in 7th position after institutions such as the Higher education institution of telecommunications and posts of Sofia, Vasil Levski National Military University of Veliko Tarnovo and Angel Kanchev University of Ruse (Terziev, 2020b; Terziev, Lyubcheva, Solovev, 2020c; Terziev, 2019b-c). General tendency in the development of research is based on certain quantitative measures (Fig. 1). We should accept it under certain conditions taking into account the Bulgarian peculiarities and the respective results of the previous years.

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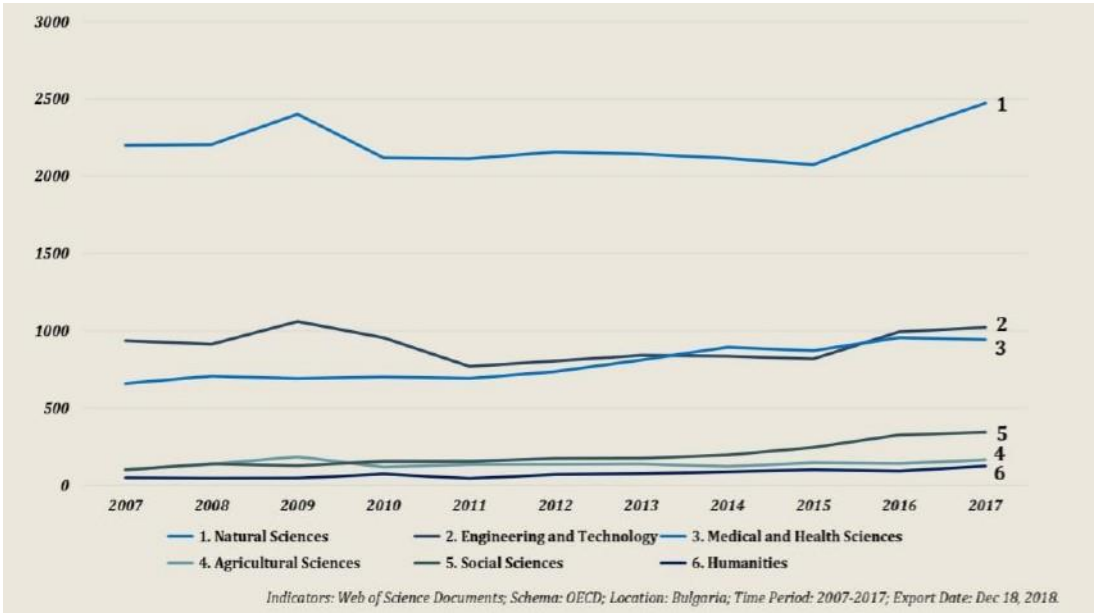

Figure 1: Tendency in the research development

Celia Luterbacher from Switzerland expressed an interesting opinion that the international scientific community is guided by one ruthless principle "I publish, therefore I exist". According to her, we pay too much attention to the quantitative results that only take into account number of publications and citations. The authorities of Switzerland prepare a reform aimed to initiate some changes in this direction. "In the last years the quantitative results more often prevail over the qualitative ones, contributing to lower motivation among scientists, not to mention that this approach will eventually reduce the quality of scientific research. All this should involve a change in the national strategy, which takes into account the various disciplinary and institutional requirements, by applying differentiated assessment practices". While evaluating the current scientific capacity of Bulgaria, the authors of the research report some difficulties in collecting data, the reason being related to incomplete information about publishing activity and citation in the databases used and especially that related to the Bulgarian academy of sciences and the Academy of agricultural sciences. For objectivity of the information and assessment of the respective citation contribution in 2018 the authors used the period from 1985 to 2018. For this purpose, the quotation coefficient in the respective formula is adjusted from 0.5 to 0.05, which also changes the role of publications in the overall assessment, as well as does not allow the comparison of the results from the previous year. The results of scientific activity monitoring performed by higher education institutions show that the main scientific organizations are concentrated in the capital, which is completely logical, considering that the main scientific infrastructure is also situated there. Higher education institutions engaged in scientific activities in Bulgaria include: Bulgarian academy of sciences, which is the undisputed leader, followed by St. Kliment Ohridski Sofia University, Medical University of Sofia, Technical University of Sofia and the only university outside the capital – Medical University of Plovdiv. Some other universities showing high results are the University of Chemical Technology and Metallurgy of Sofia, Paisiy Hilendarski University of Plovdiv, Agricultural Academy, Dr. Paraskev Stoyanov Medical University of Varna, Thracian University of Stara Zagora and Neofit Rilski Southwestern University of Blagoevgrad. It is noteworthy that out of total of 52 higher education institutions in the country only 11 meet the acceptable criteria for intensive and qualitative scientific activity, and 19 have a critically low level of their activity. Practically, there are two main scientific and educational centres already existing in Bulgaria, located in Sofia and Plovdiv, whereas the rest still have a lot of work to do to catch up and there is a large group of universities with really low results.

New scientific centres are emerging in the cities of Varna and Stara Zagora, however Varna, Ruse and Burgas can be characterized as changing for the worse. Interpretations of the recommendations of the Annual Report of the Ministry are quite curious. They are divided into five groups, as follows (2019d):

- The assessment and monitoring of the scientific activity of 2018 shows a serious discrepancy between the achieved results and the reality, which requires a serious reconsideration of the policies for reorganization and consolidation of the scientific potential by concentrating resources in functional associations of higher education institutions and scientific organizations. For example, if activity of 4 research departments focuses on the same scientific area and they are located on the territory of one settlement, they should be reorganized by uniting around one of them, that shows the highest results, and by concentrating the largest financial resource there.
- Universities with a small number of publications in international databases report a large number of defended dissertations for academic degree "Doctor" or "Doctor of Science". This raises doubts about the quality of those works. The National assessment and accreditation agency should give significantly more weight to the publications visible in renowned international databases when making decisions on accreditation of master's and doctoral programmes.
- It is advisable to differentiate research universities, which are in the first group of the ranked ones, by introducing new methods for their subsidizing from the state budget and appropriate prioritization in funding through the mechanisms of the national research programmes.
- Extremely high importance in the formula for achieved results evaluating is placed on publications and patents citations. In most cases, the importance of citations is almost ten times greater than that of scientific papers, despite the coefficient used to reduce their importance twice. A large part of the publications belongs to first-rate scientific journals, assessed according to strict criteria by the respective journals (group Q1 publications). Citation should not be neglected, especially for a smaller scientific community such as that in Bulgaria, but it should not be given such importance. The documents of the assessment agencies in the UK and France, which were presented in 2017, do not take into account the number of citations at all. OECD reports also do not recommend using citation indexes and results when evaluating scientific activity.
- Bulgarian academy of sciences, as well as the Agricultural academy institutes specializing in research predominantly, should be considered separately from the Higher education institutions, which are engaged in various activities. Medical universities are a special group in the ranking due to several factors. Above all, it is the inclusion of most of their academic staff in medical and diagnostic activities, along with teaching and research. This, in turn, leads to constant affiliation of the academic staff with both the university and the medical institution.

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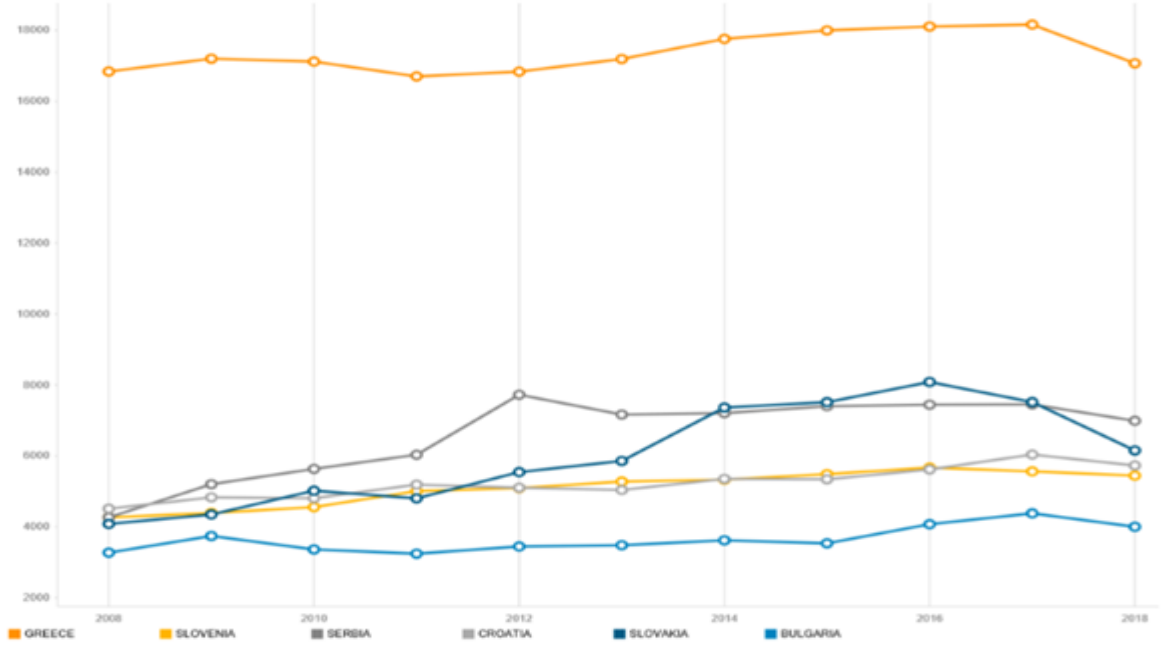

Figure 2: Dynamics of scientific results (number of publications in WoS) from 2008 to 2018 of some EU member states and Serbia comparing to Bulgaria

Bulgaria lags significantly behind Greece (approximately 4 times) and all other countries (from 20 to 50%) when it comes to published scientific works, like documents in WoS. However, while the Bulgarian research staff is more or less on the same level as that of Croatia, compared to other countries it is significantly smaller – 20% (Slovakia) and even twice (Greece, Slovenia), considering the active population in these countries (Fig. 2).

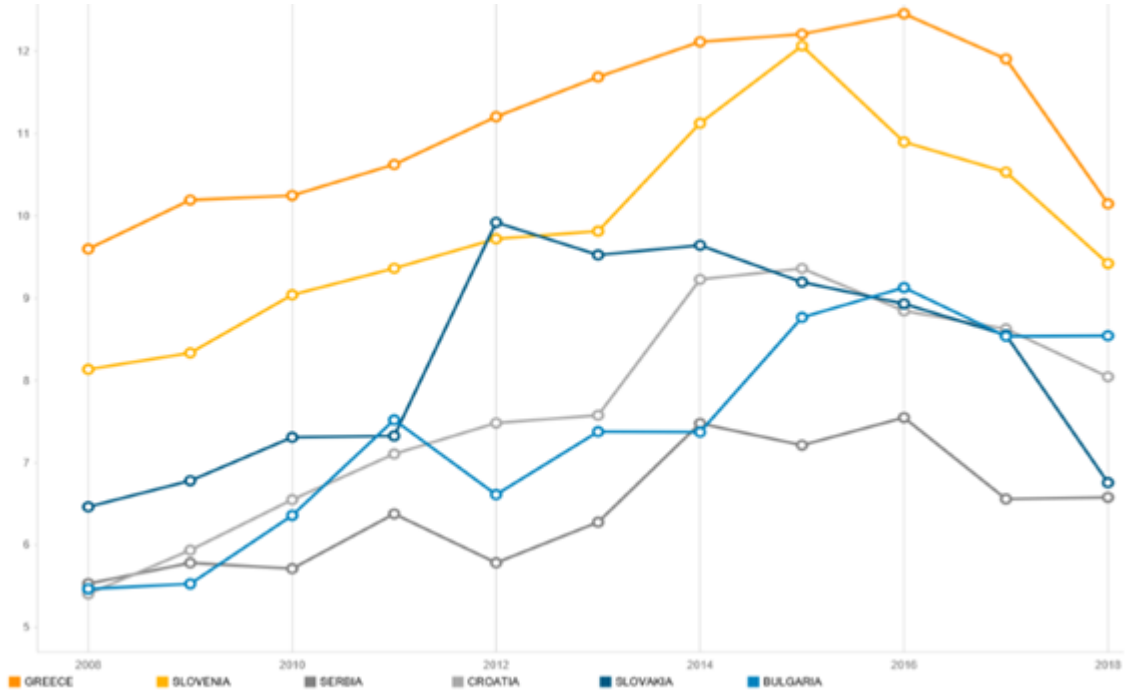

Figure 3: Dynamics of publications of top 10% from 2008 to 2018 of some EU member states and Serbia comparing to Bulgaria

After the introduction of Regulations on the scientific activity monitoring and assessment carried out by universities and research organizations in September 2015, there is stability of the results in Bulgaria, as well as of the publications of the top 10%, compared to the results of 2015. This, however, is insufficient (Fig. 3).

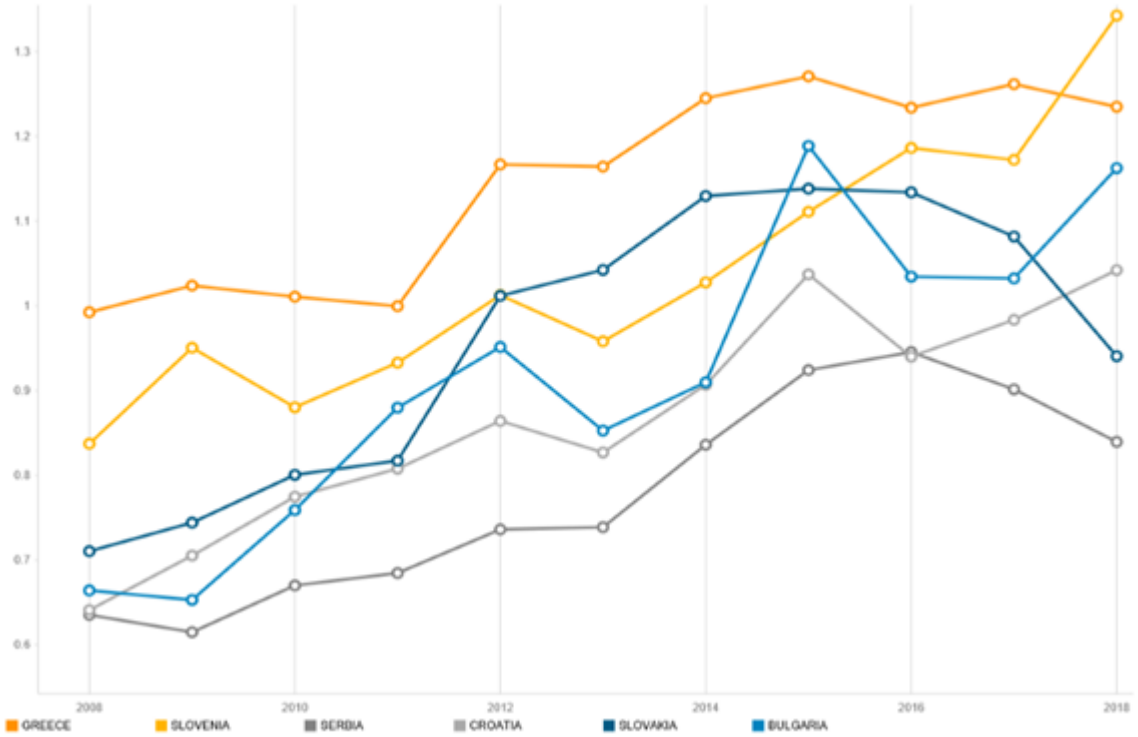

Figure 4: Dynamics of the Normalized Citation Impact from 2008 to 2018 of some EU member states and Serbia comparing to Bulgaria

The coefficient of the Normalized Citation Impact from 2008 to 2018 of some EU member states and Serbia comparing to Bulgaria shows that the scientific impact of the results obtained in Bulgaria is above the world average by 15% and according to this indicator Bulgaria is significantly ahead of Croatia, Serbia and Slovakia (Fig. 4). Bulgaria is a modest innovator and remains the least performing country in the EU-28 due to its structural underfunding, complicated procedures to access project funding, fragmented funding in various fields, weak science-education-business connection and lack of strategic focus on interventions in this area. The innovation index of Bulgaria is not only considerably lower than average for the EU (33%), but also decreases rapidly in absolute terms and relative share compared to the EU average from 2011 to 2013 (from 44% to 33%). It is noteworthy that these poor results are significantly affected by the low funding of research and development activities in the public sector as a percentage of GDP, weak innovation activity of small and medium-sized enterprises and by the strong orientation of the research system in Bulgaria to basic science. The commercialization of the results is a major weakness of the Bulgarian research system. There are only very limited frameworks to support collaboration between public research organizations, universities and the private sector. Exchange and support systems are not sufficiently developed to facilitate the transfer of knowledge, the creation of university spin-off companies and to attract (venture) capital. Public policies do not promote long-term sustainable partnerships between all parties involved in innovation. The analysis of the results outlines a serious reason for this weakness, especially in terms of cooperation between research organizations and business in Bulgaria.

The Bulgarian chamber of commerce and industry publishes official data showing that Bulgarian companies are not prepared to implement innovations independently (only 23% of entrepreneurs have expressed such readiness) or to commission universities and research organizations to develop new products. This lack of collaboration and mutual trust between research organizations and enterprises together with negative experience in commercialization of the research results of scientific organizations and businesses is one of the main reasons for the country's low innovative activity (ranking last in the EU). Not surprisingly, patent activity is also very low. Therefore, special efforts are needed to bring together the interests of research organizations and businesses, as well as to actively support and encourage their collaboration. The analysis of the state of research in Bulgaria carried out by the Ministry of education and science outlines the weaknesses as to the quality of services provided by parties of the public research sector, as well as the potential for development of research and innovation. The main problem in this area is weak cooperation with business, in particular:

- Lack of coordinated actions related to research and innovation;
- Lack of modern scientific and innovative infrastructure; Fragmented institutional environment;
- Low share of funding on a competitive basis and low overall funding rate;
- Unfavourable age profile;
- Insufficient interaction between research organizations and companies.

There are also some strengths supporting market-oriented change. These include good traditions in the natural sciences, preserved scientific schools and high publishing activity in some areas relevant to emerging technologies (physics, chemistry, materials science, biochemistry and molecular biology, medicine, pharmaceutical and engineering sciences), cultural diversity combined with specific national identity, strong orientation of researchers towards international cooperation, positive attitude of the society towards education and science. However, these strengths shall be compliant with the objectives and priority areas of the National strategy for implementing the innovative potential of the research system. We need to work on adaptability and sustainability of the potential through a stronger emphasis on market signals and ways to attract private investors. New and well-equipped research infrastructures are important elements of ecosystems in the field of research and development and innovation. The analysis identifies the following negative trends in the state of research infrastructure:

- obsolete facilities and inefficient exploitation of the existing ones;
- lack of an advanced approach to administrative and financial management of the existing infrastructure in basic organizations;
- lack of professionals and qualified employees to work with the facilities and their users;
- lack of coordination and complementarity of the available modern facilities within one organization or between different organizations;
- lack of equipment concentration and, in some cases, a highly individual approach and duplication of equipment.

Prepared diagnostic review of the research infrastructure and equipment in Bulgaria confirms the lack of sufficient modern infrastructures that meet modern requirements for research and innovation. Out of a total 161 research infrastructures in Bulgaria, 12 are of European importance (7%), 84 are of national importance (52%) and 65 are of regional importance (40%). About 30% of all infrastructure has been in operation for the last 15 years or more, and 70% of infrastructure has attracted between 25,000 and 100,000 euros per year for the last five years.

The lack of sufficient funding in the field of research and innovation, especially in infrastructures outside Sofia, leads to the impossibility to develop potential for smart specialization in Bulgaria. Generally, the diagnostic review identifies the need to support the best-developed infrastructures, with potential in the thematic areas at national and regional level.

3. CONCLUSION

The improvement of the infrastructure will significantly expand the opportunities of Bulgarian scientists to conduct high-quality research at a global level and will support the development of high-tech industry in Bulgaria. The problems identified above can be solved by increasing the participation of Bulgarian scientific organizations in joint European initiatives and infrastructures. In view of the insufficient resources, and as a way to adapt the research capacity to the needs described above, its main objectives include:

- Support for the research development policies described in the National strategy for research development until 2030 by addressing the priorities and reflecting the agenda for the creation of scientific infrastructures;
- Identification of the priorities for sustainable development of scientific infrastructures until 2023, by upgrading the Diagnostic review of scientific Infrastructures and equipment, which revealed gaps, but also the potential for smart specialization in Bulgaria through policies in the field of research and innovation.

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THE INTELLECTUAL CAPITAL AND LEAN PROCESS CORRELATION

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ABSTRACT

With the goal of establishing a stable and prosperous company, attain all the goals set by the management the importance of investing in education, trainings, development of new skills and working processes might be the key of achieving it. Vis-à-vis that it's very important to understand the Intellectual Capital concept (the creative and effective application of knowledge in production) and many other processes and models such as LEAN for the efficient managing and other models that could bring new value for a company. LEAN has been a growing trend among companies who want to achieve greater efficiency, less waste of labour and materials and achieving competitive advantage. The Intellectual Capital such as Lean are topics that many researchers have explored, but there still exists a misinterpretations of their function and there is still not a clear and accepted definition of the terms. Lean can be regarded as both as tools and methods, or it can be interpreted as a philosophy. A known perception is that there often exist a lack of focus or an inability of organizations to create a culture that will sustain Lean as a continuous change - and improvement process. The Intellectual capital structure and LEAN concept structure are much correlated and the first question would be how to consider LEAN as part of the Intellectual Capital and how to exactly define both terms. According the financial statements we are able to insight the financial situation and many results of a business entity, but there is a "certain invisible factor" in the contemporary "society of knowledge" that is becoming more and more responsible for the organization's performance and that is responsible of why some companies are more efficient than others. Nowadays, in a so called "society of knowledge" there is an increasing awareness of the importance and need of studying methods for the efficient company managing and getting a better knowledge regarding the Intellectual capital and models slouch as Lean can help us a lot for the efficient company management and better results.

Keywords: *intellectual capital, Lean model, organization, process, correlation*

1. INTRODUCTION

The age of increasing discontinuity and complexity as well as changing current and future internal and environmental conditions demands new ideas and solutions with regard to dealing with these parameters. Will it be sufficient in the future to write down visions, mission statements and strategies on glossy paper, which have been developed at the level of top management in sweaty workshops and clearly defined strategy processes?

This question is difficult to answer and it is undisputed that planning and dealing with strategic positioning will remain a success factor. One question, however, is allowed at this point: What possibilities exist to implement the so often excellent strategic projects and the corresponding models in practice and to increase their effectiveness and to anchor a corresponding mindset among employees? The past and the present show that the communication and the top-down approach for the implementation of entrepreneurial projects do not work as one imagines. What possibilities exist to increase the effectiveness of the entrepreneurial goals and intentions, as already mentioned, and to secure them in the long term? Practice shows that one potential is not given enough consideration: the human capital and its intellectual potential. There is still the widespread opinion that the management level knows best what needs to be done for the benefit of the company. Well, this may certainly be true up to a certain point, but why are we reluctant to involve employees more in the development of potential? The financial crisis has shown once again that this can have devastating consequences and that the implementation of exclusively success-related and short-term goals can limit intellectual potential. The author in no way questions the profit intentions and the required return of the capital providers, but is at the same time convinced that through the increased inclusion of the resource human capital and the application of appropriate concepts, such as lean management, perhaps not in the short term but medium to can bring added value for the company in the long term and could be a supplement to conventional profit maximization, because from the author's point of view, one does not exclude the other. The concept of lean management also includes a change of perspective from the shareholder value approach to the stakeholder value approach, which, according to new literature, will place new demands on companies, an attitude that is not unknown but has hardly been developed because it is not possible in the short term to realize this. As a result of the further development to an information and communication society, the companies commonly referred to as service companies are experiencing ever increasing economic relevance. In addition to the industrial sector, they create jobs and thus contribute significantly to the growth of an economy. Yet their business potential is often linked to the industrial economy. More and more such service companies are going public in order to generate the risk capital they need to expand their activities. In order to steer the existing capital into its optimal use, the companies to be regarded as investment projects are to be assessed by the financiers. Especially in the field of service providers in the so-called New Economy, incorrect evaluations of companies have been found at times until recently. It remains open, among other things, where the gap between a result of the fundamental valuation and the valuation on the organized capital market comes from. Assuming that the standard business valuation procedures worked correctly, the differences in valuation may be explained by the neglect of certain value drivers. For such and other considerations, it is first necessary to identify and qualify service companies, their services and their value drivers. It should be noted here that due to the heterogeneity of the service providers, no conclusive catalog of value drivers can be found, but only the essential categories are fixed, which then have to be designed specifically for the company. Criteria relevant to the evaluation can then be discussed and it can be assessed whether there are significant differences compared to companies or investment projects in the industrial sector.

2. BASICS OF LEAN MANAGEMENT

Lean management is a method for continuous process optimization. It aims to minimize waste and make the entire value chain efficient. Lean management can literally be translated as “lean management” (Bhasin, 2015). The term lean refers to the fact that lean management focuses on the essentials. In a nutshell, it's about increasing productivity while avoiding waste.

The main thing here is that processes and responsibilities are clearly defined. Simple and clear communication channels also play a central role. Lean Management makes use of various tools and methods such as the PDCA cycle.

2.1. General

With the International Motor Vehicle Program, initiated in 1985, scientists at the Massachusetts Institute of Technology (MIT) investigated differences and performance characteristics in the production of Japanese, US and European vehicle manufacturers. This emphasized the principles and methods of the Toyota production system, known today under the term of LEAN Management, as a sustainable answer to classic mass production (Maciag, 2019). A holistic approach to reacting to changes in the turbulent company environment has emerged through the consistent focus on the wishes of the customer, the urge for continuous improvement, the complete avoidance of waste and the increase in process flexibility.

2.2. Terminology

2.2.1. Lean Management

The study carried out by MIT resulted in a significant competitive advantage for the Japanese automotive industry, which was primarily due to the concept of the Toyota production system. The word lean is not to be understood in its direct translation as lean, but rather as lean in the sense of the minimum necessary proportion resources (Thomsen, 2014). Lean Management is an extension of the principles and methods of Lean Production to the business processes of the indirect corporate areas. From an academic point of view, this extension is called Lean Administration (Tarigan et al., 2018). Lean Production and Lean Administration can be subsumed under the term Lean Management, whereby the former relates to the direct and the latter to the indirect corporate area.

2.2.2. Process and business process

Process and business process could be described as a "sequence of processing steps" in which "the basic repeatability of the sequence is characteristic". The term is given an even broader definition and is defined as the “set of interrelated means and activities that transform inputs into results” (Nadarajah & Kadir, 2016). The result is the product. Based on a certain input condition, which is represented by one or more supplies (inputs), the process follows a defined result (output) with a targeted sequence of activities. In doing so, he details the flow and transformation of material, information, operations and decisions, which are delimited by a clearly described process start and end. The meaning of the term business process is often discussed in the literature and not interpreted uniformly. If the pure concept of the process does not make a clear statement about the limitation, the range, the structure and the recipient of the process result. Therefore, business processes are a special kind of processes that are "formed for the purpose of creating services". That means a business process is the content-related, temporal and logical sequence of activities that are necessary for processing an object of economic relevance (Graesley, 2003).

2.2.3. Product

Product can be defined as the result of a process (Parker, 2004). We can further classiffy it into "something which, made of certain materials, is the result of human labor" or a service, i.e. a summary of material or immaterial properties of a physical good or service. This service package consists of a bundle of properties aimed at creating customer benefits.

2.2.4. Customer

In the context of quality management and quality assurance, the term is defined as the "recipient of a product provided by the supplier". In terms of product definition, a customer is "any direct or indirect recipient of a service". In principle, it does not matter whether it is a physical product, a service or an idea (Al-Mashari, 2001). Often potential customers are also included in this definition. The direct customer of a company is not only the external customer, as or buyer of the end product, but also the internal customer or the service recipient in your own organization.

2.2.5. Value creation

The concept of added value must always be defined from the customer's perspective. With the help of target criteria that quantify the customer's wishes, the added value of the individual activity can be determined on a customer-specific basis. Basically, there are more types of activities in the sense of value creation (Bertagnolli, 2018). Waste is understood to mean unnecessarily repeated and superfluous activities that are in no way carried out the use of material, space or time contribute to increasing the value of the product. To eliminate this type of activity, no change to the actual process is usually necessary.

2.2.6. Direct and indirect business areas

Manufacturing companies can be divided into direct and indirect (peripheral) areas with regard to the manufacture of the physical product (Gerritsen, Gerven & Jongh, 2007). **Direct corporate divisions** are directly involved in the operational provision of services (production) - this is where the company's main service, the physical product, arises. On the one hand, this means "all production activities that change the characteristics of the respective material", i.e. "the six main groups of manufacturing processes. On the other hand, "all those logistical activities that are used for handling, transport, storage, provision and commissioning". Often, the literature also speaks of direct value-adding, primary or performance-oriented areas (Gerritsen, Gerven & Jongh, 2007). **Indirect company areas** do not contribute directly to the operational service provision - here a supporting service arises for the main service. Accordingly, you deal with activities that are necessary to fulfill the activities in the direct corporate area and are therefore not linked to the physical flow of materials. These areas can be both the maintenance of the tool system as well as the planning in preparation for work, the development or services. The terms indirect-value-adding, secondary or resource-oriented areas are also used here (Gerritsen, Gerven & Jongh, 2007).

2.3. Principles of Lean Management

2.3.1. Overview

We can derive five generalized principles of lean thinking based on the values as well as the guiding principles of the Toyota production system originally developed for the direct company divisions. These principles of lean management represent "a possibility to specify the value, to organize the value-adding activities in the best sequence, to ensure that these activities run smoothly and demand-driven, and to carry them out more and more efficiently". With these guidelines, which also represent recommendations for action -sent, a waste-free process flow should be implemented (Bertagnolli, 2018).

2.3.2. Value definition from the customer's point of view

The distinction between added value and waste is always made from the customer's point of view and it is important to further specify this specific "added value". The values of the customer and the supplier are often very different and make it difficult to assess the value of the product without knowing the exact needs of the service recipient , which must be satisfied with the provided input (material, information, etc.).

This view is particularly useful in complex and non-transparent processes that primarily occur in indirect company areas, since a value definition is very difficult from the end customer's point of view . Nonetheless, in terms of lean management, the focus is always on the end customer and all activities must be geared towards him (Knüpfer, 1994).

2.3.3. Identification of the value stream

The value stream includes all activities (both value-adding and non-value-adding) that are necessary for product manufacture in the respective area under consideration. Based on the knowledge of the value of a product, the entire process of service provision, from the customer's order to the handover of the product, takes into account (Erlach, 2013). The activities of each individual process step can then be divided into three categories: useful power, apparent power (non-value-adding activities) and reactive power (waste). The identification of the value stream on the one hand contributes significantly to increasing the understanding of the process and on the other hand supports the disclosure of problems that previously went undetected (Temple & Landaeta, 2010). With this support in uncovering the actual value-adding activities, the waste can be eliminated directly from the process and the non-value-adding activities can be seen as a field of action for improvements.

2.3.4. Flow principle

With its process orientation, the flow principle contributes significantly to the fulfillment of the guiding principle of the Toyota production system, which is to shorten the time span of the customer order from receipt to completion. Due to the inclination of people to function-oriented thinking and acting, the batch processing, i.e. the sequential processing of the same activities on different products, large lot sizes promoted (Hugos, 2009). This procedure increases the throughput time of the individual products and leads to high stocks. The physical and organizational linking of individual process steps to a continuous material or. Information flow counteracts this problem (Lynch, 1993). We can describes the one-piece flow, i.e. the continuous production of exactly one product with no stocks or waiting times, as the idealized optimum of production, which results from the further development of flow production according to Ford. The reduction generated by the flow the inventory leads on the one hand to an improved error detection and on the other hand to a reduction of the capital commitment. In addition, the customer's degree of satisfaction is increased as a result of the increase in flexibility and the reduction in throughput times.

2.3.5. Pull principle

The pull principle implies the needs-based provision of services. On the basis of the successfully implemented flow principle in the process, its control can be switched from the bring principle to the fetch principle (Charles, Dan & William, 2018). This enables the product to be made available exclusively at the request of the customer or a subsequent process step. In addition to the falling stocks, another advantage is the self-regulating property of the fetch principle. This means that a production plan or a detailed work specification only needs to be drawn up for the last process step. The upstream processes are controlled by the demand at the end of the process chain. The currently most established implementation of the Hol principle is the Kanban system. The procurement of material and sub-products is self-regulating depending on consumption. The minimum safety stocks required for implementation contribute to a more homogeneous utilization and smoothing of the process chain. In addition, the reduced lead time and the associated shorter and more stable delivery time have a positive effect on the customer's ordering behavior (Seifert, 2003).

2.3.6. Perfection

The pursuit of perfection is the guiding principle of lean thinking and is therefore the core of lean management. After the first four principles have been successfully anchored, the foundation for a perfect, flawless condition is laid. It is important to concentrate on the way in which such a state can be achieved. In reality, two approaches are used in combination: continuous improvement (Kaizen, Japanese "way for the better") and Radical change (Kaikaku, Japanese "reform") (Satterthwait, 2006). As a prerequisite for continuous improvement in small steps (Kaizen) mentions the existence of standardized, stable and transparent processes. On this basis, the aim is to continuously improve the current situation by continuously questioning all activities to be carried out, including the employees involved in the value-added process. Sufficient process transparency and the implementation of standards enable a sustainable introduction and anchoring of the improvements (Thomsen, 2014). The structured "perfection even in the small" promotes the optimal design of the overall process. Gradual or radical introduction of improvement measures or changes within a defined period of time. It enables the introduction of new strategies, approaches or manufacturing processes to eliminate waste.

3. INTELLECTUAL CAPITAL AND THE LEAN PROCESS

In today's time of rapid change that has cost many large companies dearly, the most important thing is to know how to learn, as this is the only way for a company to adapt quickly to new business conditions (Chatzkel, 2002). The ability to learn is linked to the intellectual capital of the company - a new and still insufficiently researched economic category. Intellectual capital is becoming the most important factor of production in all sectors of the economy. Thus, the company's attention is increasingly focused on the creativity of managers and operational executors, the ability and willingness to learn and accept new knowledge.

3.1. LEAN model as a segment of intellectual capital

Lean management is a way of thinking and operating a complete system. Such a system uses various models and tools to be directed towards the continuous improvement of the functioning of the business system with constant improvement (Thomsen, 2014). The Lean concept has the idea of providing the customer with exactly the quantity that the customer wants to buy both at the time the customer wants it and at the place where the customer wants it. All of the above is sought to be achieved at minimal cost, which is an extremely effective approach. In the first place, the LEAN concept has the task of creating value for the customer, striving to create as much value as possible with minimal resources (Gorecki & Pautsch, 2018). From the above it can be seen that the LEAN model is directly related to intellectual capital, ie that the LEAN model is a part or segment of intellectual capital, which aims to improve the business process and with extremely limited resources to achieve as much business success.

3.2. The impact of intellectual capital on a company's business

As the global business world gradually shifts to the knowledge-based economy, it is becoming increasingly important and apparent for business organizations that adequate attention must be paid to the company's intellectual capital base in order to survive in this complex and dynamic world of business (Ginesti, Caldarelli, Zampella, 2018). Gone are the days when companies only focused on their physical capital and paid little or no consideration to their intellectual capitals and still made huge profits. The competition in today's business world has become so intense that managers are using every resource at their disposal to pull others out of business. Intellectual capital has also become an important business resource that companies can use to gain competitive advantage. Companies that have managed their intellectual capital better have achieved a stronger competitive advantage than the other companies (Jordan, & Michel, 2001).

Human capital, which is an integral part of intellectual capital, has been recognized as one of the key factors for growth in any business (Becker, 2008). Companies that strengthen their own intellectual capital management compared to others do better. Intellectual capital is one of the main determinants of the performance and long-term profitability of a knowledge economy (Mouritsen, Bukh, Larsen, & Johansen, 2002). Intellectual capital is a potential source of competitive advantage and is related to future benefits. Unlike tangible assets whose value decreases with use, the value of intellectual capital increases with its use. Intangible resources, which are a substance of intellectual capital, rarely directly affect the creation of value, because the value created by the use of intangible resources is indirect, with the fact that they are interconnected with other forms of assets. Therefore, they cannot be specifically valued in relation to other assets. Despite the undeniable importance of intellectual capital for generating future benefits, determining its value and impact on the value creation process is an extremely complex and demanding job. That is why today, not only the problem of valuing intellectual capital, but also the research of its impact on the business performance of companies is gaining in importance and relevance (Janosevic & Dzenopoljac, 2013).

3.3. Lean culture as part of human capital

Lean begins with education, develops through education, and never ends with education. The culture of an organization is defined by the practices and protocols that people follow while doing their daily work (Bernstein, 2005). Culture also includes values, defined and contained, that influence the way people react to each proposal. Since we live in times of rapid change, and they will probably be like that forever, it is desirable to create a Lean culture that is flexible and able to change quickly when conditions require it. In order to extract the maximum intellectual capital, companies must systematically emphasize the characteristics, position and advancement of man as the bearer of knowledge and progress of the organization. Organizations need, first of all, to hire a quality workforce, and even to invest in such staff, to evaluate the quality of work, results and work, to motivate them by rewarding, improving, involving decision-making, assigning more responsibility, etc. (Burton, 2016). “The flow of people’s value encompasses all the essential processes that employees in a company will encounter from the time they are hired to the time they separate from the company. Each of these policies, systems, and practices must be carefully examined to determine whether they enable or hinder the adoption of a team, collaborative culture of solving systemic problems (Thomsen, 2014). Alternatives need to be developed, tested and fully tested before a wide range of changes. Each phase of the value flow must be examined and possibly modified over time to support the culture required in the organization in the future. Finally, human capital is an alarm that informs line management about the perceptions and attitudes of the workforce. Organizations go through well-understood and predictable responses to change. Human capital is ideally positioned to pulsate in the organization on a regular basis at any point in the transformation plan, providing feedback to managers regarding the current culture relative to where they expected to be (Murli, 2018)” The flow of human value can be seen in the following graph.

Figure following on the next page

Figure 1: The people value stream
(Source:Murli, 2018)

3.4. Applying Lean principles and tools in companies

Lean concept is a set of efficient and rational procedures in the systematic use of principles, methods and tools in industrial systems to find and eliminate useless activities (losses and errors) in work processes, thus creating the necessary conditions for harmonious operation of enterprise functions in a given time and conditions. Environment (Liker & Lamb, 200). Its implementation leads to efficient and effective procedures in work processes that must be constantly improved and, internally for each industrial system, standardized and accepted as models in the execution of work processes in order to achieve their business excellence in them. In this way, it contributes to the Total Quality Management system through the establishment and integration of standard management systems, and the application of adequate tools to increase efficiency (Stoeff & Schmeisser, 2014). The establishment of the lean concept affirms precisely the tools that contribute to efficiency, thus creating a productive climate in industrial systems and a good basis for further improvements in Total Quality Management for the general satisfaction of employees, users of products / services and society in general (King, 2019). The main features of Lean companies are small series of products, identification and use of competitive advantages, standardization of business, development of individual initiative and teamwork, proactive sales policy and preventive features. In addition to significant differences in the characteristics of the company, there is also a significant difference in the orientation of the company (Asefeso, 2014). While the traditional company is oriented towards the product, budget, finances and quality of products and services (the quality of products and services is maintained on the basis of inspection), Lean company is oriented towards the customer, his demand, process and care for the quality of its products and services. a way to incorporate quality into the product or service itself. Also, all stakeholders have the same point of view regarding LEAN concep.

4. CONCLUSION

Nowadays, the importance of intellectual capital is becoming immeasurable. Human capital has long since become the most important factor of production that has a role in launching all other production segments as well. Precisely, intellectual capital is becoming the leader of a "new" economy based on knowledge. The interaction of all components of intellectual capital forms the basis for creating added value in the company and building the company's competitive advantage in the market in which it operates.

Human labor is gaining in importance and is moving towards intensive activities. Companies are becoming more and more knowledge-intensive companies that strive to provide their customers with the highest quality and most flexible products and services. We have seen that the LEAN model is part of the Intellectual Capital. Therefore, the LEAN concept is an inseparable component of intellectual capital. Also, intellectual capital on the other hand has direct consequences for the success of a business organization and LEAN culture is an integral part of human capital. We have seen that the application of LEAN principles and tools reduces business costs and increases the quality of products, more precisely, increases the satisfaction of end customers or consumers. All stakeholders see the LEAN concept as a solution for achieving ultimate efficiency in the company, from which we can draw the conclusion that the application of this principle realizes a successful business strategy.

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LOGISTICS SOLUTIONS IN A FORM OF PALLET POOLING – EXAMPLE OF CROATIAN MARKET

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ABSTRACT

Working in logistics and supply chain provides a challenge when it comes to pallets and transport of goods. Making sure that company has enough of pallets to ship the goods is challenging enough, but making sure that those pallets are exchanged for the ones of same quality, and returned back to warehouse is additional challenge. Making sure that warehouse is large enough for pallet storage and constant investment in new pallets is a cost that can be avoided or reduced. Pallet pooling provides a simple solution for transport of goods, because company that has quality planning management can make sure that they only rent the amount of pallets they need for certain period. The pallet pooling company takes care of pallet management, and makes sure that the end location is safe for pick up. They deliver the pallets to the user, who ships their goods on those pallets to retail or wholesale, without the exchange and transport cost back to the warehouse. This study presents how pallet pooling came to Croatia, and how the major market leader realized that emerging markets, such as Croatia, have to be a part of pallet pooling global market. Presenting benefits of pallet pooling solutions versus the white wood pallet management on Croatian market and the benefits for the producers and retailers is the main goal of the study. Study could help Croatian producers, and all producers working in emerging markets to find benefits of pallet pooling and make their business more profitable.

Keywords: *Pallet pooling, supply chain, logistics*

1. INTRODUCTION

Managing pallets in supply chain has become one of the most important factors for global leading producers in certain sectors, such as consumer goods (grocery products, fresh products, beverage, etc.), automotive and many other. Usually pallets are purchased and then stored at company warehouse site. There is an additional complexity when pallets are purchased, such as limited warehouse capacity for final products, internal pallet management system, or the fact that financial funds are limited due to investment in pallets. Each time the goods are shipped to retail or distributor location there has to be a pallet exchange, which is another complexity, since the company has to make sure the pallets are exchanged for the ones with similar quality. Global producers face additional challenges since their goods are shipped world-wide, or at least in the region. That requires additional logistics efforts, coordinations and most important, additional cost. While taking care of shippment to distribution center or retail store is one of the logistics tasks, another one is to make sure the pallets are exchanged in other country, and that the truck is sent back to warehouse driving only empty pallets. This is where pallet pooling provides many benefits to producers, retailers and distributors. By renting only the amount of pallets needed for the shipment, the company does not have to stock the pallets, or increase their costs by taking more pallets than needed. They also do not have to exchange the pallets at the end location, or take the pallets back to their warehouse.

They only have to make sure the logistics makes the renting orders in time, so the shipments of goods to their clients or partners are made in time.

2. PALLET POOLING REVIEW

By the end of World War II there was a significant amount of handling equipment left by USA troops in Australia and that was used by Australian government to form the Commonwealth Handling Equipment Pool (known as CHEP). The company was privatized in 1949 and together with LOSCAM, who started in 1942, also in Australia, is considered a pallet pooling pioneer. CHEP started with pallet pooling in Australia, and with constant investments grew to world-wide pallet pooling provider and leader, while LOSCAM focused on Australia and Asia. What pallet pooling provides is a rental of pallets without the complexity of ownership. Pallets remain in pooling providers ownership and the renting company only uses them to transport the goods from production facility, or warehouse to retailer, distributor or user. This simplifies transport and logistics for producers and retailers, and makes more economical supply chain. Although there are benefits for supply chain, the biggest resistance comes from supply chain stakeholders. Some studies show that 46% of supply chain executives cited resistance to changes in process (MH&L Staff, 2008). Producers who ship goods from a factory in one country to numerous countries and markets, only have to think about the transport to end location. They do not have to return empty trucks with pallets to their factories, and therefore can save money or simplify the process. They also have responsibility for the pallets only until the shipment to customer is done. After that the pallet pooling company makes sure that the pallets are collected and returned to the closest pooling distribution center. One more benefit for the company renting the pallets is that they only order the amount of pallets needed for the next delivery, and in 48-60 hours the pallets are delivered to their factory. So, there is no need to send trucks to collect the pallets. This is helpful with seasonal goods, because the producer does not have to stock the pallets during the year just to be able to serve the market in time. They just have to communicate to the pooling company their seasonal needs and make sure to order the pallets in time. If a company works with white-wood pallet exchange they have to document number of pallets exchanged with each shipment and keep inventory. That can cause difficulties at year end. Retailers have one inventory list and producer the other, which calls for a pallet inventory review meeting, and usually one side has additional cost due to differencies, counted as lost pallets. Retailers who agree on pallet exchange with producers have to devide pallets by quality, and make sure that they exchange pallets with the same level of quality. This causes additional labor time and higher labor costs and higher warehouse cost. Producers on the other side have to make sure that the pallets they send are accepted by the customer. If they use one-way disposable pallets, goods might not be accepted by a retailer and can cause additional cost of new pallet purchase. By using pallet pooling solutions and companies that provide the pooling service there is no exchange between producer and customer and no inventory list. Producers send the information about delivered pallets to pooling provider and do not have to worry about the collection. Additionally all pooling equipment, including pallets can help reduce waste, because they are repaired and reused. Instead of cutting forrest and making new pallets, it is more usefull to collect, repair and reuse the pallets in the pool, and that is why some companies, such as CHEP, collect damaged pallets as well. Those pallets are repaired and returned to the pool. Independent study made by RDC Environment confirmed that CHEP pallet pooling system has the lightest impact on environment, compared to alternative systems, e.g. white-wood returnable or disposable pallets (Leblanc, R., 2013).

3. LITERATURE RELATED TO PALLET POOLING

There is a wide scope of literature related to pallet management, including pallet pooling, or pallet renting. Some papers are related to benefits of pallet pooling or costs related to pooling

solutions, and other related to pallet supply chain management or allocation of pallets. Auguston (1991, p. 46(8):76)) wrote about the U.S. market and how ready it is for pallet pooling, and had a conclusion that the cost of pallet pooling was still quite high, despite the benefits of pooling. Almost two decades later Mosqueda (2009) compared cost of pallet rental solutions versus white-wood pallet exchange system in the U.S. and had a conclusion that there can be some hidden costs in pallet rental systems, especially in form of transfer fees. However, he stated that each company should choose what is the best for their business, because rental cost does not have to be higher than purchase of white-wood pallets. Michel (2014) also reviewed the U.S. market pallet management, and presented how almost 60% of respondents said that the purchasing price of pallet was the main decision driver. He also stated that 57% of respondents stated they use pallet rental company or recovery system, which is an increase of 13% versus previous year. On the other hand, Roy et al. (2016) considered a two stage model for comparison of single-use pallets and rental pallets, and had a conclusion that rental pallets have a higher cost. McKerrow (1996, p. 39-42) wrote about envinromental benefits of moving from disposable to recyclable and reusable packaging. He also stated that there is clear cost benefit from reduction in purchase of one-trip packaging, as well as some other benefits. Raballand and Aldoz-Carrol (2005, p. 6) wrote about the Multiplicity of pallet standards, and stated that multiple pallet sizes increase trade costs, due to depalletization and repalletization and also mention the benefits of pallet rental solutions in form of cost savings. Pallets play a major part in supply chain, and pooling or rental solution percentage is increasing each year. There are some markets, smaller emerging markets like Bulgaria, Croatia, Serbia and Slovenia, who are the main growth drivers for CHEP, but there are large Asian markets, such as China, where the pooling and rental companies came in last decade as well. According to Brindley (2014) China market is expected to grow at high rates, due to logistics improvements that country is working on. Although CHEP and LOSCAM came to the market almost at the same time, China Merchant Group (CMG) bought LOSCAM, giving it a slight edge on the market, especially since CHEP focused more on United States and Europe, while LOSCAM is focusing on China and Asia. The future relationship of China and United States and the question will containers be sent from China floor loaded with product, or will they start with palletization, will also have impact on pallet pooling solutions (Brindley, 2014). The future literature related to pallet pooling and rental solutions will have to focus and tackle with questions of allocation and hidden costs of pooling solutions. The focus of future studies should also be related to waste, carbon emission impacts and more sustainable world.

4. PALLET POOLING IN CROATIA

Pallet pooling companies came to Croatia in the last decade. Since each producer has a different color of pallets, e.g. CHEP pallets are blue, IPP Logipal has pallets in terra cotta color, etc. those pallets were shipped to Croatia even earlier. Although used and delivered in Croatia, those pallets were not collected back by a pooling company, since none was present in Croatia. Instead, those pallets were used in regular exchange between retailers and local distributors, same as white-wooden pallets. Those pallets were bought or collected from a market by pallet dealers as well, who would re-sell them same as white-wooden pallets. The first company who decided to register an entity in Croatia, and cover the Croatian market was CHEP, who is a global leader with more than 120 million pallets circulating the Europe. Currently they serve more than 500000 customer locations in more than 55 countries (LeBlanc, 2019). CHEP came late in 2012 due to large quantity of pallets sent to Croatia by major consumer goods producers. CHEP relized that it was time to cover the Croatian market and open a distribution center. In the same time it was done in Serbia as well, and Slovenian market was covered few years earlier. Together they became a part of CHEP Emerging markets. In the beginning CHEP opened a distribution center in cooperation with Alca Zagreb d.o.o., who was a collection and repair

partner for Croatian market. They informed all retail and distribution companies in Croatia about their presence on the market, and stated that CHEP pallets have to be returned back to them. CHEP pallet portfolio comes with wide range of pooling platforms, but there are 4 pallets most common for Croatian market. The most common pallet is one with size 1200x800mm and height od 144mm, which is the same size as Euro pallet, as seen in figure 1.

Figure 1: CHEP Wooden Euro Pallet 1200x800mm
(Source: https://www.chep.com/hr/en/consumer-goods/platforms)

The 1200x800mm pallet is used most often for transportation in Europe, and is makes the majority of CHEP pallets in the region. UK market is a bit different and they use industrial size pallets, with size 1200x1000mm and height of 162mm, known as UK wooden pallet, as seen in figure 2.

Figure 2: CHEP UK Pallet Wood 1200x1000mm
(Source: https://www.chep.com/hr/en/consumer-goods/platforms)

The UK size pallet is mainly used by UK companies when sending goods to rest of Europe, but the companies sending their goods to UK are quite often requested to use the UK size pallet, known as industrial pallet. There are 2 smaller size pallets, a quarter plastic pallets with size 600x400mm and a half pallet wood and metal, with size 800x600mm, as seen in figure 3 and figure 4.

Figure 3: CHEP Quarter Pallet Plastic 600x400mm
(Source: https://www.chep.com/hr/en/consumer-goods/platforms)

Figure 4: CHEP Half Pallet wood and metal 800x600mm
(Source: https://www.chep.com/hr/en/consumer-goods/platforms)

Both smaller pallets are used for in-store visibility of goods and products, mainly used in retail stores. In Croatia they are used in Lidl, Kaufland, or Interspar stores for fast moving consumables and other products. During the first 3 years CHEP had to make sure that the retailers and distributors separate and return their pallets to the service center and after they accomplished that it was time to expand the business on the market. German retailers Kaufland and Lidl, known as Schwartz group have used the half and quarter pallets in other countries and they decided to use the same pallets for in-store promotions in Croatia as well, helping CHEP secure the position of pallet pooling leader in the region. Except the CHEP pallets being used in Croatia, there are some other pooling companies that have pallets delivered to Croatia, such as IPP Logipal or LPR (La Palette Rouge), but none cover the Croatian market and collect or repair their pallets in Croatia, making CHEP the only pallet pooling provider available in Croatia, who can service the Croatian export companies.

5. CONCLUSION

Pallet pooling as a part of logistics and transport solutions is present in the world for more than 70 years, but the companies still buy and exchange white wooden pallets more that they use the pooling solutions. For smaller companies it is easier to buy a certain amount of pallets and then exchange them for 3-5 times, until they are damaged beyond repair, because they do not have to sign detailed contracts with pooling companies, or they have a need for smaller quantity which they can control. For global producers it makes more sense to use pooling solutions, because they do not have to store and buy large quantities of pallets, and do not have to take care of exchange, relocation or return of pallets. There are many benefits of pallet pooling today, especially considering the waste, deforestation, CO2 emission reduction by reusing materials and many other. Croatian companies, as well as many other in the region have to consider the benefits of pallet pooling in the near future.

On one side renting can decrease the complexity of internal supply chain procedures and provide additional benefits for the planet. The contribution of this paper could help with future work on case studies in Croatia and how local companies could manage their logistics and supply chain procedures by using pallet pooling solutions.

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AROMATHERAPY AND AROMA TOURISM AS A NEW TREND OF TOURISM OFFER IN THE REPUBLIC OF CROATIA

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ABSTRACT

Health tourism has deep roots both in the Republic of Croatia and in the world. It develops quickly and in a step with trends in the tourism market. It is divided into three categories: health tourism, medical tourism, and wellness tourism. Each subcategory is specific in its action and develops according to the needs of the tourist market. This paper examines the knowledge of aromatherapy and aroma cosmetics on the tourist market. It also examines the potential of natural cosmetics as a new tourism trend in the Republic of Croatia. The methods used are quantitative methods with survey research and methods of descriptors and analyses. The research paper aims to find out if there is a potential for natural cosmetics on the market, can natural cosmetics in the future replace the commercial, and learn the respondents' opinions and attitudes about natural cosmetics. The paper has obtained certain conclusions about the trend of natural cosmetics on the tourist market, important for further developing aromatherapy as an integral part of the tourism offer.

Keywords: *aromatherapy, health tourism, natural cosmetics, tourist offer, tourist market*

1. INTRODUCTION

According to aromatherapy and Aroma cosmetics in Croatia, this research paper aims to identify the interest of tourists. The paper defines medical tourism and health tourism in a wider form, emphasizing natural healing factors, aromatherapy, aroma cosmetics, and new health tourism trends in the Republic of Croatia. Additionally, the trends of health tourism in Croatia are described in the paper due to the quantitative data analysis. In addition to the primary method, a descriptive method is used as well as analysis and synthesis. Primary research is the survey conducted to find out the opinion, attitudes, and use of natural cosmetics amongst tourists in Croatia. The survey aimed to determine if there is potential for natural cosmetics on the tourist market and whether there is a link between sustainable, health, and gastro tourism in practice. Research goals aim to find out if the respondents use natural cosmetics during their vacation, did the respondents try out a natural product, are they familiar with the Croatian producers of natural cosmetics, whether they met during their stay in a Hotel with natural cosmetics, and do they consider natural cosmetics to be replaced by a commercial or non-natural one. Conducted research aims to give conclusions about the new health tourism trends, which include aromatherapy and aroma cosmetics.

2. HEALTH TOURISM

All the more pronounced contemporary mass-tourism migrations to their characteristics touch numerous areas of social life. Among other things, we find significant interactions of tourist phenomena, health, and health culture in the empiric and receptive tourist areas, and a selective form of health tourism is also created. The health culture of modern society in the emissivity countries implies the existence of a complex system with several health institutions which, among other things, deal with the determination of the way of the use of free time or treatment through an active form of recreation, which is an increasingly significant part of tourist facilities. It is necessary to emphasize the fact that health is the oldest and strongest motif of tourist movements. Therefore, the overall tourist phenomenon, harmoniously with its functions in the physical and psychological recuperation of the organism, can, in a wider sense, be classified into one of the forms and forms of health tourism. In this context and everyday tourist practice, although different in some countries, health tourism as a selective form of tourism in the increasing expansion is located in a wide range of recreational aspects of wellness tourism to hospital tourism organized by catering companies or health institutions that provide health tourism services (*Kušen, 2006*). Developed European tourist countries, including the Mediterranean, have a richly almost two-century experience using natural factors, especially in the thermal, thalasotherapeutic, and balneotherapeutic centers intended for predominantly domestic clienteles the health and social insurance system, but more and more foreign demand. With a richer offer of spas and spas and certain health recreational facilities as a complement to the classic tourist offer of the hotel higher category, health tourism is becoming an increasingly important element of the entire Croatian tourism which could successfully compete with higher quality medical programs and contents on the World tourism market. Increasing the level of health culture and increased objective needs have conditioned the increasing development of health tourism worldwide, in which year after year, the increasing number of users (*Geić, 2011*). World Health Organization, 1948. She defined health in the following words: Health is the absence of sickness and exhaustion and general physical, mental and social well-being. In line with this definition of tourism, health tourism has evolved (*Cerović, 2008*). The basis of health tourism makes natural healing factors that can be marine, thermal, and climatic. Thermal or balneological factors include thermominatal water, peloids (medicinal mud), naphthalene, climate, plant cover, air quality, promenades, and solar radiation. Climate-healing factors include changing climate, air quality, and solar radiation. In climotherapy, favorable effects have climatic conditions and elements characteristic for some areas. Seawater, algae, promenades, plant cover, sand, Solanese peloid, sea peloid, air quality, and air conditioning are included under marine healing factors. Natural healing factors are used through three forms of natural healing: Climattherapy, Thalassotherapy, and Balneotherapy. Climatotherapy uses healing climatic factors and procedures from which the following treatments have been developed: Aerotherapy, Helitherapy, Speleotherapy. Thalassotherapy uses medicinal marine factors and procedures, of which the following forms of treatment have been developed: algotherapy, Aromatherapy, Kinesiiterapia, Peloidotherapy. In Croatia, there is a long tradition of applying thalassotherapy to health purposes. Spas that use thalassotherapy can be found in Crikvenica, Opatija, Rovinj, and Veli Lošinj. Balneotherapy uses thermominatal water, peloids, and naphthalene through various procedures; the following forms of treatment developed: hydrotherapy, peloid therapy, and naftalantherapy. After three to twelve days of using natural healing factors, balneoreaction may occur. Balneoreaction is an indicator of the organism's reactivity on the application of natural healing factors and is a sign of their strengths (*Health Tourism Development Action Plan, 2014*).

2.1. The types of health tourism

Strategy for development of Tourism of the Republic of Croatia until 2020. and national Strategy for Health Development of Croatia 2012.0-2020. Identify three forms of health tourism: wellness, health, and medical tourism.

1) Wellness Tourism – implies the achievement of physical and spiritual balance, whereby we must distinguish medically from holistic wellness. It takes place mainly in hotels and health resorts. Medical Wellness has organized the implementation of health-preventive and curative programs for disease prevention and preservation and improvement of health with a multi-discipline team that includes doctors and other professional staff (e.g., Physiotherapist, kinesiologist, nutritionist). The methods and procedures of medical wellness include methods of conventional, complementary, and traditional medicine. Holistic Wellness encompasses other, very colorful non-medical offers.
2) Health Tourism – implies the professional and controlled use of natural healing factors and physical therapy procedures to preserve and improve health and improve life. Health tourism takes place in sanatorysites and special hospitals. The emphasis is on revitalizing psycho-physical abilities in climatic, marine, and thermal destinations/Spas through the Kure, special recovery programs, balanced nutrition, etc.
3) Medical tourism – implies travel to other destinations for health care, including partial surgical procedures and dental, cosmetic, psychiatric, and alternative treatments/procedures, all with accompanying care and recovery services. Medical tourism takes place in medical clinics, clinics/polyclinics, and special hospitals. The primary motivation for travel to medical treatments is top-notch health service, often at lower costs and shorter time, and the inability to realize individual interventions/treatments in their own country.

The offer of health tourism in Croatia today includes a complex set of wellness, health, and medical tourism providers, both in the private and public sectors. Almost all the offer of wellness, a small number of spas or thermal spas, and a significant part of medical tourism offer are privately owned, presenting a market-oriented, vibrant, and medium-sized entrepreneurship. Special hospitals, spas, and large hospital systems, which control most of the natural healing factors that are currently in use (e.g., thermal water, Naphthalene), are part of the public health system and are maximally targeted at the beneficiaries of the State Health Insurance Institute (*Croatia) (strategy for the development of Tourism of the Croatian Republic to 2020, 2013*).

2.2. Trends in health tourism

The aging population, the growth of living standards, and social values attach great importance to the healthy lifestyles of megatrends, which today characterize the developed world economies contributing, inter alia, to the strong growth of health tourism in Europe and North America.

- The democratization of demand and diversification of products – a growth of new target groups (younger users and business clients). Development of new products (preventive health-tourism programs such as holistic programs for body and soul health, lifestyle programs, detox programs, and wellness programs in order to a healthier life.
- Support Insurance companies for health prevention programs – health insurance will support preventive health programs.
- The growing role and significance of medicine and further speciation, standardization, and regulation of medical services.
- Branding – competition will impose the need for branding in the function of more recognisability.

- Technological innovation – continuous and rapid development of health technology.
- Authenticity – a sense of place is a significant factor in the health-tourism offer, and the local identity, food, medicinal factors, and knowledge in their application will be more present in the treatments, on menus, and in the decoration of objects.
- Environmental sensitivity – The offer of health tourism, as a product motivated by personal health, will necessarily need to take care of environmental health and, in this context, provides for a strong shift towards a comprehensive green practice, from the use of natural Ingredients in treatments and nutrition, through the use of natural materials, light or ventilation in the decoration of the premises to the environmentally responsible management of energy, water, and waste at the level of facilities and whole destinations.

Market trends speak in support of further growth of health tourism and point to changes in its characteristics in a more pronounced medical basis and specialization, environmental sensitivity, and greater connection with authentic local ambiance (*tourism Development strategy up to 2020, 2013*).

2.3. Key success factors in health tourism

The characteristics of existing practices and market trends point to the following key factors of success in health tourism, which can be divided into four basic domains:

1) Services – Level of prices, qualifications and experience of doctors and professional staff, the general attitude towards patient and companion, transparent information about the content of purchased services, the possibility of consultation, and detailed explanation of the procedure before arrival.
2) Characteristics of the institution/center – the institution's reputation, high hygienic standards in the prevention of hospital infections, continuous modernization of equipment, calming and relaxing ambient space, involved elements of local identity, and environmentally responsible practice.
3) Destination features – Desirable image of the destination, availability of destination including transport links and entrance to the country, proven and recognized medicinal properties of natural factors, availability of quality capacities and professional staff for recuperation after the procedure, the availability of quality and affordable accommodation for escorts, the availability of primary care institutions in the destination or the immediate vicinity, the availability of diverse cultural and entertaining and Sports and recreation facilities, environmentally responsible practice and communal décor of the destination, availability of free WIFI.
4) Promotion and sales – efficient national promotion, attractive and informative Internet sites of destinations and health-tourism centers, the possibility of organizing and paying health and tourist part of the stay in one place (one-stop-shop).
5) (*Strategy for development of Tourism of the Republic of Croatia until 2020, 2013*).

3. AROMATHERAPY AND AROMACOSMETICS

The beginnings of contemporary aromatherapy go up in the Thirties of the twentieth century. French chemist René-Maurice Gattefossé performed experiments with essential oils and discovered their enormous healing potential. From these beginnings, aromatherapy developed into today's generally recognized form of treatment. Aromatherapy is based on holistic principles, namely treating a whole person instead of just a series of symptoms. It is a very humane process based on contact, communication, and work with people instead of classical medicine. Aromatherapy is a part of Phytotherapy, representing the controlled use of essential oils to preserve health and treatment and prevention of disease. It also finds its application in cosmetics in which essential oils are used in facial and body skincare preparations and as part

of a massage to improve skin condition. Aromatherapy was used by healers of China, Tibet, India, and the Middle East, and on it about 5000 years ago, almost completely founded the medicine of Old Egypt. Today, this type of therapy has found its place in medicine (prevention and rehabilitation), in cosmetics and psychology, in household use, in chemistry, Agronomicia, social activities, and the food industry. Essential oils are mixtures of volatile, biologically active compounds derived from plants by distillation or rectification. Components of essential oils affect tissues and organs as well as the hormonal and nervous systems. Essential oils, with their scent, affect both mood and emotion (*Hoare, 2010*).

3.1. Application of essential oils in natural and Aroma cosmetics

Aromacozithmetic represents natural cosmetics based on natural base oils with the addition of natural essential oils. The finished cosmetic products offered on the market are abundant in artificial ingredients, false scents, unnatural additives, and chemical compounds that cause allergic skin reactions. Aroma Cosmetics promotes blood flow, strengthens the skin's metabolism, promotes elasticity, regenerates, revitalizes, rejuvenates, provides breathability, and supplies the skin with food and oxygen. Essential oils must be high-quality and chemotype, and the medicinal oil is ecologically grown. Aroma Cosmetics do not contain parabens, synthetic fragrances, petroleum derivatives, and refined oils. We distinguish natural decorative cosmetics, cosmetics with clay (green and white), hypoallergenic cosmetics, natural creams, and oils with medicinal plants, natural perfumes. The most commonly used base oils used in the preparation of Aroma Cosmetics are argan oil, coconut oil, olive oil, jojoba oil, and castor oil. Natural Aroma Cosmetics should have one of the certificates for natural and organic cosmetics:

- The NaTrue certificate is one of the strictest defined control mechanisms for natural cosmetics manufacturers. Products with this certificate contain minimally processed natural and organic ingredients, and manufacturers must respect the production process that minimally affects the environment.
- BDIH is a German certificate of association of manufacturers and Sellers of pharmaceutical, health and cosmetic products and dietary supplements.
- EcoCert is a French organic certification organization that ensures that products are non-GMO, paraben, silicone, synthetic colors, and fragrances. The packaging must be biodegradable, and the products should not be tested on animals.

The Trend of healthy food and healthy lifestyles is many practiced, and the advantage of natural aromatherapy and aroma cosmetics is that it can be adapted to the current and individual needs of each person (*Buck, 2014*).

3.2. Example of health tourism in Croatia – Life Class Terme Sv. Martin

Life Class Terme Sv. Martin is a continental Croatia destination for wellness, sport and active holidays, congresses, and team-building with a superb gastronomic experience and beautiful nature. The center of Terme Sv. Martin Resort is a complex of indoor pools with thermal water, a summer Aquapark, a Wellness Center, gastronomic checkpoints, and golf courses. It offers apartments Regina and the four-star Spa Golfer Hotel. There is a luxurious wellness center on 1,800 square meters within the hotel, with holistic programs, individual approaches, and modern equipment that provide unity of spirit and body. The mission of Terme Sv. Martin and the LifeClass are distinguished in healthy life, sport and recreation, and local gastronomy, which is also read in the slogan "The World of healthy Pleasures." The Wellness Centre offers various wellness programs: Anti-stress face, head and neck massage, Lymphium drainage with aromatherapy, hot volcanic stone massage, rhythmic massage Rudolf Steiner, Tui Na Chinese massage with acupressure, vedaroma massage.

The special offer is a Thai massage, aroma massage with lemongrass oil, and Thai massage with coconut oil. Medical Wellness offers two programs: Iqcure Better Life and spine health programs in cooperation with Lumbalis Polyclinic. Iqcure is a medical tourism concept that combines rest, health, and wellness. In just 45 minutes, there is a complete examination of the body and determines the therapy. Packages are divided into multiple categories: male health, female health, anti-stress package, relax package, vitality package, Basic package, rehabilitation package. The world of saunas offered by Terme Sv. Martin includes a Finnish sauna, a steam sauna, a bio sauna with aroma and chromotherapy, a Roman sauna, and an ice cave. Additional offer includes: Kneipp foot bath with heated benches, treatment of cold well is intended for cooling of the body after using the sauna, resting area on ergonomic deck chairs with chromotherapy (color therapy) Refresh Corner-fruit, teas, and water. Terme St. Martin's pools are a place where the mind, body, and spirit will find a balance through the healing of thermominatal water. The Temple of Life Complex contains a modern complex with elements of the philosophy of Dr. Rudolf Steiner (mind, body, and spirit). There is also an Ion bar in the thermal mineral baths where you can enjoy the ionized water with fresh fruit and healthy desserts such as modern and healthy Međimurska gibanica. Within the resort, there is a place that combines the flavors of tradition with modern flavors of innovative culinary traditions, called Le Batat. The restaurant offers a batata-based meal. The menu is complemented by dishes prepared from the meat of local origin and the famous Međimurska fish perch. The restaurant collaborates with the family farms of the Međimurski region in the supply of groceries. Suppose tourists want to meet Međimurje as a tourist destination of the LifeClass Terme Sv. Martin organizes excursions so that tourists can experience and get to know the splendor of the Međimurski region. Today, Međimurje represents the top destination of Continental Croatia because of its rich cultural, historical, traditional heritage, religious and historic architecture, while the biggest significance of tourism is the natural beauties and protected area of the regional Park Mura-Drava. Excursions include a visit to the upper Međimurje and familiarity with Wine road, visit the Hungarian Hill, visit the Wine House Hažić and try out domestic products (apple juice, apple juice, and armadia, apple chips, homemade sandwiches with a drop of wine), visit the deer Farm, Mlinarska House and Mlini on the Mura. The resort's Pinklec gift shop offers information about Međimurje as a tourist destination and local, healthy, and local souvenirs and products. The specialty of Međimurje is Međimurje evening, which is held every Friday at the restaurant Mira where Međimurje culture, history, and traditions are presented to the guests. The Beauty center is located in the hotel Spa Golfer and offers a wide range of cosmetic treatments such as anti-aging face treatment, ultimate face lifting, wine anti-Age Peel body Mask, body mask, and massage wine therapy. During cosmetic treatments, The Comfort Zone has used cosmetics. Comfort Zone products contain natural ingredients, and cosmetics are packaged in packages obtained from recycled material. The Life Class Terme Sv. Martin is an excellent indicator of the combination of health, sustainability, gastronomic, and eco-tourism. Thanks to them, the upper Međimurje has become a top tourist destination (https://www.spa-sport.hr/hr/).

3.3. Other examples of aroma tourism service and products

1) Aroma Gelato – 100% natural ice cream without additives, color, and gluten is located in Aroma Boutique in Poreč. The offer includes 36 flavors of ice cream, which stand out: the taste of caramel with a flower of salt, lemon flavor with basil, orange flavor with ginger, mascarpone with dates and nuts (http://www.journal.hr/Lifestyle/aroma-gelato-open-doors-first-aroma-Boutiquea-in-Croatia/).
2) Festival of wild plants in Kršan – 9. The festival's edition was in the sign of plants for the spring detoxification of the organism (bear onion, dandelion, wild Radič). The festival presents local natural products from medicinal herbs, aroma preparations, and aroma

Cosmetics (http://www.istra.hr/hr/regije-i-mjesta/mjesta-i-gradovi/ltz-krsan/dogadjanja/festival-Self-medicate plants).

3) Sapunoteka is a family business that deals with the production of natural aromatic cosmetics based on olive oil. The ingredients used in natural cosmetics production are bred in their garden and use natural homemade essential oils. The packages are ecological, and the products have not been tested on animals (https://sapunoteka.com/).
4) Spring workshops of natural cosmetics in Varaždin – City market Varaždin and secondary vocational school Varaždin 10. In March 2018. They organized a workshop on natural cosmetics. Visitors could learn about the production of natural cosmetics, basic oils, essential oils, and try their hand at making natural cosmetics (Http://www.varazdinske-vijesti.hr/magazin/veliki-interes-zaradionicu-natural-cosmetics-on-Varazdinska-Trznica-14392/).
5) The Festival of salt in Nin-visitors discover the benefits of salt, its use in the service of beauty and skincare, and proper application in the kitchen (http://www.solananin.hr/hr/Beginner/).
6) Aromaputation – Aroma Tours site offers travel introductions to tourist destinations such as visiting lavender fields in France, a visit to Tuscany (https://aroma-tours.com/).
7) The Congress of Medicinal and aromatic plants of the countries of southeast Europe (AMAPSEC) – Congress brought together scientists from southeast Europe dealing with Ethnobotanics, phytochemical and cultivating medicinal, aromatic plants (http://www.hbod.hr/hr/10th CMAPSEEC)

4. HEALTH TOURISM DESTINATION BRANDS IN CROATIA

Health tourism in Croatia has a natural predisposition, long tradition, and excellent infrastructure. Croatia has confirmed the destination of health for centuries through education, expertise, and experience in addition to being natural and geographically destined. Natural predispositions such as pleasant climate, mild climates, and natural factors, as well as the proximity of European destinations, have turned Croatia's path in health tourism back to the 19th century. Century. The Slogan of the Croatian Tourist Board in the field of health tourism is: "Do not fulfill your life for days, fill your days with life" (Croatian tourist Board - https://htz.hr/hr-HR).

4.1. Istria – "Life on the Move."

Istria is a mosaic made of the rich and varied offer in which everyone will create a "stay by their own" as a great combination of rest, active life, and relaxation. In the northwestern part of Istria's peninsula, Istarske Toplice, created at the source of the healing water of St. Stephen, whose sulphonic, optimally radioactive hot water filled with minerals springs in the Motovun forests. Istrian hotels have a developed wellness offer offering individual programs adapted to everyone's needs (Croatian tourist Board - https://htz.hr/hr-HR).

4.2. Kvarner – "Region of Health"

Kvarner has long been strongly connected with health tourism, whose scientific certificates go far into the 19th century. Century. It was already quite clear: this region was destined as a destination of health. . The region is with a long tourist tradition. The longest has the city of Opatija, whose tourist history began in 1844. The first hotel was open in 1885. Moreover, in the same year at the first Congress of Balneologists, it was decided to become a climatic spa, 1889. By the imperial apparition and officially became. Thalasotherapia Opatija has even half a century of experience working with Cardiologic, Rheumic, physiatric and dermatological patients and ranks among the top institutions for treatment and rehabilitation. Opatija has also developed a wellness offer appropriate to today's standards with numerous treatments that

prevent the disease, contribute to the health and good looks. . Near Opatija there is Lovran with a famous institution for the treatment of orthopedic diseases. Lovran is famous for its laurel, by which it was given a name. Laurel has a great function in aromatherapy because of its healing properties. The island of Krk, known as the Golden Island, is a developed and appreciated tourist destination connected to the mainland by a bridge today. Along with climatic and other benefits and a rich history that has provided the name of Croatian culture's cradle, Krk is also known for its healing mud in Klimno Cove. With its famous centers, Mali Losinj and Veli Losinj, the island of Losinj is called the island of Vitality and is known in Croatian and wider frameworks for the rounded concept of health offer of health institutions, hotel houses, local entrepreneurs, but also as rarely where all residents. After all, the Lošinj tourist concept won the UNWTO Award as the best European and third project in the World competition. The natural predisposition of Lošinj was added to the modern health service in which the health resort Veli Lošinj is the front. There are respiratory and asthma treatment programs, allergy treatment programs, and psoriasis and classical rehabilitation programs for diseases of the locomotive system and neurological diseases. The health tourism on the island also benefits from top quality hotel services, systematic environmental concerns, and staff expertise and innovation. The additional strength of this concept is given by the fact that, with professional health care professionals, the hotel is involved, wellness experts, but also local population that indigenous gastronomic offer and offer adapted to modern nutritionist trends, by making cosmetic preparations based on aromatic plants of this region complement the offer of this unique island of health and vitality, in the year 1906. A health commission is established, and Crikvenica has officially proclaimed a climatic health resort and sea bathing area. Every next year there is a new chapter in the development of health tourism on this Riviera, which, along with Crikvenica, is made up of Selce, Dramalj, and others, and all together give a new contribution to the successes in prevention and treatment of diseases of the airways, sports injuries and improving the fitness of athletes, preparations and disposal of divers, etc. Thus, in Thalastherapia Crikvenica, a special hospital for medical rehabilitation is treated and rehabilitated by patients with respiratory diseases and rheumatism. Polyclinic Terme Selce specializes in diagnostics, physical therapy and rehabilitation, sports medicine, and special programs of Healthy Living (Croatian tourist Board - https://htz.hr/hr-HR).

4.3. Zadar – "Gifts of nature."

The city of Zadar, the center of the subregion, was proclaimed the best European destination. Every walk through the old town is a walk through history, which is spoken by every street and every square of the old town, whose symbol is the Church of St. Donata and the city square Forum. Biograd na Moru, once the coronation city of Croatian kings, is a prominent specialized institution for Orthopaedistas with an 80-year tradition, known for its innovative interventions and physical therapy programs. After intensive activities, relaxation offers wellness centers of hotels in Zadar, Biograd na Moru, Starigrad Paklenica, Island of Pag, or Petrcane, all with the desire to be a destination tourist holiday, healthy life, and vitality. When it comes to the nature associated with health, the first association to this town is Nin, whose natural features have created a stratified story of health, inspiration, and new life energy. This is where the largest Croatian locality of medicinal mud is located, whose efficiency in history and even today is confirmed by numerous analyses, but also those most convincing testimonies – tens of thousands of people who have felt the effectiveness of this "open-air Clinic" in curing rheumatic, dermatologic and other diseases. For the regeneration of the organism, it is beneficial to walk the shallow, sandy Nin lagoon, allowing the body to "absorb" all the healing sea water's benefits of the specific composition and salinity. Nin was proclaimed a European destination of excellence, it is known as the oldest Croatian royal town, the cradle of the Croatian state, and in it is the smallest cathedral in the world and the Coronation Church of St. Nikola.

The memorable experience is also the hand picking of salt in NIN in the traditional way, as salt was produced in Roman times. In the sign of salt and the healing mud treatment, there is another detachment of the Zadar region – the island of Pag (Croatian tourist Board - https://htz.hr/hr-HR).

4.4. Šibenik – "Ready for joy, stress-resistant"

Šibenik is a subregion of active life, a man's coexistence with beautiful nature, and a rich offer of highly refined dental tourism. Local hotels have a rich wellness offer adapted to the needs and expectations of modern tourists and remedy the health problems of modern times. Primosten's small town is known for its beautiful beaches, olive groves, vineyards, and aromatic herbs (Croatian tourist Board - https://htz.hr/hr-HR).

4.5. Split – "scents, colors, and flavors that heal"

The scent of lavender, the taste of olive oil, Adriatic fish, and freshly harvested vegetables as the basis of the Mediterranean diet, which the World Health Organization proclaimed the healthiest food, the stone towns of a special atmosphere and the relaxed way of life contribute to good mood and health. The islands, coastal, and inland have their own special story. Nearest Brač with beautiful tourist destinations and famous Bol beach Zlatni rat, mundane Hvar with UNESCO-protected old Town, which attracts history, beauty, and contents, then Vis, Lastovo – all have their own story and are full of contents throughout the year and full of healing colors, flavors, and scents. Not far from Split, there is a Makarska Riviera, which is a famous destination for tourists thanks to its beauty and tourist infrastructure. In Makarska, there is a center for rehabilitation and Physical medicine in which the natural healing factors of the sea and the coast, e.g., Clean air, seawater, algae, solar radiation, Mediterranean vegetation, used in the treatment of diseases of the spine, rheumatic diseases, neurological conditions and diseases, orthopedic diseases and deformations and in the rehabilitation of athletes. Health institutions and dental clinics provide superior health care. Many great hotels offer content tailored to modern tourists' needs in the wellness center, swimming pools, and superb market needs and lifestyle (Croatian tourist Board - https://htz.hr/hr-HR).

4.6. Dubrovnik – "The beauty and joy of life"

Dubrovnik, the center of the most southern Dalmatian region and its most famous representative, is one of the world's most beautiful cities. This region is also rich in natural factors that help restore health or preserve it. Great hotels, winners of many prestigious quality awards, have excellent wellness with a rich offer of contemporary trends and individual needs and desires. Their world quality and content offers are based on the climate and health impacts of seawater and air, aromatic plants, and healthy Mediterranean food. The offer of health is known as the island of Korčula and the Peljesac Peninsula. The interior of the island is abundant with wild aromatic and healing herbs used in the treatment of various ailments. In the Bay of Kali, in the vicinity of Vela Luka, there are sources of medicinal mud and radioactive water with a winning combination in the treatment of chronic rheumatic, neurologic and gynecological problems (Croatian tourist Board - https://htz.hr/hr-HR).

4.7. City of Zagreb – "Healthy City, City of Health"

The fact that the Zagreb Medical faculty was founded at the end of 1917 is about long tradition and expertise. In these hundreds of years, many medical professionals have been produced continuously to improve the profession and, as members of Croatian and international teams, expand the knowledge and methods of treatment and prevent diseases. Well-equipped Zagreb hospitals and polyclinics and top dental centers make Zagreb a real, rich, and complete destination of health (Croatian tourist Board - https://htz.hr/hr-HR).

4.8. Lika-Karlovac "How Does silence sound?"

There are many exciting and mysterious in Lika, a region whose clean air and water, long walks in the beautiful countryside, and the possibility of outdoor activities by themselves are already healthy. On the way from central Croatia to Lika, when entering it, there is the city of Karlovac. This historic city's hallmark is four rivers that give it special energy and its symbol, but also the recreational zone (Croatian tourist Board - https://htz.hr/hr-HR).

4.9. Central Croatia – "Romance and Life Joy"

Central Croatia makes a wide ring around Zagreb's city and the largest concentration of spas and other health facilities in the continental part of the country. For many, it is the most romantic part of the Croatian mainland with beautiful Baroque castles and green hills, and numerous thermal springs where the rich offer of health tourism has been developed in ancient history. The thermal springs in Tuhelj, Stubilna Toplice, Krapinske Toplice, Donja Stubica, Sv. Martin na Muri, Varazdinske Toplice, Daruvar, Topusko, and Ivanić Grad is a respectable offer of spas, medical tourism, and wellness. It was founded on the foundations of precious natural factors by which the local quality's thermal spas, staff expertise, and tradition are placed in the European top. Newly renovated and modern, adapted to modern and environmentally conscious consumers' demands, the central Croatian thermal spas offer many facilities for restoring health and vitality. With the staff's expertise, the services appropriate to the needs of modern guests of this spa, just like the network of hospitals and polyclinics, have superior technology and places where the path to health connects with the pleasure of staying. Some of these area centers are Krapina, Čakovec, Koprivnica, and the Baroque city of Varaždin. Krapinske Toplice is based on old thermal water sources known from Roman times as Aquae Vivae – Water of life. The Tuhelj thermal spas are formed at the very source of thermal water and the healing peloid mud that heals and relaxes. This tourist-recreation center with numerous swimming pools and an attractive water park, large contents of a rich wellness center, and accommodation facilities has everything for rest and relaxation. It is also visited by athletes who come there because of sports preparations under professional supervision. In Donja Stubica, there are Terme Jezerčica. Located at the very source of natural healing thermal water, they also have a modern wellness center and an aqua park with indoor and outdoor pools and attractions. On the northeastern edge of Hrvatsko Zagorje, there are Varaždinske Toplice, the oldest thermal spa in Croatia, which in its center is guarded by one of the most important continental archaeological complexes, the excavation of the Roman thermal baths, which is full of four and centuries served its purpose (Croatian tourist Board - https://htz.hr/hr-HR).

4.10. Slavonia – "For a new friendship richer"

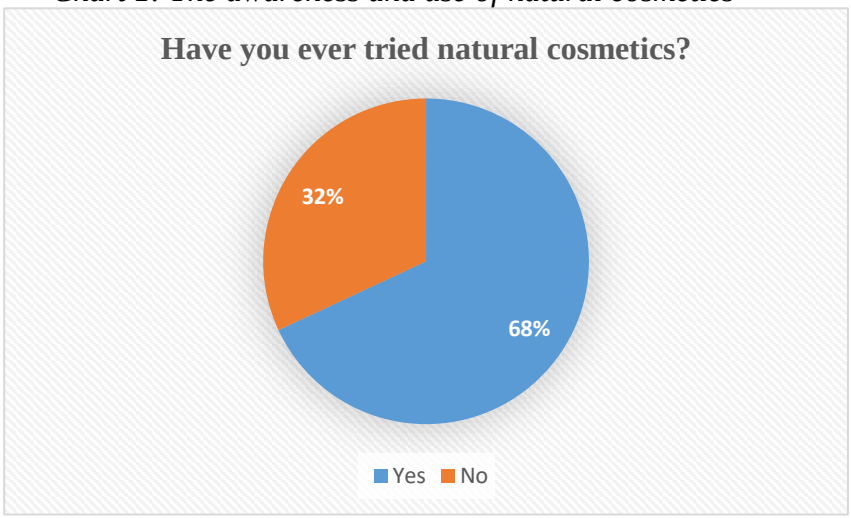
The fields of grain, the Drava River, and the Danube, which come to tourists, healthy food and thermal water, horse stud, and hundreds of kilometers of bicycle trails, are the key to this healthy life. Slavonia is a region rich in thermal springs, the most famous of which are the Bizovačke Toplice, whose healing and Recreative offer is based on the rich source of thermal mineral water, which is unique in the world, and experts characterize it as the hottest iodic water-based, slicers in Europe. The treatment is carried out here by hydrotherapy in pools with thermominous water, hydroimnastics, underwater massages, galvanic baths, Kinesiiterapia, electrotherapy, and Thermoprocedures. Lipika thermal water has been in the health service for centuries. First of all, it should thank its constant temperature at the source, which is 60 °c, and the extraordinary balneological characteristics suitable for the treatment of many diseases and rehabilitation (Croatian tourist Board - https://htz.hr/hr-HR).

5. RESEARCH RESULTS

The research aimed to find out how many respondents are familiar with natural cosmetics, they use natural cosmetics during their travels, have they tried some of the products of natural cosmetics, whether they are interested in aroma workshops of natural cosmetics and whether natural cosmetics can replace commercial cosmetics in the future. The survey was conducted via an online survey on websites and Facebook groups from 1st June to 1st August 2018. The survey included 263 respondents to different age groups. The following results were obtained from the research conducted:

- Of the 263 respondents, 71% of subjects were female, and 29% of respondents were male
- 41% of respondents who participated in the study were between 18 and 30 years old, 33% were between 31 and 40 years old, 12% were between 41 and 55 years old, 10% were under 18 years of age, while 4% were older than 55 years.
- 35% of respondents have completed high school, 34% have completed higher education, and 30% have completed higher school, while 1% have completed primary school.
- 51% of respondents are in a relationship, 31% of respondents were married, 15% of respondents were free, while fewer subjects were separated or widowed.
- 52% of respondents used natural cosmetics while traveling, while 48% did not use it.

Chart 1: The awareness and use of natural cosmetics

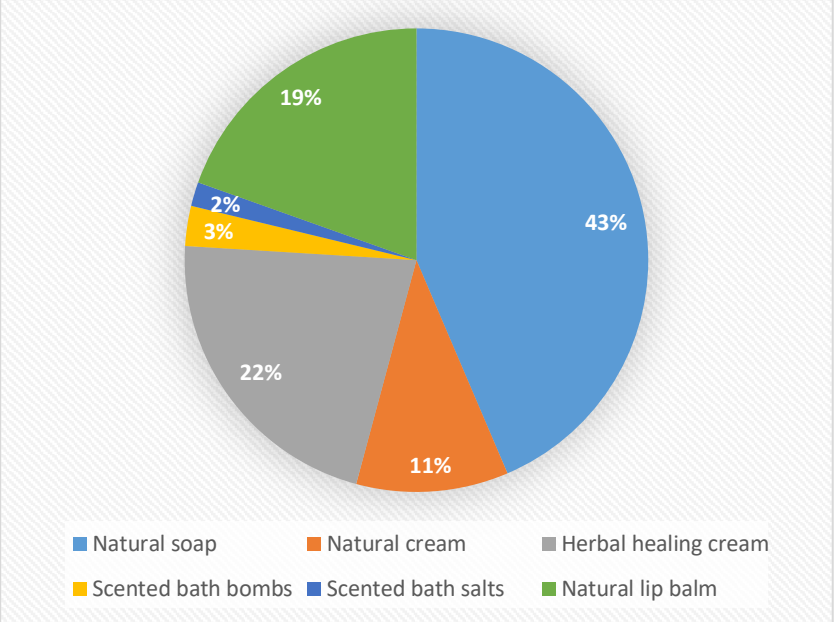


Source: authors' own processing

Chart 1 shows that 68% of respondents tried natural cosmetics, while 32% did not try it at all.

Chart following on the next page

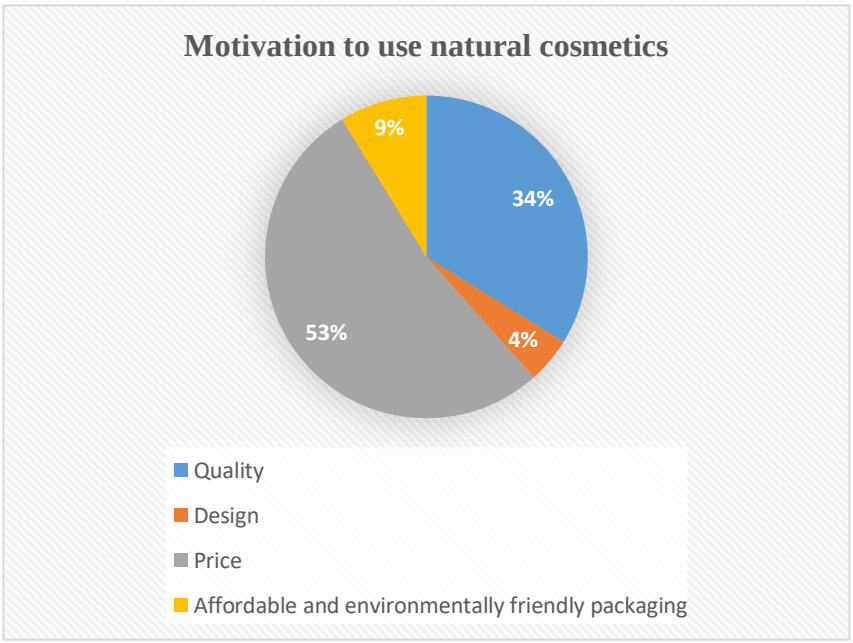
Chart 2: Types of natural cosmetics



Author: author's own processing

The following data is identified in the chart 2; the majority of respondents, 43%, have tried natural soap, 22% tried herbal healing cream, 19% of respondents tried natural lip balm, 11% of them tried natural cream, while only a small number of respondents tried scented bath tiles and scented bath bombs/salts.

Chart 3: Motivation to use natural cosmetics



Author: author's own processing

From Chart 3, the following data are visible:

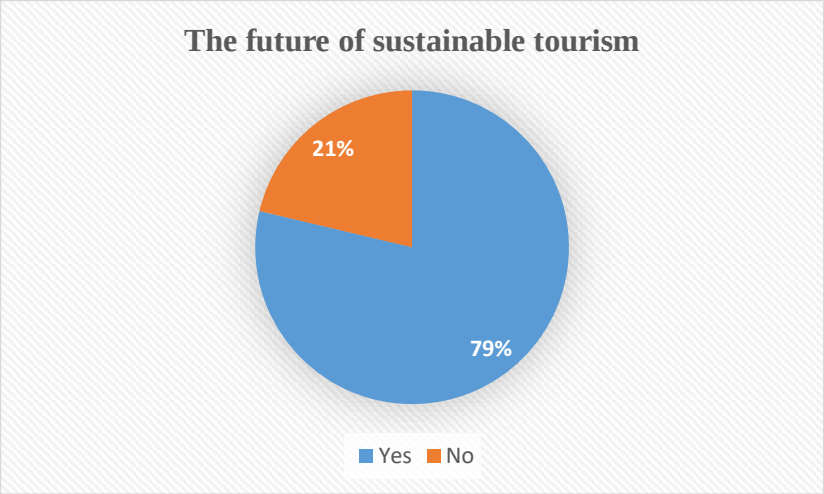
- 53% of the respondents find the motivation to use natural cosmetics in the product price, 34% of respondents would be motivated by the product quality, 9% by the affordable and ecological packaging, and 4% of the respondents would be motivated by the design of the product.

Chart 4: Interest in the workshops of making natural cosmetics

Author: author's own processing

The majority, 69% of respondents, are interested in natural cosmetics production workshops, while 31% are not interested.

Chart 5: The future of sustainable tourism



Author: authors' own processing

Most of the respondents, 79%, believe that sustainable tourism is the future and 21% of respondents consider it the opposite. Other significant research results are as follows:

- 60% of respondents are not familiar with the Croatian producers of natural cosmetics, while 40% are familiar.
- 51% of respondents believe that natural cosmetics will not be a basic necessity in the future, while 49% consider them to be the opposite.
- 64% of respondents during their stay in the hotel/hostel did not meet natural cosmetics, while 36% of respondents met.
- 70% of respondents who visited the *wellness* centers did not come across natural cosmetics, while 30% did.
- 82% of respondents did not meet natural cosmetics during their visits to beauty salons, while 18% of respondents did.

6. DISCUSSION

Respondents believe that natural cosmetics will not replace the commercial, and many, according to natural cosmetics, have certain prejudices. A small number of respondents believe that natural cosmetics will find their way into the market. Some of the respondents tried certain natural preparations, emphasizing that their commercial cosmetics are more acceptable for the price. The most tried natural product is a natural soap, followed by natural cream and cream from medicinal herbs and natural lip balm. These products are the most promoted in natural cosmetics, and these results are not surprising. Subjects are familiar with natural cosmetics manufacturers, but they have according to natural products certain prejudices. Those who do not use natural cosmetics have pleaded not to use it mainly because of the high price and ignorance of natural cosmetics. Respondents who use natural cosmetics agree that it is naturally healthier, believing that commercial cosmetics are more harmful because it contains parabens and heavy chemicals, they like to look natural and watch what they put on the skin. Natural cosmetics would be the subjects who have a positive opinion about it recommended to their friends and family. Only a small number of respondents who visited the hotel, wellness center, and beauty salon met with natural cosmetics. Respondents are interested in aroma workshops and believe that sustainable tourism is the future. The population should be more informed about natural cosmetics, through workshops of natural preparations and familiarity with the basic concepts to resolve prejudices on natural cosmetics. There is a need for greater promotion of natural products on the market with various campaigns, fairs, and exhibitions where natural cosmetics can be exhibited, and anyone could try different testers and get certain information. Wellness centers, hotels, and beauty salons in your offer should include more natural preparations. Natural cosmetics are slowly making their way into the market, but it is still not sufficiently promoted and included in the Republic of Croatia's health tourism.

7. CONCLUSION

Despite the growing popularity of health tourism, healthy lifestyle, healthy diet, natural cosmetics still does not find enough space in the tourist market. Health tourism is promoted through various segments and other forms of tourism, emphasizing gastronomic tourism and sustainable tourism. Perfect for its specific tourism forms focusing on health tourism is certainly the Life Class Terme St. Martin. Croatia attaches importance to health tourism through the promotion of certain regions and the well-being of each region. Besides health tourism, sports tourism, sustainable tourism, gastronomic tourism, and eco-tourism are promoted. Aromatherapy and Aromacosmetics are represented in some regions, but the market still does not find enough places. It is anticipated that it will be represented as a new tourist offer of the Republic of Croatia because Croatia is abundant with natural healing factors shortly. It takes more education, information, and promotion of the population about natural cosmetics and aromatherapy. The population should be more familiar with the basic concepts of base oils and essential oils in natural cosmetics, natural products, and its effects on the human body and present positive psychological effects. More attention should also be paid to the festival of natural medicinal herbs and workshops for making natural cosmetics. We can spot aromatic in several different areas: from natural preparations, health food, Festival of medicinal plants to festivals of certain aromas applied in the production of natural cosmetics. Health tourism in the future can certainly be a positive example of development, education, and the setting of new trends concerning the users of services appearing in health tourism. Thanks to the increasing demand for health tourism, all three categories of health tourism are being developed. In the future, attention should be paid to each of them, especially the wellness that has excellent effects on tourism and can be a driver of new trends.

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GDPR AND DATA PROTECTION IMPACT ASSESSMENT (DPIA)

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ABSTRACT

The DPIA is a new requirement under the General Data Protection Regulation (GDPR) as a part of the "protection by design" principle. According to the Regulation, DPIA is needed where a type of processing in particular using new technologies, and taking into account the nature, scope, context and purposes of the processing, is likely to result in a high risk to the rights and freedoms of natural persons, the controller shall, prior to the processing, carry out an assessment of the impact of the envisaged processing operations on the protection of personal data. Author in this paper presents DPIA and GDPR compliance by introducing measures to reduce address risks to the rights and freedom of citizen's privacy: protective measures, security measures and mechanisms to ensure the protection of personal data and also presents prior consultation of controller with the supervisory authority as legal requirement of GDPR before processing if the data protection impact assessment referred to Article 35 of GDPR.

Keywords: *data protection, DPIA, European union, GDPR, information security, personal data, privacy, risk analysis*

1. INTRODUCTION

Novelty in the General Data Protection Regulation ("GDPR" OJ L 119, 4.5.2016, p. 1–88) is the assessment of the impact on data protection, which is prescribed in detail in Art. 35 of the Regulation. Namely, if it is probable that some type of processing, especially through new technologies and taking into account the nature, scope, context and purposes of processing, will cause a high risk to the rights and freedoms of individuals, the processing manager evaluates the impact of protection of personal data. (GDPR, Art. 35 para. 1) Also, the same paragraph states that one assessment may relate to a number of similar processing operations that present similar high risks. Likewise, when conducting a data protection impact assessment, the controller shall seek the advice of the data protection officer in the organizations in which he or she is appointed (GDPR, Article 35, paragraph 2). Under the GDPR, a data protection impact assessment is mandatory in particular in the case of: (a) a systematic and comprehensive assessment of personal aspects of individuals based on automated processing, including profiling, and making decisions that produce legal effects that relate to an individual or similarly greatly affect an individual; (b) extensive processing of specific categories of personal data referred to in Article 9 (1) or data relating to criminal convictions and criminal offenses referred to in Article 10; or (c) systematic monitoring of the publicly accessible area to a large extent. (GDPR, Art. 35 para. 3) The supervisory authority, in accordance with the Regulation, establishes and publishes a list of types of processing operations that are subject to a request for data protection impact assessment in accordance with paragraph 1 (GDPR, Art. 35 para. 3). 4.) The National Supervisory Authority shall communicate those lists to the European Data Protection Board in accordance with Article 68 of the GDPR (Gaeta, 2019). The data protection impact assessment itself shall contain at least:

a) a systematic description of the processing operations envisaged and the purposes of the processing, including, if applicable, the legitimate interest of the controller;
b) an assessment of the necessity and proportionality of processing operations related to their purposes;

c) an assessment of the risks to the rights and freedoms of the respondents referred to in paragraph 1; and
d) measures designed to address the problem of risk, including safeguards, security measures and mechanisms to ensure the protection of personal data and to demonstrate compliance with this Regulation, taking into account the rights and legitimate interests of respondents and other persons involved. (GDPR, Article 35, paragraph 7)

It is this chapter that has aroused the most interest of organizations since the current Personal Data Protection Act did not introduce the obligation to assess the risk and security of data protection. Following this, if processing in accordance with Article 6 (1) (c) or (e) of the GDPR has a legal basis in Union law or in the law of the Member State to which the controller is subject, if that law is governed by special processing procedures or groups procedures and the data protection impact assessment has already been carried out as part of the general impact assessment in the context of the adoption of the legal basis, paragraphs 1 to 7 of Article 35 of the GDPR do not apply unless Member States consider it necessary to carry out such an assessment before processing activities. Adoption of measures to address risk problems: protective measures, security measures and mechanisms to ensure the protection of personal dana (Boban, 2019, p 91-92). Directive 95/46 / EC already provides for a general obligation for supervisors to report on the processing of personal data. The imposition of this obligation created an administrative and financial burden, and it did not in all cases lead to an improvement in the protection of personal data. The Regulation therefore seeks to abolish such comprehensive general information obligations and replace them with effective procedures and mechanisms that instead focus on those types of processing operations that are likely to pose a high risk to the rights and freedoms of individuals due to their nature, scope, context and purpose. Such types of processing operations may be in particular those involving the use of new technologies or those which are new types and for which the controller has not yet carried out a data protection impact assessment or for which a data protection impact assessment has become necessary given the time elapsed from the original processing. Furthermore, in such cases, the controller should conduct a pre-processing data protection impact assessment to assess the particular likelihood and severity of the high risk, taking into account the nature, scope, context and purposes of the processing and the sources of risk. That impact assessment should in particular include measures, safeguards and mechanisms designed to mitigate that risk, to ensure the protection of personal data and to demonstrate compliance with this Regulation (GDPR, Preamble, paragraph 89). As one of the fundamental aspects of security and protection of data and information systems in general, it is important to emphasize cryptography as a science of concealing information content and preventing their understanding, modification and use by unauthorized (unauthorized) entities. (Panian, 2001, p 107) It is based on mathematical techniques related to information security in a way that primarily verifies the authenticity, secrecy, verification of the origin of information and identity of users, and proving the responsibility of users for a particular action, which are also the most important aspect in establishing a protection system. data in general or in this case the protection of personal data. (GDPR, Preamble, paragraph 89) Conceptually, the definition is:

- Data integrity - ensures that there is no unauthorized alteration of information, such as inserting information, deleting information and replacing information. To ensure credibility, there must be a way to verify that the information has been altered by an unauthorized person. (Goldenberg, 2008, p 101)
- Confidentiality - ensures that the content of the information is available only to those who are authorized to do so. There are a number of ways to protect confidentiality, ranging from physical protection to mathematical algorithms that hide data from unauthorized persons. (Chung and Yung, 2011, p 7)

- Authentication - used at the user level and at the information level. (Yorav, 2008, p 148) Thus, authentication is the process of establishing the identity of a user (person or program) and is performed before the user is allowed access to resources. This prevents unauthorized users from using the system (or parts of the system). The authentication process consists of two parts: identification and authentication. Identification is the process where the user gives his identity, while confirmation is the process of confirming a given identity. (Pintelon, and Schoukens, 2001, pp 17-19) Therefore, the correctness of the authentication procedure depends mostly on the authentication procedure used.

The basic types of authentication, used in distributed systems, are:
- user login authentication - deals with the confirmation of the user from the system, at the time of login.
- One-way authentication - deals with the confirmation of the identity of one user by another user.
- Two-way authentication - deals with two-way authentication, where communicating users confirm each other's identities. (Wrycza, 2009, p 130)

Furthermore, it is necessary to clarify three basic authentication approaches:
1) proof by knowledge - in this approach, authentication involves the confirmation of something that only an authorized user knows. An example is password authentication. This approach contains two types of authentication: the direct demonstration method and the challenge-response method. In the direct method, the user confirms his identity by giving certain information (password) that the system compares with the previously stored. The second method works in such a way that the user answers the question posed by the system correctly. (Brands, 2000, p 192)
2) proof by possession - the user proves his identity by presenting an object that can only be owned by an authorized user. An example of such an object is a plastic card with a magnetic strip on which the essential data are written in electrical form.
3) proof by property - identity is proved by checking some physical characteristics of the user that are not easy to falsify. The measured property must be unique for each user. Some of these features are: fingerprint, voice, signature, retina. (Nanavati, Thieme, and Nanavati, 2002, p 191)

Of these three presented approaches to authentication, proof of knowledge and proof of possession, can be used for all types of authentication in secure distributed systems, while evidence is generally limited to human authentication, in systems equipped with special instruments (Tung, 2003, pp 6-7). A very important aspect in this procedure is the non-repudiation. It is the basis of the above settings and enables the linking of credibility, secrecy and identification in such a way that the person who is authenticated is also responsible for the process. (Pavlov, Van De Wouw, Van De W. and Nijmeijer, 2006, p 146)

2. MEASURES TO ADDRESS DATA PROTECTION RISK ISSUES AND MANAGE SECURITY RISK

Security in assessing the impact of data protection is the biggest challenge for the management of any organization that faces data protection risks and finds strategies to address them according to the principle of minimizing security risks. In general, risk is defined as the risk that an action taken will lead to undesirable consequences, while security information risk is defined as the danger that the application of information technology will lead to undesirable consequences in the company and / or its environment (Trzaskowski, and Sørensen, 2019).

Since risks are an integral part of the business process, efforts should be made to develop and implement an appropriate set of procedures or risk management methodology (Boban, 2014, pp 549-572). Like any management process, the risk management process needs to be carefully planned. Such a plan should cover the following activities:

- risk identification,
- probability testing and risk quantification,
- determining risk priorities,
- identification of countermeasures,
- determining the cost-benefit ratio of countermeasures,
- selection of the most effective countermeasures,
- implementation of selected countermeasures,
- defining measures to eliminate possible damages, and
- Supervision, revision and modification of the plan and procedures. (Panian, 2002, p 55)

Security information policy is the foundation of a company's security system. In practice, it translates into a set of organizational rules and procedures that together constitute the normative framework of the security policy implemented by the management of a given company (Ghonaimy, El-Hadidi and Aslan, 2002, p 198). The most important feature of a company's security policy is that it must be formalized, ie security measures implemented at the company level must be formalized and the security policy must take the form of an official document binding on all employees of the company. All employees of the company with the emphasis on technical staff and middle management participate in the development of security policy at the level of company management, since technical staff knows best the possibilities of certain problems of a practical nature, while middle management has the authority and strength to implement the adopted policy (Sharma, p 61, 2019). When creating a security policy, one should think about the possibilities of its implementation, which means knowing the level of responsibility for each employee and the responsibility of each individual to point out the possible impossibility of implementing this policy, since a security policy that cannot be implemented may mean its practical absence. Therefore, in addition to knowing the degree of responsibility in the implementation, employees are required to perform certain procedures defined by the security policy of the company. We distinguish three groups of such procedures:

- procedures for prevention of security problems,
- procedures for identifying illegal activities and
- communication procedures. (Čizmić, Boban and Zlatović, 2016)

Procedures for the prevention of security problems in the tactical sense do not define how certain security procedures will be implemented, but what the goal of these procedures is and who will undertake the obligation to perform them. The manner of their implementation is determined on the basis of the analysis of risks to which the system may be exposed and possible shortcomings of the observed system (Boban, 2015, pp 27-52). Procedures for identifying unauthorized activities include a few simple procedures performed by a security administrator or an appropriate computer program. The basic way to detect attempts at "unauthorized activities" or most often unauthorized access to information systems is to monitor the login system by logging user logins in the appropriate files, and programs analyze how many failed attempts, when they were made, how often, in which part of the company etc. Also, the most important thing is that this supervision must be permanent in order to be able to react in a timely manner (Cabrio, 2018). Communication procedures are a defined way of communication between users and administrators of information security, which determines the effectiveness and efficiency of the company's security policy.

The way to solve minor problems can be informal, but reports of more serious problems must be documented in writing for this purpose with adapted appropriate forms (fault report, password change request, etc.). In the process of electronic communication after establishing mutual identity, communication partners begin to exchange various messages. However, it is not guaranteed that all messages come from the user who claims to be sending messages. Namely, someone can misrepresent themselves and thus get information that does not belong to them. The solution lies in the authentication of individual messages using a digital signature (Gatt, 2019). When planning and creating a security policy, it is necessary to emphasize the compliance of the elements of security procedures with legal and other provisions and regulations, as well as with contractual provisions with other legal and natural persons. This means respecting the general principles of legality, criminal and civil law, by-laws, contractual obligations, internal rules in the company and established business customs and practices. Among other things, it is necessary to respect the usual ethical norms that are not formally prescribed and concern, for example, the privacy of the individual. (Valvo, pp 347-358) Thus, information content concerning any transmission of threatening, false and ridiculous information that may disrupt employee relations, spread racial, national or religious intolerance, and endanger an individual's privacy should be sanctioned to some extent. The main problem is the establishment of evaluation and control criteria, which can be solved by setting up an ethics committee whose task would be to establish ethical standards within the company, prevent violations of employee rights and possibly sanction violations of set standards.

3. MECHANISMS TO ENSURE THE PROTECTION OF PERSONAL DATA

The security of public key infrastructure as an element of security policy during implementation and generally exceeds the requirements of a typical security system for processing transactions. Namely, the issuance of only one wrong certificate and the penetration of an unauthorized user into the certification authority system can result in an unlimited number of bad transactions or the issuance of a mass of unreliable certificates (Palladino, 2019, pp 75-86). The basic requirement of the security policy of the public key or certification key that supports the operation of a critical application is the fact that it must use hardware cryptographic modules to sign certificates, because software-based cryptography is too susceptible to breaches and abuses. The keys that connect a number of certification authorities, the so-called. root-keys. [20], are generally long-lived and require special precautions, including storing the private key in secure, offline hardware units. The individual parts of such keys must be known to a number of authorized persons, each of whom knows only his part of the key and who must jointly sign certificates in a controlled process. Additional security policy elements should also be applied as follows:

- physical insurance of material resources (premises, buildings and equipment in which the certification authority is located)
- personnel security measures (control of activities of all persons who have access to the certification authority and their special education) and
- procedural controls (defining a precise security policy and mandatory double control over sensitive functions). (Boniface, Fouad, Bielova, Lauradoux and Santos, 2019, pp.1-20)

Given that the security of certification authorities must be extremely high, the investment in the construction itself and the costs of operating secure resources are such that many companies cannot cover them on their own. Hiring or outsourcing the functions of a certification authority does not always have to be the best solution because companies often want control over the public key infrastructure: who gets the certificate, what is the content of the certificate and how and when certificates can or must be revoked, but also in the routine, daily functioning of the certification authority.

Still, there are solutions that reconcile seemingly conflicting needs in the form of distributed functionality. Distributed functionality implies the division of the infrastructure function of a company with a global certification authority. Companies monitor the work of the certification authority and continuously administer and monitor its activities. On the other hand, day-to-day background functions of secure data processing, such as issuing certificates using cryptographic hardware and securely storing certificate data, are delegated to a global certification authority. After successful user or process authentication, the system must find a way to restrict access to those resources for which they do not have access. The system solves this task by using access control mechanisms. Basically, these mechanisms are the same for both distributed and centralized systems. The main difference is that resources in a centralized system are located locally, so access control to these resources can be done centrally, while in a distributed client-server environment, each server is responsible for controlling access to its own resources (Boban, 2019). When talking about access control in computer systems, the following terms are usually used:

- Objects - an object is an entity to which access must be controlled. It can be an abstract entity (process, file, scoreboard) or a physical entity (processor, memory segment, printer). Each object has a unique name that distinguishes it from all other objects in the system. Each object is also assigned a type that determines the set of operations that can be performed on that object.
- Subjects - a subject is an active entity whose access to objects must be controlled. In other words, it is an entity that wants to access objects and perform operations on them. Examples of subjects are processes and users. It should be noted that subjects are at the same time objects because they too must be protected. Because of that, they, as well as the objects, have a unique name.
- Protection rules - protection rules define possible ways of interaction between subjects and objects. This means that these rules govern the access of subjects to objects. Each pair (subject, object) is assigned an access right which is a subset of all the access rights that the subject can exercise on the object. (Čizmić, Boban and Zlatović, 2016)

4. PRIOR CONSULTATION

The controller shall consult the supervisory authority before processing if the data protection impact assessment referred to in Article 35 shows that, if the controller does not take risk mitigation measures, the processing would lead to a high risk. (GDPR, Art. 36 (1)) If the supervisory authority considers that the intended processing would infringe the Regulation, in particular if the controller has not sufficiently identified or reduced the risk, the supervisory authority shall, within a maximum of eight weeks of receiving the request for advice it shall advise the controller and, where appropriate, the processor in writing, and may exercise any of its powers under Article 58. (Gobeo, Fowler, and Buchanan, pp 176-181, 2018) This period may be extended by six weeks, as appropriate, taking into account the complexity of the intended processing. The supervisory authority shall, within one month of receiving the request, inform the controller and, where appropriate, the processor of any such extension and of the reasons for the delay. (Ketscher, 2018.) These time limits may be suspended until the supervisory authority has received the information it may have requested for consultation purposes. (GDPR, Article 36, paragraph 2)

5. CONSLUSION: DPIA AND COMPLIANCE WITH GENERAL DATA PROTECTION REGULATION (GDPR)

Technological developments and new ways of processing personal data have made it necessary to adopt a new instrument that will ensure the protection of privacy as a fundamental right and freedom of individuals in relation to the processing of their personal data.

The Regulation on the Protection of Individuals with regard to the Processing of Personal Data and on the Free Movement of Such Data (General Data Protection Regulation) represents a significant step forward in the field of personal data protection. The very effect of the General Regulation is primarily reflected in the fact that its adoption ensures uniform and uniform treatment of data protection supervisory authorities, which will lead to simpler and equal protection of the rights of all individuals in the European Union. Also, new definitions are introduced and some existing ones are simplified, biometric and genetic data are determined, existing terms are described more precisely, respondents' rights are strengthened and certain administrative obligations of personal data collection managers are reduced and simplified, supervisory powers are strengthened and fines can be imposed. for the protection of personal data. The biggest novelty is the introduction of an impact assessment obligation according to which, according to Article 35 (1) of the GDPR, if it is likely that some type of processing, especially through new technologies and taking into account the nature, scope, context and purposes of processing, will cause high risk for the rights and freedoms of individuals, the controller conducts an assessment of the effect of the envisaged processing procedures on the protection of personal data prior to the processing of personal data. In doing so, it must take into account how one assessment may relate to a number of similar processing operations that present similar high risks. Thus, for the first time, risk assessment and protection of personal data have an evident effect of implementation in the field of legislation. Of course, when conducting a data protection impact assessment, the controller must seek advice from the data protection officer, if appointed (GDPR, Art. 35 (2)). In addition to the said General Regulation, the Directive on the Protection of Individuals with regard to the Processing of Personal Data by Competent Authorities for the Prevention, Investigation, Detection or Prosecution of Criminal Offenses or the Execution of Criminal Sanctions and on the Free Movement of Such Data is an integral part of the adopted legislative package. This Directive will harmonize the protection of personal data processed by judicial and police authorities in the Member States of the European Union. It clearly defines the possibilities for processing personal data of respondents, including their export to third countries, while ensuring high standards of protection of individuals in proportion to the needs of the implementation of appropriate police and judicial procedures. This Directive clearly defines the supervision of the processing of personal data by an independent data protection authority. Digitization is the backbone of the development of the information super-traffic and opens the complexity of privacy protection and information security. Liberalization, on the other hand, primarily refers to the openness of unlimited communication space with the accompanying process of cultural globalization. Globalization, with the support of information and communication technologies and open global space, is shifting global trends to local frameworks. The unstoppable trend of the information society improves the quality of communications, improves the development of technologies, but has an important task - to establish a model of data protection, especially personal data protection, the most valuable part of personality and the concept of individuality versus global universality. force on April 27, 2016. The aim is to determine the boundaries and maximally protect the flow of data with an emphasis on the processing of personal data in the European Union in the modern information society. From these facts arises the need for thorough research and analysis of data protection in the Republic of Croatia from a security and legal aspect. Furthermore, as a member of the European Union, Croatia was obliged to harmonize its legislation with GDPR EU regulation in the field of data protection, as well as all other EU members which from 25th May 2018 presents personal data protection regulation in order to harmonize and increase the protection of citizens' privacy.

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CONTRASTS OF CONTEMPORARY MARKETING

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ABSTRACT

In the time of the 4th Industrial Revolution, based on new technologies and new paradigms, new entrepreneurial ventures, and new business models are developing. At the same time, consumers' awareness of their new role and market power is being brought to them by laws and new communication technologies. In these and such circumstances, the marketing business philosophy of the globalized market is also developing. The subject of research in this paper is fourth-generation marketing. The research aims to determine the relationship between traditional and digital marketing and whether traditional marketing will soon disappear. The paper presents the results of the survey that will be presented by first presenting the essential environmental factors that have throughout history influenced the development of business philosophy and marketing practices, then exposing the key trends that shape current market conditions and the main characteristics of marketing 4.0 in the context of the presentation of marketing generations. The special section contains a comparison to determine the relationship between traditional and digital marketing.

Keywords: *the 4th Industrial Revolution, marketing 4.0, traditional marketing, digital marketing*

1. INTRODUCTION

In the time of the 4th Industrial Revolution, based on new technologies and new paradigms, new entrepreneurial ventures, and new business models are developing. At the same time, consumers' awareness of their new role and market power is being brought to them by laws and new communication technologies. In these and such circumstances, the marketing business philosophy of the globalized market is also developing. The subject of research in this paper is fourth-generation marketing. The research aims to determine the relationship between traditional and digital marketing and whether traditional marketing will soon disappear. The methodology used in this paper is analysis of available data and a desk research, as well as a review of the literature and previous research. Author is also contributing by describing personal experience such as a real-life experience and observation. The paper presents the results of the survey that will be presented by first presenting the essential environmental factors that have throughout history influenced the development of business philosophy and marketing practices, then exposing the key trends that shape current market conditions and the main characteristics of marketing 4.0 in the context of the presentation of marketing generations. The special section contains a comparison to determine the relationship between traditional and digital marketing. Contribution of the paper is seen in offering contemporary movements in understanding of traditional marketing and marketing in the time of 4th industrial revolution, but also in the time of Covid 19 pandemic. It is important to understand contrasts in marketing and adopt them through business side but also through a personal side of the consumers. Considering the Covid 19 pandemic, the world has slowly shifted all its major operations online and those who were not comfortable with using technology have been forced to adapt and learn new skills. Because people spend more time online then ever digital marketing can prove to be very effective and productive in these advanced technological times.

Traditional marketing is at a disadvantage because not only does it require paper, delivery, human aspect and employees who interact with each other it is currently considered very unsafe and unsanitary even dangerous because of the potential contamination and transmission of the deadly disease.

2. BUSINESS PHILOSOPHY AND MARKETING PRACTICE

The business philosophy and marketing practices develop over time. As the market developed, so did marketing. To understand marketing today, i.e., the diversity that shapes it, it is necessary to use the method of comparison to highlight the similarities and differences of modern companies that develop a business based on the philosophy of marketing. Therefore, this paper discusses the contrasts of modern marketing in order to better see the many similarities and differences in the characteristics of modern marketing. To understand the business philosophy and thus marketing, it is necessary to understand the market's concept or market mechanism that works differently in different times and conditions. The simplest and shortest definition defines the market as a place of supply and demand. However, it has hundreds of shapes and faces. When we talk about the market, then it is "Plac" in Varaždin, Varaždin securities market that existed until recently, or Varaždin Stock Exchange merged with the Zagreb Stock Exchange, such as the process of collecting and opening public offers for goods, services or works. Further, it is an auction of the English or Dutch types, such as every 10th of the month Fair in Benkovac, or a conversation between two friends who offer each other a car or something else for sale. Likewise, when talking about the market, one should think about market structures. It is legal and legitimate to talk about free and non-free market competition or market competition to highlight different market structures and recognize the balance of power between those who shape supply and those who shape demand. Very often in the literature, we talk about free competition, about monopolies, about duopolies, and less often, we mention monopsony, duopsony, or oligopsony. Thus, market power can be manifested both on the side of the bidder and on the client's side, which is very important for an entrepreneur who shapes the marketing mix to survive in the market. Within the topic of market structures, we also talk about marketing. For marketing as a business practice, every individual has a definition, if he has ever tried to give the same. To the definition that says 'marketing is life, marketing is love' or 'the right product in the right place, at the right price, at the right time' etc. However, marketing has evolved as the market has evolved as it has evolved the economy. The environment has also developed, so the question is, who influences market competition? The question is not what influences, but who influences? Because, whatever happens, any processes, people are the bearers of those processes. Thus, we need to think about who started and where does a particular process go? The story of market and marketing development needs to be contextualized, put concerning relevant events and processes in the distant or recent past. For the analysis of many of today's processes in Europe and the world, one can begin with 1989, the fall of the Berlin Wall. Or, can we say that it is the fall of the Steel Curtain? What happened, and why is that image so important? Also, the 1990 Christmas Constitution is essential for the Croatian economy. Why? Because since then, the free market and free entrepreneurship have been defined as the foundations of economic structure, because monopolies are forbidden, and the freedom of access to foreign capital is determined. What is vital for Croatian entrepreneurs and citizens is also membership in the European Union from July 1st in 2013, Croatia joined the club of the most developed European countries. However, we must not forget the great crisis of 2008, which after eighty years, again affected the whole world. Industry 4.0 is a term that is not understandable and recognizable to many entrepreneurs, politicians, or even consumers today. These are new industries based on the new technologies of the 4th Industrial Revolution. These are new business paradigms and models that enable the growth of competitiveness through the productivity of companies and national economies.

Technologies that characterize the economy of the 21st century are smart robotics, 3D printers, data in the clouds, augmented reality, artificial intelligence, blockchain, and others. Thus, various environmental factors, either simultaneously or successively, affect the space in which modern man lives, affect the market, and then the marketing philosophy. Sometimes this is more intense due to social changes, for example, when the Berlin Wall fell, many countries came out from behind the Steel Curtain of Communism into the space of democratic freedoms. The new Christmas Constitution laid the foundations for a new life and economy in Croatia. It resulted in many new laws that affected the market, marketing. Today, after the economic crisis, modern man is intensely under the waves of a new industrial revolution or new technologies. If we do not adapt to such changes in the environment will be flooded with this wave of new technological changes. It should be noted that entrepreneurs must follow what is happening in the environment and adapt to survive. The end of 2019 and the beginning of 2020 were marked by the COVID-19 pandemic. It brought about unimaginable changes in all spheres of human life and activities. It is still pending what achievements and consequences it will have on the economy. One question can be asked here. How did Amazon, Netflix, Spotify, Apple Music, Uber, Airbnb succeed? Amazon was in business, like a bookstore. However, it has managed to connect publishers and retailers and create a new business model for the global market. Netflix created a tsunami, flooded all video stores, and stayed in some area of seemingly the same business, but, significantly different. Many things, in the new possibilities of the new environment, began to materialize.

2.1. Key trends that shape modern market conditions

In addition to political, technological, and economic changes, there have also been changes in consumer behavior. According to Google research, it can be stated that eight out of ten questions asked on search engines refer to questions in a situation when a consumer finds himself in a store (in-store). While consumers stand in front of shelves with shoes, books, closets, or the like, regardless of whether any of the sales staff is available, customers want to consult with some of their friends or read some reviews to make a purchase decision. Alternatively, when a person or family travels on vacation, they will again ask the question 'dr. Google'. There is more and more information available to the modern consumer, and it often makes it difficult for him to make a decision. When we talk about young people and the so-called netizens (a new term, we are talking about people who seem to be residents of the network), in a situation when the Internet has developed to unimaginable widths and depths, when it increases tenfold from year to year by the number of users of smartphones, tablets, and other smart technologies, consumers get into one new situation. Then the bidders in that and such a game have far better-organized consumers ahead of them than they were twenty or more years ago. The phenomenon of business cloning should also be highlighted. People in business are trying to take advantage of new technological opportunities, and it is no problem if they ‘clone’ a particular business. So from Amazon.com, it happened in India FlipChart.com; in China, instead of PayPal, there is Alipay, Uber in Malaysia has experienced its form under the name Greb, from eBay in Croatia similarly there is "eKupi“, and many others. What marks the end of the second decade of the third millennium is undoubtedly the process of convergence. One can point out the example of banks, which arose from postal companies, which provided various postal and telecommunications services, payment services, etc. For other financial services, users had to open bank accounts and go to the bank. For insurance business, one had to go to the counter or the insurance company's office. Today, however, these services and many others are located in one place, at one counter, either at the post office or at the bank. Today, it is available 7x24 in a way that the customer can spend a lot on his own, from home, from the office, on the computer, or a smartphone.

Today, telecom companies are becoming increasingly important for financial institutions. Likewise, in protecting industrial property rights, they are critical participants, especially concerning various copyrights and publishing rights, which are charged by telecoms on behalf of various professional associations, publishers, and artists. Some researches show what has happened from 1960 until today in terms of the increase in the number of ICT services users; the decrease in transport and communication costs. However, one shows a significant decline in the use of fixed telephony, i.e., the number of fixed telephony subscribers. In contrast, the number of mobile phone subscribers is continually growing. The decline in transport and telecommunications costs, which have practically reached zero, is also shown. These data suggest that unimagined opportunities for economic development have opened up. During one average human lifespan, unforeseen changes occurred during the 20th and early 21st centuries. During one average human lifespan, unforeseen changes occurred during the 20th and early 21st centuries. Some researches show the number of engineers in the STEM field who obtained a degree from 2000-2012 at universities in China, and in the United States. While that number in the U.S. hovers around 300,000 in China, there are about 1.4 million new bachelors of engineering per year. These data speak of China's significant competitive advantage. In developed countries, there is an average of 74 robots installed per ten thousand employees in European manufacturing industries. This data speaks of a new trend in the global industrial production scene. Namely, the processes of repatriation of production have started, from eastern countries to the west, because the robotization of production enables a more competitive level of costs, mostly free of labor costs. In practice, too, many paradoxes occur, such as the coexistence of online and offline communication. Although it characterizes modern man that he wants everything ‘digitus’, everything should be available immediately and here, whether for leisure, diet, work or the like. However, it is unnatural for a man to stay only online. One has to be offline, as well. He wants to hear the voice, and he wants to see the face, he wants to touch the thing, smell it, lick it. From that, it can be concluded that offline marketing has a chance for coexistence, for symbiosis with online marketing. Modern customers are better informed but more hesitant. That is another paradox! Because 'showered' with different reviews, opinions, suggestions, etc., with more information, it turns out that it is harder to make a decision. Today, customers are in such a situation that they continuously have lawyers available when making decisions, who 'whisper' to them either negative or positive information in the context of the decisions they make in the market. Today's customers can put tremendous pressure on the market, with the messages they send on social networks, etc. They can start street city riots, bring banks to bankruptcy and bring down governments. An example from Croatia says that three nurses in a kitchenette are at work, because they were dissatisfied with union commissioners, gathered two thousand people online. They then approached the Minister of Health and the Prime Minister to inform them of the nurses' dissatisfaction in the health system. Thus, consumers can act positively but also negatively about other market participants or in society. When analyzing political election campaigns, it can be simply said that the current U.S. president, (despite the lousy climate in public space shaped through public media) using social media as a platform, came to his first term. What needs to be emphasized, which is very important in current marketing are f-factors (friends, family, fans, followers). These are people who are sources of information to modern consumers or voters. Often, these are people who have never met, nor are they likely to meet, but they shape public opinion, attitudes, and the like. Kotler et al. (2017, str) writting that 4A to 5A game is also engaging. These are people who advise ‘under the voice’, who significantly influence the decisions of the modern consumer. They appear on social networks; on other media, they have their blogs. Today they are called influencers. What is important to them? These are the three ‘O’s’. They speak through their own experience, respect or encourage others' experiences, and they are, along with the media, also a significant incentive for consumers in making everyday decisions.

Circles are closer or farther, that is, bigger or smaller, and it is actually about when the consumer will make a decision, in what way and at what time. When he becomes aware, when he hears about event incentives from some media or social networks, he will try to ask some other people, i.e., he will take into account the f-factors to make a decision. Respecting their own experience, consumers will suggest to each other, either for or against, in making a decision. So, it is about the essential power of consumers who have significant influence through social networks. As today is the Fourth Industrial Revolution, it is necessary to remember the differences in the technologies by which the industrial revolutions were initiated and on the basis of which they took place. The story of the economic, technological possibilities of the steam engine did not look promising. A lot of it was risky and uncertain if transport and production technologies are analyzed. One may ask whether there was marketing in the time before the steam engine? Or did marketing only begin to materialize through the second industrial revolution, using electricity and the technologies that relied on it? Or did the powerful computers, which led to the Third Industrial Revolution, lead to the development of marketing? The Fourth Industrial Revolution brings new technologies. Understanding the concept and content of Industry 4.0 will be illuminated if the technologies it relies on are mentioned: robots, 3D printers, augmented reality, artificial intelligence, cloud data, and everything that allows fast real-time data collection and processing. They have enabled significant technological changes, which require organizational changes, in all elements of procurement, production, distribution, and public relations, by applying the mentioned things. What needs to be pointed out when talking about the Internet, to give contrast, the internet as a networking system, has existed since people, from Adam and Eve, who were networked, so Cain and Abel were born, etc. Likewise, the sea is a network, because when a man 'put the finger in the sea, he is connected to the whole world'. The Internet, which is called today's network are just new technologies, new platforms, media. Moreover, that is the step forward! Industry 4.0 offers productivity growth, flexibility, quality growth, and faster business processes, personalization of products and services, increased security, improved working conditions for employees, then collaboration, training, and dissemination of knowledge, an increasing number of involved machines and people.

3. FOUR GENERATIONS OF MARKETING

Speaking about business concepts, Kotler talked about production, sales, marketing, and the concept of social marketing. Speaking of generations of marketing, he speaks in a new way about what happened in developing the philosophy of marketing. When it comes to generations of marketing, then in the first generation of marketing, the focus of the provider is on the product. At that time, such technological capabilities and conditions of the social environment were a problem for producing a product and providing a service. In the second generation of marketing, the consumer comes to the center of interest as the standard of living begins to rise. People came out of the world wars, started earning higher incomes so they could say 'I have needs, but I also have desires'. Furthermore, marketing experts have realized that it is not enough to feed, water, clothe, and accommodate people, but that further effort is needed to better understand consumers and potential customers. There it is possible to fall into various traps! Various dimensions of man are recognized, from the aspect of integrative anthropology, such as physical, mental, spiritual, social, and transcendental, so new methods, tools and practices are introduced in the research of consumer needs. The result is new products and services offered in the market. A more humane approach is born, where one tries to penetrate the deepest secret persons. According to Kotler, when we talk about the fourth generation of marketing, it is about the path from traditional to digital marketing. When talking about marketing, it is necessary to understand the forces that shape it and their influences on marketing, from vertical to horizontal.

Due to changes in the environment, organizational changes are happening in companies. From a very layered hierarchical organizational structure, the so-called flat organizational structure - as few vertical organizational levels in decision-making as possible to make decisions decentralized, in the shortest possible time, in a turbulent environment. Likewise, from exclusive to inclusive. It is nice to say 'exclusive' whether it is hotels, jobs, books, universities, etc. However, today there is a growing awareness of the need for a philosophy of inclusion, in the private and public sectors. This means that all members of society, of any size community, must be involved. For, 'they know more man and burden than the man himself'. In this sense, in the fourth generation of marketing, it is necessary to involve not only consumers but also all stakeholders in various processes to be more successful or, to ensure survival, or increase the value of their own business. Individualization in terms of possibilities and human needs, rights, and freedoms has been a prevalent philosophy of life over the past century. On the other hand, today, the world has grown again that it is not possible to survive if people are islands but to connect. In this way, different social groups are formed either in the virtual or in the real space. In this way, better circumstances are acquired in order to achieve the philosophy of marketing. There are no temporal or spatial boundaries; that is what marks and shapes marketing 4.0 today. For a long time now, there have been evident trends that production plants have moved from developed western countries to less developed or underdeveloped eastern countries due to lower labor costs, etc. However, a new trend has started in these countries, and innovations have started coming from there. It is no wonder if we consider the number of newly educated engineers in the STEAM area in these countries versus the number in the most developed countries in the world. So, it's no wonder that five times as many engineers will increasingly create new services and new products. Online and offline marketing are interacting. Modern consumers using new communication channels have a strong negative and positive impact on market trends. In contemporary literature, there is talk of whispering about what can very actively shape contemporary marketing, marketing 4.0. The influence of young people, women, and citizens of the network is also a factor that significantly determines marketing 4.0. Likewise, as women are increasingly employed, working higher wages forever, and creating and making decisions, their impact on contemporary market trends is very significant. In the world of women, many decisions are certainly better, smarter than men make, and so their influence is growing.

3.1. From traditional to digital marketing

Marketing 4.0 in the digital economy needs to be seen in the process, from traditional to digital marketing. It should be investigated, does one exclude the other, or is coexistence possible? Moving from traditional to digital marketing, they need to be integrated and increase the company's chances of survival. In short, what is the significant difference between traditional and digital marketing is shown in Table 1. The table shows a list of traditional marketing channels and digital marketing channels with detailed description of several distinctive ways in which customers are reached. We can see that digital marketing column has significantly more ways of reaching and interacting with potential customers and consumers as opposed to traditional marketing which only consists of a limiting number of marketing channels. It is important to note that digital marketing uses a two-way communication method and therefore has a better insight into potential customer's wants and needs. Communication and feedback are very important as satisfied customers and a positive customer feedback can be more productive then simply a one-way communication marketing.

Table following on the next page

Table 1: Difference between traditional and digital marketing

	TRADITIONAL MARKETING	DIGITAL MARKETING
ADVERTISING CHANNELS	newspaper ads, television and radio advertising	in addition to T.V., radio advertising and SMS, it also consists of internet marketing via websites, social networks, banners, email marketing, mobile marketing, search engine optimization (SEO), PPC (pay per click) campaigns
INFORMATION	one-way, message-oriented to the consumer	two-way, emphasis on communication and feedback from consumers
MARKET STRATEGIES	segmentation and targeting	protection and promotion by satisfied consumers
CONNECTION WITH THE CONSUMER	linear	horizontally
MARKET POSITIONING	brand positioning and diversification	adjustment of brand recognition and brand marks (message)
MARKETING MIX	4P (product, price, place, and promotion)	4C (cocreation, currency, communal activation, conversation)
CONSUMER-SELLER RELATIONSHIP	the seller controls the market / the consumer has no bargaining power	cooperation of sellers and consumers, the consumer participates in the process of product modification and controls the performance of the company
MEASURING RESULTS	immeasurable, a limited range of the message	fully measurable, messages unlimited, target market capability and targeted messages

Source: Rončević, A., Boršćak, A., Kuštelega, L. (2019)

In terms of advertising, according to available data, in 2018, the best year for advertising after the past global financial crisis, budgets grew by over 5 percent. The World Cup held in Russia, in which Croatia was a significant participant, certainly contributed to this. Also, the Winter Olympics were held, so it is difficult to estimate the increase in advertising budgets objectively? Good forecasts for 2019 did not apply to all sectors of the economy or to all communication channels. One of the exceptions is Eastern and Central Europe's area due to the strengthening of the Russian market, where 11 percent growth was forecast. In digitally developed Western Europe, advertising budget growth of 3.5 percent is forecast. Television remains the most robust advertising channel. For mobile advertising, a 22 percent growth is forecast, so that television advertising would outgrow it. Internet advertising has been announced to grow by 12 percent. However, if the segment related to Google and Facebook is isolated, this data is significantly smaller because it represents over 60 percent of all advertising on the Internet. According to forecasts, investments in this communication channel will decrease by more than 7 percent, if Google and Facebook are excluded. Globally, Internet advertising currently accounts for less than 50 percent of the budget, while traditional advertising is over 55 percent. So, the coexistence of traditional and digital marketing is still close. Advertisers' investments in print media continue to fall, so the downward trend continues. For the year 2019, a 9.5 percent drop in advertising budgets in these media was announced. In contrast, radio advertising is still expected to grow. Namely, the research results and the awareness of advertisers that people spend much time in the car or at home doing some other work have certainly made this communication channel attractive to investors. In the last twenty years, the printing industry has undergone major changes, but due to the quality and speed, standard technologies in the printing industry (offset and flexographic printing) still dominate.

However, today, in addition to inkjet technology and electrophotography, these printing services are increasingly used, so in this way, we can see the symbiosis of traditional and digital marketing. More and more clients are turning to digital printing houses and will continue to do so in the future so that they will take an increasing market share in the graphic market.

4. CONCLUSION

Speaking about the contrasts of modern marketing, the coexistence of traditional and digital marketing is evident through several examples. Still, in mailboxes or under car wipers, consumers find flyers and catalogs, watch very high-quality production ads on television, but will not be able to protect themselves from ads while reading news on a portal. On the other hand, when consumers come to smart shops, car repair shops, or museums, they can combine different technologies with the help of augmented reality equipment to complete their own experience or quality of service. There are real and virtual realities, and 4.0 marketing processes take place in them. The world and the time in which the modern consumer lives are changing faster and faster, and it is necessary to understand that. Whoever is not awake will sooner or later disappear from the market or will wake up not prepared. Contemporary is both traditional and modern, that is, both traditional and digital marketing because there are so many products, services, and markets, so that every entrepreneur who knows how to communicate in that reality, how to organize business processes, will wisely combine traditional and modern. Knowledge management is crucial, and the state's role must not be forgotten.

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SOCIAL RESPONSIBILITY WITHIN THE HIGHER EDUCATION FRAMEWORK

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ABSTRACT

Social responsibility within the higher education framework relates to determination of activities and concepts, as well as professional training of future generations according to the labor market demands. On a strategic level, socially responsible higher education can be defined as a long – term method with two possible approaches: educational activities approach; as well as the approach wherein the former is viewed as the basic product. Higher education strategy requires careful planning, research, and determination of key decisions, i.e. determination of the direction of action; all in order to achieve certain predetermined goals. Said goals need to be set according to the current educational policy and labor market demands. Furthermore, socially responsible education strategy can be defined as a business activity framework within which one defines goals, tasks and activities that need to be accomplished in accordance with a well determined strategy and usage of available resources. All of this is necessary in order for a socially responsible institution to attain a desirable market position. When viewing social responsibility as a market opportunity, one needs to take into consideration education as a process, due to the fact that it represents a sequence of activities which link the present to the future; moreover, it is based on the analysis and identification of market opportunities conducted regularly by higher education institutions, in accordance with their attained knowledge and skills. Detection of opportunities in the education market is possible solely due to intense market trend tracking; said trends also being noticeable in market demands for educated professionals, especially considering the fact that the knowledge - society nowadays represents one of the basic values, as well as a societal and economical need of the modern human. Human capital quality is determined by the education system quality, investments in education and education participation. 266 undergraduate and graduate nursing students have participated in a research conducted at the North University. It has thusly been determined that the respondents aren't completely informed as to the application fields and methods pertaining to social responsibility.

Keywords: *social responsibility, higher education, knowledge society, labor market demands*

1. INTRODUCTION

Social responsibility as a concept has existed almost since the beginning of mankind, as it represents a sort of care for the rest of the community and the surrounding environment. Social responsibility also represents being conscious of the new meaning and role of manufacturers in this new, global society, especially in the eye of the consumer. Furthermore, social responsibility may be considered an open process which continually leads to changes in goals and various priorities; where the basic objective is to attain social responsibility in all aspects

of human existence. Basic character of sustainable development and social responsibility takes on a dimension of pronounced individuality of various motives that are noticeable during purchasing clothing items, where the consumer is conscious of their choices in an ethical and ecological sense. The consumer therewith takes into consideration their own needs and satisfaction of said needs, as well as the needs of society and nature. A socially responsible consumer shall thus choose a product that does not jeopardize the future of succeeding generations by excessive usage of nonrenewable resources, energy sources or long – term environment devastation and pollution. One comes across terms like social responsibility, socially responsible behavior, consumer behavior, consumer responsibility, sustainable development, sustainable economy and sustainable society in everyday life. This is largely due to an intense industrial growth, economic growth, mass adaptation, a sudden global expansion and development of technological innovation; all of which failed to take into account environment and natural resource preservation. Nowadays, more and more people become conscious of the fact that the modern lifestyle has become increasingly harmful to the environment.

1.1. Research objectives

Every national economy and its long – term growth depend on the education system, investments in education and the development of education in itself. In order to achieve improved competitiveness, it is mandatory to invest in education and to substantiate the existing college study programs with corresponding literature; therefore, the following is necessary:

- conduct a critical analysis of the past University North activities in order to model a foundation for an empirical research among the student population,
- define and describe the key characteristics of social responsibility application in a higher education institution
- research and analyze the development of university studies according to the labor market demands; determine the frequency of social responsibility application toward all the participants (students – higher education institution – employers – the community).

2. SOCIALLY RESPONSIBLE BUSINESS ACTIVITY

Being socially responsible is to invest in human capital, in the environment, in relationships with the participants; furthermore, it is to conduct business in an ethical way, with the objective of creating added value for the organization, as well as creating a healthier and more agreeable environment for life in general. The concept of socially responsible business has been slowly developing throughout history, making it impossible for us to pinpoint an exact moment of its creation (Bobera, Hunjet and Kozina, 2015). As the industry grew, using human strengths and knowledge, as well as natural resources in order to achieve its objectives (i.e. to generate profits), society became conscious of the need to protect the environment, along with the people contributing to the success of respective industries (Kotler and Lee, 2009). Some societal matters are easier to solve than others, therefore the decision as to which social objective the organization is going to pursue may be the biggest challenge. This decision directly affects the later programs and results. The following are some of the questions that managers in charge of deciding on the social objective face: How does the decision contribute to the business objectives of the organization, how big is a certain social problem, is the state in charge of solving said problem, or is it someone else's charge, what opinions will the shareholders have on the matter, will the final decision on the social objective cause a scandal (Tamvada, 2020) and (Čutura, 2018)? After the social objective has been set forth, the managers in charge need to recommend an initiative – for example, community service, corporative philanthropy, corporative social marketing and so on – that might be useful to attain the set social goal.

It is vital to find a way for the organization to pursue said social goal without jeopardizing or neglecting its main business, as well as to determine whether this kind of promotion really works and who actually pays attention to it (Licandro, 2017). Available literature on the matter singles out two dimensions of socially responsible business: the internal and the external dimension. The internal dimension is comprised of human resources, health and safety, adaptation abilities and environment. The external dimension is comprised of the local community, suppliers, buyers and the organization business participants (Servera-Francés, Piqueras-Tomás, 2019) and (Woo Sung & Sekyung, 2019). The internal dimension represents business activity that is socially responsible towards the organization's environment. The internal dimension is comprised of: human resources management, health and safety of employees at work, the ability to adapt to changes and management of influence on the environment and natural resources. The term "human resources" refers to labor force within the organization. This might refer to the individuals within the company, as well as their competencies and skills, or to a part of organization in charge of employment, dismission, professional training, motivation, creation of a positive work environment and division of responsibilities, activities and tasks according to the knowledge and skills of employees employed in accordance to the requirements of a certain position. High quality human resources can provide for a good source of competitive advantage on the market. Encouraging human rights and eradication of all forms of discrimination results in: lower unemployment rates, visible devotion to societal problems and improvement of conditions in the labor market. Good human resources management in general results in lower business costs and overall business success, as well as in the aforementioned beneficial outcomes. Workplace health and safety are mostly based on obeying by the laws and regulations, some of which are: Labor Law and the Safety and Health at Work Law. Moreover, the organizations also encourage some preventive measures, using improvement of working conditions and workplace safety. On the other hand, the demand to measure, document and communicate the aforementioned qualities in the marketing materials is also on the increase. These elements are included in the process of certification and marking (Ovidiu-Ioan Moisescu, 2018) and (Vučemilović, 2019). The external dimension of socially responsible business relates to socially responsible business activity outside the company's boundaries, and is comprised of the relationship with the local community, suppliers, buyers and participants who maintain a relationship of reciprocity with the company; i.e. the organization and the participants in the external dimension mutually affect each other in some capacity (Gutiérrez Rodríguez, Cuesta Valiño, & Vázquez Burguete, 2017). The organization affects the local community by providing employment, thusly encouraging education, ensuring income and attracting new people if the local community lacks human resources. This way, the organization promotes the area by drawing new people to the community. Later on, said promotion is conducted by the people themselves if they are content with their workplace. The organization furthermore sponsors fundraising activities, builds infrastructure and therewith affects the economical and societal development of the local community (Vrdoljak Raguž, Hazdovac, 2014) and (Galant, Cadez, 2017). Apart from the above mentioned factors, the external dimension also includes respecting all human rights, erradication of discrimination and promotion of equality in general, as well as taking care of the global environment when the organization's business activity is conducted on a global level (Kolić Stanić, Barišić, 2019).

3. HIGHER EDUCATION IN THE REPUBLIC OF CROATIA

The Croatian higher education system prides itself on its long educational tradition, developed mostly due to public university activity – in Zagreb, Rijeka, Split, Osijek, Pula, Zadar, Dubrovnik and Koprivnica. From 2003, Croatia conducts an intense reform of the higher education system, and in accordance with the Declaration of Bologna.

At the moment, the Croatian education system is completely synchronized with the Bologna guidelines, and the Croatian higher education institutions represent a part of the European Higher Education Area. (Hunjet, Geček, Mrvac, 2015) Linking higher education, science and research to the private sector is an important process; one that is being conducted parallel with the higher education reform. According to the Act on Scientific Activity and Higher Education, the activities pertaining to higher education are to be conducted by higher education institutions. Higher education institution is a university, as well as any faculty and art academy in its composition, a polytechnic and any other higher learning institution. A university, a faculty and an art academy are founded in order to conduct higher education activities, scientific, technical and artistic activities, and any other activities in accordance with the law and their respective statutes. These higher education institutions organize and conduct university studies, but can also, in accordance with the Act on Scientific Activity and Higher Education, organize and conduct professional studies. University studies educate and train students to perform jobs in the field of science and higher education, business world, public sector and society in general. University studies are comprised of three levels: undergraduate studies, graduate studies and postgraduate studies. Polytechnics and higher learning institutions are founded in order to conduct higher education activities and professional studies, and can conduct professional, scientific and artistic activities in accordance with the Act on Scientific Activity and Higher Education and their respective statutes. Professional studies provide students with an appropriate level of knowledge and skill that allows them to perform professional jobs. These studies educate and prepare students for a direct inclusion in the labor market. Professional education is comprised of: short professional studies, undergraduate professional studies and specialist graduate professional studies (ZZDVO, 2003). Enrollment is performed based on an invitation to tender, as published by the higher education institutions conducting the studies. The invitation to tender is to be published at least six months prior to start of classes. Higher education institutions determine a selection process that guarantees equality of all applicants regardless of their race, skin color, gender, language, religion, political views, sexual orientation or age. Higher education facilities determine the criteria that become the basis of classification and selection of candidates. The criteria relates to results during previous education, types of previously completed education, classification exam results or other exam results, as well as special knowledge or skills. Higher education facilities determine which high school programs provide appropriate enrollment prerequisites for certain undergraduate university studies, integrated undergraduate and graduate university studies or professional studies, respectively. Graduate university studies or specialist graduate professional studies may solely be enrolled by persons who have previously completed corresponding undergraduate studies. Higher education institutions determine which undergraduate studies are deemed acceptable when applying to enroll into certain graduate studies. Persons who have completed undergraduate professional studies may be enrolled into graduate university studies in accordance with the General Act of the university conducting said studies. Acceptable applicants may be singled out using a competency exam during a classification procedure and/or using differential exams at the beginning of the study program as a full- or part time student. Postgraduate studies may be enrolled by a person who has previously completed a corresponding graduate study, whereby the university reserves the right to determine other prerequisite criteria that needs to be met in order to be admitted. (Horvat Novak, Hunjet, 2016) According to the European Commission, transferable skills can be acquired by education or work experience methods (ESF, 2010). Transferable skills can be acquired by increased mobility between the university and the business sector; thusly the students can combine theoretical knowledge with practical learning. The objective of education and training by international, intersectoral and multidisciplinary mobility is to create creative, entrepreneurial and innovative students capable of handling present and future challenges.

Development of professional and personal competencies in students by work experience is extremely beneficial to postgraduate students, but also to universities and entrepreneurial/research centers. This contributes to an improved cooperation between universities and non – academic sectors by transfer of knowledge and improvement of mutual research projects. Universities and the business sector should cooperate in order to support dialogue, partnership and networking between the education and the business sector by raising visibility of the cooperation benefits and good cooperation practices in the media; by providing better support to budding partnerships and networking between the education and the business sector on a national, regional and local level; and also by including several societal partners, companies, researchers, councilors and professional guidance experts in order to achieve an improved mutual understanding. All the participants should take part in joint discussions. The idea is to build a better future with the aid of technology, innovation and sustainable development philosophy, all in order to identify long – term questions pertaining to the immediate environment and turn said questions into research challenges interconnected with the global questions like the Millennial Development Goals (UN) (Hunjet, Kozina, 2014).

4. ANALYSIS OF THE CURRENT CONDITION

University North, despite a large selection of programs, still doesnot attract a large number of students. There are plenty of reasons for that. The main reason is an in adequate awareness on the behalf of the public, that is to say the target group. As theneed for education growsever larger, as does the competition, thatleads to a second equally important factor. Today price is an important factor when deciding about and choosing a higher education institution. The University hasabout 4000 fullandpart time students from allover Croatia and the neighbouring countries, and it employsover 350 qualified employees and associates in allteaching, scientific-teaching and arts-teaching positions. Theration of professors and studentsis 1:23. The basic reason and goal of establishing University North is a long term increase of the number of higheducated population in the counties it operates in, in otherwords in thenorth-westernregion of Croatia (Hunjet, Kozina, Đukec, 2018). University North offers a range of programs, in which every body can find something for themselves. A richchoice of program sattracts people from differentareas of interest. Study programs are carriedoutand organised on three education levels: undergraduate, graduateand post-graduatestudies. University North offers the possibility of education in two university centres- University centre Koprivnica and University centre Varaždin. In his work, Campbell claims that the contemporary world is not divided by ideology, but by the degree of development and innovation, considering that the world is currently going through the fourth industrial revolution, which differs from all previous industrial revolutions by its scale and complexity. The proof that the new industrial revolution is indeed taking place is the fact that genetics and artificial intelligence, nanotechnology, robotics, biotechnology and other modern sciences and technologies, which until recently were not interconnected, are now building on each other and driving global economic growth and development. The Fourth Industrial Revolution is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres. It is, in its nature, global. It creates enormous opportunities for economic and social development, but also brings about major threats to geopolitical security, the labour market, future jobs, income equality, as well as the system of values and ethical standards. In parallel with the new industrial revolution, socio-economic, demographic and geopolitical changes are taking place, which, individually and synergistically, are affecting the spheres of labour and education as parts of society's growth and development. Changes manifest themselves in the emergence of new jobs and occupations, which will partially or completely replace the existing ones. Willinsky writes about a managerial revolution in what might be thought of as a transformed commodities market, in which knowledge is regarded as the value-added and the most effective commodity which is

derived from static interpretation of data, data analysis, market research and knowledge of different marketing strategies (Willinsky, 2005). In this context, predicts that knowledge workers will be the drivers of the knowledge society (Liessmann, 2008), which indicates that a fundamental social transformation has taken place in which "the material economy" must be replaced by the so-called "symbolic economy" (Prisching, according to: Liessmann, 2008). Liessmann also states that, through the concept of knowledge worker, Peter Drucker defined the vision of a new utopia of free and individual access to the crucial resources of the new society. In the years to come, jobs in the field of mathematics and informatics, architecture, and, to a lesser degree, management and trade, will gain in importance. Adverse trends will continue in the manufacturing industry and production. Waste management, tourism, health and food industries have generated a range of new occupational profiles that require new competences, i.e. new skills and abilities, primarily in the field of communication, as well as new methodologies, and an understanding of factors and actors essential for growth. Considering the above, University North is striving to develop study programmes that meet the current demand, as evidenced by continued innovation of the educational process, expanded capacity, and new models of practice. In order to help young people develop 21st century skills, the process calls for innovation that will enable greater creativity and flexibility, and facilitate personalized learning and the acquisition of new skills (Hunjet, Geček, Mrvac, 2015). With this in mind, University North strives to develop new functional skills and abilities in students. Quality education system is generally defined as a system which creates knowledge, skills, competencies and insights that improve the standard of living, and facilitates sustainable growth and development of a society as a whole. Future (new) occupations require the abandonment of the existing linear principle in education and require multifunctional practical training (new professional and specialist study programmes) as a prerequisite for specialisation in different scientific fields. University North is now reaching the level where creativity and freedom of choice lead to new occupations generated by the labour market (Hunjet, Milković, Vuković, 2018).

5. THE RESEARCH

The survey conducted as a portion of the empirical research has provided answers as to the questions on social responsibility within the framework of higher education at the University North's Nursing Department. The research was conducted via a survey questionnaire in June of 2019. The surveyed participants were nursing students at the undergraduate professional study and graduate university study. Collection of primary data, using a sample comprised of 266 students/examinees, has been utilized for the purposes of this paper. The survey questionnaire was comprised of 4 question groups (Benšić, Šuvak, 2013). The first group of questions was to provide basic examinee data, whereas the second group was to determine examinees' opinions on matters related to the University North's social responsibility. The third question group was to provide answers as to the examinees' opinions on matters related to the University North's social responsibility as an educational institution. The fourth group of questions was to provide answers as to the examinees' opinions on matters related to the social responsibility elements regarding the nursing study program and their future profession. Objective of this research was to determine the degree to which nursing students at the University North are familiar with the concept of social responsibility, as well as to determine examinees' opinions on matters related to the University North's social responsibility and matters regarding the University's social responsibility as an educational institution. All the surveyed students were familiarized with the topic of research, as the front page of the survey contained the title of the research and a brief explanation. All the participants were volunteers, and the questionnaire was to be filled out anonymously.

5.1. Research results

5.1.1. Basic examinee data

86% of female students and 14% of male students participated in this research. In terms of age groups, the majority of examinees, 64%, were under the age of 25. The following 24% of examinees were aged 25 to 34, whereas 10% of the examinees stated they belonged to the age group 35 - 44. A mere 2% belonged to the age group 45 - 54. 65% of examinees have previously completed a high school education, whereas 35% of examinees stated they have previously completed a higher education. The majority of examinees were residents of the Varaždin County (35%), followed by 24% examinees from Međimurje County and 9% from Koprivnica – Križevci County. 8% of examinees were from Krapina – Zagorje County, 7% of examinees were from Zagreb County. The remaining counties were represented by a small number of examinees. This sample type indicates a young, working - age population; one that can affect social responsibility with its contribution. Whether the observed population is comprised of full – time students or unemployed part – time students, social responsibility is still a vital element of their future vocation. The total sample shows that the majority of examinees come from Varaždin and the surrounding cities.

5.1.2. Examinee opinions on matters regarding University North's social responsibility

The question "Are you familiar with the socially responsible concept University North has been conducting?" has been answered positively by 41% of students, whereas the remaining 59% answered negatively. 75% of the examinees were part – time students, 24% were full – time students and the remaining 1% were alumni. 89% of examinees stated that the University North was a public institution, 7% thought it was a private university and the remaining 4% weren't familiar with the University's status. The question "What does the term "socially responsible educational institution" mean to you?" was answered with "the responsibility of an institution towards the community" by 44% of the students; 34% of the students stated it meant caring for the society, community and people; 13% of examinees thought it meant caring for students/alumni; 3% of students thought it was caring for employees; 2% stated it meant preparing students for labor market inclusion; 1% said it was environment preservation and the remaining 1% stated it was to do with workplace security and preservation. The question "What do you consider to be the most common impediment to conduction of socially responsible business?" was answered with "a lack of time and resources" by 40% of examinees. 22% of examinees answered said question with "difficulties in communication with other education participants (students and the community)," 15% of examinees thought the most common impediment was insufficient influence on the local community; the same percentage of examinees said it was conflict between different interest groups, and the remaining 7% stated it was a lack of clear and ecological standards. The question "Do you consider the University webpage informative regarding the institution's conduction of socially responsible business?" was answered with a "Yes" by 79% of examinees and with a "No" by 20%.

5.1.3. Examinee opinions on matters regarding social responsibility of the University North as an educational institution

Likert scale…..1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree. The question "Does University North support the local community and various socially beneficial initiatives?" was answered by the majority of examinees (47%) with "agree" (4). The mean value of answers was 3,68. 39% of examinees confirmed that the University takes into consideration ethical and societal criteria by answering with the number 4 on the scale. The mean value of answers was 3,79. 43% of the examinees deemed the University's fundraising activities and donations to the local community socially responsible by choosing answer number 4 („agree"). 40% of the examinees chose answer number 5 („strongly agree").

The mean value of all answers was 4,23. 35% of the examinees agreed that the University takes into consideration environment protection by choosing number 4 ("agree"), whereas 28% either chose number 5 ("strongly agree") or number 3 ("neither agree nor disagree") on the scale. The mean value of all answers was 3,78. Majority of the examinees (36%) agreed that "the University North abides by a code of ethics and principles of socially responsible business when engaging in decision making," by choosing number 4 ("agree") on the scale, whereas 28% either chose number 5 ("strongly agree") or number 3 ("neither agree nor disagree") on the scale. The mean value of all answers was 3,78. 46% examinees agreed that the University encourages the protection and preservation of international human rights (number 4 on the scale), whereas 27% either strongly agreed (5) or neither agreed nor disagreed (3). The mean value of all answers was 3,94. The majority of examinees (38%) neither agreed nor disagreed (number 3 on the scale) with the statement saying that the University takes initiative in order to encourage larger social responsibility towards the environment; 33% agreed and 20% of the examinees strongly agreed. The mean value of all answers was 3,61. 28% of the examinees strongly agreed (5) with the statement that the University respects other organizations and continually supports the development of the local community; 40% agreed (4), and 28% neither agreed nor disagreed (3). The mean value of all answers was 3,88. 39% of examinees agreed (4) with the statement that the University implements a quality assurance system into higher education; 39% strongly agreed (5), whereas 24% neither agreed nor disagreed (3). The mean value of all answers was 3,95. Majority of the examinees (39%) agreed (4) that the University regularly monitors and reports socially responsible business activity as an institution; 29% neither agreed nor disagreed (3%), and 25% strongly agreed (5). The mean value of all answers was 3,82. 32% of the students agreed (4) that the University resources can be considered generally valorized and utilized for student education; 31% strongly agreed (5), 28% neither agreed nor disagreed (3), whereas 14% disagreed (2). The mean value of all answers was 3,51. The majority of examinees strongly agreed (5) that the University has a significant positive impact on the economy of northwestern Croatia; 29% agreed (4), 27% neither agreed nor disagreed (3), whilst the remaining 8% disagreed (2). The mean value of all answers was 3,80.

Figure following on the next page

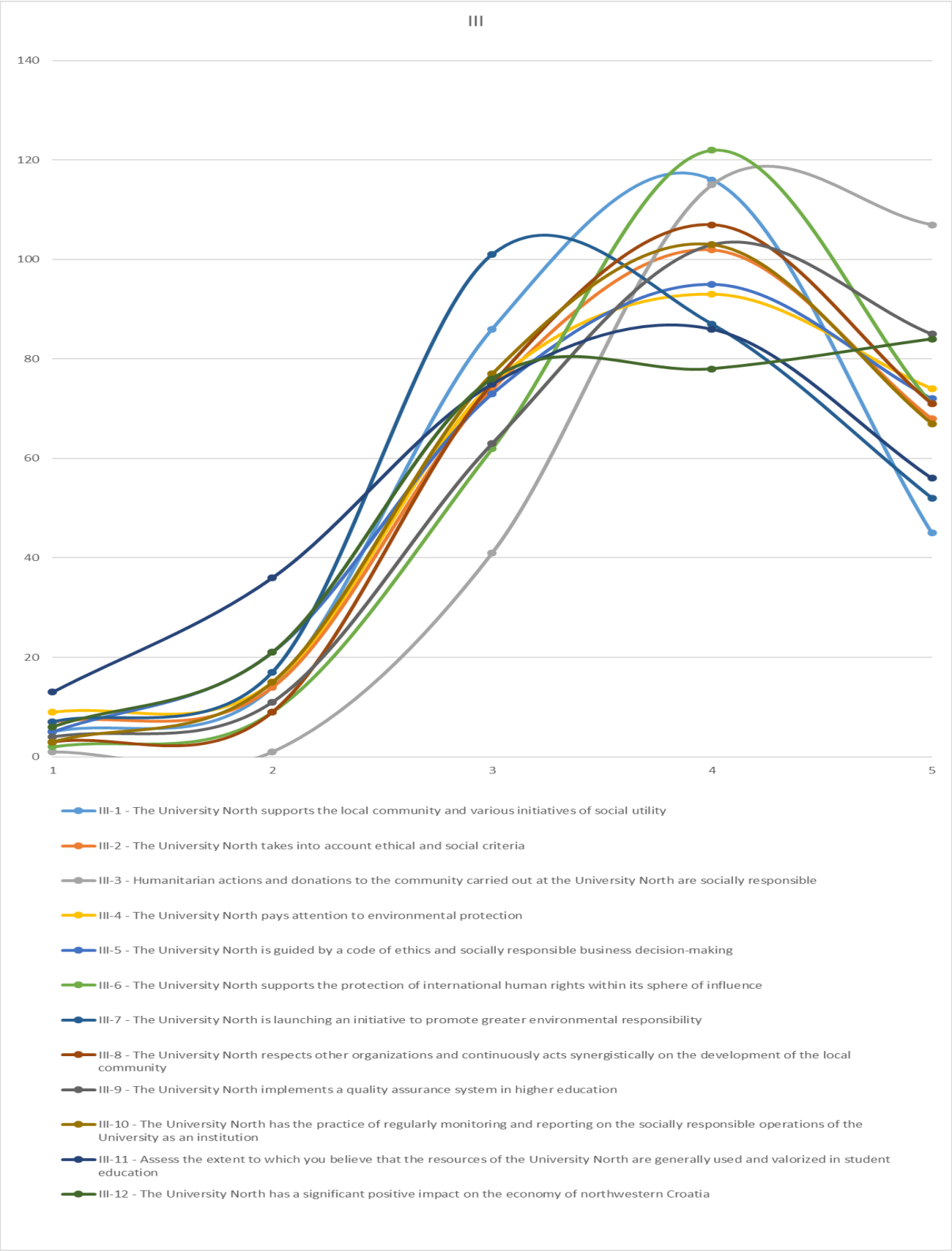

Figure 1: Respondents' attitudes on issues related to social responsibility of the University North as an educational institution
(Source: Autors)

6. CONCLUSION

Importance of the herewith conducted research is primarily reflected in the combination of the development of new studies, which has been proven vital to the acquisition of necessary knowledge, skills and experiences. In this manner, higher education works towards improvement of the climate at the University North, as well as towards improvements in usefulness and interest. The aforementioned factors point to a higher quality of the teaching process, which therewith necessarily reflects the improved quality of the educational objectives and accelerates the achievement of the previously set learning objectives; as well as improves competencies vital to very professorial engagement. Accordingly, one can also expect minor, yet positive side effects, such as: easier access to information and a more active engagement in the educational process, which inevitably leads to responsible student behavior. Every individual makes it their priority to attain a desirable position on the labor market, as based on their acquired diploma. Employment is one of the major long - term objectives of every economic politics. Learned knowledge, as well as acquired skills, provides foundation for continuation of education. Sustainable development and the development of society as a whole require innovation and constant skill perfection, as well as continual investments in personal knowledge. If the Republic of Croatia, along with its citizens, recognizes the importance of intellectual capital and the importance of investments in education, it might yet catch up with the developed countries and enter the global labor market. Higher education institutions are facilities meant to ensure the transfer of professional knowledge and competencies. Said knowledge and competencies are to be transferred to individuals who will later use them in the real world, implement them in their future vocations and use them in order to attain a desirable position on the labor market. The obtained results indicate some of the benefits, as well as shortcomings of the higher education at the University North's Nursing Department. Said results may be utilized as foundation for possible corrective measures or creation of future development strategies.

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