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## Conference Paper

Economic and social development : 79th International Scientific Conference on Economic and Social Development : book of proceedings : Rabat, 25-26 March, 2022

## Provided in Cooperation with:

Varazdin Development and Entrepreneurship Agency

*Reference:* (2022). Economic and social development : 79th International Scientific Conference on Economic and Social Development : book of proceedings : Rabat, 25-26 March, 2022. Varazdin, Croatia : Varazdin Development and Entrepreneurship Agency.  
[https://www.esd-conference.com/upload/book\\_of\\_proceedings/Book\\_of\\_Proceedings\\_esdRabat2022\\_Online.pdf](https://www.esd-conference.com/upload/book_of_proceedings/Book_of_Proceedings_esdRabat2022_Online.pdf).

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# Economic and Social Development

79<sup>th</sup> International Scientific Conference on Economic and Social Development

## Book of Proceedings

Editors:

**Mustapha Machrafi, Dean Uckar, Toni Susak**



ISSN 1849-7535



9 771849 753006 >

Rabat, 25-26 March, 2022

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in cooperation with  
**Faculty of Management University of Warsaw**  
**Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat**  
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## **Economic and Social Development**

79<sup>th</sup> International Scientific Conference on Economic and Social Development

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**Title ■** Economic and Social Development (Book of Proceedings), 79<sup>th</sup> International Scientific Conference on Economic and Social Development

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**Publishing Editor ■** Spomenko Kesina, Domagoj Cingula

**Publisher ■ Design ■ Print ■** Varazdin Development and Entrepreneurship Agency, Varazdin, Croatia / University North, Koprivnica, Croatia / Faculty of Management University of Warsaw, Warsaw, Poland / Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat, Morocco / Polytechnic of Medimurje in Cakovec, Cakovec, Croatia

**Printing ■** Online Edition

**ISSN 1849-7535**

The Book is open access and double-blind peer reviewed.

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# ECO-ECONOMIC DECOUPLING: PERCEPTION OF CROATIAN AUTOMOTIVE CLUSTER

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## ABSTRACT

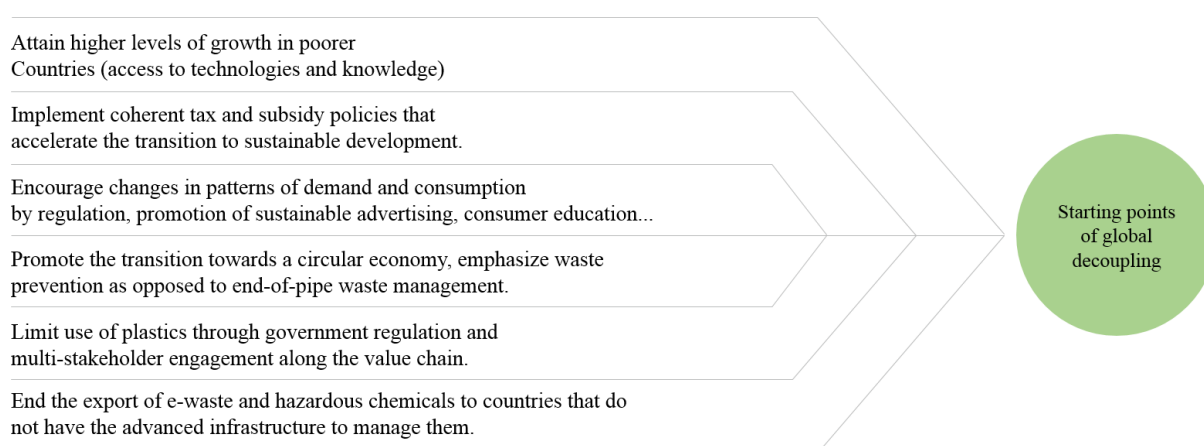
*One of the key issues to be addressed, which is in relationship with sustainable green economic development of automotive industry, is how to achieve decoupling between environment protection and economic development. To satisfy the requirements of sustainable development, an economy should be capable to simultaneously sustain economic growth and minimize environmental pressure. The vision of European automotive industry for the future goes well beyond 2030 targets of the Paris Agreement and the United Nations Environment Program. The Croatian automotive sector, consisting of more than 130 companies, is well accredited. Increase of the emerging SMEs in engineering, electro-mobility and ICT is noticeable in recent years. The most developed sub-sectors in Croatia are manufacturing of automotive components and special-purpose vehicles which both follow the goals of EU automotive associations, such as the European Green Vehicle Initiative (EGVI). The issue of sustainable mobility is put in the forefront with a strong action plan for zero net-impact emissions. The most recent European Green Deal elaborates in detail the measures predicted to diminish environmental, water, air, and soil pollution by 2050. Despite the global trend of increased environmental demands, the companies within Croatian automotive cluster, managed to have linear increase of sustainable profitability trends, starting from 2016. Croatian companies, as presented in the survey questionnaire are seriously taking into the account UNESCOs Sustainable Development Goals (SDGs) and have identified eight among them as the most important ones for their businesses. **Keywords:** automotive industry, regional development, green materials, business innovations, eco-economic decoupling*

## 1. INTRODUCTION

Circular economy is founded in the restorative principle and decouples the economic growth from the increases of the environmental footprint and finite resource consumption (Ellen MacArthur Foundation, 2013). In the impact/resource decoupling, increasing the variable of economic output does not induce an increase in the environmental impacts/resources (UNEP 2011). Creating a proper balance between financial and environmental sustainability is the most challenging task of European companies. One of the concerning facts, which has a huge impact on global competitiveness and prices are the stringent environmental standards. The companies outside the EU meet those requirements with much lower extent. The paper will focus on the automotive industry which is a growth engine of Europe's economy and has been accompanied by numerous innovations and continuous changes in production technology.



Its turnover is roughly 7 percent of the EU's GDP, and tax contributions related to the industry are total EUR 410 billion in the EU-15 countries alone. In 2017 European Union exported a huge number of vehicles (5.4 million), which accounts for over 40 percent of global automotive value share (Cornet, McKinsey Race 2050, 2019). Clearly the vision of the entire sector is to be a world leader in sustainability, while not leaving negative imprints on the environment (Cornet, McKinsey Report, 2019). So, the logical question is how companies cope with these very challenging obstacles and their opinion of the requirements since the vision outreaches both the 2030 targets and the Paris Agreement. The UN Global Sustainable Development Report is tackling integrated pathways for transformation and identifies national government, enterprises, academia, civil society, citizen groups and international organizations as key stakeholders of effective and sustainable interventions.



*Figure 1: Global decoupling of GDP growth from the overuse of environmental resources (UN, GSDR, 2019)*

Directive 2000/53/EC of European Parliament on end-of life vehicles is proposing several measures for decrease of environmental impacts. The accent is put on minimisation of environmental impact of end-of life vehicles and strengthening of internal markets through quality improvement and energy conservation.

## 2. SUSTAINABILITY IN AUTOMOTIVE INDUSTRY

The Strategic Guidelines for the Automotive Sector issued by the Croatian Ministry of Economy in 2013 emphasizes the need to encourage investment in the development of advanced and new propulsion technologies. A focus is laid on improvement of alternative fuels efficiency, such as natural gas, liquid fuels from biomass, hydrogen, and electric propulsion. Equally important are advanced technologies and advanced materials which can accelerate innovation process through the entire value chain of the automotive sector. Several benefits are identified when using materials of new generation which are green, lighter, and therefore decrease the energy consumption.

### 2.1. Weight decrease (Light construction)

A weight reduction is one of the most important measures of sustainable development. It can be achieved with the substitution of commonly used metals - iron and aluminium, with lighter textile fibres reinforced composites (FRC). Composites are homogeneous materials obtained by merging two or more different materials: matrix, reinforcements, binders, and fillers. The goal is to achieve specific characteristics and properties, such as high strength, density, stiffness, hardness, thermal and/or electrical conductivity. Commonly used engineering materials are composites, reinforced with natural fibres.

They consist of a matrix that can be ceramic, metal, thermoplastic, or thermoset, and of additives like fibre, yarns, or fabrics. Up to now the bast fibres (flax, hemp, jute, ramie, etc.) were used in the agro-textiles, mobile-textiles, geo-textiles, industrial-textiles and packaging textiles. Main advantages of natural fibres compared to synthetics are low price, light weight, biodegradability, and easy availability. Drawbacks are lower mechanical properties compared to e.g., glass fibres, so it must be upgraded by composite matrix. Further requirement is chemical modification of natural fibres for increased adhesion between the hydrophilic fibres and hydrophobic matrix. Already very common application of textile reinforced composites is in the automotive industry. One of the numerous examples is Mercedes Benz, which reported excellent properties of flax/sisal fibre mat embedded in an epoxy resin matrix in the door panels. Applied bast fibres successfully replaced previously used wood fibre materials. By using FRC weight is significantly decreased, e.g., in the case of replacement of steel 60-80% or in the case of aluminium 20-50% (Vinson, 2002).

## 2.2. New & Green materials

An increasing development of environmental consciousness and thus a significant interest in natural fibers for production of green products is initiated in recent years. A growing global problem of waste, increased prices of crude oil (raw material of synthetic fibers) and high processing costs have spurred the development of concepts such as sustainability and review of renewable energy sources. Therefore, research and development of biodegradable composites of high structural and functional stability has began (Mohanty 2005). Biocomposites are composite materials made of natural fibers and synthetic derivatives of non-biodegradable polymers such as PP (polypropylene), PE (polyethylene) and epoxy resin. On the other hand, they can be made of natural fibers and biodegradable polymers such as PLA (polylactic acids) and cellulose esters (Kovačević, 2015; Kovačević 2021). Biocomposites made from plant fibers and biopolymers are environmentally friendlier and therefore called green composites (Maya, 2008).

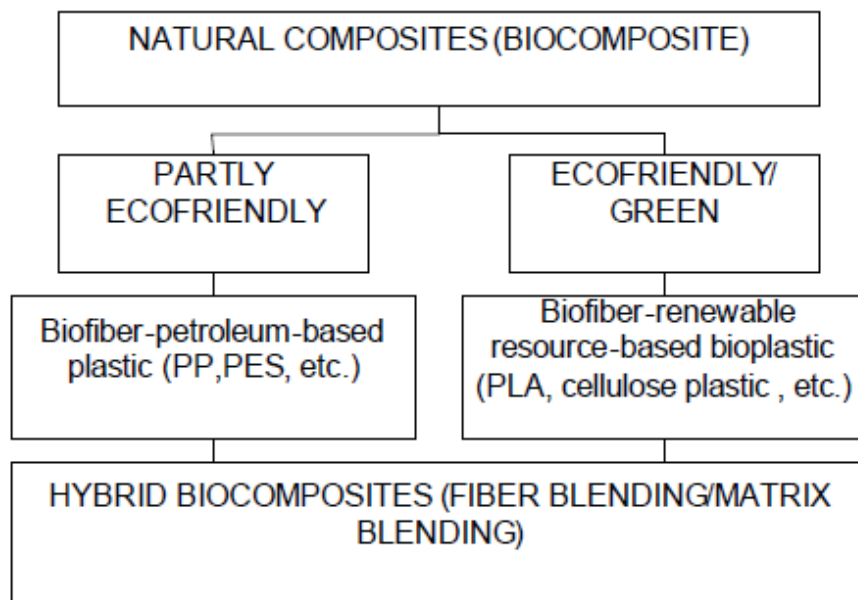


Figure 2: Classification of natural composites or biocomposites

European car makers are already testing natural products because of the increasing pressure of European Commission criteria to meet requirement that 70 percent of car parts are made from recyclable material.



#### Car parts:

- 1 - underfloor protection trim;
- 2 - automotive instrumental panel;
- 3 - door panels;
- 4 - seat backs;
- 5 - rear deck trays;
- 6 - pillars;
- 7 - headliners;
- 8 - bumpers;
- 9 - engine shield;
- 10 - trunk trim.

Figure 3: Car parts made of natural fibre composites

Figure 3, shows applications of natural FRCs in automotive industries. Most of the EU car manufacturers (e.g. Audi, Mercedes, Volkswagen, BMW, Opel, etc.) are already using natural fibre composites for car interiors (seat cushions, sub-floor coverings, door trims, central console trim) and exteriors (tires, bumpers, wheel arch) (Sonar, 2015).

### 2.3. Energy consumption decrease

The transportation sector in general, accounts for 25% of global energy consumption, and therefore is of great importance to find different paths for its decrease. On the one side are new technologies, such as alternative propulsion methods (hybrid electric vehicles, battery electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles) and on the other side are lightweight materials.

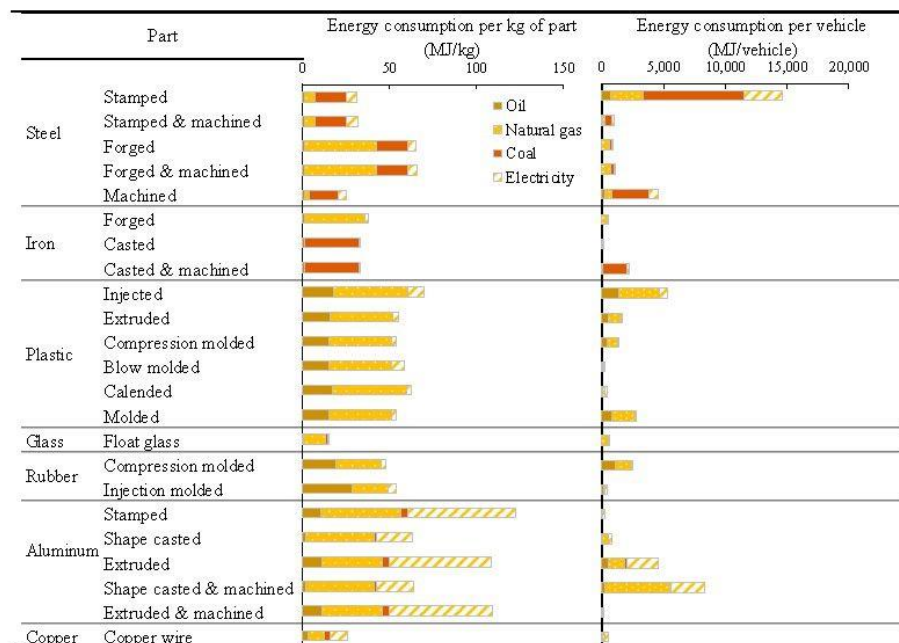


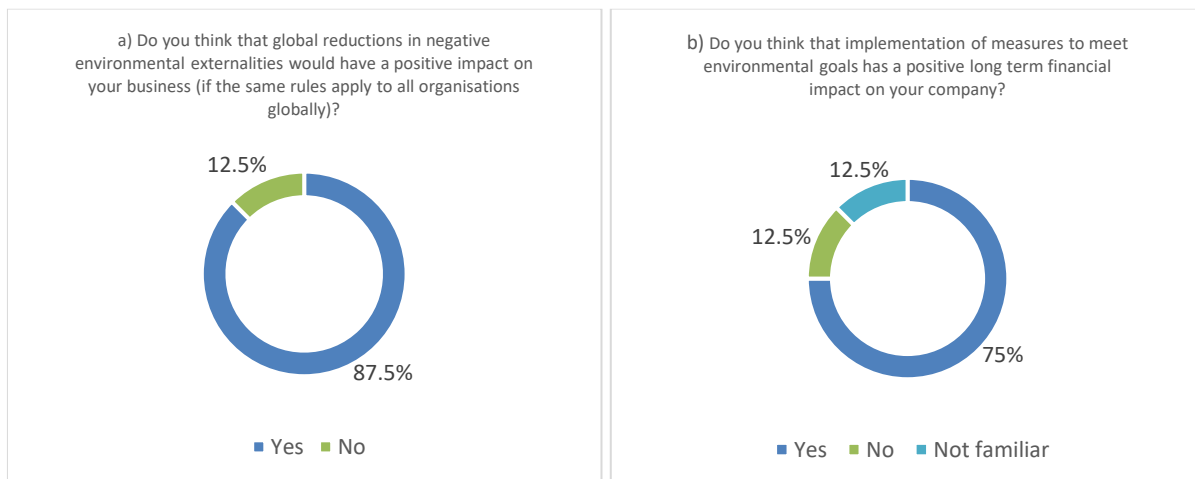
Figure 4: Energy required to produce vehicle parts

The environmental effect of a vehicle can be assessed through its life cycle and the estimated values of the energy consumption and CO<sub>2</sub> emission were determined as 7–22% for the production phase and 78–93% for the use phase (Sato, F.E.K. and Nakata, T. 2020).

Their study revealed values of energy consumption per produced parts mass, fig.4, which can be used to facilitate future material and energy consumptions of the automotive industry. The highest energy consumption per vehicle can be observed in the case of stamped steel and shape casted & machined aluminium. Due to its complexity and overproduction, the automobile is still one of the least sustainable systems. Its production is extremely dependent on economies of scale and technology (Nieuwenhuis and Katsifou, 2015) and is the third biggest (9.9%) end-use market for plastic (PlasticsEurope 2019). Real examples of innovative solutions are given by the AD Klaster (cluster of Croatian producers of automotive parts) which are successfully connecting the segment of eco-economic innovation with the business results.

### 3. RESULTS AND DISCUSSION

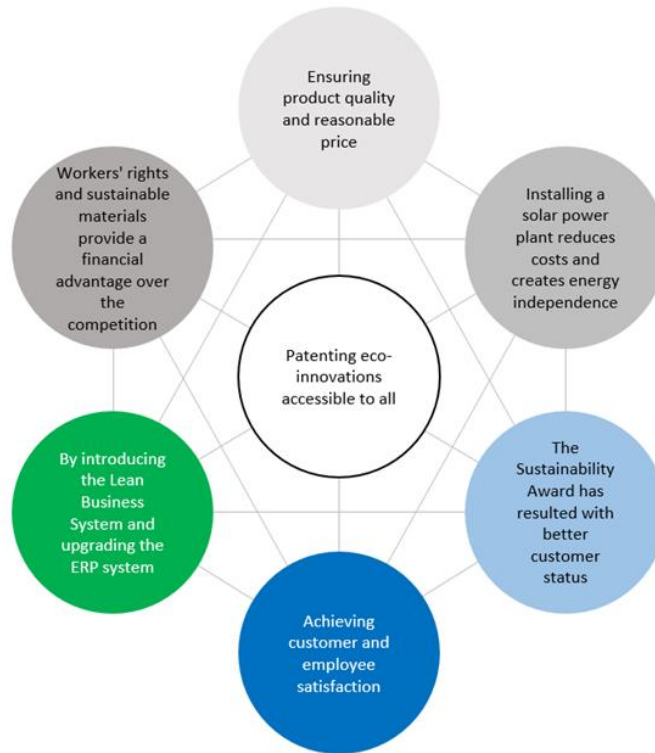
Decoupling trends of the environment and the development of organizations included in survey was unknown, up to now. The method of a survey questionnaire has been chosen to puzzle out this important issue on the example of the Croatian automotive industry. High percentage (approx. 85%) of the Croatian automotive cluster representatives were included in conducted survey. The basic idea of this paper has been previously confirmed on a different case where J. Kovács (2012) claims that increase in efficiency and profit can be mutually achieved by technological upgrades and reuse of process materials. The question that follows concerns the situation in Croatian automotive industry, so our research investigates which opportunities manufacturers are using to contribute to eco-economic decoupling.



*Figure 5: The connection between the implementation of measures for environmental goals and the long-term positive impact on the financial profit*

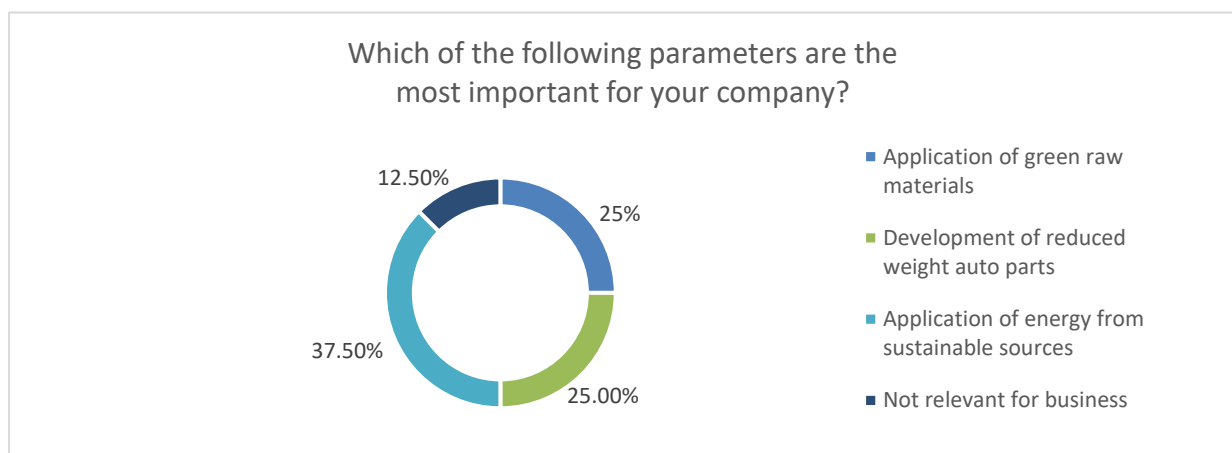
Figure 5 reveals the difference in the total number of companies that believe in global implementation of the same standards, which would bring greater profitability to all stakeholders. According to Nguyen (2016), there is no consensus on the transition of certain shares of environmental externalities into the framework of services and products, while various models are presented. But one thing is for sure, if a certain model was successfully applied globally, the reduction of negative environmental externalities would be directly related to the decrease of final product prices.

*Figure following on the next page*



*Figure 6: Concrete examples of corporate social responsibility for company and business value strengthening cited by cluster members*

Concrete eco-economic examples of corporate social responsibility (CSR) presented in Figure 6 provide an overview of key strategic actions. The diversity of these actions is manifested in the specialization of certain firms and their sustainability goals. Sustainability Awards are certainly a great example of a tool for validating and recognizing the efforts of companies. Any practice of creating an additional value, i.e., motivations for the manufacturer to work on increasing eco-economic decoupling, lead to the growth of the gap of the traditional positive correlation of these two variables (economic growth and unwanted ecological externalities).



*Figure 7: Ecological parameters as a competitive advantage*

Specific environmental parameters (Figure 7) affecting the company's business are additionally determined by customers and other stakeholders. For example, lighter materials directly reduce fuel consumption and are not only an environmental factor but also an economic one.

Some of the surveyed companies emphasize the importance of developing environmentally friendly and biodegradable composites consisting of textile fibres and matrix from sustainable sources. Only a small part of the stakeholders (12,5%) has opinion that proposed environmental issues do not have impact on their business.



Figure 8: Corporate social responsibility and marketing

However, when it comes to marketing (Figure 8), the greatest emphasis is placed on economic sustainability and market relations, because the customers are the ones who condition the product specifications. Such a relationship is logical since this specific case is dealing with component manufacturers who place their products further to the assemblers of finished products. But it doesn't mean that the reduction of environmental impact has been neglected, on the contrary, it is highlighted by the example of Figure 9.

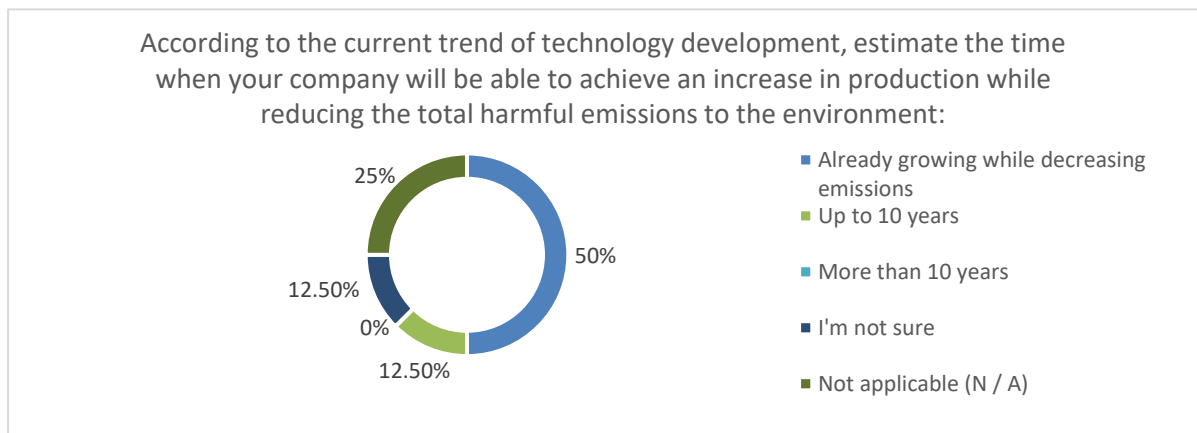


Figure 9: Simultaneous increase in production with reduction of total harmful emissions to the environment

The encouraging fact is that 50% of the companies are already noticing a constant reduction in harmful emissions to the environment despite their growth, which is a small step in achievement of the 2030 climate and energy framework (Figure 9).

#### 4. CONCLUSIONS

Achieving decoupling between economy and environment is the key issue for implementing green economic development and ultimate achievement of automotive industry's sustainable development. To satisfy the requirements of decoupling, an economy should be capable to simultaneously sustain economic growth and minimize environmental pressure.



The global issue of pollution and possibilities of its reduction, with an emphasis on automotive industry, are tackled within the paper. Textiles are being increasingly employed in vehicles because of their low weight and low cost, so the increase of their consumption is in line with the increased sustainability demand. The average weight of textile materials in a mid-size car has increased from 20 kg in 2000 to 35 in 2020. This increase is resulting from their excellent performance related to comfort, acoustics, safety and fuel economy. Direct consequence of weight reduction is lower fuel consumption and lower CO<sub>2</sub> emissions. Further possibility of substitution of conventional materials with the more sustainable ones are foreseen by the application of biopolymers reinforced with biofibres. This combination can form new biocomposites which can replace the composites reinforced with glass fibres in many applications. For example, one of the most common applications of biocomposites made from bast fibres such as flax, hemp or Spanish broom is in the automotive industry, specifically in the development of car interiors (carpets, trim on the inside door, cover for the spare wheel, airbag, etc.). The increasing use of biocomposites in the normal human life provides a better and healthier life of every individual, and the steady progress of our eco-system. The results of survey indicate the members of AD Klaster as leaders of innovative changes in Croatia. Through the implementation of new and advanced technologies and materials the impact on the environment has been continuously decreasing, while followed by economic benefits.

**ACKNOWLEDGEMENT:** *The research has received funding from the European Regional Development Fund via KK.01.1.1.04.0091 project „Design of Advanced Biocomposites from Renewable Energy Sources“ (BIOCOMPOSITES).*

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## ANALYSIS OF THE PERCEPTION OF CORPORATE SOCIAL RESPONSIBILITY IN THE BANKING INDUSTRY IN THE SEE REGION

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### ABSTRACT

*Over the last decades corporate social responsibility has become an increasingly important factor in the context of a company's strategic focus. Companies are increasingly incorporating socially and environmentally responsible goals into their long-term business strategies more often, thus contributing to the community within which they operate while shaping their own image. Although there are numerous research papers on corporate social responsibility, research papers on relationship between employer branding and social responsibility are relatively scarce and the topic is still unexplored. This paper aims to explore the perception of young people from four regional countries about the role that corporate social responsibility plays within the business operations of the banking industry. That is, it aims to define the importance of corporate social responsibility in the process of selecting a future employer, as well as the level of influence that the image of social responsibility has on the final selection of the employer in the banking industry. The paper covers all of the factors that influence the process of selecting a future employer from both an employer's and a job candidate's point of view, and presents the conclusions of the research.*

**Keywords:** corporate social responsibility, banking industry, employer branding, human resources

### 1. INTRODUCTION

The processes of digitalization and globalization have connected and opened the modern market in unprecedented ways. They have not only enabled instant communication and the availability of information, but also opened up international opportunities for skilled workforce. Furthermore, corporate social responsibility has lately become increasingly important when it comes to the success of companies. Withholding information from consumers has become difficult in the digital age. Thus, business is becoming more transparent by making irresponsible practices more prominent, as well as companies responsible for them. Companies are monitored by stakeholders and more expectations are imposed each day in the context of corporate social responsibility. The level of awareness about the impact of companies on the environment and the community has risen and the need for corporate social responsibility has become more apparent. The culture of consumerism and increased production are imposing companies, and society in general, a challenge and an obligation to implement a sustainable way of doing business today. Through development of the term *corporate social responsibility* (hereinafter CSR), both internal and external processes for measuring corporate social responsibility have also developed. Regulators and sanctions have appeared as well. In the past, a company's financial performance was the only relevant measure of success. Although business profitability is still an extremely important factor, other factors of the same importance appeared over time, such as compliance with legal regulations, ethics and the overall contribution to the community as a whole.

Consequently, one can conclude that a responsible business is one that is profitable, in accordance with legal regulations and has a positive effect on the community within which it operates (Vig, 2019). That is why corporate social responsibility plays a great role in shaping the image of modern companies. Errors are quickly spotted and reflected in the publicity behind consumers. Furthermore, brain drain as well as negative birth rates present a growing problem in the context of finding and retaining skilled labour force in Southeast Europe. Therefore, the relationship between CSR and attracting or retaining a skilled workforce is gaining in importance. Following the above statements, this paper focuses on the analysis of the perception of corporate social responsibility as one of the key factors for attracting potential workforce. Due to its nature, which largely depends on the trust and transparency of business, the banking industry is a relevant example of a business whose quality is directly influenced by the degree of corporate social responsibility.

## 2. THEORETICAL DETERMINANTS OF CSR

Corporate social responsibility is a multidimensional concept that can be viewed from several perspectives. The focus of this paper is on exploring the role of CSR in long-term business strategy. That is, to examine the perception of employees and potential employees about the role of CSR in business. The concept of corporate social responsibility has become frequently used in business practice. However, there is no single, comprehensive definition. This indicates that there is still room for research on CSR issues, thus making CSR difficult to explain and measure or quantify. In order to better direct the further course of work, the definition of corporate social responsibility according to Kotler and Lee (2011) was chosen, "Corporate Social Responsibility (CSR) is a company's commitment to improving the well-being of the community through discretionary - voluntary - business practices and contributions at the expense of its own resources.", which best illustrates the author's understanding of the concept. When explaining the concept of corporate social responsibility, it is important to emphasize the thesis *doing good above the norms defined by ethics and law*. CSR can be viewed as an indicator of the legitimacy of a business and a reflection of its quality. The interrelationship of the company's CSR within the business and the consequent involvement of employees is the relationship that this paper seeks to examine. In the last twenty years, a great amount of attention has been paid to employee engagement. Research shows that the degree of employee engagement is a good indicator of employee performance, organizational success, and financial performance, such as shareholder earnings (Bates, 2004; Richman, 2006). On the other hand, according to the same authors, research shows that it is increasingly difficult to hire employees due to the degree of employee demotivation deepening. Thus, it can be concluded that the engaged workforce achieves better results. The challenge lies in finding a motive. Corporate social responsibility greatly affects a company's reputation and its relationship with stakeholders. Not only the degree of CSR and the success of a company are in positive correlation, but the development of corporate social responsibility also has a positive effect on the morale, loyalty and image of a company, as well as customer loyalty. Because of the many benefits caused by the development of CSR, many companies are willing to invest large sums in CSR initiatives (Beckerolsen, Cudmore, & Hill, 2006). CSR is considered an investment and has come into focus of many companies that regularly use it as a marketing tool to build long-term stakeholder relationships (Perez, & Bosque, 2014). Although research on the correlation between socially responsible business and employee satisfaction is rare, the authors want to prove a positive correlation. This would position CSR as one of the most important factors when it comes to long-term business strategy. Success comes from consistency, consistency from motivation, and motivation from legitimacy. Making a profit is a fundamental goal of any business.

### 3. ANALYSIS OF THE BANKING INDUSTRY IN SEE

The current global situation dictates trends that have strongly emphasized the importance of corporate social responsibility in recent years. Banks make up the foundation of an economy, which in turn affects the development of that market and companies within it. Stakeholders of today's information age are well informed. The ultimate goal of every organization, including banks, is to remain competitive in the age of digitalization and increasing competition. Every company needs to retain both customers and educated workforce in order to survive. Stakeholders, armed with knowledge, put pressure on banks and force them to adapt a socially responsible concept into the way they do business. Managing CSR activities to improve a company's reputation is becoming an increasingly common challenge according to Meehan, Meehan, and Richards (2006). The level of competition between banks increase every year and market shifts are rare. Within the Balkan region, there are several groups that occupy leading positions in each of the countries, and the *status quo* rarely changes. Competition is fierce because supply is limited. Customer loyalty and positive perception by all stakeholders are crucial to survive. It can be assumed that they motivate establishment of CSR strategies. According to Bravo, Montaner and Pina (2012), customer loyalty is significantly influenced by a corporation's image. This can also be transferred to the perception of banks as desirable employers. The banking sector in Southeast Europe has undergone a significant transformation since the 1990s. Today it is a consolidated and privatized industry characterized by a strong presence of foreign banks. Although countries in Southeast Europe differ in size, degree of economic development and EU integration and GDP, at the same time they have gained autonomy, share the same history and a similar socio-economic background. They all arose from similar or the same foundations and are therefore worth considering as a whole. Studying the differences in their economic growth can clarify some of the reasons why their population may view CSR differently.

### 4. EMPHIRICAL RESEARCH

Hereafter, the article presents some findings of two researches conducted. The aim of this paper is to determine the correlation between the degree of corporate social responsibility and the positive perception of the employer by candidates at the beginning of their careers within the banking industry. The initial research assumption is that the workforce prefers the employer whose business is perceived as socially responsible, assuming that the conditions are satisfying. The perception of the generations, that are about to enter the labour market in the future, differs from the perception of the older generations. As a result, market conditions and trends change. The only question is to what extent a company's image influences professionals when looking for a job and how important socially responsible business is to them, whether it is more important than the other factors.

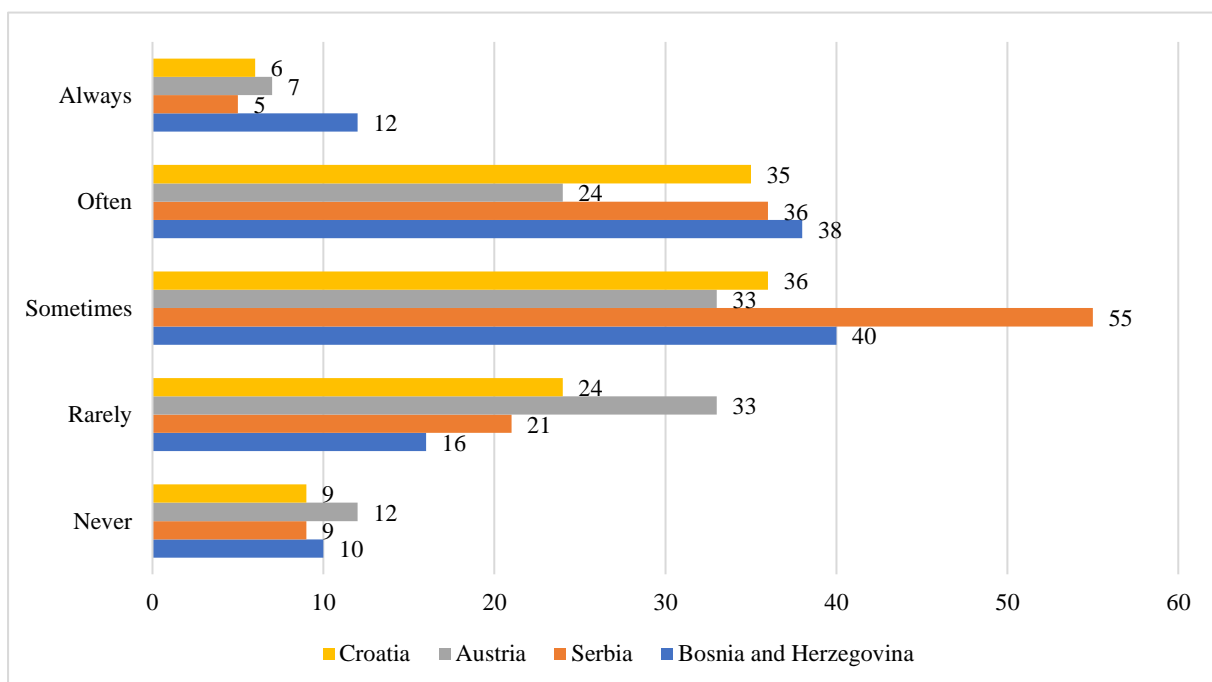
#### 4.1. Methodology

The first of two approaches used in this research is survey-based research. The research was conducted online between June and September in 2021 on 461 respondents from four countries - Austria, Bosnia and Herzegovina, Croatia and Serbia. Respondents were law and economics students and graduates aged between 18 and 30 years. The goal was to include a workforce that is just entering the labour market. The survey is divided into five main parts. Firstly, elimination questions were asked to ensure the relevance of the sample, then questions related to employer selection, familiarity with the concept of corporate social responsibility, then to the banking industry, and finally demographic questions. This approach provided information from a larger number of respondents. The instrument of this research is an online questionnaire. The second approach was in-depth interview. The interviews were conducted in June 2021 on a sample of nine respondents from five countries, hence Austria, Croatia, Serbia, Montenegro and Slovenia.

Respondents are employees of the human resources department of a certain banking group's sister banks. The sampling plan of both researches was developed in accordance with the objectives of the research. Information was collected online via video call.

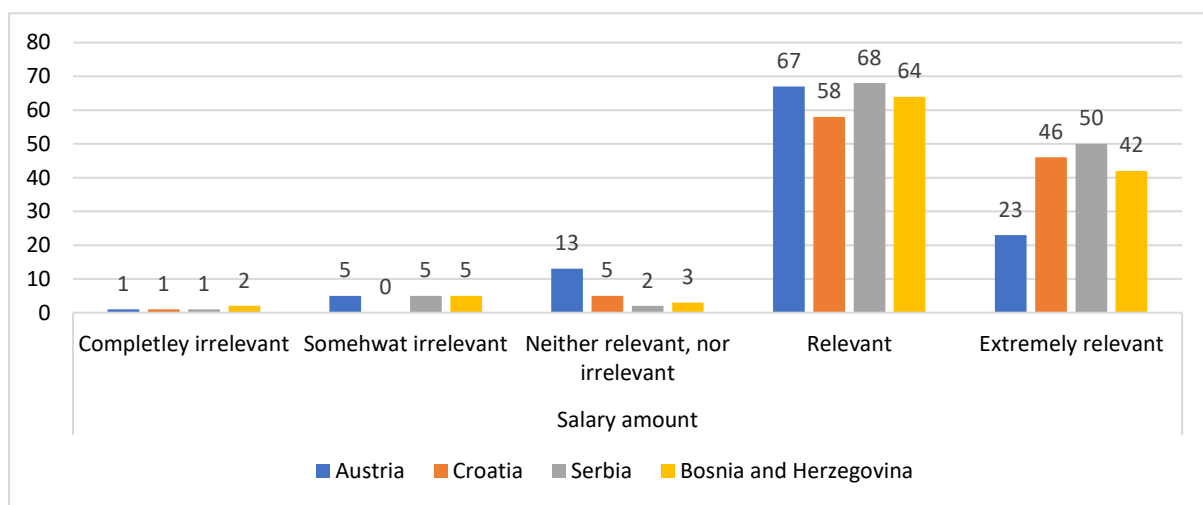
#### 4.2. Survey results

Primary research was conducted to examine the perception of young students and graduates from the region about socially responsible business and its impact on the formation of attitudes about the desirability of a future employer. The obtained results contributed to the formation of a comprehensive conclusion on the perception of students and graduates of selected countries in Southeast Europe on corporate social responsibility as a factor in the desirability of banks as an employer. The results of the survey are divided into five groups. The first group consisted of elimination questions, followed by questions related to the selection of the employer, familiarity with the concept of CSR and finally questions related to the banking industry. The last group of questions were demographic questions. All respondents were asked two elimination questions to determine whether they were students or graduates of economics or law between the ages of 18 and 30. The survey could only be completed by respondents who met the above criteria. A total sample of 461 respondents joined the survey, of which 109 from Austria, 110 from Croatia, 126 from Serbia and 116 from Bosnia and Herzegovina. The respondents were mostly between 21 and 26 years old and economists by profession. The second set of questions examined which factors are crucial to respondents when it comes to choose an employer, through which channels they inform themselves and what they pay attention to. The majority of respondents, as many as 396 of them, use the employer's website as a channel through which to they gather information about their employer. The second most popular channel for obtaining information about employers are social networks such as Facebook and LinkedIn, while news portals are consulted by 85 respondents. Some of the other channels mentioned by some respondents are word of mouth and Google. The results were similar in all countries, without large deviations in values. In Croatia, social networks are a somewhat more popular channel of information, while in Serbia it is the word of mouth recommendation of employees.



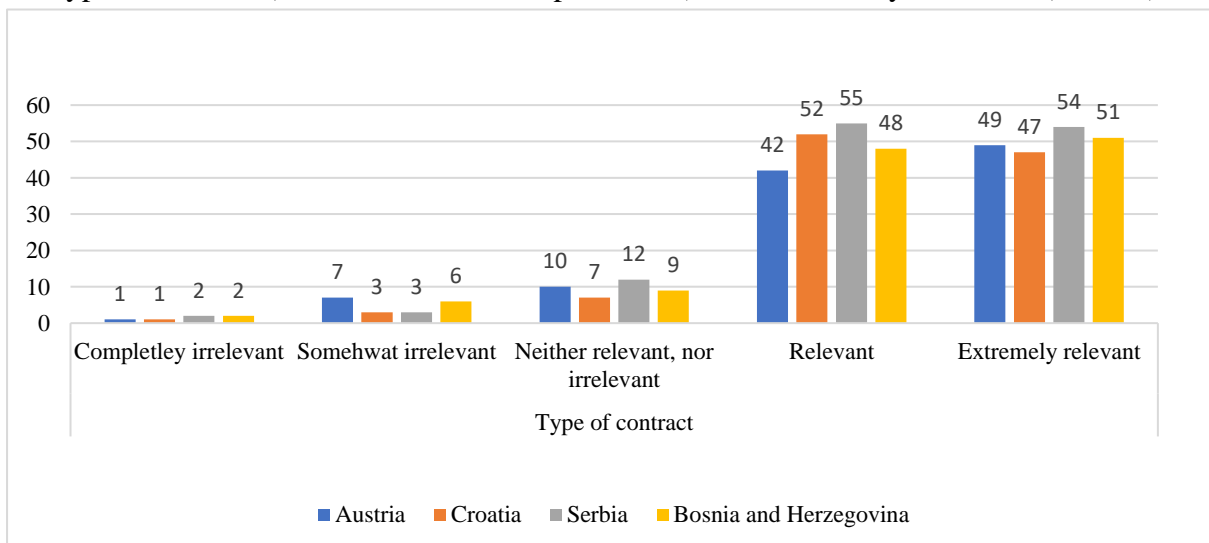
*Chart 1: Frequency of being informed about employer's CSR activities  
(Source: authors' work)*

Furthermore, 164 respondents are regularly informed about CSR activities. The most zealous are respondents from Bosnia and Herzegovina, 50 of whom are often or continuously informed about the CSR activities of their current or potential employer. Austrian respondents are the least informed about the CSR activities of the employer, 45 of them are rarely or never informed. The most common channels of information about the CSR activities of the employer are social networks and company websites. 236 respondents inform themselves through social networks, while 228 of them frequent a company's website. The third set of questions was related to the factors that respondents consider when choosing an employer. Respondents were first asked to rank certain general factors that they take into account when selecting an employer in order of importance from “Completely irrelevant” to “Extremely relevant”. The figures below show the results by country for the selected factors. Respondents in all countries classify compensation as an important factor when choosing an employer. It is interesting to note that most respondents do not describe the salary factor as extremely important (relevant), which is shown in Chart 2.



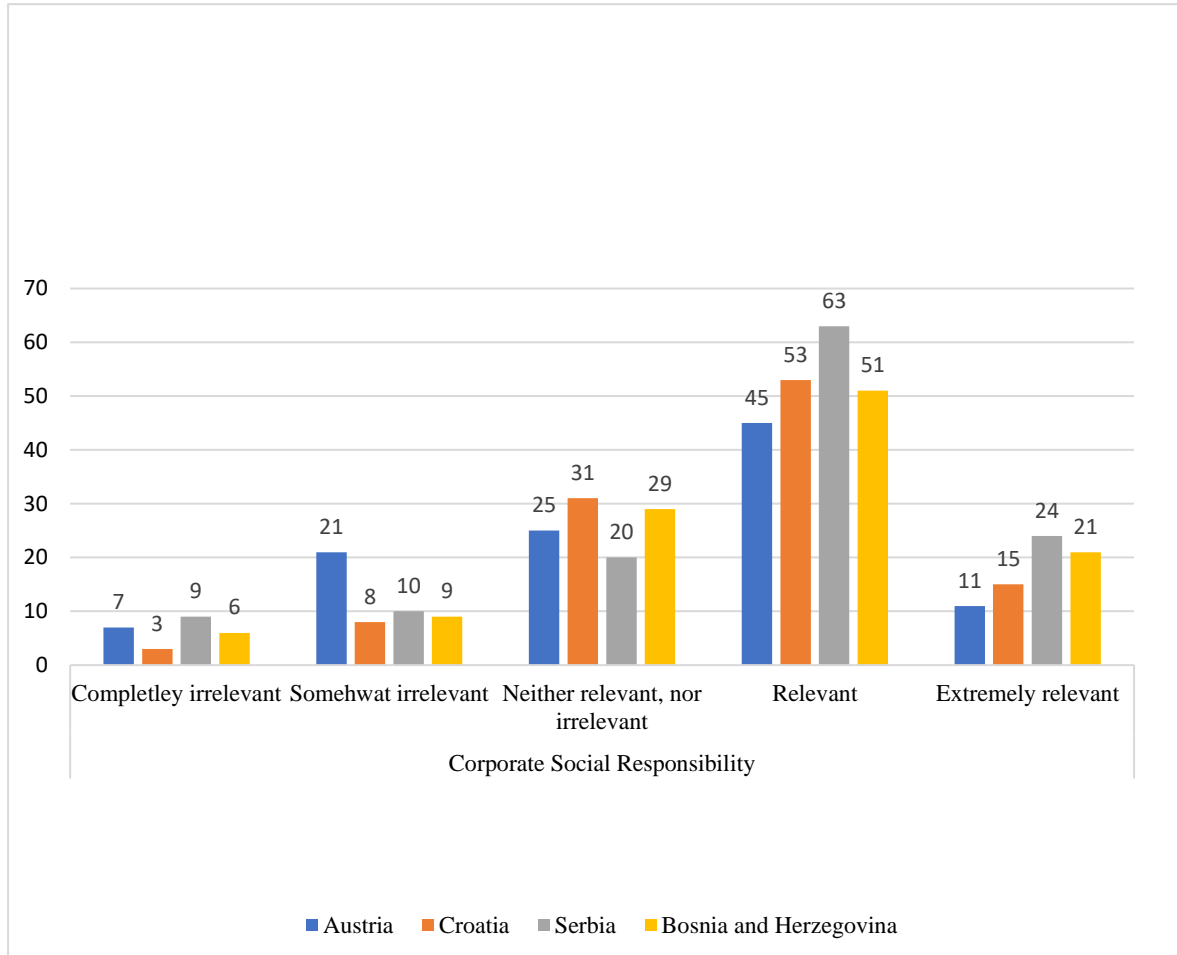
*Chart 2: Relevance of salary amount  
(Source: authors' work)*

In contrast to business security and the level of salary, a larger number of respondents describe the type of contract (indefinite, definite, replacement) as an extremely important factor (Chart 3).



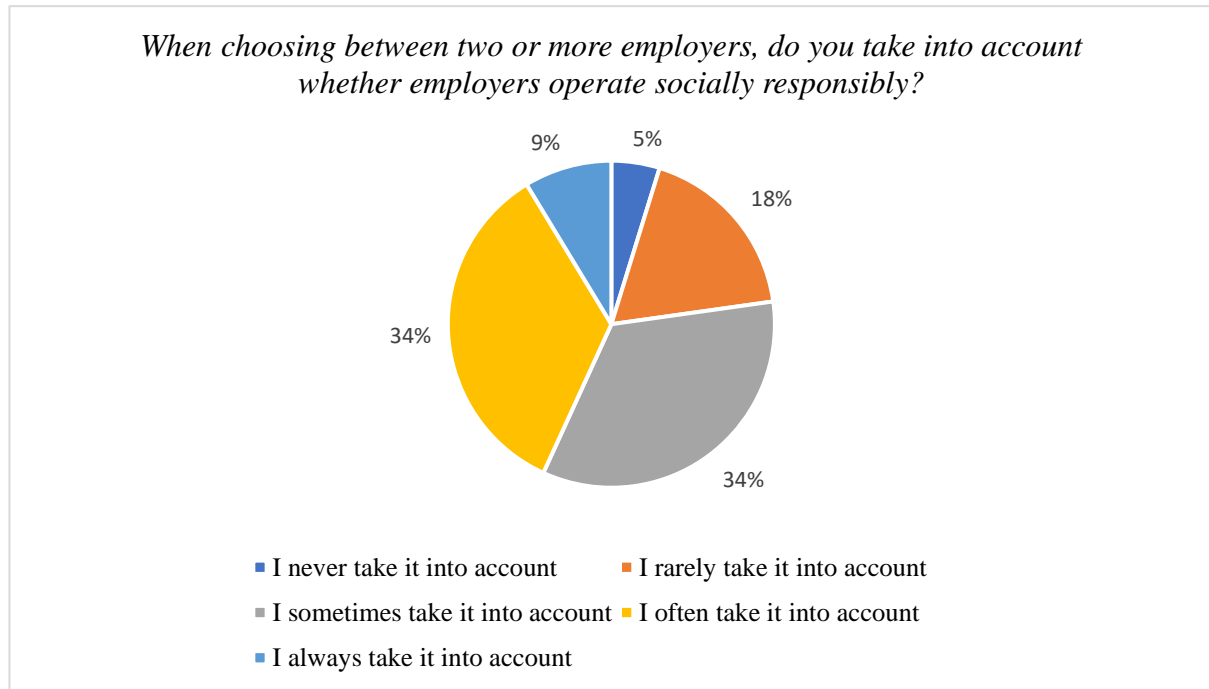
*Chart 3: Relevance of type of contract  
(Source: authors' work)*

Although many respondents cited CSR as an important general factor when choosing an employer, the number of respondents placing importance on it is smaller compared to other factors. That is, although CSR is considered an important factor (Chart 4), it can be concluded that the factors of the type of contract, salary and business security are perceived as more important.



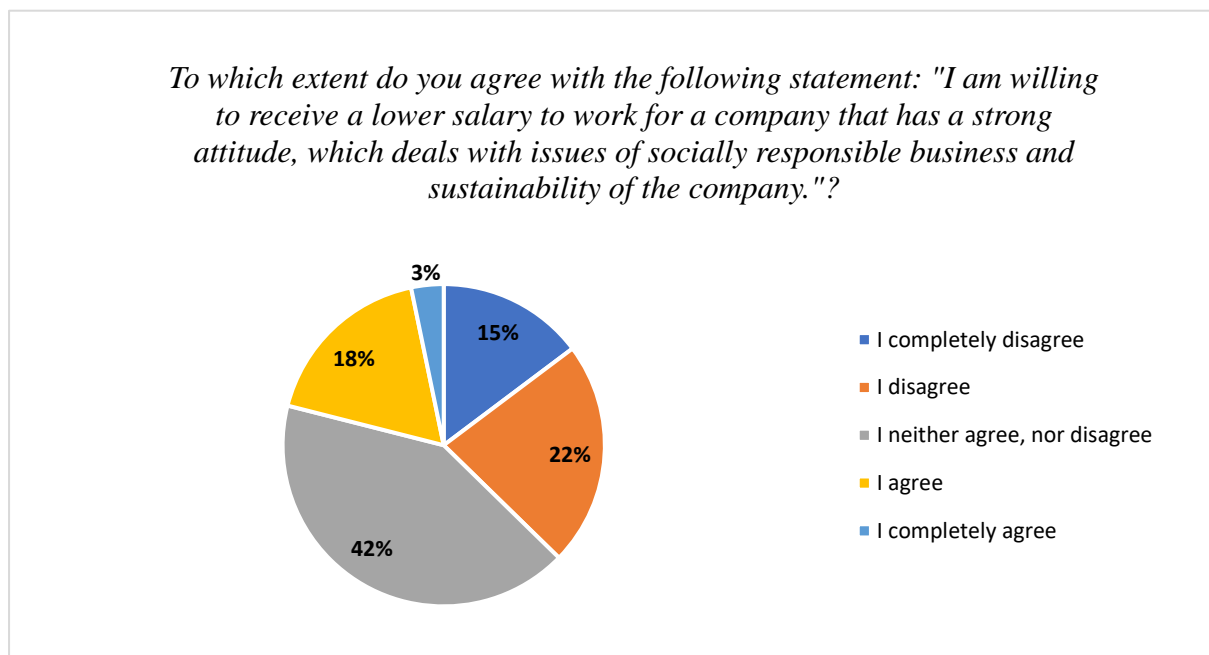
*Chart 4: Relevance of CSR activities  
(Source: authors' work)*

The fourth group of questions presents the results of questions related to the respondents' familiarity with the concept of corporate social responsibility. Croatian respondents are perceived to be best acquainted with the concept of CSR, as many as 54 respondents, or 49% of them stated that they are fully familiar with the concept. In the other three countries, Austria, Serbia and Bosnia and Herzegovina, on average 21% of respondents are fully familiar with the concept of corporate social responsibility. The largest percentage of respondents who have not heard of the term are from Austria. Twelve percent of Austrian respondents have not heard of the term corporate social responsibility. Most respondents correctly recognize and state certain dimensions of CSR, but only a few respondents express a correct understanding of the whole concept. According to the research results, only 5% of respondents never consider corporate social responsibility when choosing between two employers (Chart 5). When making a decision, 34% of them often take CSR into account. 93% of respondents said they are more likely to join or stay to work for a company that has a high reputation for corporate social responsibility and supports charities and promotes sustainability efforts.



*Chart 5: Considering CSR activities when choosing a potential employer  
(Source: authors' work)*

The last set of questions presents the results of issues related to corporate social responsibility within the banking industry. Most respondents believe that socially responsible business in the banking industry is just as important as in other industries. 76% of respondents believe that CSR is more important in the banking industry than in other industries. Only 21% of respondents are willing to receive a lower salary to work for a company that has a strong attitude towards issues of corporate social responsibility and corporate sustainability. 42% of them do not have a certain attitude, while 37% are not ready to receive a lower salary to work for a highly socially responsible employer, as presented in Chart 6.



*Chart 6: Employee's attitude towards potential employer*

Eventually, out of a total of 469 respondents, 326 of them were female, 129 male, and 6 did not want to declare themselves. 312 respondents have student status, while there are 149 graduates. 139 of respondents worked via student contracts, 157 were full-time employees and 165 unemployed.

### **4.3. In-depth interview results**

The results of research through in-depth interviews are divided into results that speak of the scope of corporate social responsibility strategy, then the integration of CSR functions in the organizational structure, the connection of human resources and CSR and finally the connection of CSR and employees. The in-depth interview included nine respondents from five countries. Respondents state that the role of CSR in banking in general is strategic, i.e. strategic with the aim of actively contributing to the development and well-being of society of which it is an integral part. Regarding the role of CSR within the selected banking group, respondents give several different perspectives. The Slovenian respondent states that the role of CSR is to build the image of socially responsible business, while respondents from Austria believe that CSR is perceived differently in different banks. They conclude that the role of CSR, in addition to creating a positive image, is actually part of the group's identity and has been present in the strategy since the bank's founding, helping to support the bank's strategy. Every employee is encouraged to ask themselves three questions before each decision, the questions being "Is it profitable?" And "Is it legal?" are asked. However, the question that makes a difference, both for bank and for everyone involved, would be "Is it the right thing to do?". This is precisely the issue that forces the bank to develop its services and products to the highest potential, thus making the greatest contribution to the individual and society as a whole. All respondents agree that a developed corporate social responsibility strategy has a positive impact on the quality of the banks operations and that the group's CSR strategy represents the so-called unique selling point by which customers recognize the bank. The function of corporate social responsibility is implemented through various policies in business segments implemented by different organizational units. CSR is primarily the responsibility of the Communications Service, and other Sectors such as Marketing, HR and Property are involved. There is no special department or CSR specialist employed in any of the sister banks, except in Serbia and Austria. Within the Communication Sector in Serbia, there is one person in charge exclusively of CSR issues, and he is subordinate to the Director of the Directorate. At Graz subsidiary, there are 2 people employed in the department of the General Secretariat. A department specializing in CSR exists at the group's headquarters in Vienna. Sister banks have developed plans and programs for volunteering, donations and mentoring. Such activities are mostly voluntary. For example, in Croatia, every year the bank organizes a Happy Hour in which employees participate in the sale of homemade cakes, the profit of which is donated to charity. Employees participate in volunteering organized by the bank or in cooperation with various organizations involved in humanitarian activities. Employees also participate through recycling in environmental offices and participate in the School of Smart Finance financial literacy project as lecturers. CSR is not included in the annual goals of employees, but respondents note that corporate social responsibility is integrated into the strategy of the Group and is therefore part of daily activities through talent programs, internships, workshops, mentoring, volunteering. The CSR strategy in the SEE subsidiaries has not been developed to the extent that there is a process of collecting feedback from employees participating in voluntary activities, nor is there a systematic plan and program to promote CSR among stakeholders. Regarding the perception of corporate social responsibility by potential candidates, the company's CSR activities, as part of the employer branding strategy, are promoted towards potential candidates for employment. During the recruitment process, knowledge of CSR by candidates is considered an added value because it reflects the nurturing of values nurtured by the Group.



“It is important to us that candidates we consider for potential employment are aware of the importance of CSR activities the site is familiar with the company's CSR activities, but this is not an elimination factor”. All respondents notice a change in trends around CSR attitudes in younger candidates and employees, compared to older ones. Younger employees are increasingly interested in the topics of corporate social responsibility and during the selection process they ask more and more questions related to corporate social responsibility strategies. “Although they already know a lot about the Bank during the preparation for the interview, because they recognize our Bank by its CSR”. In the context of employer branding, CSR strategy is extremely important and serves as an important promotional activity. The respondent from Serbia states that “it is necessary to be a socially responsible company in order to have a chance to position yourself as a desirable employer in the modern environment”.

## 5. CONCLUSION

Although the results of the survey were obtained from a sample of about a hundred respondents per country, it should be taken into account that the region from which the respondents come is culturally and economically similar. Three-quarters of the survey respondents are female. The respondents are highly educated and are mostly economists. Most respondents are currently attending undergraduate studies. All countries are equally represented by the number of respondents. In order for the research to be representative for the whole region, it would be necessary to include an equal number of gender respondents and to include a larger number of lawyers, as well as graduate students and graduates. The research, however, has yielded instructive results that are certainly worth studying. Taking into account the presented research results, the following conclusion remarks could be added:

- 1) Most respondents find out about a possible employer through the employer's website or social networks such as Facebook, Instagram or LinkedIn.
- 2) When considering, the main factors that are taken into account and have the greatest importance for the respondents are the type of contract, then business security and then the amount of monthly salary.
- 3) Although it is important to the respondents whether the employer operates socially responsibly, this factor is considered only after the three above-mentioned factors have been met. However, in case the respondent finds out about the extremely negative reputation of the employer related to corporate social responsibility, most respondents would reconsider the application. That is, they would choose another employer if they have a choice.
- 4) Respondents are informed about the CSR activities of employers through the employer's website, social networks of the employer, online portal or through oral lectures.
- 5) Work-life balance is another factor that most respondents describe as extremely important. Among the additional factors, the respondents state that the possibility of additional training is an extremely important factor that they take into account, as well as the safety and health of employees in the workplace. The ability to volunteer for most employees is neither important nor unimportant. That is, it is not the deciding factor when choosing an employer.
- 6) More than 40% of respondents from each country have heard of the concept of corporate social responsibility and know some of it. While a minimum of 20% of respondents from each state are fully familiar with the term. As many as 49% of Croatian respondents state that they are fully familiar with the term, while only 17% of Austrian respondents claim the same. Respondents most often define CSR as a way of doing business that is not to the detriment of the community, and many also mention environmental protection. However, only a few respondents provide a complete definition of corporate social responsibility.
- 7) As many as 35% of respondents are regularly informed about CSR activities of employers, most of whom come from Bosnia and Herzegovina. Austrian respondents are at least regularly informed about the CSR aspect of the employer's business they are considering.

Nearly half of respondents say they often take CSR into account when choosing between two employers, 43%, while almost all respondents say they are more likely to join or stay to work for a company if it has a high reputation for CSR and supports charities and promotes sustainability efforts.

- 8) The last question showed that a very small number of respondents (21%) are willing to receive a lower salary to work for a highly responsible company. However, 37% of them are not ready to sacrifice their salary in order to work for a responsible employer. It can be concluded that if the same or similar conditions were offered, respondents would prefer to work for a company that operates in accordance with CSR standards. But if the employer offers better conditions, it will still prevail.
- 9) When it comes to CSR within the banking industry, most respondents claim that CSR is just as important as in other industries.

Consequently, there are some recommendations for improving CSR related activities in order to aid employer branding:

- 1) Successful implementation of CSR requires a deep understanding of the multidimensionality of the concept itself, as well as its impact on society as a whole.
- 2) Key theoretical recommendations need to be strategically defined by concrete steps and provisions in order to successfully and productively introduce them into business practice.
- 3) The recommendation for practice is the gradual and in-depth introduction of social responsibility in all aspects of business. If a contractor has an in-depth understanding of the process, prerequisites such as business security, salary levels and types of contracts will themselves be determined in the direction of sustainability and stability.

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# INTELLIGENT ANIMAL HUSBANDRY IN THE CONTEXT OF DIGITAL BUSINESS TRANSFORMATION

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## **ABSTRACT**

*In the context of global economic uncertainty, turbulence and crises, in times of global Covid pandemic, digital transformation is an opportunity to optimize and rebuild business. Businesses rely on traditional management based on the work of managers and employees. Every business uses software products, but digitalization is more extensive. In it, every process in the company leaves a digital imprint, leading to comparability, traceability, analytical. This process is in line with the European Commission's Digital Single Market Strategy. Livestock and agriculture are one of the traditional sectors that are vital for development of societies and independent national economies. Over the last 70 years, the world's population has grown rapidly. The latter was registered with the increase in food needs. This in turn affects the employment of workers in the industry. The availability of intelligent systems for automation of production in animal husbandry will optimize production processes, increase productivity and efficiency of the sector. The process of accelerated development of agriculture (livestock and agriculture) also leaves its ecological imprint, which cannot be ignored. This article focuses on the study of the possibilities for the introduction of intelligent systems in animal husbandry in the context of digitalization processes in the economy. The application of innovative methods and tools for intelligent and efficient animal husbandry with reduced human resources and reduced impact on the environment. The aim is to study the factors influencing digitalization and to monitor the economic effects on the industry. The study uses various analyses of official and secondary databases, reports, surveys, web-based searches.*

**Keywords:** *Agriculture, Digitalization, Ecology, Economy*

## **1. INTRODUCTION**

Digital and network technologies are part of modern life. They affect every aspect of everyday life and socio-economic relationships. Society, communications, business, institutions, production, distribution, exchange, consumption are marked by a technological digital imprint. Some authors call modern man "homo economicus", but through digitalization "homo digitalis" is gradually emerging. The aim of this study is to study the state and challenges of digitalization of the livestock sector.

To achieve this goal, the following tasks are solved:

- to analyse the state of digitalization in agriculture;
- to identify trends in this area;
- to identify problems and challenges for the development of intelligent animal husbandry.

The methods used to achieve the goal and solve the problems are analysis and synthesis, induction and deduction, axiomatic method, statistical calculations, structural-functional approach.

## **2. THE DIGITAL TRANSFORMATION OF AGRICULTURAL BUSINESS**

Numerous examples can be given of the impact of digital transformation in every human activity:

- starting from international relations and globalization;
- the public sector and public goods;
- business, economics, manufacturing, entrepreneurship and innovation;
- banks and banking, digital money and transactions;
- healthcare, ecology, training, etc.

Worldwide, access to and use of the Internet and modern technology has improved. But there are big disparities - geographical, national, political, economic, sectoral. In the context of global economic uncertainty, turbulence and crises, in times of global Covid pandemic, digital transformation is an opportunity to optimize and rebuild business. Improving the dissemination of information, knowledge and innovation is a priority in the new programming period of the European Union. The Covid crisis has proved that the process needs to be accelerated. This is in line with the European Commission's Digital Single Market Strategy. Today, more than ever, information is emerging as the latest currency. Digitization is rapidly transforming the agrarian business (livestock and agriculture). This process in agriculture leads to increased competitiveness and provides a higher return on investment. The availability of intelligent systems for automation of production in animal husbandry will optimize production processes, increase productivity and efficiency of the sector. Information and communication technologies are a priority in the development of the European Common Market. The following regulations and important documents affecting digitalisation in agriculture have been created:

- Digital Agenda for Europe.
- Strategy for smart, sustainable and predominant growth.
- The common agricultural policy of the European Union.

The main organization responsible for the digital transformation of the sector is the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI). The process of digital business transformation includes in general:

- digitization of information and use of its full potential (release from paper);
- processes are automated;
- the time of the organization is used effectively;
- mobility is provided, work from any place and at any time;
- management, security and control of information and information flows;
- working through cloud technologies that add value to the business;
- Internet of Things (IoT);
- blockchain technology and more.

The latter are fully applicable in the agricultural business, after adaptation to specifics. The systematic application of digitalization in the agricultural business achieves:

- the introduction of digital innovative technologies in the agro-food chain;
- providing access to up-to-date knowledge;
- testing and experimenting with digital innovations in the sector;
- enhancing digital skills, as well as providing access to these skills;

- building agricultural information systems and databases;
- registers in the scope of geographic information systems.

The main goal is to turn the agricultural sector and business into a high-tech, sustainable, highly productive and attractive area that will improve the conditions for business and living in rural areas. Network connectivity is one of the conditions for the effectiveness of digitalization. Significant differences in access to high-speed internet are found in different regions of the Community. According to the European Commission, there is a serious disparity between rural and urban areas at European Union level. By 2020, about 45% of households have access to the Internet. The situation reflects the state of the communications infrastructure in rural areas. At present, there are no complete statistics on the use of digital technologies in the agricultural sector. This creates some difficulties in studying the processes. The global trend is towards increasing the use of information technology. Also, according to Eurostat data, the growth of users of mobile devices for Internet access is significant. It is assumed that the trend is also valid for European rural households and producers.

### **3. INTELLIGENT ANIMAL HUSBANDRY**

Digitalisation and digital services in agriculture and the livestock sector mean using new and improved technologies, enabling farmers and other stakeholders (farmers, processors, traders and consumers) in the agro-food chain to add value by improving production of food, increasing the productivity and sustainability of agricultural production, improving human health through the production of quality food and tackling the challenges of climate change. All this will increase the presence of national products on world markets, increase farmers' incomes and attract young people to develop agriculture, reduce production costs and improve the traceability and quality of products in view of market demand and requirements.

Digitalization is part of European and national policies, as an opportunity to develop and introduce new technologies and solve many problems and challenges:

- production of better quality food;
- increasing the efficiency and profitability of livestock production;
- protection of natural resources and the environment;
- demography in agricultural areas - reduced supply of social, economic and cultural services, low level of information and knowledge, lack of opportunity to start a business and introduce innovations, which in turn affects the quality of life.

The main goal of the digitalisation of European agriculture (in particular livestock farming) is to make it a high-tech, sustainable, highly productive and attractive area of the world economy that improves the living conditions of farmers and rural areas in general. The increase of the world's population and the decrease of the arable lands at a fast pace are some of the main factors that stimulate the interest and development of the global market of intelligent animal husbandry. The aim of this growth is to improve the overall efficiency and production of available arable land through the "Digital Agricultural Revolution", a change that ensures that agriculture meets the needs of the global population in the future. Digitalization is part of the implementation of various strategies, such as the strategies from "Farm to Table", for biodiversity (green deal), for the creation of smart settlements and for recovery after the pandemic with COVID - 19 and others. Balancing the consumption and application of new computer, robotic and artificial intelligence technologies in agriculture leads to easing the administrative burden, to building and developing appropriate digital infrastructure for communications and connectivity, to investing in modernization and precision livestock technologies, to developing digital networks and the use of software applications in the management of activities and decision-making to more accurate prediction of stages in the

development of animals and their production. The EU's common agricultural policy, supporting the rural economy, plays an important role in promoting the development of smart villages. Digital technologies are the future of animal husbandry. They will facilitate the work of livestock breeders and make their production more profitable. Combined with innovative genetics, climate change will seek newer solutions to help producers produce more with fewer resources. The measures to be taken by the state in connection with the digitalization of the livestock sector are in relation to:

- raising the digital skills of farmers and employees in the sector;
- encouraging young professionals;
- access to trainings and consultations;
- financial incentives by reducing the tax burden when implementing digital solutions at the level of agricultural holdings or at the level of settlements, etc.

Investments in digitalization of agricultural holdings include:

- promoting the digitalization of agriculture - animal husbandry and crop production;
- the application of precision agriculture;
- robotization and cobotization of production processes on the farm;
- digital marketing, supporting productivity growth in the Livestock sector.

The fastest responding to changes in agriculture and new technologies are larger farms in the livestock, fruit, cereals and essential oils sectors, as they know how much more efficient and cost-effective a production can be using innovation in digital services, creating modern and efficient agriculture. Small and medium-sized farms are experiencing difficulties in introducing and using digital services due to the lack of internet access in many rural areas, which limits the opportunities for digital agriculture there. The use of new technologies in agriculture raises concerns among farmers about investments in the purchase of various types of equipment such as drones, on-board equipment, chips for animals, etc., which are large. The introduction of innovations and digitalization of business creates risks for the future development of farmers and seriously increases their indebtedness. Another problem that also deepens after the introduction of the strategy is the loss of know-how due to mechanization in production. Concerns among most farmers are that digitalisation will make them dependent on large multinationals. Digitalisation is one way of tackling environmental and economic challenges in agriculture. An important point for the digitalization of the livestock farm is the right choice of technologies and the involvement of highly qualified agricultural experts and advisors to interpret data, make livestock recommendations, develop and analyse current experiments and more. Opportunities for rural development will be improved through the transfer of knowledge, which will help attract young people to agriculture. Digitalization in animal husbandry allows the agricultural economy to realize its high potential through:

- increase productivity;
- lower production costs;
- adding value and higher resource efficiency through automated crop and livestock management processes;
- improving quality and safety, and thus income and quality of life;
- drastic reduction of pollution to sustainable levels;
- flexible and fast response to market trends;
- to a reduced footprint on the environment, energy and climate.

In addition, digitalisation in the sector aims to increase farmers' incomes, reduce their production costs, provide new financing opportunities, improve the traceability and quality of

products according to market and consumer requirements, real-time access to information on production processes. This will help farmers to regulate and improve the specific qualities of products, as well as nutritional value and better animal health.

#### 4. CONCLUSION

The attempt made to consider and interpret the digital transformation of animal husbandry, as well as a result of the study can be summarized several main conclusions:

- Intelligent animal husbandry and the digital transformation of the economy, makes consumers' access to the products they are looking for independent of time and geographical frameworks and constraints. Companies that use tools for digital business transformation create new competitive advantages and achieve better performance.
- The digital transformation of agribusiness uses unlimited potential for data collection, storage and efficient use. Data is becoming one of the main tools of intelligent animal husbandry. The agribusiness should treat them as a key strategic asset.
- The access of European farms from different rural areas to the Internet has improved significantly in recent years;
- There is great variability in terms of digital transformation in the agricultural sector, in its individual sub-sectors, farms of different types and sizes, as well as in different regions;
- The amount of investment, data security, as well as the qualifications of employees are the main obstacles according to livestock producers in the introduction and use of digital technologies in the livestock sector;
- The measures to be taken by the states in connection with the digitalisation of animal husbandry are in terms of increasing the digital skills of farmers and employees in the sector;
- The appointment and promotion of young professionals;
- Access to trainings and consultations;
- Financial incentives by reducing the tax burden when implementing digital solutions at the agricultural or settlement level.

Digital technologies are the future of intelligent animal husbandry. They will facilitate the work of producers and make their production more profitable. Combined with innovative genetics, climate change will seek newer solutions to help producers produce more with fewer resources.

**ACKNOWLEDGEMENT:** *The research leading to these results has received funding from the Ministry of education and science under the National science program INTELLIGENT ANIMAL HUSBANDRY, grant agreement n°D01-62/18.03.2021*

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## COMPARISON OF EMPLOYEE SALARY AS A MATERIAL FACTOR OF WORKPLACE SATISFACTION WITH OTHER INTANGIBLE FACTORS OF WORKPLACE SATISFACTION

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### ABSTRACT

*Employee salary is an indispensable factor for which workers come to work every day. Without wages, people would not be able to live or meet their basic living needs. Is the salary only the main motivating factor for employees to come to work, or are there other factors of employee satisfaction in the workplace, which are also important to them? Employees work for a salary and it is the main reason for coming to work. However, what are the attitudes of employees when they have a choice, higher salary or job security? Higher salary or good work atmosphere, correct superiors and correct work colleagues? The aim of this paper is to use the method of scientific research to obtain data on the questions asked, statistically process the collected data and draw conclusions after the research. The survey was conducted in January 2022, on a random sample of 233 respondents (employees) in the Republic of Croatia. Respondents are employees of private and state-owned companies in the Republic of Croatia. Three hypotheses have been set: H1: Intangible factors of satisfaction are more important to employees than high salary, H2: Employees have the most important intangible factor - correct behavior of superiors, H3: Employees want a higher salary for their work. Hypotheses H1 and H3 were accepted by the results of this research, while hypothesis H2 was not accepted because the most important intangible factor of satisfaction for employees is a good work atmosphere.*

**Keywords:** *employee salary, intangible factors of employee satisfaction, good working atmosphere, human resources, managers*

### 1. INTRODUCTION

Every employee, every man, has to work to meet their basic living needs. However, in addition to salary, as a material factor of job satisfaction, employees are also important intangible factors, such as a good relationship with work colleagues, fair if not good relationship with superiors (bosses), recognition for work and commitment to workplace etc. Managers are in charge and responsible for the function of human resources management, whose main and fundamental purpose is the employment of human resources, caring for the progress of each employee at work, managing working hours of human resources, organizing professional training and seminars attended by employees, establishing remuneration in companies and overall care for employees, starting from the acquisition (employment of human resources) to the retirement of employees.



According to Pfeifer: "Human resource management: the latest management function related to attracting, maintaining and compensating employees" (Pfeifer, 2006: 4). Management in companies is responsible for attracting employees, developing employee competencies, managing employee careers and for stimulating employees for further effort and commitment in the workplace. Only a satisfied employee can achieve the maximum during his working life. The sum of the efforts and commitment of each individual employee in companies makes the overall business success of the company. Therefore, it is very important that each employee contributes to the company in which he works, because the positive effects will positively affect the success or profit of the company, the company's reputation etc. and negative effects will negatively affect the success of the company. In the last two years, during the global pandemic COVID-19, employees, as well as managers, are more exposed to stress and find it harder to organize their work and perform their daily work tasks. Teamwork is hampered during the COVID-19 pandemic, due to the inability to make contacts among workers as before the pandemic and due to the large number of sudden illnesses of workers, which have a very negative impact on all employees and the performance of daily tasks. Emotions are involved in every job and employees need and expect management support, guidance, recognition for their efforts and praise. Managers should take this into account, because in addition to salary, employees have other factors of job satisfaction, such as: good work atmosphere, correct behaviour of superiors, correct behaviour of colleagues, low stress in the workplace and the possibility of promotion.

## **2. LITERATURE REVIEW**

Porter (1985) emphasizes the strategy of differentiation as a competitive advantage of the company, which implies that the company offers a unique product. How will companies offer a unique product? The answer lies in human resources, their efforts, commitment and definition of new products, development of existing products and innovation. Managers cannot achieve the business success of the company they manage on their own. The sum of all individual employee commitments makes up the overall success of a company. Employees, of course, expect a salary for their daily work and efforts in accordance with their education and work results. Whether this is the case will be shown by the results of the research in this paper on a sample of 233 respondents. Kanter, (1984) points out that even the smallest individual effort of an employee can trigger major changes in companies, when all the effort and contribution of all employees in the company is cumulatively added up. Therefore, managers should value every employee, because they never know when an employee will create a business idea that can change the direction of the company and bring the company a profit or reputation in public. So, it is pointed out by Preiss and Spooner, (2003) that managers should focus on a creative and innovative workforce. Leadership is an important managerial function by which managers influence their employees, ie direct the daily activities of employees in order to achieve organizational goals. " Leadership includes goal-orientation. This means that leadership is directing a group of individuals toward achieving a task or purpose. Leaders focus their energy on individuals who work together to achieve something. Thus, leadership takes place and has effects in the context in which individuals move toward a goal." (Northouse, 2010:3). In order to achieve the set organizational goals, communication in companies should be a two-way process, in which it is clear who is working, what is working, why is working, what are the goals to be achieved and what are the deadlines. Managers need to define who is responsible by levels for the execution of assigned tasks, define teams, monitor business processes, rewarding employees based on clearly set criteria for evaluating commitment and completing the tasks set before employees. "Top managers must know how to use business information that they collect from operational and middle management, and operational and middle management collects that information from employees themselves.

In this way, top managers do not leave anything to chance, but act responsibly, and know how to read problems from the collected information, and problems in this way will not accumulate, but be solved promptly. It is very important to find and solve the cause of the problem, not the consequence. Because, when the consequence already occurs, then it is too late to act, then it is not solving the problem, but mitigating the problem. What is initially a small, easily solvable problem over time can grow into a bunch of problems that are discovered at the last minute, when they are usually very difficult or, most often, impossible to eliminate. " (Panian, Klepac, 2003:139.) Amo, BW (2006:292) points out: "organizations with stronger competitive strategies are more likely to want their employees to exhibit innovative behaviour." In order to successfully overcome all obstacles in communication between managers and employees, but also employees among themselves, communication should always be two-way, honest and timely. Delayed communication can only lead to problems in interpersonal relationships." Communication between management levels and employees themselves should be two-way, not one-way. That communication should be noise-free in communication, and problems should be resolved promptly. The success of communication depends on all participants, because their previous experiences and giving common same or similar meanings to the message greatly affect the success of the communication event" (Lamza – Maronić and Glavaš, 2008:10). "The availability of information at the right time has become crucial for business decisions. Organizations of the future must be focused on establishing quality, stable and effective communication both within their own company, in their business, interpersonal relationships, and in relation to the environment." (Lamza - Maronić and Glavaš 2008:14) . If one-way communication prevails in companies, a large amount of business information that may be important for the business success and further course of the company's business remains missed, which can have negative effects. Human resources also in a situation where they do not have feedback on their inquiries become dissatisfied, which also has a negative impact on the company's operations. The flow of information and the communication process in companies should be transparent, understandable to all, with feedback (or feed-back), so that all stakeholders in the communication process feel satisfied with the outcomes of the communication process and be instructed in further tasks expected of them, as well as of opportunities available to them. Employee motivation decreases when they do not have feedback on how to complete business processes, when they know what the opportunities are, how to improve business, what are the mistakes, how to correct them etc., all with the goal of achieving efficiency in the workplace that reflects customer or customer satisfaction. "Communication between the manager and his associates is extremely important for the successful development of management as a process, ie their mutual relationship is extremely important. Without good, ie complete communication between the manager and the associate in performing all managerial functions, it would be difficult to expect successful planning, organization, management and control." (Sikavica et al., 2008:20).

### **3. FACTORS OF SATISFACTION OF WORKERS IN THEIR WORKPLACES**

Salary is a basic factor of worker satisfaction in the workplace, as a material factor of satisfaction. Employees work for a salary, so that they can afford the basic necessities of life. For employees, to feel satisfaction in their workplace and be motivated to achieve success and to strive, intangible factors of satisfaction in the workplace are very important. This paper investigates the impact of the following intangible factors of worker satisfaction in the workplace: good work atmosphere, correct superiors, correct work colleagues, the possibility of advancement and the level of stress in the workplace. Employees will feel better in the workplace when their supervisor praises them for a job well done and when their supervisor shows that they appreciate the effort, with a salary incentive or just a compliment for the effort.

Chung and Gibbons (1997) point out that organizations can encourage their employees to create new resources. According to Bahtijarević-Šiber (1999:20), "as people and investing in them are investments in business and development, the greatest return to it is achieved by organizations through the best use and development of their potentials". Employees should not be perceived by managers as a cost, but rather an investment that will bring results and innovation. Moreover, Sigurnjak (2015:17) claims that "today business is characterized by virtual economy, intellectual capital, and the knowledge economy. Enterprises that don't have the competence to successfully manage human resources will not have insured sustainable development."

#### 4. RESEARCH METHODOLOGY AND RESEARCH RESULTS

The survey was conducted in February 2022, using the online survey method, on a sample of 233 respondents in the Republic of Croatia (N = 233, without regional restrictions). Only employees were examined, regardless of the number of years of age and education. Questions were asked in which the respondent must decide whether to choose a higher salary at his workplace or a good work atmosphere, then whether to choose a higher salary or correct superiors and correct work colleagues, and whether to choose a higher salary or promotion (advancement). Respondents were also asked to choose a higher salary or a lower level of stress. The data obtained by the questionnaire method were processed in the SPSS program.

The aim of the research is to get answers to the following questions:

- Question No. 1: Will employees give preference to higher salary or intangible factors of employee job satisfaction?
- Question No. 2: Which intangible factor is most important to employees?
- Question No. 3: Are employees dissatisfied with the amount of salary they receive for the work done?
- Question No. 4: Do workers want a higher salary for the work they do?

Three hypotheses have been put forward:

- *H1: Intangible satisfaction factors are more important to employees than high salary*
- *H2: For employees, the most important intangible factor is the correct behaviour of superiors*
- *H3: Employees want higher salary for their work*

Statistics		
Age		
N	Valid	233
	Missing	0
Mean		40,47
Median		39,00
Std. Deviation		8,431
Range		38
Minimum		25
Maximum		63
Percentiles	25	34,00
	50	39,00
	75	45,00

Table 1: Respondents by age

Table 1 shows the respondents by age. The study involved 233 respondents (N = 233), the minimum age of respondents is 25 years, and the maximum number of years of respondents is

63 years, 25% of respondents are 34 years old, the median is 39 years old, and 75% of respondents are 45 years old. The difference between the maximum and minimum number of year or the range is 38.

The study involved 191 women (82%) and 42 men (18%), as shown in Table 2.

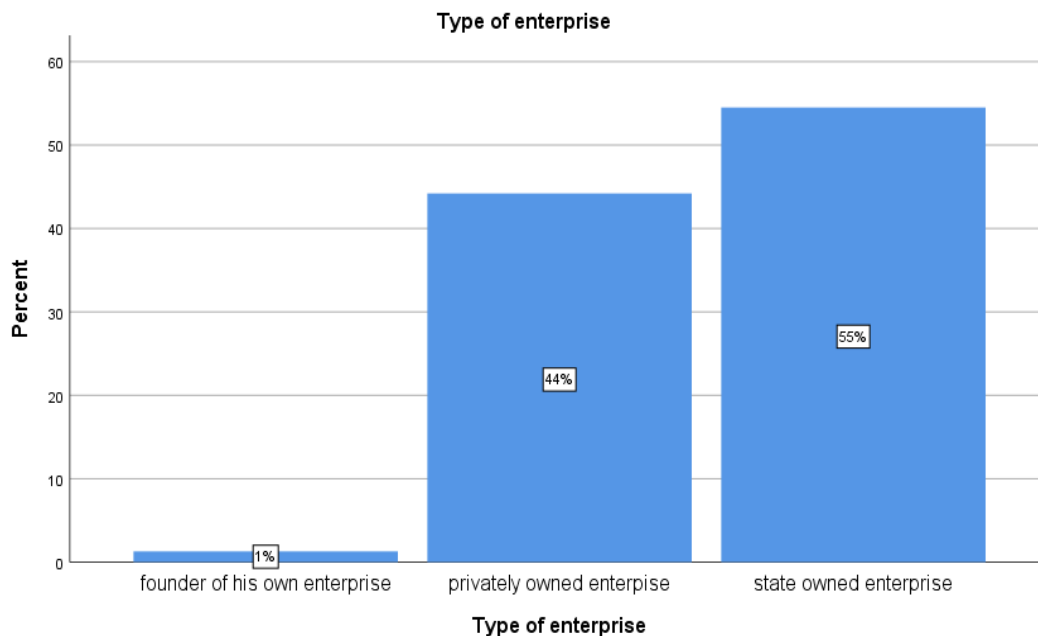
		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	191	82,0	82,0	82,0
	Male	42	18,0	18,0	100,0
	Total	233	100,0	100,0	

*Table 2: Respondents by gender*  
(Source: Autor's creation using the statistical program SPSS)

Table 3 shows the respondents according to the completed level of education. Most respondents graduated from university (47.2%, ie 110 respondents), followed by 83 respondents from high school (35.6%), a smaller number of respondents completed a doctorate (3% of respondents), and 33 respondents completed a master's degree (14, 2%).

		Completed degree			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	college	110	47,2	47,2	47,2
	doctorate	7	3,0	3,0	50,2
	high school	83	35,6	35,6	85,8
	master's degree	33	14,2	14,2	100,0
	Total	233	100,0	100,0	

*Table 3: Respondents by completed degree*  
(Source: Autor's creation using the statistical program SPSS)



*Graph 1: Type of enterprise*  
(Source: Autor's creation using the statistical program SPSS)

The largest number of respondents (Graph 1) works in a state-owned company (127 respondents or 55%), followed by 103 respondents or 44% in a private company. The smallest number of respondents is the founder (owner) of their own company (3 respondents or 1%). As shown in Table 4, a total of 233 respondents participated in the survey, of which 182 were employees (78.1%), and the remaining, smaller part of the respondents are managers in the companies in which they work (51 respondents or 21.9%).

		Employee or manager			Cumulative Percent
		Frequency	Percent	Valid Percent	
Valid	employee	182	78,1	78,1	78,1
	manager	51	21,9	21,9	100,0
	Total	233	100,0	100,0	

*Table 4: Respondents by employee or manager*  
(Source: Autor's creation using the statistical program SPSS)

Respondents were asked about choosing a high salary as a material factor of satisfaction, in relation to intangible factors of satisfaction: good work atmosphere, correct behaviour of superiors, correct behaviour of colleagues, the possibility of advancement, job security and low stress. The question of job satisfaction with the workplace was asked, which is shown in the following tables. Table 5 shows whether respondents would work in a bad working atmosphere for a higher salary, or in a good working atmosphere for a lower salary. The vast majority of respondents (85.8% or 200 respondents out of 233 in total) would rather work in a good working atmosphere with a lower salary than work in a bad working atmosphere with a high salary, which is the choice of 33 respondents or 14.2%. Thus, employees gave preference to the intangible factor of job satisfaction rather than the material factor - salary.

**Choice: high salary or good working atmosphere**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	good working atmosphere and low salary	200	85,8	85,8	85,8
	high salary and poor working atmosphere	33	14,2	14,2	100,0
	Total	233	100,0	100,0	

*Table 5: Respondents' choice - high salary or good work atmosphere*  
(Source: Autor's creation using the statistical program SPSS)

What is the situation with the second intangible factor, the correct behaviour of superiors, is shown in Table 6.

**High salary or Correct superiors**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	correct superior	177	76,0	76,0	76,0
	high salary	56	24,0	24,0	100,0
	Total	233	100,0	100,0	

*Table 6: Respondents' choice - high salary or correct behaviour of superiors*  
(Source: Autor's creation using the statistical program SPSS)

A large number of respondents (177 respondents out of 233 or 76%) again preferred the immaterial factor, the correct behaviour of superiors, rather than the high salary chosen by 56 respondents out of 233 respondents or 24% of respondents.

The percentage in favour of the intangible factor of a good work atmosphere is higher than the percentage of choosing the correct behaviour of superiors (out of 233 respondents, 200 choose a good work atmosphere, and out of 233 respondents, 177 choose the correct behaviour of superiors). What is the situation when choosing the correct behaviour of colleagues in relation to high salary is shown in Table 7.

High salary or Correct work colleagues					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	correct work colleagues	162	69,5	69,5	69,5
	high salary	71	30,5	30,5	100,0
	Total	233	100,0	100,0	

*Table 7: Respondents' choice - high salary or correct behaviour of work colleagues  
(Source: Autor's creation using the statistical program SPSS)*

The choice of correct behaviour of colleagues before a high salary is visible in the vast majority of respondents (162 respondents or 69.5%), compared to respondents who choose a high salary (71 respondents or 30.5%). Although the high percentage is in favour of the immaterial factor of employee satisfaction in the workplace - the correct behaviour of colleagues before the material - salary, the percentage is lower by 6.5% than for the variable correct behaviour of superiors. Employees care a little more about the correct behaviour of superiors than the correct behaviour of work colleagues, but still choose both intangible factors (both correct behaviour of superiors and correct behaviour of work colleagues) rather than a high salary in an enviable percentage. Table 8 shows the respondents' choice between a high salary and the possibility of advancement.

High salary or The possibility of advancement					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high salary	93	39,9	39,9	39,9
	possibility of advancement	140	60,1	60,1	100,0
	Total	233	100,0	100,0	

*Table 8: Respondents' choice - high salary or possibility of advancement  
(Source: Autor's creation using the statistical program SPSS)*

140 respondents (60.1%) out of 233 in total stated that the possibility of advancement is more important to them than a high salary (93 respondents or 39.9%). A good work atmosphere, correct superiors and correct work colleagues are more important to employees than the possibility of advancement.

High salary or Secure working position					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high salary	48	20,6	20,6	20,6
	secure working position	185	79,4	79,4	100,0
	Total	233	100,0	100,0	

*Table 9: Respondents' choice - high salary or secure working position  
(Source: Autor's creation using the statistical program SPSS)*

The choice between high salary and secure working position is shown in Table 9.

When it comes to secure working position, the percentages in favour of secure working position are very similar to the intangible factor correct superiors and correct work colleagues. A good work atmosphere is the leading intangible factor that interests employees from those researched by this paper. 185 employees (79.4%) choose job security over high salary (48 employees, or 20.6%). Whether employees choose a high salary or a low level of stress is shown in Table 10. The percentage is similar as for other intangible satisfaction factors other than the work atmosphere (172 employees, or 73.8% choose a low level of stress, and 61 employees choose a high salary, or 26.2% of employees).

High salary or Low stress					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high salary	61	26,2	26,2	26,2
	low stress level	172	73,8	73,8	100,0
	Total	233	100,0	100,0	

*Table 10: Respondents' choice - high salary or low stress*  
(Source: Autor's creation using the statistical program SPSS)

Respondents were asked if they would change their current job (Table 11). 48.1% of respondents would change their current job (112 respondents), 27.5% of respondents might change their current job (64 respondents), and 24.5% of respondents (57 respondents) would not change their current job.

Change of current job (higher salary)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	maybe	64	27,5	27,5	27,5
	no	57	24,5	24,5	51,9
	yes	112	48,1	48,1	100,0
	Total	233	100,0	100,0	

*Table 11: Change of current job*  
(Source: Autor's creation using the statistical program SPSS)

Furthermore, respondents were asked how much they want a higher salary (Table 12). A high percentage of employees (71.7%) want a higher salary, maybe 21.0% of respondents want it, and only 7.3% of respondents do not want a higher salary. Employees want and may want a higher salary for their work.

Better salary					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	maybe	49	21,0	21,0	21,0
	no	17	7,3	7,3	28,3
	yes	167	71,7	71,7	100,0
	Total	233	100,0	100,0	

*Table 12: Number of respondents who want a higher salary*  
(Source: Autor's creation using the statistical program SPSS)

Whether the salary of employees is in accordance with the completed level of education is shown in Table 13. 53.6% of employees stated that their salary is in accordance with completed education, 12% of respondents claim that it is sometimes in line, and 34.3% of employees stated that their salary is not in line with the completed level of education.



## Salary in accordance with the completed degree

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	80	34,3	34,3	34,3
	sometimes	28	12,0	12,0	46,4
	yes	125	53,6	53,6	100,0
	Total	233	100,0	100,0	

Table 13: The amount of salary in accordance with the completed level of education  
(Source: Autor's creation using the statistical program SPSS)

Hypotheses H1 (*H1: Intangible satisfaction factors are more important to employees than high salary*) and H3 (*H3: Employees want higher salary for their work*) were accepted by this research. Hypothesis H2 (*H2: The most important intangible factor for employees is the correct behaviour of superiors*) was not accepted, because the most important intangible factor for employees is a good work atmosphere.

## 5. CONCLUSION

The aim of this research was to find out whether non-material satisfaction factors (good work atmosphere, correct superiors, correct work colleagues, possibility of advancement and low level of stress) or material factor of employee satisfaction - high salary - are more important for employees in their workplaces. When employees have the opportunity to compare only one intangible factor and one material satisfaction factor – salary, they choose that intangible factor. The most important intangible factor of worker satisfaction in the workplace (in the case of two options, one intangible factor and a material factor of salary) is a good work atmosphere chosen by 85.8% of respondents, second is secure working position chosen by 79.4% of respondents, in third place are the correct superiors chosen by 76% of respondents, in fourth place is the low level of stress chosen by 73.8% of respondents, correct work colleagues as an intangible satisfaction factor is chosen by 69.5% of respondents, and the possibility of advancement was chosen by 60, 1% of respondents. A high percentage of employees want a higher salary in their workplace (71.7% of respondents), while 53.6% of respondents say their salary is in line with their education, and 48.1% of respondents would change jobs, and perhaps 27.5% of respondents would change jobs.

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## **BUSINESS INFORMATION SECURITY AS A PART OF CORPORATE SECURITY**

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### **ABSTRACT**

*In the new concept of national security, intelligence collects business information and has a significant place in the range of instruments for achieving the economic dimension of national security. Vulnerability in the information system causes a negative chain reaction in all other systems and is therefore a matter of general security. The value of business information is measured in billions of dollars, and the U.S. economy has suffered \$ 300 billion in damage over the past few years due to the loss of business information. Effective information security can be achieved through a holistic approach that includes organizational and sociological factors within the organization combined with technological measures. Information security should be the responsibility of everyone in the organization, from management and the CEO to the lower level of management and all employees. People are a crucial factor in ensuring the security of the organization and the most common causes of information loss by employees are omissions and fraud, and information security depends on employee behavior that can enhance security and nurture an information security culture that promotes positive security behavior. It is important that the business entity assesses the risks and what information will be available to the public, and that it uses innovative technologies related to the defensive dimension - counterintelligence and greater security of the business entity.*

**Keywords:** *Business Intelligence, Information Security, Corporate Security, GDPR*

### **1. INTRODUCTION**

In order for a business entity to function successfully, a degree of security and responsibility is required. From an organization's perspective, it's important to pay attention to data and business information security. Sardi, A. et al (2020) state that the World Health Organization has discovered a dramatic increase in the number of cyber-attacks since the beginning of the Covid-19 pandemic. In Italy, the state of emergency has seriously affected cyber security and the onset of a pandemic has doubled the total number of attacks on organizations and individuals. There is a need for new research on privacy risks given the new circumstances of the pandemic. Loss of information has a negative impact on an organization's profitability, as Avery, A. et al. (2021) explain. In addition, cyber-attacks and data breaches are among the biggest threats faced by any business and the corporate sector needs to establish security practices regardless of the size of the organization. In order to successfully implement the concept of information protection policy in the organization, physical, technical, administrative

and legal control is needed. It is important to ensure that business information is not lost either physically (e.g. fire, burglary) or electronically. The goal of various cyber attacks is to break into systems, copy and disclose information. Former employees can also pose a threat. Nowadays, the use of publicly available information of business entities of the competition and their analysis is common, and this set of methodologies is called business intelligence. Information that is a business secret can also be collected illegally when it comes to business espionage. It can be sold, used as a mean of blackmailing or compromising the system. Vulnerability in the information system causes a negative chain reaction in all other social systems. The aim of this paper is to recognize and clarify the growing importance of business information security, identify key components of information security and systematize knowledge based on a comprehensive review of relevant scientific literature.

## **2. BUSINESS INFORMATION SECURITY CONCEPT**

The importance of information in the rapid development of the world economy is growing and today's corporations have developed data protection systems. According to Kralj, R. (2005), information is the basis of a whole range of business and social activities such as business, banking, public (tourism, transport, meteorology, science) and private information systems to personal communications between individuals. Modern business is largely based on the exchange of a large amount of business information within companies and their clients. Keeping up with world trends and modernizing all forms of communication requires understanding the importance of information and communication systems security, and information security is a growing problem today, explains Kralj, R. (2005). Information security implies a state of confidentiality, integrity and availability of information, regardless of the form in which information exists, and is achieved through the application of appropriate information security measures and standards and organizational support for planning, implementation, verification and refinement of these measures (Vidović et al, 2011). Korać, M. D. (2018), defines the acronym CIA, which originated from the English initials of the protection of the Trinity, ie. of the three basic principles of information protection that are the same as just mentioned, namely: confidentiality, integrity and availability. In addition to basic information protection, there is additional information protection. According to Vidović et al. (2011), confidentiality of information means that information is available only to those who are authorized to use it and integrity means protection of data from intentional or accidental unauthorized modification, while availability is a guarantee to authorized users that the system will be available whenever they have it. need. Information security is not the same as IT security because information security includes the protection of all information, regardless of the form in which the data and information were found, Vidović et al (2011) point out. Information security covers not only the information itself but also the entire infrastructure that facilitates their use and thus covers hardware, software, threats, physical security and human factors, where each of these components has its own characteristics, says Arbanas, K. (2021). System security is the likelihood that a system will function without compromising its vital functions under certain circumstances. It is important to develop safety measures in accordance with the assessment of how and to what extent the danger threatens, explains Kralj, V. (2005) and adds that if the threatening danger changes and becomes more complex, safety decreases and needs to be adapted to the new situation. Absolute security is not possible, but an appropriate level of security is possible when strategic technological solutions are applied, balancing risk with cost and efficiency, explains Kralj, V. (2005). A number of procedural, personnel, physical, environmental, systemic and communication security defense measures needs to be considered when meeting security requirements for the confidentiality, availability and integrity of information.

The value of information and processes should be known, the risk in the existing environment analyzed and an appropriate set of protective measures should be implemented, the author adds. It is necessary to define the technology and methodology used as well as the procedures or detailed steps in accomplishing security tasks. Djurkin-König, L. et al. (2020) state that numerous social processes, primarily globalization, internationalization, integration, etc., have created a different environment for companies and corporations and other businesses that today operate in an environment full of security challenges and a wide range of threats. Risks, threats and uncertainties have become business constants and a key reason why corporations must develop and implement a security protection component in all business processes and corporate governance functions. Recent research in the U.S., according to Djurkin-König, L. (2020), shows that the U.S. economy has suffered \$300 billion in damage over the past few years just because of the loss of business information, not counting damage caused by other forms of threat. Business information and intangible resources represent more than 80% of the market value of many companies, and therefore information integrity disruptions can be devastating. The development of information technology has led to the transformation of information into a resource as important as material goods such as land, labor and capital. Successful application of information security requires the application of security standards such as the international standard ISO 27001 or more precisely ISO / IEC 27001: 2005. It is a framework of guidelines and procedures that prescribe how to organize security in any organization. ISO 27001 has a corporate (and not just IT) approach to security and includes aspects such as physical, technical security, human resource management, legal protection and systematic risk checks of the organization.

### **3. BUSINESS INTELLIGENCE - USE OF INFORMATION ON COMPETITORS**

Businesses often use information on competitors to make better strategic decisions and increase productivity and revenue. Other benefits include better planning and forecasting, better analysis of consumer behavior, better sales results and pricing, marketing activities, and improved product offerings. The term is "business intelligence" or intelligence activity in the business(economic) area. Furthermore, Kalb, C. (2000) in the chapter "Conducting intelligence ethically" explains that this is actually information whose use cannot be restricted because it is publicly disclosed. This is information in publicly available publications, in public communication or that is otherwise available to the public, such as industry conferences or executive briefings for investors. The author also states that the employment of former operatives is allowed as long as ethical guidelines are followed. In this regard, ethical and unethical activities should be well distinguished. It is stated that the competition often presents itself as a buyer or a student asking for information, which is not legal. It is important to distinguish competitive intelligence from corporate spying. Competitive intelligence is a process of legal and ethical collection and analysis of information about competitors and industries in which companies operate in order to achieve the goals of the business entity faster and better. Corporate intelligence, business intelligence, market intelligence and other similar terms are often used interchangeably, and any difference between them is more semantic than substantive (Kalb, C., 2000). Business intelligence is therefore an intelligence activity in the business world of gathering public and publicly available data by ethical means, their analysis and transformation into ready-made business intelligence analysis or "knowledge" with the aim of making better business decisions to preserve the position of the business entity in the business environment, avoid threats and overall quality progress of the business entity (Bilandžić, M. 2005.). Vidović, D. (2011) explains that, in contrast to offensive action and gathering publicly available information, there is also a defensive dimension which consists of counterintelligence action.

Counterintelligence is aimed at achieving the security of the business entity and establishing a mechanism for its protection from business intelligence activities of competition as well as protection from business espionage.

#### **4. GDPR AND INFORMATION SECURITY**

Security, especially in today's digital age, means the protection of personal data and in this regard the General Data Protection Regulation or GDPR has been adopted, which requires companies to protect the personal data and privacy of all citizens of the European Union. Paragraph 2 of Article 32 of the GDPR "Security of processing" shows a direct link between information security and personal data protection, especially in paragraph 2, which states that when assessing the appropriate level of security, special account shall be taken of risks of unlawful destruction, loss, alteration, unauthorized disclosure of personal data or unauthorized access to personal data transmitted, stored or otherwise processed". According to paragraph 1 of Article 32, taking into account the latest developments, scope, context and purposes of processing, as well as the risk of different levels of probability and seriousness for the rights and freedoms of individuals, the controller and processor shall implement appropriate technical and organizational measures to ensure security with regard to risk, including pseudonymization and encryption of personal data; the ability to ensure the ongoing confidentiality, integrity, availability and resilience of processing systems and services; the ability to restore and access personal data in a timely manner in the event of a physical or technical incident; a process for regularly testing, evaluating and evaluating the effectiveness of technical and organizational measures to ensure security of processing. Furthermore, according to paragraph 4, "the controller and the processor shall take measures to ensure that any individual acting under the responsibility of the controller or processor who has access to personal data does not process that data unless instructed to do so by the controller." Article 32 of the GDPR is the article most violated in relation to the implementation of the GDPR (according to Exin Privacy and data protection). According to the sum of fines per article, it was ranked first, with 335,159,507 euros paid by organizations that did not meet his conditions. On average, violating this part of the regulation results in a fine of about 4.3m euros, illustrating the importance of a proper information security system. (Exin Privacy and data protection). Having an appropriate information security management system is key to GDPR compliance, but it is not all that is needed. At the same time, it is not possible to just invest in the GDPR strategy and leave information security as it is. GDPR does not provide information on how to understand security at a deeper level. The company's compliance with the GDPR includes documenting and complying with regulations, but information security requires a full understanding of how to identify and close gaps that could jeopardize data. It is therefore strongly recommended that organizations are educated in both areas to ensure optimal privacy and data protection in order to protect their business and protect themselves from high penalties for violating the GDPR. General Data Protection Regulation (GDPR) or Regulation 2016/679 of the European Parliament and of the Council of April 27 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data and repealing it Directive 95/46 / EC (ie Directive 95/46 / EC of the European Parliament and of the Council of October 24 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data) is a regulation governing data protection and privacy within the European Union and adopts rules and regulations related to the export of data to third countries. The GDPR was adopted on April 14 2016 and entered into force on May 25 2018. Because it is a regulation, not a directive, it is directly binding and applicable but provides flexibility to certain aspects of the regulation. Therefore, the regulation is directly applicable in all Member States of the European Union and is fully binding. In this regard, Rustad, M. L. and Koenig, T. H. (2019) state that when the history of globalized data protection will be printed, it

will be especially marked on May 25, 2018 - the day when the GDPR came into force. According to Rustad, M. L. and Koenig T. H. (2019), this law is the latest phase in the EU's 50-year effort to protect the personal data of consumers in the EU. The GDPR is a complex document consisting of eleven chapters, ninety - nine articles and 173 preambles.

## 5. CONCLUSION

The problem of security is multidimensional and complex, and in modern conditions, security is no longer just a military issue. In the new concept of national security, intelligence collects business information and has a significant place in the range of instruments for achieving the economic dimension of national security. Vulnerability in the information system causes a negative chain reaction in all other systems and is therefore a matter of general security. The value of business information is measured in billions of dollars, and the U.S. economy has suffered \$ 300 billion in damage over the past few years due to the loss of business information. Information security implies a state of confidentiality, integrity and availability of information and is achieved through the application of information security measures and standards and organizational support for the implementation and refinement of such measures. Effective information security can be achieved through a holistic approach that includes organizational and sociological factors within the organization combined with technological measures. Information security should be the responsibility of everyone in the organization, from management and the CEO to the lower level of management and all employees. People are a crucial factor in ensuring the security of the organization and the most common causes of information loss by employees are omissions and fraud, and information security depends on employee behavior that can enhance security and nurture an information security culture that promotes positive security behavior. It is important that the business entity assesses the risks and what information will be available to the public, and that it uses innovative technologies related to the defensive dimension - counterintelligence and greater security of the business entity. It is important to create a comprehensive security culture within the organization for effective information security management.

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# DOMESTICATION OF STANDARTIZATION: INFORMAL MANAGEMENT PRACTICES DURING IMPLEMENTATION AND CERTIFICATION OF QMS ACCORDING TO ISO 9001 IN BULGARIAN BUISNESS ORGANIZATIONS (EMPIRICAL STUDY 2015 - 2021)

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## ABSTRACT

*This paper presents the results of an empirical study focused on informal management practices that arise from the standardization of business processes. According to neo-institutional theory, there is a general trend towards standardization because organizations seek support and legitimacy in their institutional fields by adopting structural models and management methods/practices that are generally perceived to be the best available. At the same time, however, these structural rules may differ from structures that act efficiently because they (these rules) are largely generalized, whereas technical activities vary with unique, unstandardized conditions. Therefore, to resolve these conflicts, organizations often detach their everyday organizational practices from formal structures and procedures. The case with the adoption of the ISO 9001 standard is a relevant example of such behavior. This process – i.e. the deliberate disconnection between organizational structures that enhance legitimacy and organizational practices that are believed to be technically efficient within the organization – is central to the neo-institutional theory and is defined as decoupling. I extend the literature on decoupling by focusing on the problems that arise from the decision to decouple and more specifically, the gaps that decoupling creates between symbolically adopted formal policies and actual organizational practices. I use the ISO 9001 quality management system standard, which is known to engender internal constraints and resistance, as the empirical setting for this study. The term "domestication" is introduced to expose specific informal management practices that allow ISO 9001 certification to be performed effectively without all regulations being adopted and followed according to their original design and purposes. This study, based on qualitative analysis of fifteen ISO 9001 certified organizations in Bulgaria illuminates ambivalent behaviour to formal rules, which is expressed through targeted non-compliance with regulations and procedures formally adopted within the organization and certified as complying with ISO 9001 standard.*

**Keywords:** *Decoupling, Domestication, ISO 9001, Neo-Institutionalism, Standartization*

## 1. INTRODUCTION

Common literature (organisational analysis; organisational sociology; organizational change) argues that there is a general trend towards standardization, because organizations seek support and legitimacy in their institutional fields by adopting structural models that are generally perceived to be the best available (Boxenbaum and Jonsson, 2017; DiMaggio and Powell, 1983; Meyer and Rowan, 1977; Vasconcelos and Vasconcelos, 2003). In that way, international normalization entities such as the ISO (International Standard Organization), responsible for issuing numerous industrial norms and/or standards, are key actors in defining the isomorphic properties of many institutional fields (Vasconcelos and Vasconcelos, 2003, pp. 174). This could be clearly seen in the case of ISO 9001 - one of the most widely accepted quality management (QM) standards issued by the ISO (Boiral, 2003; Lewis et al. 2007; Sampaio et al.



2009). According to the neo-institutional theory in sociology, the adoption of the ISO 9001 standard has inevitably led to situations in which organizations would often adopt policies or codes of conduct (e.g. international standards) for symbolic purposes, without necessarily applying them in practice (Christmann and Taylor, 2006; Roy and Boiral, 2007). In such instances, organisations do not change their organisational practices, but merely present them in a way that would formally align with the requirements of a specific standard. Following the neo-institutional theory, these situations of conflict, where institutional and task environments are in discord, are defined as *decoupling* (Meyer and Rowan, 1977). Given the importance of decoupling to institutional theories, and the growing number of research hours put into industrial norms who, in recent years, adopted this concept (Boiral, 2003; Vasconcelos and Vasconcelos, 2003; Walgenbach, 2001), it is surprising that previous studies have not given sufficient scientific attention to the aftermath of decoupling - and more specifically, the problems that could arise from the decision to decouple. Organizations which seek to maintain the ISO 9001 standard in the long-run must undergo recertification audits every three years. Unlike a certification audit – the initial audit, a recertification audit is much more complex in nature as it includes data from all previous audits. Bearing this in mind, I would argue that the need (or lack of) for recertification is key in explaining how decoupling may evolve over time. How this is being done, however, remains relatively unknown. Particularly, literature has not been able to shed light on specific informal practices which managers deliberately adopt in order to achieve certification (e.g. ISO 9001 certification) without fully integrating the formal criteria imposed by these standards (in their origin). Emphasizing this important gap in the literature, I investigate the informal management practices that managers apply in situations where the institutional expectations potentially conflict with internal managerial processes and resources. Taking this into account, this paper seeks to answer the following pertinent research question: *How do organizational decision makers solve decoupling's problem – the gap between symbolically adopted formal policies and actual organizational practices – in situations where the adoption of the standard (in our case, the ISO 9001) must be maintained long-term (i.e. when recertification audits are required)?*

## 2. A NEO-INSTITUTIONAL PERSPECTIVE TO STANDARDIZATION

The idea of standardization in social sciences and economics is close to the solution of a coordination problem - a situation, in which all parties could obtain mutual gains, but only by making mutually consistent decisions (Blind, 2004; Timmermans and Epstein, 2010; Botzem and Dobusch, 2012). From this point of view, standardization includes the case of "spontaneous standardization processes", to produce *de facto* standards (Blind, 2004). International (certifiable) standards have become an integral part of the standardization narrative. Precisely by reducing the cost of managing global supply chains through (1) establishing harmonized international requirements and (2) using third-party auditors to certify suppliers' compliance with these requirements, the international standards have substantially aided the facilitation of international trade (Christmann and Taylor, 2006; Heras-Saizarbitoria and Boiral, 2013). Vast research into the need for standardization has led researchers to contend that the motives behind the adoption of industry standards (and the ISO 9001 standard in particular) could be divided into two main categories – *external* and *internal* (del Castillo-Peces et al., 2018; Fonseca and Domingues, 2018; Sampaio et al. 2010). The *external motives* include market image, customer requirements, and government regulatory ones, among others, whereas the *internal motives* include process improvement and increased efficiency, as well as cost reduction (Casadesus and Karapetrovic, 2005; Georgiev and Georgiev, 2015; Hussain et al., 2018). More importantly, the broad literature pertaining to ISO 9001's implementation argues that the external motives are superior to the internal ones (Georgiev and Georgiev, 2015; Rusjan and Alič, 2010). For instance, the desire for legitimacy with buyers and suppliers, as opposed to the need for

improving efficiency, is what usually drives businesses to adopt international standards such as ISO 9001 (Georgiev and Georgiev, 2015; Heras-Saizarbitoria and Boiral, 2013; Hussain et al., 2018). In other words, organizations would often incorporate elements that could yield external legitimacy, but do not necessarily increase organizational efficiency. Following these findings, the literature pertaining to the motivations behind the adoption of international standards has brought into consideration the inclusion of a number of theories. This has been done in an attempt to explain this phenomenon of organizational dynamics. Among these theories, *the neo-institutional theory in organizational analysis and sociology* proposed by Meyer and Rowan (1977), and further developed by DiMaggio and Powell (1983) has taken a central role in recent researches of standardization. The cornerstone of the neo-institutional theory, argued by Meyer and Rowan (1977), claims that in modern societies, organizations find themselves in a highly institutionalized context of various professions, policies, and programs, which serve as powerful myths. These myths emerge as a solution for widely perceived organizational problems. They become rationalized once they begin to be widely believed to constitute proper solutions to these problems. As more organizations conform to these myths, they become more deeply institutionalized; that is because organizations need a social mandate (legitimacy) to operate – this is acquired by conforming to social expectations (e.g. acquiring and maintaining the ISO 9001 certificate). Ergo, looking through the lens of the neo-institutional theory, the general trend towards standardization is an example of organizations who seek support and legitimacy in their institutional fields by adopting structural models, which are generally perceived to be the best available. In that way, international normalization entities such as the ISO, which are responsible for issuing many kinds of industrial norms and/or standards, are key factors in defining the isomorphic properties of many institutional fields (Vasconcelos and Vasconcelos, 2003, pp. 174).

## 2.1. Decoupling

Besides the claim that organizations conform to rationalized myths, there is a second important claim about isomorphism (organizational similarity); namely that organizations often detach their everyday organizational practices from formal structures and procedures (Boiral, 2003; Boxenbaum and Jonsson, 2017; Meyer and Rowan, 1977; Tilcsik, 2010). For instance, whenever an industry standard becomes a customer requirement, management may be tempted to implement it superficially, so that the organization could achieve the legitimacy benefits of certification, while it continues to partake in business as usual – i.e. with minimum disruption to the already established organizational practices (Boiral and Roy, 2007). This deliberate process (defined as *decoupling*) is commonly caused by institutional pressures – i.e. pressures to comply with the regulations and norms of how organizations should be structured and operated (Brunsson et al., 2012, pp. 618; Tilcsik, 2010, p.1474). More specifically, decoupling occurs when institutional and task environments are in conflict (in other words, when environmental expectations conflict with internal managerial interests and available resources), or when there are conflicting institutional pressures (Boxenbaum and Jonsson, 2017; Meyer and Rowan, 1977; Oliver, 1991). Putting this in the clearest, shortest and easiest to understand way, decoupling could be defined as the creation of gaps between formal policies and actual practices (Meyer and Rowan, 1977; Tilcsik, 2010). In recent times, decoupling has also been taken into consideration for the research of the acceptance of standards such as the ISO 9001 and ISO 14001. This type of research has shown time and time again (just as in the case of other industrial norms) that firms which aim to mainly obtain the ISO 9001 standard in order to achieve the legitimacy benefits of certification, may not sufficiently implement the standard's requirements to realize its intended performance outcomes (Aravind and Christmann, 2011). There is, however, a case to be made here. Unlike some industrial norms, certain standards, such as the ISO group of standards, require an initial audit – the certification audit – followed

by recertification audits every three years. Given these specifics, we are able to make a clear distinction between firms that adopt a standard for a one-time purpose (e.g. firms that seek to partake in government bids that require the adoption of the standard) and those that adopt the standard as a part of their long-term business strategy (e.g. companies that seek to enter new markets or establish a fruitful collaboration with other business entities). Essentially, the difference between these two types of businesses is that the first one would not maintain the standard in the long-run – i.e. the companies will drop the standard, ergo will not undergo recertification audits, whereas the second type of companies will do so. A recertification audit, unlike a certification or the so-called initial audit, is much more complex in nature as it includes a variety of documents, that cover the whole period between the first audit and the current one.

### 3. METHODOLOGY

In order to thoroughly study the informal management practices that decision makers implement in situations, where a gap between the formal and actual acceptance of industrial norms or standards occurs, I found myself looking for different research sites; ones, where these events would have a high probability to occur. In my case, I used the first international study into ISO 9001 certification in Bulgaria - conducted by Georgiev and Georgiev (2015). The study examines the motives (external versus internal) behind ISO 9001 certification among Bulgarian businesses<sup>1</sup>. In line with a theoretical framework and research questions, I focused on companies whose ISO 9001 adoption was driven by external motives only (as the probability of registering decoupling from the formal rules and regulations of ISO 9001 was high). In other words, this study used *criterion sampling* (Palinkas et al., 2015; Palys, 2008; Patton, 2002) - i.e. cases that meet predetermined criteria. Accordingly, interview invitations were sent only to organizations which were registered as business entities on the territory of Bulgaria, being ISO 9001 certified (2008 or 2015 issue) between 2013 and 2020. I conducted a total of fifteen one on one, face-to-face, semi-structured interviews<sup>2</sup> with top managers<sup>3</sup>. All companies are SMEs, have been certified for more than 6 years and have successfully passed at least one recertification audit. To triangulate the data, I also collected internal documents<sup>4</sup> with reference to the ISO 9001 implementation and certification.

### 4. FINDINGS

The core research question that guided this study is the following: *How do organizational decision makers solve decoupling's problem – the difference between symbolically adopted formal policies and actual organizational practices – in situations where the adoption of the standard (in our case, the ISO 9001 standard) happens to be long-term (i.e. when recertification audits are required)?* Thus, given RQ, in this section, I describe the informal management practices utilized by decision makers in their quest for maintaining the ISO 9001 standard in the long-term, while at the same time engaging in technical business as usual. First and foremost, in all surveyed companies I registered a gap between the formal and actual acceptance of the rules and regulations set by the ISO 9001 standard. No significant changes, in terms of the processes to which the standard sets specific requirements, were registered in the day-to-day business practices of the ISO 9001 certified companies. In other words, throughout all surveyed organizations I witnessed management practices for the implementation and certification of QMS (quality management systems), which were characterized by a deliberate

<sup>1</sup> According to the International Organization for Standardization, the number of ISO 9001 certified firms in Bulgaria is 6,854 (2020 estimates).

<sup>2</sup> The interviews were tape-recorded and lasted between 50 and 90 minutes.

<sup>3</sup> e.g. CEO, Company Owner, Production Manager, Quality Manager.

<sup>4</sup> The internal documents included QM manuals, quality policies and procedures, memos, internal audit reports, letters, process flow charts and others. In total, we studied over two hundred documents corresponding to about 3000 pages of written material.

disconnection between the formally adopted regulations of the standard and the companies' actual practices – which, as already mentioned, is what the literature defines as decoupling. Intentionally refusing to focus on the outcome, however, I sought to analyze the process that leads to decoupling; this, as well as the need for bridging decoupling's inherent gap - not just once but continuously – i.e. in situations where companies seek to maintain the ISO 9001 standard long-term and thus, must undergo surveillance and recertification audits. As emphasized in the above mentioned literature, through decoupling decision makers in vast businesses solve a fundamental, ubiquitous problem that the companies in question face in their pursuit of gaining (external) legitimacy, while engaging in business as usual. A very important thing to take into account, however, based on the ISO 9001 standard's specifics (i.e. the requirements for surveillance and recertification audits as part of maintaining certification), companies that adopt the ISO 9001 standard in line with their long-term strategy face another obstacle - the need of successfully passing the certification audit and the subsequent surveillance and recertification audits. In order to address this challenge, my study reveals that these informal management practices are being applied and explicated in two main areas. The first area reveals informal practices, related to lack of top management commitment and the blunt delegation of all responsibilities to an external consultant. The second area exposes *opportunistic* (in the sense of Williamson, 1975 „self-interest seeking with guile“) preparation or fabrication of documents and records, which have no real value, and represent a so called hollow evidence, necessary for passing the various audits. I elaborate on these two areas in the following pages.

#### **4.1. Lack of Management Commitment**

In all fifteen companies that I have obtained information on, the implementation of the ISO 9001 standard was achieved without the involvement of top management; instead, the development and the actual implementation of the QMS has exclusively been outsourced to an external consultant. As the CEO of a micro firm specialized in audio engineering services explained:

*I have not read the ISO 9000 standard in detail; it was our consultant who took care of that. That being said, I do not really know what is expected from us now, and frankly said, I have not changed anything with reference to how we operate as a business.*

Moreover, in thirteen of the cases, the respondents testified that more often than usual, the management is largely unfamiliar with the the standard's formal structures and requirements. The QM<sup>5</sup> of a micro firm rendering marketing services said:

*I do not know and do not really care what is written in the ISO manual; that is exactly why I have hired a consultant. What I care about, however, is that this whole ISO thing does not interfere with my day-to-day business. When the time for the biannual or annual surveillance audit draws near, my consultant comes in and deals with the auditor. To be frank with you, I even do not know where we keep the ISO folder in our office. The last time I looked for it, my assistant found it behind one of the PC speakers.*

Putting the lack of management commitment aside, in fourteen of the sampled organizations we have observed another peculiar facet – no employees have participated in the ISO 9001 implementation process and no one has changed their work routines in accordance with the QMS regulations. Specifically, even though the formal requirements of the QMS target all employees in the organization, this does not happen in reality.

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<sup>5</sup> Quality Manager

As the CTO<sup>6</sup> of a mid-sized construction firm explained:

*This is by far the most difficult part – to change the ways your employees are doing their job while you are in the process of implementing the [ISO 9001] system. Also, I have to say that the actual documenting of the processes and commitment to the standard's rules and regulations was ignored by most of my colleagues during the actual implementation process.*

It is axiomatic that in the absence of management commitment, employees are even less interested in the regulations and rules set by the standard, and do not comply with them. As the QM of another mid-sized construction firm asserted:

*Given that our boss is not interested in the ISO requirements, there is no reason for us [employees] to deal with them.*

Within twelve of the surveyed companies, it becomes evident that the implementation and certification of ISO 9001 is perceived as a bureaucratic administrative act that is necessary for the company's survival, but is not accepted by the members of the organization as a "management guide". The QMS seems to be perceived as merely a portfolio of just another bureaucratic set of documents and nothing more. Moreover, the management and employees distance themselves from the operational processes and formal requirements of the various audits - the presentation and defense of the QMS during all audits gets outsourced to an external consultant. As the Owner of a micro IT firm explained:

*I have not read the ISO 9001 standard in detail; it was our consultant who took care of that. That being said, I do not really know what is expected from us now, and frankly said, I have not changed anything with reference to how we operate as a business.*

The same respondent continues:

*The first certification audit was carried on the shoulders of the (external) consultant, I hung in there, but apart from not crashing the system, I did not understand anything else. The consultant was answering most of the questions while I was sitting there, twiddling his thumbs, serving coffee and trembling, thinking that they would not pass the recertification audit.*

Notably, the formal act of the audits creates tension among the management and employees as it (the audit) is often perceived as an exam situation – a traumatizing experience that requires a ceremonial preparation (Boiral, 2012). Specifically, the purposeful and continuous application of informal management practices aimed at tension relieving of successfully passing audits without changing the actual business practices of the company, creates fear and the expectation of failure was often compared to failing a university exam. For instance, the QM of a micro manufacturing firm said:

*Regarding the certification itself, I remember that an auditor had to come to the company every now and then to inspect our work. I expected that the whole [certification] process would be like an exam at the university - we would be torn apart and sent for an exam result in September<sup>7</sup>. That's what I expected. As to the successful implementation of the system, I assumed the same thing as with passing an exam in a subject that will not benefit you [in the future]. You hang it [a certificate] on the wall and nothing follows from that, except for the fact that you have some extra work to do from there onwards. And so it turned out; we all have a bit more work to do now, after the certification.*

Successfully dealing with an audit situation is considered an impressive success - this is a result of the fact that the goal of passing each relevant audit is achieved without making unwanted

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<sup>6</sup> Chief Technical Officer

<sup>7</sup> In Bulgaria, exam results are usually in September.

compromises with the actual organizational practices. The fewer nonconformities raised by the auditor, the greater the relief for managers and other decision makers who are aware of the fact that the organization is not complying with the standard's formal requirements. As the CEO of a micro agriculture firm explained:

*I clearly remember worrying over each of the (re)certification audits – pondering over whether we would pass it was overwhelming. Some of the most notable moments included the surprise that we haven't had any major nonconformities within the standard's requirements, as well as the argument about whether our software product needed to be calibrated, which was rather frantic, in my opinion. The external auditor said it needed to be calibrated, while the consultant said it needed not to... I was puzzled. In the end, the auditor included it [the software calibration] in the report as a minor recommendation.*

#### **4.2. Formal Fabrication of Documents and Records**

A common aspect that has been witnessed in all covered business units was the presence of a specific set of informal management practices, characterized by purposefulness and routine. For instance, documentarily (i.e. at a formal level), while a full compliance with the requirements of the ISO 9001 standard is observed, the regulations are transformed or circumvented in practice, so that a real transformation in the day-to-day organizational practices does not really occur. Given that the ISO 9001 standard requires business planning and setting management goals for a period of one year in the future, our research found that these goals are written in order to pass the relevant audits with no actual intention of being completed. As the Managing Partner of a small real estate firm explained:

*The goals we usually include are merely written for the audit simply because the standard requires it. In reality, we have other [different] goals, and we are unlikely to follow those needed for passing the [relevant] audits.*

According to the ISO 9001 standard, Maintaining a QMS involves the creation, maintenance and storage of written evidence of all management processes. Given this rhetoric, my study found that in most of the cases such records were not maintained regularly; instead, shortly before each relevant audit, they had been formally created (opportunistically) as a part of the ceremonial preparation. A common field for a concrete example on such activities is the standard's requirement for the existence of written criteria for initial selection and ongoing evaluation of all key suppliers and subcontractors. This aspect clearly illustrates some of the informal management practices that take place within organizations - no real assessment is actually being made. The following example from the managing partner of a medium-sized construction firm is emblematic for this claim:

*We have a registry of all our suppliers - the important information is inside it. I personally have not read it, and to be honest with you, I am not really interested in the registry itself. We have a consultant to take care of this. The suppliers that we are working with have been with us for many-many years and there is no way we are going to start evaluating or changing them now.*

There is no significant change in the operational course of the studied firms' internal processes after the implementation of ISO 9001. Moreover, the findings shed light on a substantial increase in the newly created fictitious evidence in the section "Management of documents and records", where a significant number of fictitious documents are generated in order to achieve (re)certification. In other words, an informal resistance begins to appear whenever a need for increased paperwork and bureaucracy comes.

The following example from the CEO of a micro IT firm is representative for all of the cases studied:

*The week before the certification audit we filled the registers with what the consultant told us. It seemed to be about the laws and regulations and the documents we have in the company. I still didn't understand why we had to do this.*

The third management area in which our study found a ceremonial documentary preparation for passing the relevant audits is in the field of human resources management (HRM). The standard's formal policies require planning, conducting and documenting staff training. In twelve of interviews, however, our informants testified that in their companies there were conducted no such practices. Instead, documents and records regarding staff training are formally prepared, shortly before the relevant audits get to be presented to the auditor. In reality, however, the documented events have not taken place. As the Production Manager of a small construction firm explained:

*Certain documents and procedures were initiated thanks to the consultant we had hired. During the audit, we presented all kinds of documents that were requested and that was it. I cannot really say that we strictly follow the standard's rules and regulations. There is so much paperwork imposed by the standard that if we have to do it all, we will lose precious time and effort. When the next audit comes, we will prepare something...at least formally.*

Another respondent – Owner of micro IT firm continues:

*The ISO adoption led to the inclusion of many new entries, registries, and other documents. The paperwork increased a lot. Most of my colleagues were not really happy about this, but we all knew that we had to do it...at least on the formal side of the whole thing.*

## 5. FINDINGS

The results show specific management patterns of behavior – i.e. informal management practices - through which certification according to ISO 9001 is achieved. Given that the certification and recertification audits cause "tension", decision makers implicitly seek to alleviate it, until the company successfully receives certification. Put in other words, my results confirm that among the surveyed companies in Bulgaria, the implementation and certification of QMS according to ISO 9001 occurs through a purposeful transformation of formal rules and requirements into various informal practices, mainly circumvent and partially modifying these rules from their original design and goals. In the studied cases, managerial behavior towards QMS according to ISO 9001 is based on ambivalence in relation to formal rules. It is expressed through the purposeful circumvention and non-compliance with the standards' rules and procedures, which are formally adopted within the organization and are certified as meeting the standard. Based on the above I have formulated the following definition: **domestication is a purposeful informal management practice aimed at circumventing and modifying the standardized regulations of ISO 9001, so that the organization maintains a certified status without changing its day to day business practices.** In my analysis, the term "domestication" in its form is closer to the meaning implied by the American anthropologist Gerald Creed in his book "Domesticating revolution: from socialist reform to ambivalent transition in a Bulgarian village" (Creed, 2010). In the it Creed illustrates how Bulgarians domesticate socialism<sup>8</sup>, hence transforming it into an environment that allows them to maximize their personal benefits at the expense of public resources. Creed's analysis traces how this domestication became possible, bringing to the fore the culturally justified ambivalence of the Bulgarian peasants towards "mine" - "foreign" and "own" - "public"; against the background of the expanding informal sector, caused by scarce resources in all socio-economic spheres, this transforms socialism into

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<sup>8</sup> Between 1944 and 1989 Bulgaria was a socialist state.

a "purely Bulgarian, local product". In present times Bulgarian socio-economic culture seemed to be diffuse, "feminine", emotional, particularistic and controversially communitarian (Chavdarova, 2004, pp. 56; Trompenaars and Hampden-Turner, 2011). My assumption is that a diffusive and particularistic socio-economic culture may explain why managers and employees would be reserved and may informally resist the adoption of ISO 9001 requirements, seeking to partake in informal practices in order to reach their goal - achieving certification. In this case, we are not talking about a predominantly purposeful and explicit solution for domestication, but about an implicit cultural model of behavior. In this brief analysis I shed light on specific informal management practices through which organizations are able to continuously bridge the gap between the standard's requirements and organizations' actual practices; ergo, maintaining the standard while they engage in technical business as usual. I define the term domestication as the ongoing intentional act of overcoming the internally inherited contradictions between international standards' universal requirements and internal operational efficiencies. In doing so, I provide a new lens through which one could look at the decoupling process and the underlying informal management practices that seek to harmonize/overcome the internal constraints and resistance produced by industry standards such as the ISO 9001. Undoubtedly, the adequacy and validity of the process I have named domestication should be further verified by thorough empirical research.

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# THE ROLE OF ENERGY AND RAILWAY TRAFFIC CORRIDORS IN CHANGING THE GEOPOLITICAL POSITION OF CROATIA: A REVIEW OF DEVELOPMENTS AND PERSPECTIVES

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## ABSTRACT

*Traffic corridors can be and usually are a prime factor of fulfilling certain geopolitical goals, whether they are used to expand presence, inhabit certain territories, increase goods exchange or are used as military transport corridors, or all of the above at the same time. Geopolitical position is a complex category and represents a set of geopolitical features of a certain political-territorial unit, in most cases the state. The geopolitical position is not permanent and unchanging, but is a changing category that changes with respect to changes in the state and its environment that affect the geopolitical position of the state. By studying the role of the traffic corridors passing through Croatia and the territories of the neighbouring countries, we have tried to explore the perspectives of improving Croatia's geopolitical position as a country that is located at the fringes of three large European regions – Central Europe, Southern Europe and South-eastern Europe. The role of European traffic corridors and the further development of infrastructure on these corridors could determine the future importance not only of these corridors but a geopolitical and geo-economic position of Croatia in the future decades.*

**Keywords:** *geopolitical position, traffic corridors, Croatia, Western Balkans, infrastructure*

## 1. INTRODUCTION

Geopolitical position is one of the geopolitical contents of national security. Geopolitical contents include all territorial-political and military-geographical or geostrategic components of historically changing significance, which affect the stability of the state in regional, superregional and global geopolitical relations. At the state level, geopolitical contents of national security are: geopolitical position, geostrategic position, geo-traffic position, border and territorial disputes, size of territory, shape of territory, position of the core region and capital, other aspects (Klemenčić, 2007: 263-267). Located between the Pannonian Plain and the Adriatic Sea, although territorially small, but with a complex elongated shape, Croatia is a Central European, Mediterranean and Danube country. Territorially extending to significant European natural-geographical units / regions, it is located at the crossroads between the Baltic and the Adriatic and the Atlantic and the Black Sea, i.e. the Middle East (Lozančić et al., 2020: 14). If we put geopolitical position in its temporal context i.e. study its changes through time, we can state that from the first early medieval Croatia until today, the geopolitical position of Croatian territories, as well as its borders, has changed greatly. Precisely because of the frequent changes of its borders, the geopolitical position of Croatia was often unfavourable. Furthermore, the evolution of Croatia's geopolitical position from 1991 until the present time when Croatia became a member state of the EU will be clarified.

## 2. HISTORICAL OVERVIEW

With the realization of its independence in 1991, Croatia became an independent and sovereign European state. It thus acquired the conditions that its geopolitical position could begin to be viewed in a new way, almost independently of the other territorial-political units with which it was in a state union (more in: Kurečić and Padjen, 2013: 503). After the year 2000, significant changes took place in Croatia and Southeast Europe. In Croatia, there has been a change of government, but also a change of regime. The regime, undoubtedly and rightfully most credited for the defence of Croatia in the Homeland War, after the conclusion of the War, was unable to change, too dependent on the state's first President Tudjman and the ruling party. After the years of economic stagnation, it was replaced by a more democratic rule. An indicator of this regime change is the fact that Croatia was internationally isolated until the regime change. The first sign of the beginning of the exit from international isolation was the entry of the NATO's Partnership for Peace Program in May 2000. Nevertheless, although the part that was set, politically, at the beginning of the 2000ies to join NATO and later the EU, Croatia still, even before the end of the first decade of the 21st century, was suffering the consequences of geopolitical rivalries, the main feature of which was the rivalry for control of territory. Border disputes and problems that Croatia has with neighbouring countries with which it was in a common former state (Serbia, Bosnia and Herzegovina, Montenegro, Slovenia) burdened, to a greater or lesser extent, relations between Croatia and these countries, relations in the region and threatened European Croatia's perspective, i.e. its future accession to the EU. By jeopardizing Croatia's accession to the EU, Croatia's further, much-needed Europeanisation was also threatened, but a very bad message was sent to the "Western Balkans" that their future accession to the EU may not depend on themselves but on their neighbours, which become members states of the Union before them and want to fulfil their interests at the expense of their neighbouring EU-aspiring states (more in Kurečić and Crljenko, 2013: 550). Croatia's path to the EU was also heavily burdened by the requests of the Hague Tribunal, through which some of Croatia's most important war commanders, by most of the Croatian population, considered as heroes, who participated in the liberation of the occupied territories, were indicted by the Tribunal, and Croatia was compelled to extradite them. Internally, weak ability of Croatian institutions to implement structural reforms to the required extent and within the set deadlines was also one of the internal factors that slowed down Croatia's path towards European integration. Croatia's internal weaknesses in Europeanisation were reflected in Croatia's weaker position in the already most demanding and comprehensive negotiation process, with benchmarks for every chapter, that was set as a model for every future negotiation on the accession to the EU. These objective difficulties made Croatia's accession to the Union even more difficult, regardless of external factors that could have blocked negotiations or entry into the Union after the negotiations. By joining the EU, the Croatia joined the society of developed European countries. Croatia has a lot to offer the EU, but it also needs to protect its interests so that it does not become a country where most natural resources are held by foreign companies and individuals. Insufficient development of the Croatian market and uncompetitive production can be a big problem for Croatia after joining the EU, because it is becoming an integral part of the billion-dollar market. When Croatia is viewed from a geopolitical point of view, i.e. from the context of its shape of borders and territories, it is evident that Croatia is at the crossroads between Western and Central Europe and Eastern and South-eastern Europe. Its position itself provides great opportunities for defining new trade flows between these countries with the countries of Eastern and South-eastern Europe. In the end, one can only conclude that Croatia has a very favourable position in Europe, where it has the potential for a very successful economy and to be a prosperous country, which is currently not the case in most respects. The problem is mainly related to the previously mentioned structural problems of the Croatian economy, which no government has been able to solve so far.

Croatia is a country that in the past two decades has not been able to adequately use its favourable geographical and geopolitical position to achieve significant economic growth and development. After considering the features of the geopolitical position of Croatia, we try to prove this thesis by pointing out contemporary problems in the Croatian economy. The transition to a capitalist system of social organization, mostly accompanied by rather bad experiences of transformation and privatization, had significant consequences marked by a negative sign (Jurčić, 2010, 852-880)<sup>1</sup>. Therefore, Croatia's economic results, contrary to the results with regards to political stability, should not be copied as an example of success for the Western Balkans states. Croatia's attitude, as a member of the EU and NATO, towards the two countries of the "Western Balkans" region, Bosnia and Herzegovina and Serbia, can be assessed as critical for stability on Croatia's eastern and south-eastern borders, but also for stability in the region closest to Croatia. Croatia is the only member state of the Union and NATO with which Bosnia and Herzegovina shares the longest border (932 kilometres), and due to the status of the Croatian people as a constitutive nation in Bosnia-Herzegovina as well as Croatia's constitutional obligations to take care of all its citizens, in Croatia and in other countries, Croatia and Bosnia and Herzegovina are inseparable. Bosnia and Herzegovina and Serbia are among the very few countries with which Croatia has a trade surplus, so economic ties are also a factor that will affect the connection between the three countries and the future. The geopolitical position of Croatia, no matter how long it has been a member of the Union, and at the same time the states on its borders were outside the Union and part of the "Western Balkans", remains fundamentally connected and "leaning" on the states on Croatia's eastern and south-eastern borders. Since further enlargement of the EU on Serbia and especially on Bosnia and Herzegovina even in 2021, eight years after Croatia has accessed the EU, does not seem like a realistic possibility in the near future, Croatia might spend a decade and a half or more "playing the role" of a state at the EU's external borders and a key link between the EU and the Western Balkans. It is not disputed that the political elites of all countries in the "Western Balkans" region at least declaratively want their countries to join the EU, and in all countries except Serbia, there is a desire of political elites to join NATO, which was already achieved by Albania (2009), Montenegro (2017) and more recently by North Macedonia (2020). The accession of the Western Balkan countries to the EU will largely depend on the ability of elites to act on the institutions and societies in their countries, to accept European standards and norms and to begin the process of accelerated Europeanization of the Western Balkan countries. But at the same time, the accession of the countries of the "Western Balkans" to the EU will also depend on factors operating outside the region, within the EU itself. The speed of overcoming the economic crisis, the level of economic disparities between the European North and South countries, the ability to articulate common interests and decision-making in a Union of almost 30 members will be the main factors determining the speed of accession of the Western Balkans. Theoretically, a situation is possible in which the countries of the region will meet all the necessary criteria, but the Union will not be ready to accept them.

### 3. OVERVIEW OF THE RELEVANT TRAFFIC CORRIDORS

Discussing the geographical position of Croatia with regards to the traffic corridors of the EU, we tend to perceive Croatia's position after its independence as somewhere in the middle –

<sup>1</sup> Differences in the social and economic development of individual parts of the country have deepened. The depopulation of certain areas was significantly expressed, as shown by the results of the 2001 and 2011 Censuses. It is beyond any doubt that the 2021 census (delayed from April until September and October 2021 due to the pandemic) has shown an increasingly negative demographic trends, mainly due to outmigration since 2013, and Croatia's accession to the EU, and particularly since 2015 and the abolishment of restrictions at the German labour market for Croatian citizens). About a quarter of Croatia's population is concentrated in the capital, Zagreb and its surrounding region. Negative economic indicators are visible from a number of indicators on wages and labour costs, unemployment and employment, prices, personal consumption, GDP and investment.

between marginalization and integration. As noted by Topalović and Krleža (1996), the geopolitical outlook of Croatia is complicated by historical ties as well as the many international actors who have tried to assert control over the Western Balkans. The valorisation of Croatia's geographical location in the function of strengthening its geographical position also strengthens its geopolitical influence in the region, and thus the geopolitical influence of its allies, i.e. the main Euro-Atlantic power – the USA. Thus, the area of Croatia is taking on an increasingly important, not only transport and energy, but also security and geopolitical regional role. However, in the context of the geopolitical position of the expansion of the Russian-Turkish interest geopolitical circle and neighbouring countries in the Adriatic-Black Sea isthmus, an attempt to further marginalize the Croatian geo-traffic position is to be expected. Within the broader regional / global geostrategic dynamics, especially in the northern and southern sectors of the Danube-Adriatic corridors, the interests of the neighbouring countries of Italy, Hungary, Slovenia, Serbia and Montenegro are increasingly expressed (Lozančić et al., 2020: 21). Due to the processes and events that have happened in the last three decades, primarily the war between Croatia and (then) Serbia-Montenegro, traditional European transit corridors, that had a paramount importance for the former joint state and consequently for Croatia, have lost the value that they had for most of the second half of the 20<sup>th</sup> century. European corridor X, that can be described as the one mainly following the river valleys of Sava, Morava and Vardar (local name: Savsko-moravsko-varđarski koridor) was the primary transit corridor of the both former Yugoslav states. It was favoured out of objective reasons (due to convenient topography of river valleys and low-lying plains, very low investments were needed to build and maintain this corridor, first as a railway and then also as a highway corridor). It was also favoured for political reasons, hence it enabled the possibility of connecting the capital city of the largest and then most powerful unit, Serbia, and the whole both Yugoslav states with other large cities (in Serbia: Niš, where an important branch connects this corridor with Bulgaria and Turkey) and capital cities (Ljubljana, Zagreb, Skopje) of three out of five (other than Serbia) republics in the second Yugoslav state. The importance of this corridor for political reasons of keeping a multinational, multiconfessional, however non-willingly established and non-democratic federation more cohesive and maintaining political and factual control was visible in the name of highway that was built and named for the official slogan of the “Yugoslavian unity”: *The Highway of Fraternity and Unity (Autoput bratstva i jedinstva)*. During the both Yugoslav states, the contemporary European corridor X was therefore used as a political tool of making the central government stronger in relation with federal units, especially Slovenia and Croatia, which were significantly more economically developed than the rest of the country and were streaming more towards the West. After the political crackdown that was imposed on Croatian political reform forces in the late 1971 and early 1972 as described in Šušak (2008), the construction of a modern transit corridor (contemporary European Vb corridor) was put on a halt. Even today, due to political reasons until 1991, and then the war and its aftermath, and later, the strategic decision of the state (late 1990ies, reaffirmed and accelerated at the beginning of 2000ies) to build modern highways instead of railways, in order to provide infrastructure to develop tourism further (Croatian Adriatic coast is a destination reached primarily by individual means of travel i.e. cars, and was even more so about 20 years ago when this decision was made) Croatia does not have a modern rail connection between its Pannonian (and its core region, situated in Zagreb and its surroundings) and its Adriatic region, through the Dinaric mountains. Railway connection between Zagreb and Rijeka, especially between Ogulin and Rijeka is outdated, and although it is electrified, it was built through a difficult mountainous terrain, has low operating speeds, very steep ascents and thus low transit capacity and high operating costs. The second railway branch of the Vb corridor, from Oštarije and Ogulin to Split (with further branches to Zadar and Šibenik, respectively) also represent outdated, non-electrified railway lines.

This lagging behind of Croatian railway lines on the Vb corridor did not start recently, it has been going on since the Homeland War and even before, hence Croatia was not permitted to build a modern railway line between its main port of Rijeka and its core region situated at the southwestern fringe of the Pannonian plain, with further lines connecting it to Central Europe. The main port of Slovenia, Koper, by the simple “nature of things” was given an opportunity and quickly surpassed Rijeka in the volume of container and other higher value traffic (Trupac et al., 2002). Koper has a more modern railway line, although this line also has its limitations due to unfavourable relief, the second and compared to older, a more modern track is currently being built. Additionally, a position of Trieste should not be omitted hence it is also very favourably located and conveniently connected with Slovenian railway network. It also has to be noted that Slovenia has built a modern railway connection with Hungary, and therefore Slovenian railway network now connects Austria and Hungary with Koper and Trieste. Several authors have also pointed to Hungary’s interests in the further development of corridors in the wider region including Balogh (2017). It is necessary to construct a modern railway line between the cities of Ogulin and Rijeka, if the European traffic corridor Vb wants to be maintained competitive at all in the future outlook of railway corridors traversing Croatia and connecting Pannonian plain with the Adriatic Sea region. In the first half of the 1990ies due to the Croatian Homeland War, corridor X was closed. Even the railway infrastructure was significantly destroyed in the occupied part of Croatia (between the border with Serbia and almost up to the city of Vinkovci), so it had to be reconstructed. The corridor was re-opened after the normalization of relations between Croatia and Serbia, and some of its parts were improved, however it never retained its pre-war importance. Even today, the volume of traffic on this corridor has not surpassed its pre-1991 values. The consequence of the events in the 1990ies was gradual divergence of traffic to other, alternative corridors, which has, in the meantime became not just an economical and pragmatic, but also a geopolitical issue. Due to the geopolitical interests of Serbia, as an actor with the most favourable geographical position in the Western Balkans region as well as China, as a great power interested for building its influence and presence through the development of infrastructure, thereby developing its One Belt, One Road Initiative related infrastructure, the transit corridor between Belgrade and Budapest is being renovated and modernized, effectively making the connection between Piraeus/Athens (the harbour has been bought by China) via Skopje and Belgrade and Budapest, with further connections to Central Europe, an actual and relevant geopolitical interest of both Serbia and China, with Greece and North Macedonia as transit countries, possibly profiting (up to a certain point) from a planned future higher level of goods traffic on this, now Danube (actually Tisa-Danube)-Morava-Vardar transit corridor. A further modernisation and therefore development of these two transit corridors (Athens-Budapest; Koper, as well as Trieste) opens two real threat for Croatian segments of the X and Vb and corridors, respectively, to be “left in between” and with a decreasing volume of traffic, hence more convenient opportunities will continue to grow.

#### **4. APPROACHES IN THE EXISTING LITERATURE**

The studying of the relevance of Croatia from a geopolitical viewpoint, especially from the viewpoint of traffic corridors, has been done from multiple perspectives and has considered numerous policy recommendations. We provide a brief literature review to illustrate points of contention in the existing literature and to examine the different research approaches undertaken to examine this complex issue. Magaš (1997) conducted an expansive historical analysis of the geopolitical difficulties in the region surrounding Croatia. The author emphasizes that one of the factors that could be detrimental to development of the region include ethnic tensions in Albania and other surrounding countries and that these factors may be detrimental to the development of the region (Magaš, 1997: 30).

While this article was written some time ago, the underlying tensions within the region have not fully dissipated. Kulović (2016) indicates that the geopolitical identity of Croatia mirrors that of the EU and that the example of the LNG terminal indicates that Croatia conforms to the geopolitical priorities expressed by the EU. Furthermore, Kulović (2017: 29-30) indicates that Croatia has engaged in relevant efforts to ensure that its interests in the Adriatic are protected, but that it has not managed to fully ensure that the EU prioritizes Croatian interests there. Poletan Jugović (2008) examined the importance of the Pan-European Corridor Vc and concludes that it has a prominent role in defining the future geopolitical considerations for Croatia. The author believes that the port of Ploče will especially have a significant position as there is potential for it in both the route Split – Ploče as well as Budapest – Osijek – Sarajevo – Ploče (Poletan Jugović, 2008: 206). Poletan Jugović (2008) further emphasizes the need for cooperation among all of the relevant stakeholders to ensure that Croatia has a prominent role in the European supply chain. Slukan Altić (2011) examines the very identity of Croatia as part of the Western Balkans, questioning whether this is something that is ingrained in the culture of Croatia or that has been influenced by foreign political interests. The author concludes that there is no geographical basis to consider Croatia as a part of the Balkans after an in-depth examination of how the very term of the Balkan peninsula evolved, but that there have been other instances throughout history where countries have been associated with neighbouring regions due to interests of other international actors (Slukan Altić, 2011: 409-410). Altaras Penda (2018) examines the decision to pursue the Three Seas initiative and the economic and geopolitical implications of this decision. The author believes that the decision to pursue such a political approach shows maturity from the decision-makers in Croatian politics and that this reflects on the increasing capacity of Croatia to influence international events (Altaras Penda, 2018). Šarić (2018) reemphasizes the importance of the geostrategic location of Croatia and emphasizes that this is an underutilized asset that could lead Croatia to have a more prominent role in the region. The author further believes that the best way for Croatia to maximize its geopolitical and economical reach in the region would be through supporting state companies of strategic significance (Šarić, 2018: 1478). Lozančić et al. (2020) place emphasis on the importance of sea transport and that Croatia and Bosnia and Herzegovina are at risk of being marginalized in key trade corridors as Serbia takes steps to take control over key aspects of the Southern Adriatic Corridor towards the Montenegrin coast. The authors also emphasize the importance of trade corridors to the security and geopolitical interests of modern states and that Croatia has significantly benefited from accession to the EU and NATO membership (Lozančić et al., 2020: 146). There are also some authors who approach the issues of traffic corridors as a necessary avenue for the development of Croatia. Sić (2012) displays such a slightly different perspective by emphasizing the importance of the development of the Pan-European corridors for the development of the region around Osijek. As indicated by Sić (2012: 63-64), the development of the region around Osijek is slightly inhibited due to the slow construction of new railway lines, but the development of infrastructure could contribute to fuelling long-term growth. Lalić (2003) believes that transit corridor X is central to the future development of Croatia and that it represents a key corridor connecting central and south eastern Europe. The author believes that further investment into developing this infrastructure at a more rapid pace is essential and that the importance of this project needs to be made clear to private investors (Lalić, 2003). Bendeković et al. (2014) highlight another potential policy solution by proposing that Croatia should engage in further development of intermodal transport. The authors believe that it has a comparative advantage compared to some of the other countries within the region due to the potential of the Sava – Danube waterway (Bendeković et al., 2014: 267). Ilić and Orešić (2004) have stressed the unequal development of the transportation network in Croatia and highlighted that the Croatian road infrastructure is far superior to other forms of transportation.



The authors highlight that such an approach does not conform to the Pan-European concept of development and that significant investments are required, especially into railway infrastructure (Ilić and Orešić, 2004: 19). The key aspects of the literature review are briefly summarized in Table 1.

Paper	Methodology	Focus of paper
Magaš (1997)	Literature review and qualitative analysis	Historical examining of geopolitics in the wider West Balkan region
Lalić (2003)	Analysis of potential to construct the railway	Review of the importance of constructing corridor X
Poletan Jugović (2008)	Qualitative analysis	Analysis of the relevance of the Pan-European Corridor V for Croatia
Slukan Altić (2011)	Qualitative analysis	Questioning whether Croatia belongs to the Western Balkans
Sić (2012)	Review of importance of infrastructure construction importance	Questioning how infrastructure development and integration within the Pan-European corridor can help fuel development of the region around Osijek
Bendeković et al. (2014)	Qualitative analysis	Analysing the potential for further development of intermodal transport in Croatia
Kulović (2016)	Literature review, three-fold typology of geopolitical reasoning	Potential of Croatia to protect national interests in the Adriatic
Altaras Penda (2018)	Qualitative review of policy	Decision by Croatia to pursue the Three Seas initiative
Šarić (2019)	Literature review and qualitative analysis	Geopolitical position of Croatia and Hungary
Lozančić et al. (2020)	Interdisciplinary qualitative analysis	Geopolitical importance of key corridors for Croatia

*Table 1: Overview of key aspects of the examined papers  
Source: Analysis and summary conducted by the authors'*

As can be seen from the examination of the literature, the scope of the topics covered is highly broad. In terms of methodological approaches, nearly all of the examined papers are dependent on qualitative methods of analysis that do not provide significant input beyond the views of the authors themselves and the application of theoretical frameworks. The utilization of alternative methodological approaches that includes components such as in-depth surveys or the Delphi method would allow for an approach that considers more viewpoints and provides new scientific contributions to the field. In terms of the fragmentation of the many topics considered, some topics such as the Three Seas Initiatives have received some coverage in some of the observed papers (Lozančić et al; 2021; Altaras Penda, 2018). The problem of a lacking focus by parts of the field could be resolved by the key publications in the field calling for special focus that would narrow interest on some of the underrepresented aspects. It should also be noted that the previously proposed solution would place emphasis on the significantly different policy solutions proposed by the authors.

## 5. CONCLUSION

Croatia's position both politically and in terms of its geographic orientation leaves it on the margins of different political environments. Croatia has opted for membership in the EU and NATO and has attempted to maximize gains from participating in these organizations, but many

of the preconditions necessary for the long-term economic growth of Croatia have not yet been accomplished. Despite the favourable geopolitical location of Croatia, parts of the transport infrastructure are dated and require significant investments. Such an approach endangers the position of Croatia particularly given the emphasis on intermodal transport in Europe. Numerous governments have failed to implement the needed structural reforms to minimize the administrative burden and ensure the smart and sustainable growth of Croatia. The literature examining key geopolitical aspects of Croatia in many ways mirror the shifting political approaches implemented in Croatia. There are many different topics and scopes of study within the examined papers and yet the methodological approaches are widely similar and require more emphasis on empirical contributions. This should be encouraged as it could help Croatian policy-makers when devising strategic decisions and in navigating the overall complex geopolitical outlook of Croatia.

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## APPLICATION OF STRATEGIC MANAGEMENT ACCOUNTING TECHNIQUES IN DECISION MAKING – THE CASE OF CROATIAN COMPANIES

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### ABSTRACT

*Modern business environment requires new concept of business that is based on the strategic deliberation and it consists of cointegration of qualitative and quantitative values. In those circumstances, the information needs and interests of different users are becoming more demanding. Strategic management accounting has a significant role in decision making through the preparation of information that is going to be a starting point for defining a long-term goals and control of its achievement as well as for defining the companies' strategy. Accordingly, information of strategic management accounting is complementing the information of traditional management accounting. In order to be utilized efficiently in decision making processes, strategic management accounting information should be proper the business context and it should reflect the roles, responsibilities and values of the actors that participate in decision making. The quality of strategic management accounting information depends on the applied techniques of strategic management accounting. So, the goal of this paper is to investigate which techniques of strategic management accounting are applied in Croatian companies and which are the most important sources of information for making the strategic business decisions. The research was conducted by using a web survey on the sample of 1100 Croatian companies. The research results showed that techniques of strategic management accounting are insufficiently used in Croatian companies, although those companies that are using the techniques and information of strategic management accounting highlighted the better quality of decision making processes and better cooperation between management accountants and companies' management. Also, the research results showed that the information from financial statements is the most important for making the strategic business decisions.*

**Keywords:** *Decision making, Management, Sources of information, Strategic decisions, Strategic management accounting, Techniques of strategic management accounting*

### 1. INTRODUCTION

Challenges in modern business environment and strong global competition require from companies to define strategic purpose and its strategy. Many authors pointed out that traditional management accounting does not fulfil these requirements and does not provide enough information to support strategic decisions (Lord, 2007). Strategic management accounting prepares the information needed by management to make strategic business decisions, set long-term goals and formulate a strategy to achieve them, thus enabling long-term sustainability of the company. Emphasis is placed on information related to external factors, as well as non-financial information and internally generated information. Strategic management accounting techniques are used in the selection, implementation, development and evaluation of competitive strategy. Palmer (1992) and Roslender (1995) highlighted that in competitive business environment the role of strategic management accounting is to support the

formulation, implementation and realization of company's strategy in order to achieve the competitive advantage. The choice of techniques of strategic management accounting depends on the specifics arising from the nature of the activity, the capabilities of the accounting information system and the ability of management to use strategic management accounting information. Accordingly, the goal of this paper is to investigate which techniques of strategic management accounting are applied in Croatian companies and which are the most important sources of information for making the strategic business decisions. In terms of structure, the paper starts with a brief introduction, followed by a theoretical framework and literature overview. The third section covers research methodology, whilst research results and discussion are laid down in the fourth section. The paper ends with concluding remarks, limitations of the study, and the possible direction of future research.

## **2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

### **2.1. Strategic management accounting and techniques of strategic management accounting**

The implementation of strategic management accounting techniques is very important for company's success in the contemporary, highly-competitive business environment. The lifetime of products and services is getting shorter and companies need to shorten the time it takes to introduce new products and services to market. Emphasis is placed on innovations and rapid adaptation to market demands, while companies want to maintain or increase their profitability and offer products and services of appropriate quality on the market to ensure customer satisfaction. In these circumstances, managing companies only on the base of financial measures is not promising and sustainable. Modern business environment requires the implementation of strategic management accounting techniques as strategically oriented tools which provide non-financial measures, and advanced management accounting system which support the implementation of company's strategy. Simmonds (1981: 26), who is considered to be the founder of the strategic management accounting concept, defined the strategic management accounting as "the provision and analysis of management accounting data about a business and its competitors for use in developing and monitoring the business strategy". Bromwich (1988: 27) define the strategic management accounting as "the evaluation of the enterprise's comparative advantages or value added relative to its competitors and to evaluate the benefits the enterprise's products yield over their lifetime to customers and the benefits which these sales yield to the firm over a long decision horizon". Many other authors (e.g. Roslender, 1995; Dixon, 1998) also defined the strategic management accounting. All definitions have the following features in common – focus on the provision of financial and non-financial information for making business decision, focus on the long-term forward-looking orientation and focus on the future and sustainability. The most important issue regarding the application of strategic management accounting techniques arises from the absence of the widely accepted definition of the strategic management accounting (Dmitrović-Šaponja and Suljović, 2017) and the absence of setting lists of techniques that strategic management accounting should include (Langfield-Smith, 2008). There are different techniques of strategic management accounting that are identified, but Cravens and Guilding (2001) are the authors of the most widely used classification of strategic management accounting techniques. They identified 14 techniques of strategic management accounting, and those are: activity-based costing/activity-based management, attribute costing, benchmarking, competitive position monitoring, competitor cost assessment, competitor performance appraisal based on public financial statements, customer accounting, integrated performance measurement, life cycle costing, quality costing, strategic costing, strategic pricing, target costing and value chain costing.

Guilding, Cravens and Tayles (2000) identified two other strategic management accounting techniques, and those are brand value budgeting and brand value monitoring. Jasch (2003) identified environmental management accounting as a technique of strategic management accounting.

## **2.2. Review of previous researches about the application of strategic management accounting techniques**

Čadež (2006) investigated the use of strategic management accounting techniques on a sample of 206 manufacturing companies in Slovenia. The most widely used strategic management accounting techniques are capital budgeting, quality costing, competitor performance appraisal, benchmarking and strategic pricing. At least used are valuation customers as assets, lifetime customer profitability analysis and life cycle costing. Ramljak and Rogošić (2012) provided an insight into strategic management accounting practices in large Croatian companies. The questionnaire was sent to the 400 largest companies, and a final usable sample consisted of 65 fully completed questionnaires. The most used strategic management accounting technique is activity-based costing followed by quality costing and target costing. The least used strategic management accounting techniques are life cycle costing and environmental costing. They concluded that the use of strategic management accounting techniques has a positive impact on the cost control and reduction. Dmitrović-Šaponja and Suljović (2017) examined the application of strategic management accounting techniques on a sample of 80 large Serbian companies (59 manufacturers and 21 trading companies). Findings of their research showed that 73.75 percent of surveyed companies apply at least one strategic management accounting technique. The most often used technique of strategic management accounting is activity-based costing followed by quality costing, value chain costing, attribute costing and benchmarking. The least used techniques of strategic management accounting are target costing, competitor performance appraisal based on public financial statements and environmental management accounting. Petera and Šoljaková (2020) investigated the degree of use of strategic management accounting techniques on a sample of Czech medium and large companies. The sample consisted of 1000 companies, but in total 90 complete and usable questionnaires was collected. The majority of respondents were companies from manufacturing industry followed by wholesale and retail trade industry and construction industry. The most often used technique of strategic management accounting is strategic planning and budgeting followed by customer accounting and target costing. The least used techniques of strategic management accounting are integrated performance measurement systems, strategic pricing, activity-based costing and benchmarking. There are many other studies that investigated the use of strategic management accounting techniques (e.g. Čadež and Guilding, 2007; Cinquini and Tenucci, 2010; Cescon, Constantini and Grassetti, 2019).

## **3. RESEARCH METHODOLOGY**

In order to examine which techniques of strategic management accounting are applied in Croatian companies, and to explore the main sources of information for making a strategic business decisions, we have conducted a primary research in a form of a web survey. Use of survey as a research method is very often in strategic management accounting (e.g. Čadež, 2006; Dmitrović-Šaponja and Suljović, 2017; Lääts and Haldma, 2012; Petera and Šoljaková, 2020). Based on the research goals, in this paper are addressed the following research questions:

- *RQ1: Which techniques of strategic management accounting are mostly applied in Croatian companies?*
- *RQ2: Which are the most important sources of information for making strategic business decisions?*

In order to achieve the goals of this paper and to answer on the research questions, the primary research was conducted by using a web survey on the sample of 1 100 Croatian companies. The selection of companies was conducted by using simple random sampling procedure. Ultimately, 113 companies participated in the survey. Consequently, the response rate of 10.27 percent was achieved. The sample structure according to the National classification of activities (Official Gazette, 2007) is presented in Table 1. The research was conducted from July to August 2021. Collected data are processed and analysed by using a methods of descriptive statistics.

<b>Economic activity</b>	<b>Number of companies</b>
Wholesale and retail trade, repair of motor vehicles and motorcycles	18
Manufacturing	17
Construction	15
Other service activities	13
Professional, scientific and technical activities	9
Information and communication	7
Financial and insurance activities	6
Agriculture, forestry and fishing	5
Transportation and storage	4
Human health and social work activities	4
Mining and quarrying	3
Accommodation and food service activities	3
Real estate activities	3
Administrative and support service activities	3
Electricity, gas, steam and air conditioning supply	1
Water supply, sewerage, waste management and remediation activities	1
Education	1

*Table 1: Sample structure according to the National classification of activities  
(Source: Authors)*

In the survey the most have participated companies engaged in wholesale and retail trade, repair motor vehicles and motorcycles (18 of them or 15.93 percent), then companies engaged in manufacturing (17 of them or 15.04 percent), companies engaged in construction (15 of them or 13.27 percent), and companies engaged in other service activities (13 of them or 11.50 percent). On the other hand, the smallest number of companies that have participated in the survey are engaged in electricity, gas steam and air conditioning supply; water supply, sewerage, waste management and remediation activities; and education (only 1 company from each economic activity). The structure of respondents in our research is in line with the structure of respondents in the study conducted by Petera and Šoljakova (2020). As we mentioned previously, in the survey have participated 113 companies, but only 28 of them or 24.78 percent use some of techniques of strategic management accounting. Further analysis and discussion is based on their answers.

#### **4. RESEARCH RESULTS AND DISCUSSION**

Companies that apply some of techniques of strategic management accounting pointed out that the strategic management accounting and information that are produced by using a strategic management accounting techniques is extremely important or very important for 25 of them (or 89.29 percent). The connection of strategic management accounting with company's strategy and company's management is extremely important for the long-term sustainability of the

company, given that strategic management accounting is an important source of information for making strategic business decisions. Research results showed that the most of surveyed companies (10 of them or 35.71 percent) believe that there is a good connection between strategic management accounting and company's strategy; 8 of them (or 28.57 percent) have a very good connection of strategic management accounting with company's strategy, while 9 of them (or 32.14 percent) consider that they have an excellent connection of strategic management accounting with company's strategy. On the other hand, the results of the assessment of the relationship between strategic management accounting and company's management are slightly different. The most of surveyed companies (11 of them or 39.29 percent) believe that there is an excellent connection between strategic management accounting and company's management, 9 of them (or 32.14 percent) believe that there is a very good connection, and 7 of them (or 25 percent) believe that there is a good connection between company's management and strategic management accounting. Research results indicate on the conclusion that the use of information of strategic management accounting leads to the higher quality of business decisions, which contributes to the successful operation of the company because it allows management to quickly identify the problem, its causes and choose the best method to eliminate it. Table 2 shows the descriptive statistics about the application of certain techniques of strategic management accounting in large Croatian companies.

Strategic management accounting technique	N	Mean	Standard deviation
Customer profitability analysis	28	4.32	1.09
Valuation of customers as assets	28	4.30	1.41
Target costing	28	4.28	1.18
Competitive position monitoring	28	4.03	1.74
Quality costing	28	3.97	1.29
Competitor cost assessment	28	3.86	1.77
Value chain costing	28	3.80	1.57
Integrated performance measurement	28	3.67	1.65
Brand valuation	28	3.61	1.36
Life cycle costing	28	3.25	1.68
Environmental costing	28	3.18	1.45

*Table 2: Descriptive statistics of applied strategic management accounting techniques  
(Source: Authors)*

Among the more widely used techniques, customer profitability analysis, valuation of customers as assets and target costing are undoubtedly standing out. On the other hand, the least applicable are life cycle costing and environmental costing. Efficient strategic business decisions are crucial for long-term sustainability and profitability of a company and they are based on relevant and qualitative sources of information. Table 3 shows the research results about the importance of certain source of information for making strategic business decisions.

Source of information	N	Mean	Standard deviation
Financial statements	28	4.85	0.38
Other accounting information	28	4.71	0.49
Information from the environment	28	4.57	0.78

*Table 3: Descriptive statistics on the importance of different sources of information for strategic decision making  
(Source: Authors)*



Research results showed that the information from financial statements is the most important information (for 9 or 32.14 percent of surveyed companies) or is very important (for 14 or 50 percent of surveyed companies) for making strategic business decisions. Furthermore, results showed that other accounting information is the most important information (for 6 or 21.43 percent of surveyed companies) or is very important (for 17 or 60.71 percent of surveyed companies) for making strategic business decisions. Information from the environment (e.g. data on prices of products and services, market trends, competitors, customers, suppliers) is the most important information (for 6 or 21.43 percent of surveyed companies) or is very important (for 16 or 57.14 percent of surveyed companies) for making strategic business decisions. Finally, the applied information technology is the most important for the quality of information for making strategic business decisions for 7 or 25 percent of surveyed companies.

## 5. CONCLUDING REMARKS

The results of the research showed an insufficient level of application of strategic management accounting techniques in Croatian large companies. The reason for this should be sought in the insufficient application of advanced management information systems that support the implementation of strategic management accounting techniques. Furthermore, poor knowledge of management and responsible persons with strategic management techniques can be pointed out as the reason for poor application of these techniques. In addition, the reason for insufficient application of strategic management accounting techniques is the low level of application of strategic management accounting information in business decision-making processes, i.e. lack of understanding of strategic management accounting output. The results of this research are in line with previous research on the application of strategic management accounting techniques in the surrounding countries (e.g. Čadež, 2006, Ramljak and Rogošić, 2013). The main limitation of this research is very small and heterogeneous sample that lead to questionable representativeness of the research results. Regardless, the results of this research could be a good starting point for further researches. Further research should cover a larger number of companies and sample should be precisely defined according to the industry and size of the company. Also, further research should include in-depth interviews with managers and other decision makers in companies in order to determine the importance of strategic management accounting techniques and the value of strategic management accounting information in making strategic business decisions for certain industry and certain sector.

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# THE FUTURE OF AGRICULTURE DRONE TECHNOLOGY TRENDS AND PROSPECTS

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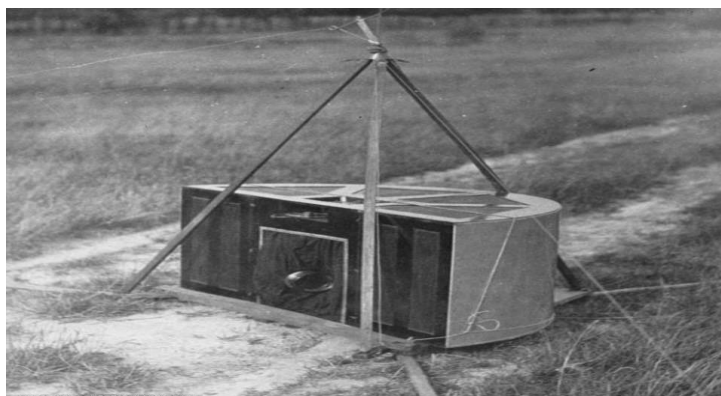
## ABSTRACT

*Given climate change, coupled with a lack of skills, farmers have always been receptive to the adoption of technologies, smart technologies in achieving positive results on agricultural crops. One of the prospects of precision agriculture is the use of agricultural drones in technological processes developed by farmers to make more efficient use of agricultural fields. Agricultural drones are those technologies that contain sensors, GPS, technologies that can capture images of agricultural fields and then provide data on soil and crop vegetation. In this paper we will explore the role of agricultural drones in the near future so that farmers and agronomists around the world can improve resource management in response to squeezed budgets.*

**Keywords:** *drone, precision agriculture, sensor, unmanned aerial vehicle (UAV)*

## 1. INTRODUCTION

After the advent of the first drone in 1907, by one of the pioneers of photography who created his own panoramic lens, George L. Lawrence, (Bujor, 2017) according to fig.1, the 21st century has led to the flourishing of the drone industry, and of course we cannot overlook the emergence and the use of agricultural drones which are really successful, because a lot of companies come up with all sorts of crop monitoring solutions.



*Figure 1: Picture of the first drone  
(Source: Descopera.ro,2020)*

An agricultural drone consists of a multispectral camera and a GNSS sensor unit, which mounted on the drone scans the land and from the collected data the analysis software creates an NDVI map (refractive index of vegetation) and RGB (red/green/blue). Equipped with technological capabilities and connectivity, drones are one of the cutting-edge technologies incorporated into the smart factory at various stages of the processes. At the moment, drones are not widely used in production according to Figure 2. According to the Federal Aviation Administration (FAA), production uses only 1.5% of the US market. The main reasons for the low use of drones in production are related to the complexity of the site. Global Agricultural Drones market analysis to date is a specialized and in-depth study of the Agricultural Drones industry with a focus on the global market trend. This study aims to provide an overview of the global agricultural drones market, with detailed segmentation of the market by product type, component, application and geography. The global market for agricultural drones is expected to grow high over the period 2020-2027.

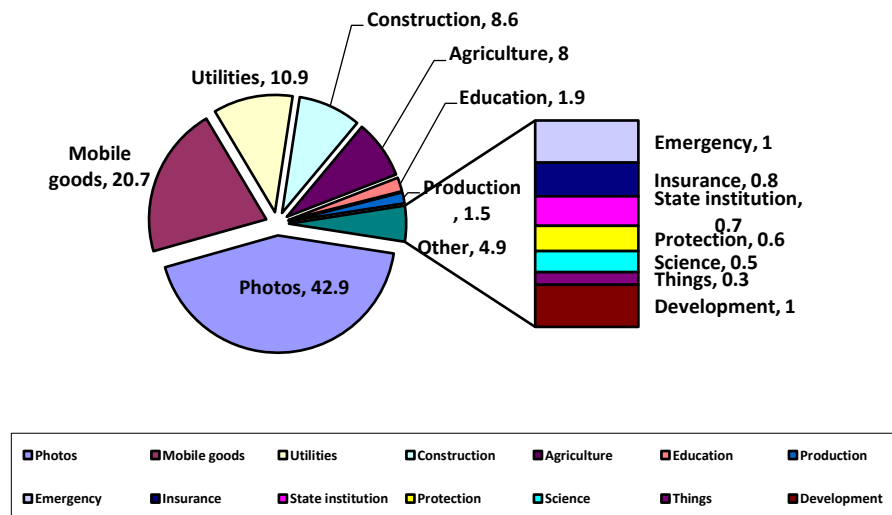


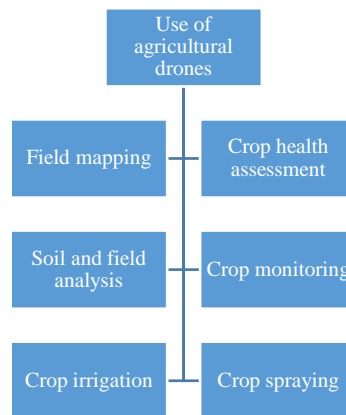
Figure 2: Fields of activity used by drones  
(Source: *Eduadrone.ro*, 2020)

This study provides key statistics on the state of the market to the most important players in the market and offers key trends and opportunities in the market. The drone market is currently very fragmented, with many manufacturers who are also software providers for their use, the most well-known being DJI and Parrot, the world leaders. However, there are also drones and software companies with a smaller market share (Aerobotics, AgEagle, PrecisionHawk, Sensefly (bought by Parrot), Sentera, Skycision, Skyx, Rantizo and other) (Ghise Ghe.,2020).

## 2. USE OF AGRICULTURAL DRONES TRENDS AND PROSPECTS

Drones, also known as unmanned aerial vehicles (UAVs), are not yet taking their rightful place in global agriculture, but they are playing an increasingly important role in precision farming, helping agricultural professionals to innovate sustainable farming practices, protecting the environment while accelerating productivity and profitability. The drones now used in agriculture are of medium size and are generally used for crop condition assessment applications as shown in Figure 3. Larger drones, capable of carrying loads of several dozen kilograms, are mainly used for planting and spraying plant protection products. The versatility of drones offers multiple ways to improve existing agricultural processes. As the market has evolved, many small companies have emerged which, using commercial machines, have

developed software to collect and analyse data and offer complex programmes for agronomic crop management. The use of drones in the agricultural industry is growing as part of an effective approach to sustainable agricultural management, enabling visionary countries (not to mention the UK), agronomists, agricultural engineers and farmers to increase the efficiency of their operations by using data analytics to gain dynamic insights into their crops. Crop monitoring is made easier through the use of drone data, and the information helps to accurately plan and make continuous improvements, such as trench use and applications of fertilizers and treatments.



*Figure 3: Use of agricultural drones  
(Source: Authors, 2022)*

Products can be accurately tracked using GPS locations for millions of monitoring points over a given area. UAVs are particularly useful for carefully monitoring large areas of farmland, taking into account factors such as slope and elevation to identify the most appropriate seeding strategies for each type of land. (Chirita A., 2021)

### **2.1. Trends**

The agriculture drones market is expected to grow by 31.1% by 2025 over 2019. The value of this market is expected to reach USD 5.19 billion by 2025.(Plantmaster.ro, 2021) The growth is attributed mainly to factors such as population growth and increased pressure on global food supply. Using these drones is a cheap and economical way to manage agriculture, which helps to perform difficult tasks while reducing costs according to Fig.4.

*Figure following on the next page*

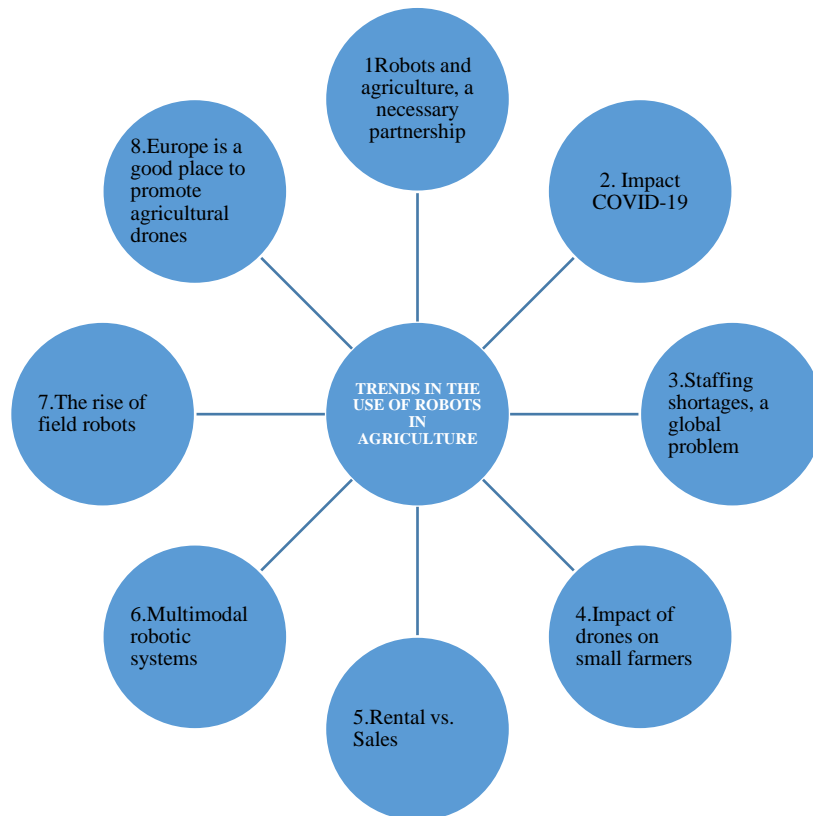


Figure 4: Trends in the use of drones in agriculture  
(Source: Authors, 2022)

#### 2.1.1. Robots and agriculture, a necessary partnership

Agricultural robots have emerged more out of farmers' need to automate repetitive, slow and tedious tasks so they can focus more on improving production quality and increasing yields. Although we call them robots generically, there is a huge variety of equipment that has some degree of freedom of movement, from unmanned aerial vehicles (UAVs) or drones, milking robots, automated harvesting systems, to autonomous tractors and unmanned ground vehicles (UGVs) used in nurseries or greenhouses, sorting and packing robots or for weed control. Currently, milking robots and drones dominate this market, but other intelligent systems will soon take over. In Romania are operated 18 robots per 10,000 inhabitants, twice as many as in 2014, but far fewer than in other European countries (Fig.5).

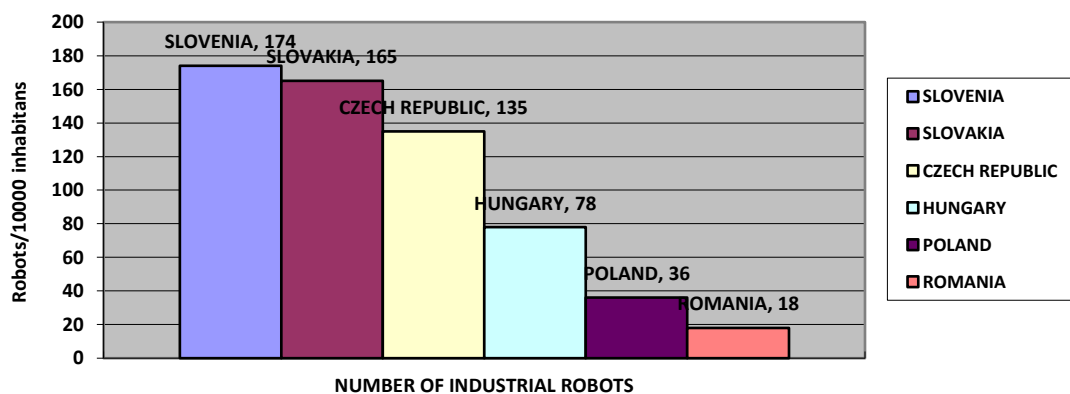


Figure 5: Industrial robots/10,000 inhabitants  
(Source: International Federation of Robotics, 2020)

### *2.1.2. Impact of COVID-19 on the use of drones in agriculture*

Growing labour shortages, maturing IoT and navigation technologies and, last but not least, the COVID-19 pandemic are the main factors that have spurred the accelerating use of robots in the agricultural sector in recent years. In addition, untapped market potential and possibilities for automation in agriculture, increased use of electrification technology for agricultural robots and the use of multi-modal real-time robotic systems in the field have created more opportunities for autonomous vehicle manufacturers. As expected, the pandemic crisis has had a major impact on market development dynamics. Factory closures and quarantine measures implemented worldwide have limited movement and business activities, so the market for agricultural robots last year was down 10% from two years ago. The impact, however, is expected to be short-term.

### *2.1.3. Staff shortages, a global problem*

The agricultural sector is under pressure from global population growth and the need for higher productivity on existing land. Factors such as demographic change and urbanisation are now affecting the industry. According to World Bank estimates, employment in agriculture has fallen by 15 percent over the past decade. The labour shortage has become a global problem as:

- Ageing farmer population further limits supply of manual labour;
- The younger generation is less interested in farming, and children from farming families often move to cities to seek better career prospects.

There are many developed countries in both Europe and America where wages in agriculture are high enough but people do not want to perform physically demanding and repetitive tasks such as picking strawberries or other berries. Or with robotic automation this problem could be solved.

### *2.1.4. The impact of agricultural drones on small farmers*

Smaller farms have somehow lost the start in terms of automation, even if, at least in theory, it would be easier to implement these new technologies because of their small size. However, investments often do not offer sufficient returns for this category of farmers. Even though today the automatic guidance systems that come on tractors and drones are much more affordable in terms of purchase costs, this type of equipment is not yet widespread.

### *2.1.5. Rental vs. sale of self-steering technology*

Only one in 10 farms worldwide use so-called self-steering technology on agricultural machinery. These farms are expected to lag behind in technology with the introduction of more specialised and expensive robots and software systems. This problem is particularly prevalent in developing countries such as India, China and Brazil because there is a lack of skills and technical awareness among farmers. As a result, many agricultural equipment manufacturers prefer to rent their equipment instead of selling it.

### *2.1.6. Multimodal robotic systems*

The use of multi-modal or heterogeneous platforms combining ground and airborne vehicles provides opportunities for targeted support, intelligence and planning of operations at a higher level. Collaborative behaviour between different robots becomes advantageous for large-scale agriculture as tasks can be carried out in parallel, offering greater savings. Different types of robots and autonomous systems can now be interconnected. For example, drones are an excellent platform for aerial monitoring, but with limited payload, operational time and robustness. They are not suitable for all ground operations. Therefore, ground and air vehicles must be coordinated to perform their respective tasks.

Controlling multiple robots through a centralised software platform will bring many benefits. Such as the ability to operate swarms of robots to perform various agricultural tasks, such as spraying and weeding simultaneously.

#### 2.1.7. *The rise of field robots*

According to analysts at Markets&Markets, who conducted this study on the agricultural robot market, field applications will see the fastest growth over the next four years. Forecasts say that by the end of 2023 autonomous vehicles will have a higher share of growth in this market than milking robots, for which the pace of sales will slow as they have been on the market for a long time.

#### 2.1.8. *Europe a breeding ground for agricultural drones*

North America is the undisputed market leader in agricultural robots, both in terms of production and number of units in operation. Companies in this region (especially the US) are investing heavily in research and development aimed at creating cost-effective and highly productive robots. Europe is lagging behind, but still has a lot of catching up to do, especially on data privacy and regulatory requirements (Gordea, 2022). Currently most agricultural drones are medium size (typically used for analysis applications), while larger drones are used when a load is needed (e.g. for planting or spraying applications) however, all such equipment shall be used per season according to tab.1.

Season	Spring	Summer	Autumn	Winter
Tasks	*equipment preparation (drone) *application of fertilizer *application of herbicides *soil processing, seed bed preparation *set up cultures	*application of herbicides *application of fertilizer *application of fungicides *application of insecticides *irrigation management	*harvest *management of soil rescots *application of fertilizers and manure *land improvement	*acquisition of cars *acquisition of input *acquisition of insurance
Utilisation	*early soil analysis, soil preparation and drainage	*analysis of samples *irrigation management *observation of variability of growth *evaluation and observation of the need nitrous *the crop monitoring phase for the time of application	*pre-harvest: constant observation *post-harvest: *soil analysis, soil processing and topography	*evaluation of equipment performance (drones - types)
All the years round	*post rain: analysis of the soil drainage system *post storm: determination of damage			

*Table 1: Use of drones by season*

*(Source: European Commission, Digital Transformation Monitor, Drones in agriculture, 2018)*



## 2.2. Prospects for the use of agricultural drones

Drones are advanced, intelligent and versatile as they can be used in a variety of industries. And one of the industries where industrial drones can be used is agriculture. As technology develops and manufacturers invest in regulatory changes to the use of industrial drones, they are increasingly being used to help farmers. Currently, industrial drones are an important step for modern agriculture that keeps pace with technological change. Drones have been used for decades in the private sector, but have only recently started to gain popularity in the agricultural world. Agriculture is one of the most promising industries for drones. Drones are poised to tackle significant challenges and streamline many aspects of the industry. The world's population is projected to reach 9.7 billion by 2050, and as the population grows, so does agricultural consumption. To face up to this growth, we need to tackle a modern agriculture that is capable of meeting new demands and challenges. I will report on the prospects of using industrial drones in the process of achieving modern agriculture, in line with the evolution of the world and population growth:

### 2.2.1. *Increased productivity and reduced costs*

One of the main benefits of drones is that they can increase the productivity of the agricultural sector. As the world's population continues to grow, so will the demand for agricultural products. Drones meet the needs of the growing agricultural industry. For example, they offer much more advanced forms of crop monitoring, faster inspections, accuracy and advanced metering tactics that help farmers save water and chemicals.

### 2.2.2. *Accuracy and efficiency*

Agricultural farms are made up of large agricultural areas. Human inspectors are a little limited in what they can achieve in a single day. Traversing fields and even viewing them from a helicopter provides limited accuracy. In addition, they are time-consuming and costly. Fortunately, industrial drones are another option worth considering. They are light, quiet and easy to implement in modern agriculture. In addition, industrial drones increase the accuracy and efficiency of any farming operation. When equipped with advanced thermal and geographic sensors, drones can provide information that human inspectors cannot.

### 2.2.3. *Reducing pollution, an essential benefit for modern agriculture*

Pollution is one of the main problems of mankind and agriculture. Important water sources are annually polluted by pesticides and fertilisers used in agriculture. But experts say farmers can reduce erosion and sedimentation by 20-90% by applying management practices that control the volume and flow of runoff, hold soil in place and reduce soil transport. When it comes to correct and measured application of pesticides, drone spraying is recommended. By allowing farmers to accurately assess how much pesticide should be applied and when, drones reduce agricultural pollution and help make the environment a safer place.

### 2.2.4. *Industrial drones used to achieve modern agriculture increase yields*

In the future, agricultural farms are expected to account for 80% of the commercial drone market, and there is a good reason for this. Industrial drones help increase yields and profits.

## 3. ROMANIAN DRONE IN GLOBAL PERSPECTIVE

These technologies are created with massive investment, adapting solutions for agriculture. This means large farms, significant funds, and Romania is at a disadvantage in these areas. In this context in Romania, we do not create solutions, we just take solutions that others have made and implemented. This increases the gap between Romania and those economies. At the same time, there is a silver lining that we should not neglect.

There are countries, such as the Netherlands, where agriculture has become an industry, where the relationship between traditional lifestyle and agriculture becomes a memory. This is something that would be sad to happen in Romania. Sure, we would like agriculture to become a bit more interesting, more efficient, but not with such complicated social costs. Evidence that drones are increasingly used on farms around the world as shown in Fig.6 - and even in Romania as shown in Fig.7 - supporting the implementation of the concept of precision agriculture.



*Figure 6: Images with DJI drones  
(Source: Ferma.ro, 2021)*

Within just a few years, drones have started to play an increasingly important role in farmland management, based on natural soil variation as well as in optimising crop and input allocation. Unmanned aerial vehicles provide real-time information on crop development, allowing early detection of any deviations from the normal growth rate, risk factors, soil moisture deficits, etc. The same reasoning applies to the application of herbicides, pesticides or fertilisers, which can be much better distributed according to identified needs. Moreover, new generations of unmanned aerial vehicles also allow these operations to be carried out, with low-altitude flight ensuring controlled distribution of chemical inputs. For a long time, agriculture was considered a traditional branch of the economy. But modern technologies have changed the face of farming forever. In fact, in the 17th century In the 21st century, the use of drones is as natural and indispensable as mechanisation was in the 20th century. The cost of drones is not high, what really costs much more are the licenses for specialized software, software that can develop a multitude of maps and with the help of sensors can evaluate and study farmers' crops.

*Figure following on the next page*



*Figure 7: Agricultural drone assembled in Romania XFlight  
(Source: Stiriagricole.ro, 2015)*

Below we list three of the most obvious reasons why drones have the chance to become so popular with farmers.

### **3.1. Drones ensure effective crop surveillance**

Unmanned aerial vehicles are helping farmers to monitor their extensive crops. Today, they are monitored by satellites, manned aircraft or a simple field raid. But this takes time and money, especially as the time-consuming collection and processing of data does not allow farmers to intervene in time before the entire crop is compromised. Drones are able to collect and process a large amount of information that can be of great benefit to the crop.

### **3.2. Drones simplify the use of other cutting-edge technologies in agriculture**

The flying machines can be equipped with infrared cameras, height sensors, fertiliser introduction and pollination systems, as well as many other technologies to collect data on plant condition or flock location and so on. Good compatibility with other useful technologies in the field simplifies and cheapens the transition to precision farming, which reduces costs and increases production by optimising the use of resources and consumables. Drones can also be fitted with cameras and video cameras to monitor the health of plants in less accessible places in the field or to keep an eye on the herd during grazing.

### **3.3. Drones - a universal data collection tool**

Farmers usually closely examine plant health after cultivation and at harvest. Drones make it possible to monitor crops throughout their lifecycle so that once problems are flagged, farmers can intervene before the whole crop is compromised. Thanks to unmanned aerial vehicles, farmers are spared the long and tiring walks in the field with special measuring instruments. Drones have great potential to optimise agricultural production, but their main advantage lies in simplifying access to other technologies that allow both farmers and large holding companies to grow more and reduce their costs (Filip O., 2021).

#### 4. CONCLUSIONS

The revolution in agriculture began with the integration of drones to monitor large crops, transmitting real-time information on their status, possible anomalies and water requirements. Drones help farmers to assess their land without actually walking to it, and to make quick decisions if problems arise. Drones are considered unmanned aircraft and must be registered with the Romanian Civil Aviation Authority in accordance with the legislation in force. The role of modern technologies (mainly drones) in the agricultural sector is very important and the use of new machinery and equipment can help increase agricultural productivity. Unmanned aerial vehicle systems (UAVs) provide a clean framework for gathering information from the ground, both over small and large areas, capacity 800 and 1,500 hectares per hour. In a country like Romania, precision farming is still in its infancy, but in the near future its technologies will be increasingly common. The country's agricultural potential has always existed, but now, with new technologies, it could reach an even higher level.

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## STRATEGIES FOR THE DEVELOPMENT OF SOUTH – EAST REGION IN CORRELATION WITH THE DEVELOPMENT OF THE RURAL LABOUR FORCE

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### ABSTRACT

*Regional development involves diversifying activities that lead to boosting economic activities and improving living standards in the region. The analysis of economic development in this region is based on the development of living standards and the prosperity of the population. Economic growth is seen as a broad and complex process that depends on many key instruments, such as small and medium-sized enterprises, job creation, institutions, and research bodies. In this paper, we will structure and identify the needs and implicitly the solutions necessary for the development of the rural environment and the agriculture of region 2 South East. They also take place through questionnaires to local farmers in the region. An important role in achieving sustainable and sustainable development is the positioning of the region analyzed in the European Union, but especially in the global economy. The development of the rural environment depends a lot on the improvement of the infrastructure, economic growth, the realization of new jobs, the innovation of advertising methods, and not only. The geographical advantages of the region and the investments that have taken place in recent years have significant and competitive advantages to reduce the forecasted risks. The notion of rurality is highly ambiguous, so that rural areas are often defined by their differences in urban areas. In recent years, the rural population of our country is declining due to migration to the urban area where the way of life is much more developed. Agriculture is an essential tool in the rural economy, especially since Romania is a predominantly rural country.*

**Keywords:** *rural development, strategy, labour force, performance, economy*

### 1. INTRODUCTION

In the period after the 1990s, the countryside underwent major transformations from a socio-economic point of view, but also demographically. In the first part, rural society experienced a rather difficult period, and agriculture was the most important activity in support of everyday living. Economic growth brought new programmers that involved the development and modernization of society. Romania's accession to the European Union was to diversify the economy and improve the quality of life. This work is organized on two sides based on highlighting the process of reorganization of the rural environment. In the first part we analyzed human resources through the evolution of the relevant indicators, but also the innovation potential enjoyed by the rural area of the South-East Region with the help of a questionnaire addressed to rural residents of Romania, the Republic of Moldova and Ukraine. In the second part of this article, we presented the need for rural development within the region and its position through a SWOT analysis.

## 2. MATERIALS AND METHODS

Following this study, we will propose proposals and recommendations on the following sectors, namely health, education, social services, infrastructure, living conditions and, finally, employment. These recommendations are necessary to improve the quality of life of the inhabitants of the South-East region and to ensure continued prosperity. In carrying out this study we addressed an appropriate methodology based on techniques and methods such as the accumulation of information, qualitative and quantitative analysis, and interpretation of the results. We studied and interpreted the information collected by reaching several indicators specific to the South-East Region of Romania. The information is clear, qualitative, and truthful and leads to the exact determination of the real problems in the rural communities of the Region. At the end of the paper, we carried out a SWOT analysis to highlight the advantages, but also the disadvantages faced by the South-East Development Region.

### 2.1. Questionnaire

We produced a questionnaire addressed to the rural inhabitants of the South-East Region, but also to the inhabitants of the rural area of the Republic of Moldova and Ukraine. The questionnaire was conducted in Romanian, and then translated into English. Through this questionnaire we aimed to identify the current situation and the obstacles facing rural society, especially since we are in pandemic times. Participants in this questionnaire are over 18 years of age and are students or graduates of the University of the Lower Danube in Galati, or students. They received no economic reward. The table below represents the structure of the questionnaire.

The c...	Age	Sex	Last f...	Do y...	In yo...	What...	Do y...	Whe...	Are t...
Romania	28	Female	MASTERS	It's not ...	Educati...	Wheat c...	Own m...	Local m...	Yes
Romania	22	Female	License	It's not ...	Educati...	Vegeta...	Develo...	County ...	Yes
Republi...	31	Male	doctorate	Agricult...	Educati...	Wheat, ...	Develo...	County ...	Yes
Republi...	25	Male	MASTERS	It's not ...	Educati...	Wheat c...	Own m...	County ...	Yes
Ukraine	23	Male	License	It's not ...	Agricult...	Wheat c...	Own m...	Local m...	Yes
Ukraine	28	Male	MASTERS	It's not ...	Educati...	Wheat c...	Own m...	County ...	Yes
Romania	41	Male	doctorate	Horticul...	Educati...	Wheat c...	Own m...	County ...	Yes
Romania	20	Male	High sc...	It's not ...	Educati...	Wheat c...	Develo...	County ...	Not
Romania	18	Male	High sc...	It's not ...	Health, I...	Wheat c...	I do not ...	Other	I do not ...
Romania	24	Female	License	It's not ...	Educati...	Vegeta...	Own m...	Local m...	Not
Romania	30	Male	MASTERS	It's not ...	Health, I...	Vine, An...	I do not ...	County ...	I do not ...
Republi...	43	Male	doctorate	Agricult...	Educati...	Wheat c...	Develo...	County ...	Yes

Figure 1: Data collected from the questionnaire  
(Source: Own data processed in SAS Data Explorer)

This survey was conducted with 54 people from the above countries with different ages and professional training. Most are men and are master's graduates. Only questionnaires that had complete answers were analyzed.

## 2.2. Statistical determination

The questionnaire initially consists of demographic data on the country where respondents live and continued with their opinion on the level of rural development in the South-East Development Region. Statistical achievement was done using SAS software (Analytics Software & Solutions - Data Explorer - Manage Data) in which we included data such as country of origin, gender, age, degree of education, position towards agricultural activity in the region.

## 3. RESULTS

The table above describes the demographic characteristics of the survey participants. Most who responded from Romania and are men, 50,9 %, and 49,1 % are women. In the figure below we see the distribution by country and gender.

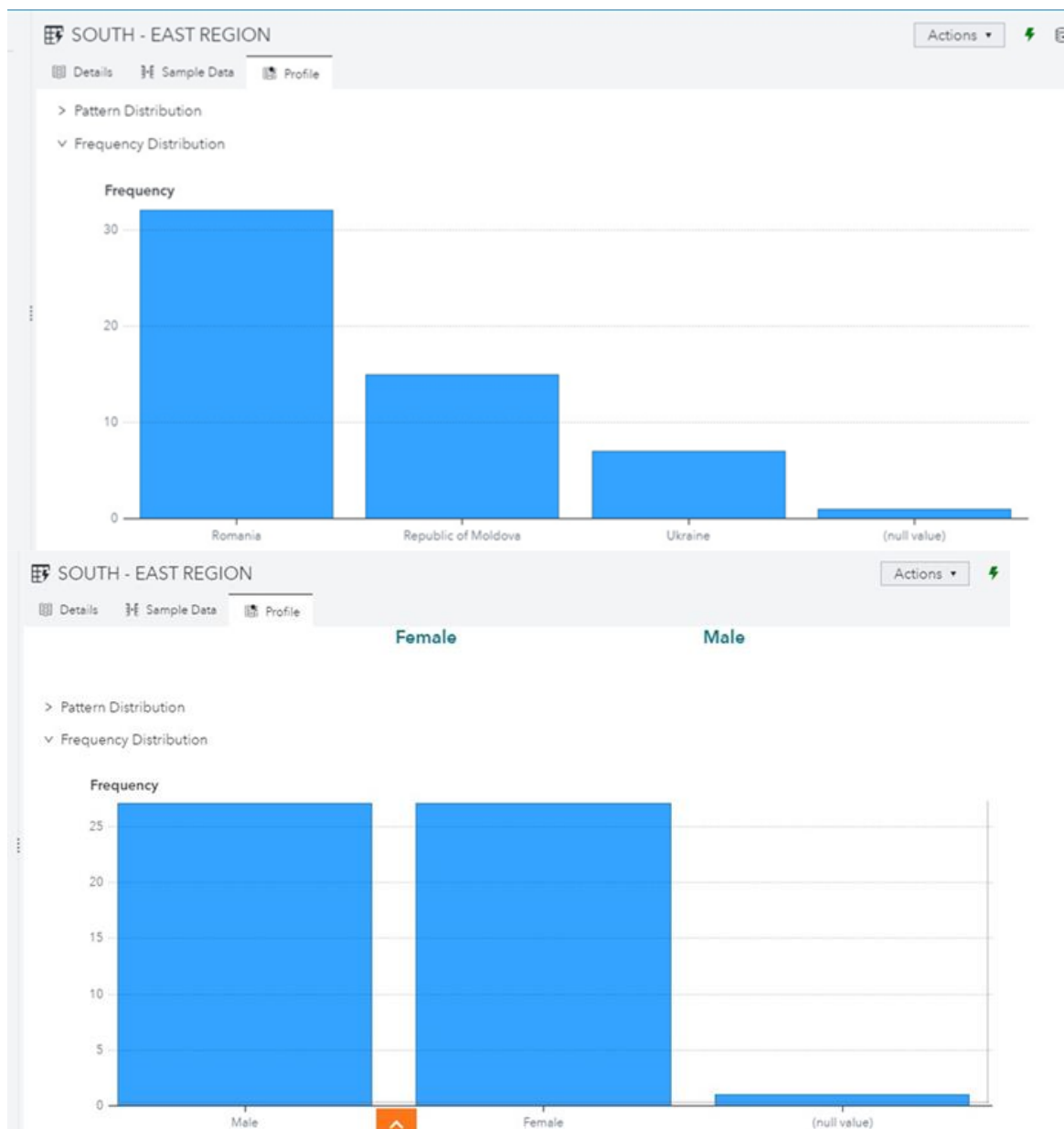


Figure 2: Demographic characteristics established following the application of the questionnaire  
(Source: Own data processed in SAS Data Explorer)



Their age varies, and the majority, 44,4% are master's graduates, while only 14,8% are doctoral graduates, 22,2% graduates, and 16,7% have only high school.



*Figure 3: Age distribution of survey respondents  
(Source: Own data processed in SAS Data Explorer)*

At the level of the South-East Region, most of the population is active in agriculture, fisheries, and forestry (nearly 238,9 thousand people), with agricultural land accounting for more than half of the region's area. In some areas fishing is the very only source of income for the inhabitants, for example in the Danube Delta. In recent years, agricultural activity has decreased more and more, and the working population has not shown interest in it. When asked about the need for development of the most important sectors in the South-East Region, such as agriculture, education, infrastructure, health, or tourism, 68,5% claimed that infrastructure, followed by agriculture with 64,8%, and education in third place is 63%. In the figure below we see the exact distribution of responses and their analysis.

*Figure following on the next page*



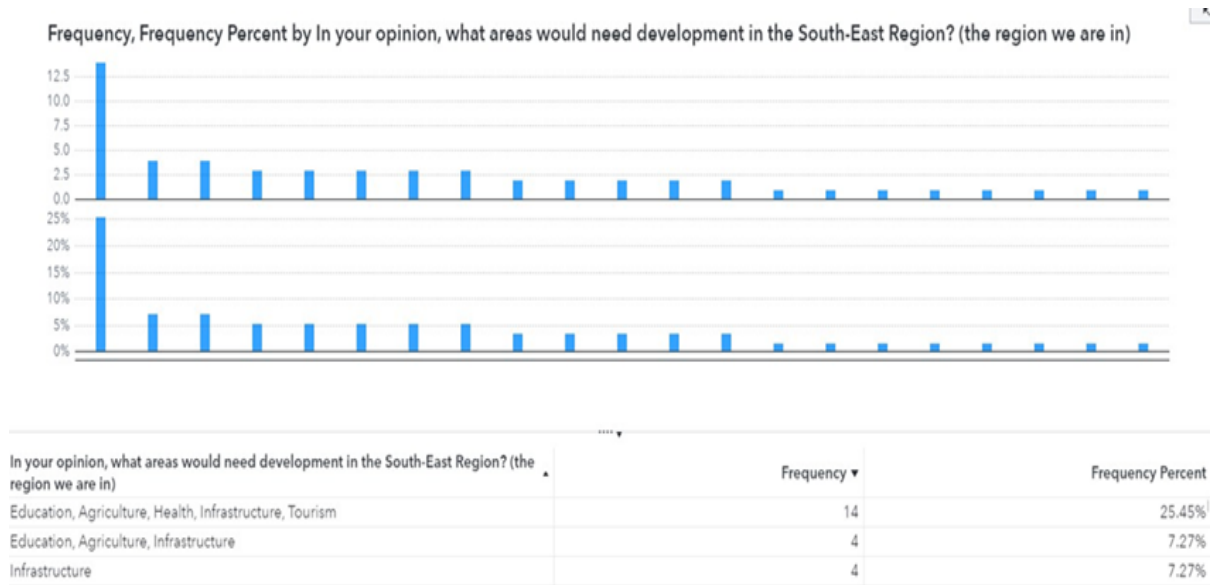


Figure 4: Analysis of responses on the development of the most important sectors in the SE Region  
(Source: Own data processed in SAS Data Explorer)

Education is a very important sector for optimal economic development. The South-East region is far behind the European system or even the national system. There have been significant gaps in the education system over the past two years. More than half of pupils are enrolled in very crowded or underutilized schools. The following question answered refers to the current state of play of equipment used in rural activities. Most responded that the activities are done with their own materials and not with developed equipment with advanced technology. Each rural area in the region has abandoned or underdeveloped land. The region does not enjoy the existence of courses involving the formation of the workforce and the transition from outdated agriculture to that using state-of-the-art instrument.

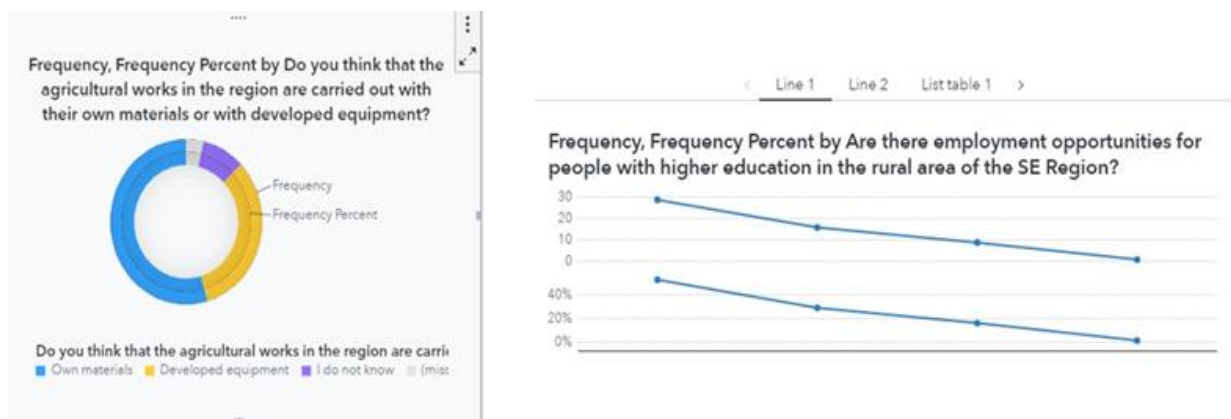


Figure 5: Interpretation results with SAS software  
(Source: Own data processed in SAS Data Explorer)

Various programmers and projects have been implemented to increase and develop the economic potential in the region, which have led to the development and implementation of strategies. Most of the responses relate to the fact that they have made a moderate positive contribution.

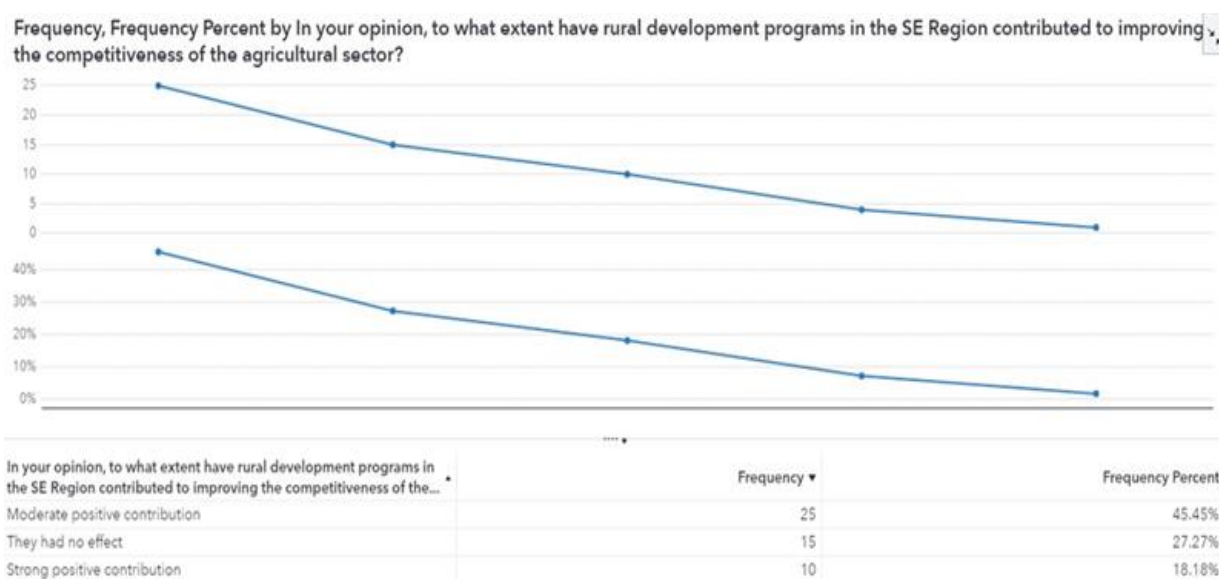


Figure 6: Contribution level of development programmers implemented in the South-East Region

(Source: Own data processed in SAS Data Explorer)

#### 4. SWOT ANALYSIS

In developing this study, conducting a SWOT analysis is essential for the development of development priorities. We carried out this analysis based on the results highlighted from the analysis carried out highlighting the region-specific strengths and weaknesses, as well as the opportunities and threats that can influence and affect the development of the region.

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Increase in Gross Domestic Product in recent years.</li> <li>• Increase the activity rate within the Region to 68%.</li> <li>• Constanta recorded a relatively low unemployment rate below the national average.</li> <li>• Multiplying new businesses by almost 42,69%.</li> <li>• There are 7 higher education institutions in the Region.</li> <li>• Romania's largest shipyards, Constanta, Mangalia, Galați, Brăila and Tulcea, are in the region.</li> <li>• The region has a tradition in the agrarian sector being the first national, in terms of the area of the vine and the second place in terms of the cultivation of cereals.</li> <li>• The region has great tourist potential, especially as on its territory can practice seaside tourism.</li> <li>• Most agricultural production is destined for export.</li> <li>• Climate conditions favor the optimal achievement of agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of Gross Domestic Product from National Gross Domestic Product in recent years.</li> <li>• Decrease of the civilian active population by 5,8%.</li> <li>• In 2019, the Region recorded the highest unemployment rate in the country.</li> <li>• In 2019, the South-East Region recorded an average monthly salary below the country's average.</li> <li>• In 2018, the Region ranked 6th in terms of the foreign investment rate, which is very low.</li> <li>• The region spends very little on research, development, and innovation.</li> <li>• The region is performing poorly around digitization, unlike the other regions.</li> <li>• The existence of an undeveloped irrigation system.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Projects involving the development of infra-structure in rural areas.</li> <li>• Promotion of rural areas and development of tourism.</li> <li>• Achieving cross-border development.</li> <li>• A plan to attract subsidies for agricultural production.</li> </ul>	<ul style="list-style-type: none"> <li>• The existence of the ageing process of the inhabitants that negatively affects the labour force in the region.</li> <li>• The existence of quite large gaps between the South-East Region and the other regions of Romania.</li> <li>• Low level of non-refundable funding.</li> <li>• Increase in school dropout.</li> </ul>

Table 1:SWOT analysis  
(Source: Own processed data)

## 5. DISCUSSION

The challenges in the countryside are growing and intense, so the researchers show interest in the study of agricultural systems. Social, economic and climate change challenges are under review through models that predict the performance of the rural environment. The study of the literature highlights the strategies in improving agricultural performance. Elements targeting high-quality technology for the sustainable development of agriculture have also been considered. An area development plan begins with an analysis of the current state of the area with an emphasis on the main areas that need improvement. This plan is made possible by creating a set of measures and methods that lead to the implementation of the planned activities. In this paper we considered the information studied in case studies, journals or research reports and websites related to rural development. The Regional Operational Programmed targeting the South-East Development Region (POR SE 2020-2021) involves improving the regional economy and living conditions in the region by developing regional entrepreneurship, infrastructure and important services through the most efficient management of resources, but especially by moving towards an increasingly common technological progress today.

## 6. CONCLUSION

Compared to other countries of the European Union, agriculture is an essential source in our country, especially as almost 32,6% of the inhabitants are employed in this activity, as opposed to 5,3% in the European Union. Demographic analysis highlights a decline in the population in both urban and rural environments, and rural residents are much fewer than those in urban areas. The most populated counties of the region are Constanta and Galați, while Brăila and Tulcea are the last places. Labour force is declining in rural areas from year to year. The creation of new jobs can take place with the help of the following aspects, namely:

- Reorganization and modernization of agricultural holdings.
- Increase in qualitative and not just quantitative productions.
- Existence of an idea of industry innovation.
- Switching to digital technology.
- Conducting education and study programmers.
- Achieving and promoting Erasmus programmers that enable the exchange of experience between European countries and beyond.

Development and innovation are key points in human resource growth, growth, and competitiveness between businesses. In terms of labour, the South-East Region ranks 6th among the country's development regions, with only 64% in 2019. Following the analysis carried out on the needs of the Region related to its development capacity, we can say that it is important to create a set of recommendations with the main objective of the development of the South-East Region, namely:

- Development of infrastructure due to increased competitiveness of small and medium-sized enterprises through support for young entrepreneurs and development of producer groups and supply chains.
- Development of the research field and cooperation between research centers and the entrepreneurial environment through the creation of start-ups or spin-offs.
- Stimulating the business environment by increasing the level of diversification of the rural economy.
- Increasing the life expectancy of start-ups.
- Conducting training or counselling activities among young students or graduates with a view to start-up.

In recent years, the business environment in the region under review has faced numerous difficulties, despite the partial progress achieved. The most dynamic sectors in the region are agriculture and tourism, followed by trade. Most economic problems are found in sectors such as industry and construction. The favorable geographical position of the region and the increased tourist potential are the main advantages of the counties of the South-East Development Region. Creating new jobs is the most important positive effect in the region's local economy. Other positive effects would be to increase the quality of life of the population and increase wages and pensions.

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## WEALTH AND WELFARE - DEVELOPMENT OF A GROSS NATIONAL PRODUCT (GNP) AND GINI INDEX IMPACT REGRESSION MODEL

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### ABSTRACT

*Economic growth does not necessarily mean development as well. As an example, Russia has achieved high growth rates through the exploitation of mineral resources. The gross national product (GNP) per capita of Russia has grown, but this growth has not been evenly distributed. Prof. Joseph Stiglitz, an American economist and public policy analyst, argues that unless economic growth is reflected in rising standards, development has failed. Thus, a high GNP per capita does not necessarily mean prosperity and welfare. The equality of society in terms of participation in national wealth is measured by the Gini index as a measure of statistical dispersion intended to represent income inequality or wealth inequality within a nation or a social group. If the Gini Index is 1, only one person owns all the wealth, if it is 0, everyone owns the same. This parameter alone is not overly important because, as an example, Sierra Leone and Burkina Fasso have very low Gini indices, but this means that they are all equally poor. On the other hand, petrodollar economies, if they show the Gini index at all, have extremely high GNP per capita values, but everything is concentrated on a small number of people. The paper compares the GNP per capita and Gini index using statistical methods. After proving the correlation, a model was developed which performed a new ranking of the world economy. It has been proven that the uneven distribution of income relativizes its level, and certain transition points of decline, ie growth of the Gini index, have been determined.*

**Keywords:** *correlation, new ranking, transition points, world economy*

### 1. INTRODUCTION

The political and economic debate on the way to reach a more equal distribution of income and wealth was particularly alive at the beginning of the last century [1], emphasizing the large social differences and unequal distribution of wealth created in the second half of 19. century. Corrado Gini, Italian statistician, demographer and sociologist, was first who handled this issue in 1909. by proposing the “ $\delta$  Index” which was supposed to describe the relationship between the social classes and the distribution of wealth [2]. His model was static and it implied that wealth as well as poverty are given by birth. This kind of reasoning faded with the Industrial Revolution (that created a new industrial middle class), hence this model demanded corrections.

Later on Gini introduced the “mean difference” which was meant to emphasize “the differences between the various measurements of studied variable” rather than “the differences between measurements and their arithmetic mean” which made his model more dynamic and realistic [3]. Such a model was more appropriate to the new socio-economic environment which gave everyone a better chance of success. The *mean difference* played an important role; in particular, in the study of the inferential aspects of the Gini index, but still it was insufficient to include standard deviations of different variables. Finally, in 1914, Gini introduced “Index of concentration”, explained its calculation with grouped data and illustrated its properties with empirical applications [4]. Later on Pietra introduced a simple geometrical interpretation of the Gini index and showed the relationship existing between the Gini mean difference and the standard deviation from the mean and from the median [5]. Gini's contemporary Vilfredo Pareto, emphasized the meaning of free market and liberty in terms of egalitarianism and inclusivity. He stated that contemporary society was neither founded on free competition nor on private property. Rather, it was founded on the action that the State carried out in favor of the affluent classes, thus creating a bourgeois socialism [6]. In his research, he set out a principle, later known as Pareto optimal, that ratio 80/20 is optimal i.e. 20 percent of people produce 80 percent of wealth. This theorem is applicable interdisciplinary. In the first 20 percent of any kind of activity, 80 percent of the task is done [7].

## 2. THE GINI CONCENTRATION INDEX AND A GROSS NATIONAL PRODUCT (GNP)

The Gini concentration index, commonly known as Gini index or Gini coefficient is a statistical measure of the concentration (of some value) in a distribution of a positive random variable in all social sciences. However, it is mainly used in economics in order to measure a distribution of wealth/income regarding social inequality [8]. The Gini index is usually defined as the ratio of the area that lies between the line of equality and the Lorenz curve over the total area under the line of equality. Therefore, Gini index can be calculated as follows

$$G = \frac{A}{A+B}, \quad (1)$$

where A represents the area between the line of equality and the Lorenz curve whereas B represents the area under the Lorenz curve (Figure 1).

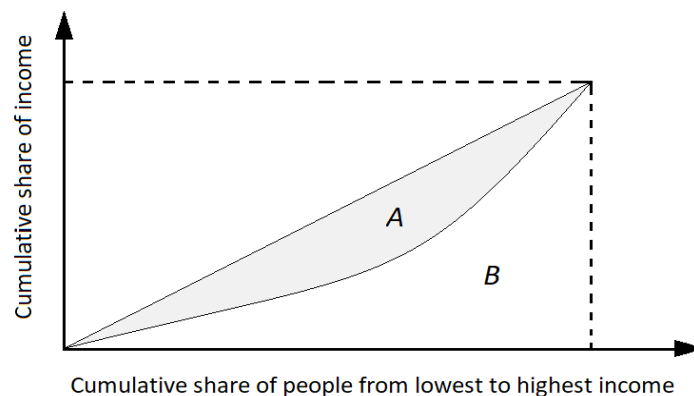


Figure 1: Line of equality and Lorenz Curve

The Gini index spreads between values of 0 and 1. To put it simply if the Gini index is equals 1, all the wealth of a particular population is owned by one single person.

On the other hand, if it is 0, every member of the population owns the same amount of wealth. The Gini index is usually multiplied by 100 i.e. it is expressed as a percentage between 0 and 100. After the fall of Berlin wall and the end of (short) 20. century, the socio-economic model of the liberal democracy has prevailed all over the world. Since then, we are witnessing the largest economic growth in human history, in literature also known as Economic miracle [9]. Within 30 years (1989-2021) the world Gross Domestic Product (GDP) has grown as shown in table 1 [10].

<b>GDP in Trillion current US\$</b>	<b>1989</b>	<b>2019</b>	<b>index</b>
World	20,136	87,568	434,8827970
USA	5,642	21,433	379,8830202
China	0,3475	14,28	4109,352518
Japan	3,055	5,149	168,5433715
Germany	1,399	3,888	277,9127949
United Kingdom	0,927	2,879	310,5717368
Canada	0,565	1,742	308,3185841
Russian Federation	0,506	1,687	333,3992095
India	0,296	2,871	969,9324324
EU	5,194	15,689	302,0600693

*Table 1: GDP growth 1989-2019 G8 countries, India, China and EU  
(Source: World Bank Database)*

World GDP is more than quadrupled, the global wealth is more than four times larger, but the question is, how evenly this wealth is distributed. This paper argues about wealth distribution in Europe, measured by the Gini Index. It refers to Europe (and United States of America (USA)) between 2004. and 2016. since the complete data on Gini index and GNI per capita (Gross National Product (GNP)) was disposable only for that period. A brief analysis has been conducted even though inequality is essentially immeasurable [11] because of different income levels across the European Union (EU), huge differences in GNP and huge differences among small rich countries (such as Luxemburg) and large poor countries (such as Romania). Furthermore, different EU countries carry different burdens of social, historical and political heritage that have greatly influenced their socio-economic development. Therefore, this paper focuses on correlation between GNI per capita and Gini index.

### 3. COLLECTING AND PROCESSING DATA

14 countries were randomly selected from each European region; Denmark (DNK), Sweden (SWE) from Scandinavia; Ireland (IRL), Great Britain (GBR), France (FRA), Germany (DEU) from Western Europe, Czech Republic (CZE), Slovakia (SVK), Hungary (HUN) from Central Europe, Poland (POL) from Eastern and Italy (ITA) from Southern Europe. In addition to the above, data for the United States was observed as well. The data was extracted from the World bank database and analyzed for the period between 2004. and 2016 (since most of the countries consistently publish their GINI index only since 2004.). GNP values in 2016 and 2004. were subtracted and divided by the number of years in order to determine the rate of change in GNP per year (annual GNP growth).

According to their annual GNP growth countries were divided into three categories:

- A = Low annual GNP growth rate
- B = Mean GNP growth rate
- C = High GNP growth rate (above \$ 1000 / y)

Category	Country	RGC/y
A	ITALY (ITA)	<b>307</b>
	HUNGARY (HUN)	<b>371</b>
B	GREAT BRITAIN (GBR)	467
	POLAND (POL)	539
	CZECH REPUBLIC (CZE)	618
	FRANCE (FRA)	643
	SLOVAKIA (SVK)	645
	ESTONIA (EST)	911
C	AUSTRIA (AUT)	1038
	GERMANY (DEU)	1057
	UNITED STATES OF AMERICA (USA)	1134
	IRELAND (IRL)	1171
	SWEDEN (SWE)	1214
	DENMARK (DNM)	1283

Table 2: The difference between the GINI coefficient of 2016 and 2004

In the first part of our brief analysis, the GINI index has been compared to the GNP/1000\$. In order to check if there were some visible patterns or any other kind of possible regularities throughout the observed period, a series of graphs has been taken out of the raw data. The following graphs (Figure 2 – 8) show GINI versus GNP / \$ 1000.

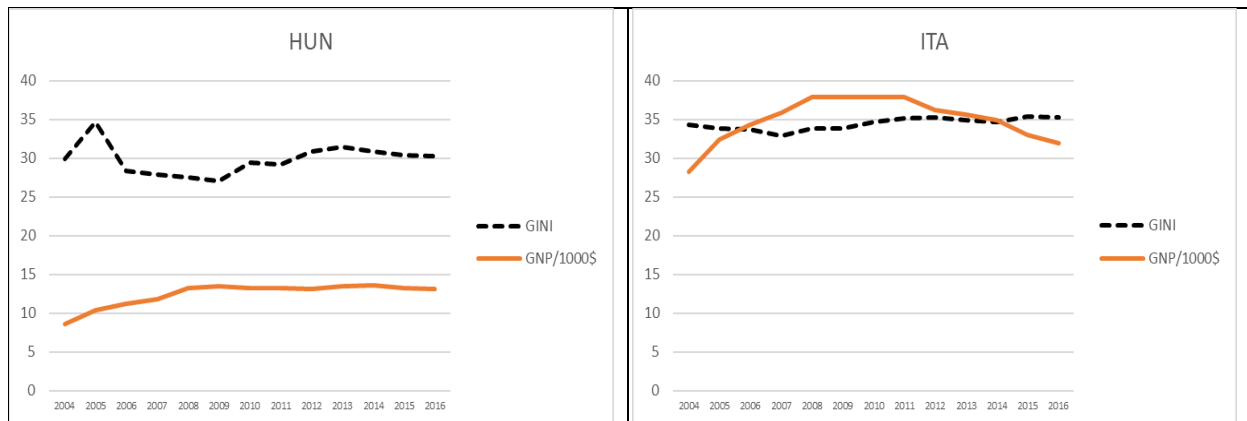


Figure 2: Category A - Hungary and Italy

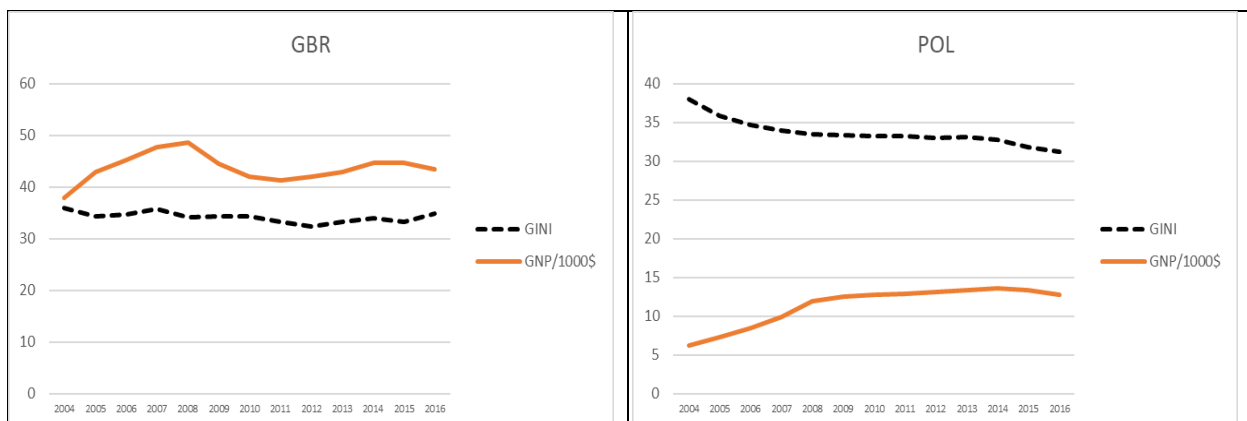


Figure 3: Category B - Great Britain and Poland



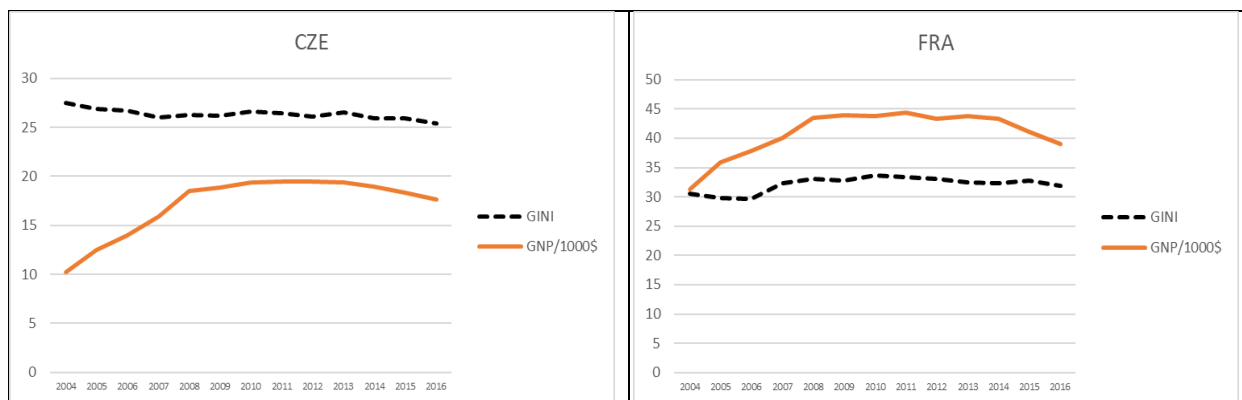


Figure 4: Category B - Czech Republic and France

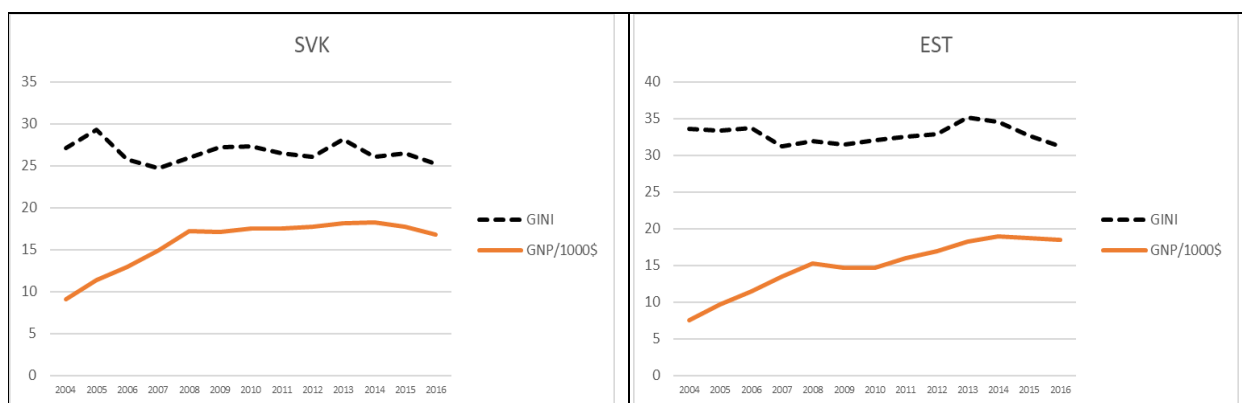


Figure 5: Category B – Slovakia and Estonia

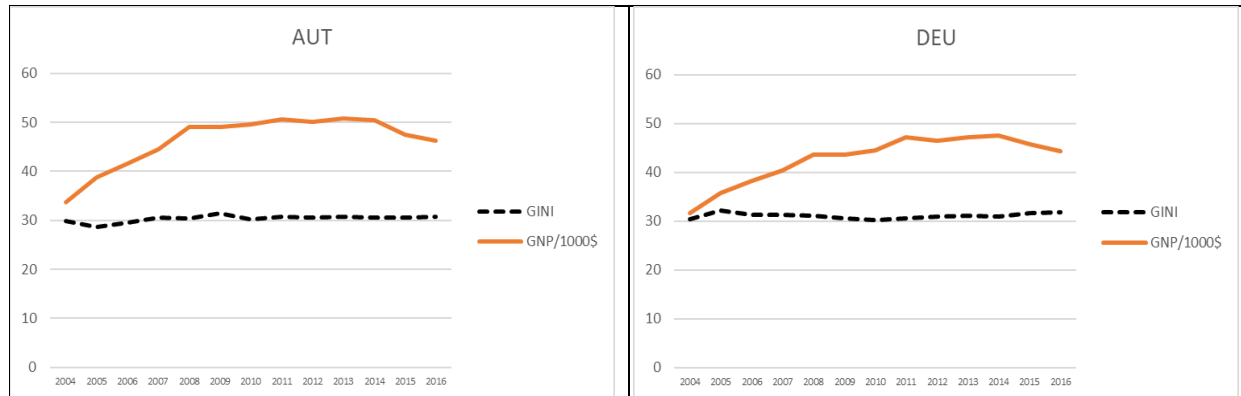


Figure 6: Category C - Austria and Germany

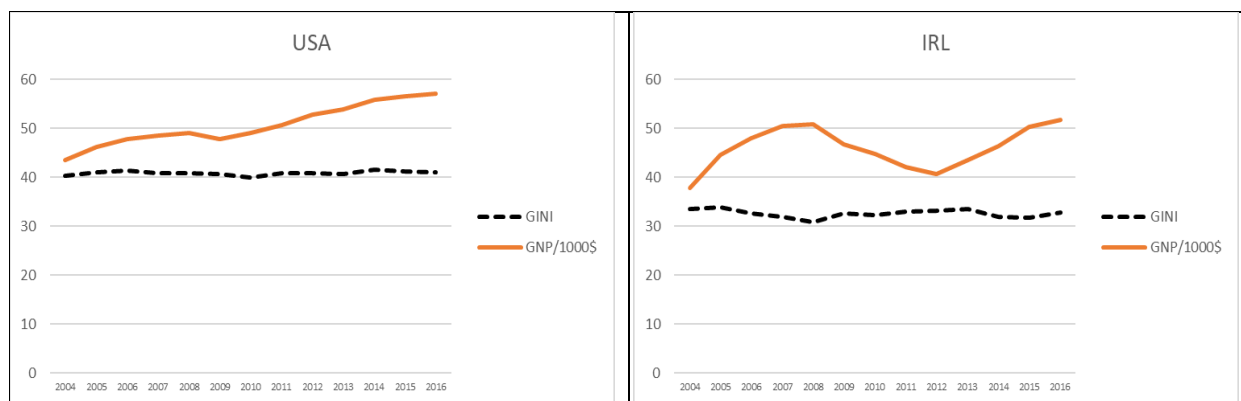


Figure 7: Category C – United States of America and Ireland

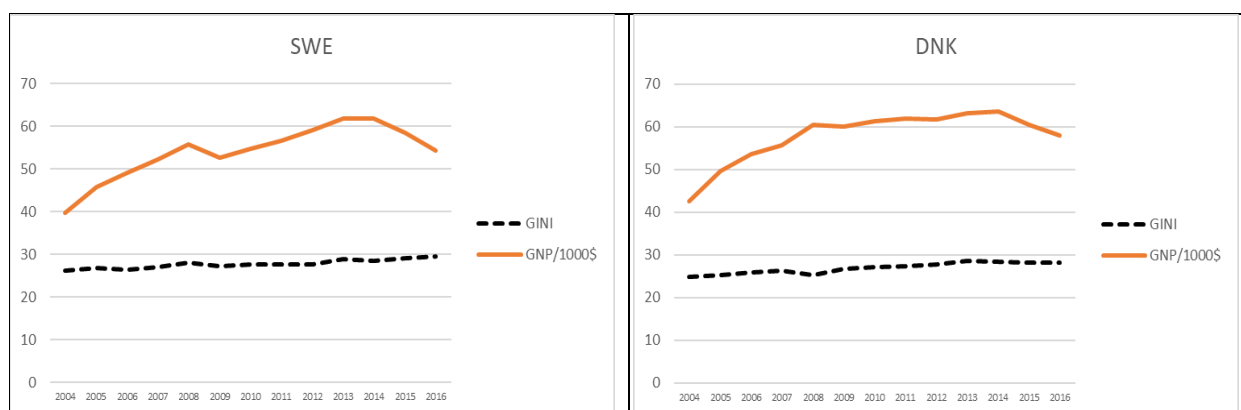


Figure 8: Category C – Sweden and Denmark

#### 4. ANALYSIS OF THE CHANGE IN THE GINI COEFFICIENT IN RELATION TO ANNUAL GNP GROWTH

One can easily notice that GINI index does not necessarily rise or fall with GNP, but rather follows its own, unpredictable course depending on a particular country in which it was measured. However, for some of the countries (Slovakia, Estonia) it is obvious that periods of the consistent GNP growth can be broken into two or more periods of GINI growth and dropoff. This kind of behavior cannot be characterized as the consequence of GNP growth solely, since it depends on the economy of a particular country. However, if the wealth redistribution mechanisms are weak (due to the low wages and weak welfare state) in the periods of rapid GNP growth there should be a significant concentration of wealth/income before this wealth may be redistributed across the population. For example, in Germany (Figure 6) as well as in the USA (Figure 7) there has been rapid GNP growth, but at the same time this growth has not been accompanied with sufficiently wide redistribution of wealth/income. GNP in Germany increased by \$12,700 in 12 years which gives the rate of change \$1,060 per year. In the USA, the rate of GNP change was \$1453 / y in the period from 1991. to 2018. Unfortunately, in both countries the GINI index went up. As opposed to Germany, in Poland (Figure 3), the GINI was declining. One might argue that Gini index in Poland went down because of the moderate rate of growth – the increase in GNP in Poland was relatively small (compared to Germany), around \$ 6,500 in 12 years, or \$540/y. The period in which the GINI coefficient grows from a local minimum to the next local maximum may be presented as “the period of the accumulation of wealth”. Similarly, the period that spans from a local maximum to the next local minimum may be called “wealth redistribution period”. To each local extremum on a graph of the GINI index curve, a corresponding GNP (GNI per capita) value may be assigned.

Two hypothesis were proposed:

- H<sub>1</sub>) With a steady gradual increase in GNP, there should be at least one period of accumulation and one period of redistribution, i.e. one rise and then a decline in GINI.
- H<sub>2</sub>) A sudden increase in GNP causes accumulation and thus an increase in GINI

These two hypotheses can be tested by observing the values of GINI and GNP at the beginning and end of a longer period (“endpoints”), but can be further tested by observing local minima and local maxima. The example of Estonia (Figure 5 and Table 3) shows that with a sharp increase in GNP comes first a period of accumulation (concentration) and an increase in the GINI coefficient, and only then a period of redistribution and reduction of GINI.

ESTONIA	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
GNP	7500	9730	11500	13430	15210	14650	14710	15990	16880	18250	19000
GINI	<b>33,6</b>	33,4	<b>33,7</b>	31,2	<b>31,9</b>	31,4	32	32,5	32,9	<b>35,1</b>	34,6
local extr.	max	min	max	min	max	min	-	-	-	max	-
GNP incr/y	-	2230	1770	1930	1780	-560	60	1280	890	1370	750
GNP incr.since last minimum	-	-	1770	-	1780	-	-	-	-	3600	-

Table 3: Estonia – the example

GINI reached its local minimum in 2009 and amounts to 31.4. From 2009 to 2014, GNP rose by as much as \$ 3,600. However, so much capital cannot be redistributed and GINI grows continuously from 31.4 to 35.1 and only then begins to fall to fall to 31.2 by 2016. The GINI coefficient is dependent on the GNP. As GNP rises, GINI rises and then falls, then rises again.

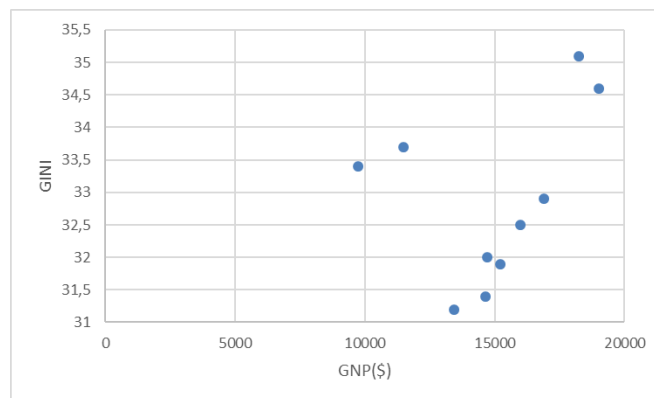


Figure 9: Estonia: GINI vs. GNP

A similar correlation between GNP and GINI occurs in France between 2005 and 2009 (Table 3, Figure 10.).

FRANCE	2004	2005	2006	2007	2008	2009
GNP	31360	35870	37850	40130	43460	43930
GINI	<b>30,6</b>	29,8	29,7	32,4	<b>33</b>	32,7
local extr.	max	-	min	-	max	min
GNP increase/y	-	4510	1980	2280	3330	470
GNP increase/min-max	-	-	-	-	5610	-
GNP increase/2008-2005	-	-	-	-	7590	-

Table 4: France – the example

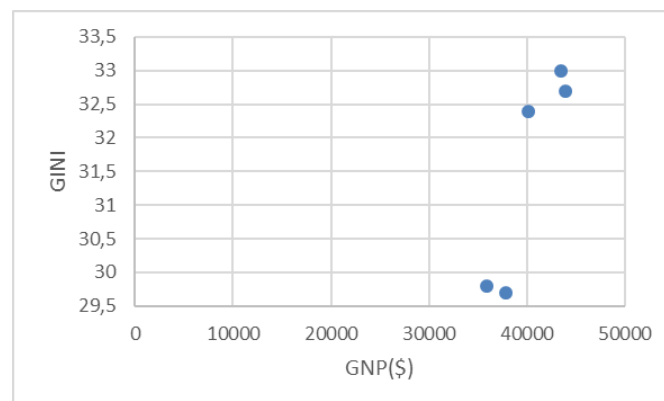


Figure 10: France: GINI vs. GNP

GNP mainly increases (in most countries on a longer time scale) as a function of time, while GINI often oscillates over time, i.e. it also oscillates depending on GNP, e.g. in Slovakia (Figure 11).

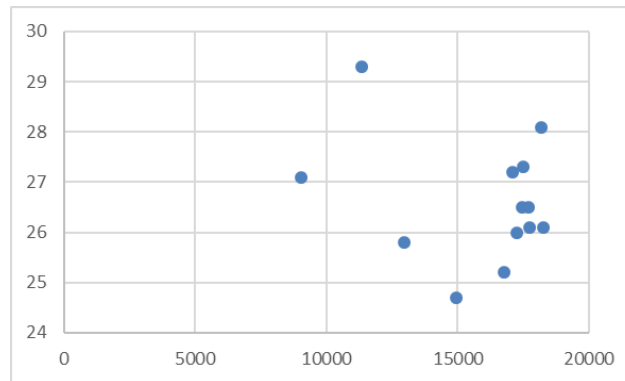


Figure 11: Slovakia: GINI vs. GNP

However, there are other examples. In Ireland, GNP is rising and GINI is steadily falling, leading to a negative correlation (Figure 12).

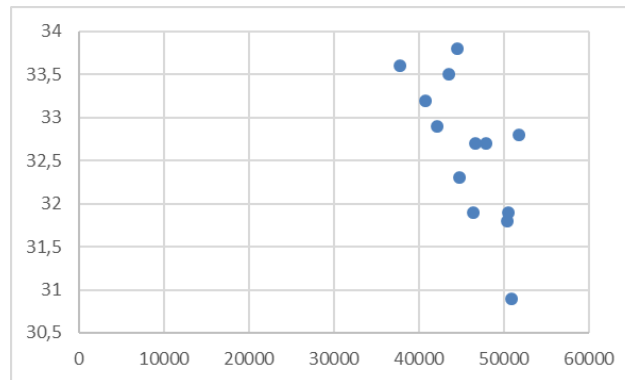


Figure 12: Ireland: GINI vs. GNP

The opposite example is the USA, where GNP and GINI are growing at the same time throughout the observed period (Figure 13).

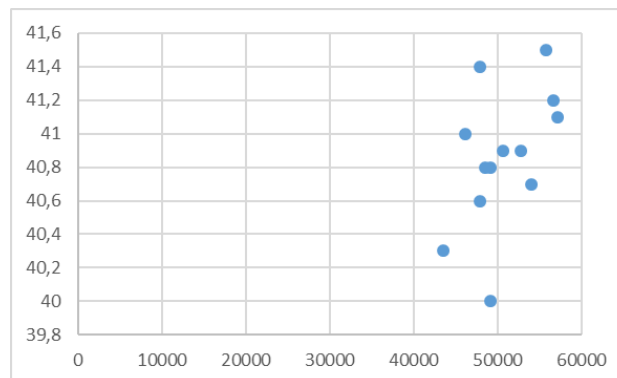


Figure 13: USA: GINI vs. GNP

Besides Estonia and France, the difference between the GINI coefficient of 2016. and 2004. was calculated for all the countries. This difference was compared with the rate of change of GNP.

Country	RGC/y	Incr. in GINI
ITALY (ITA)	307	0,9
HUNGARY (HUN)	371	0,4
GREAT BRITAIN (GBR)	467	-1,2
POLAND (POL)	539	-6,8
CZECH REPUBLIC (CZE)	618	-2,1
FRANCE (FRA)	643	1,3
SLOVAKIA (SVK)	645	-1,9
ESTONIA (EST)	911	-2,4
AUSTRIA (AUT)	1038	1
GERMANY (DEU)	1057	1,5
UNITED STATES OF AMERICA (USA)	1134	0,8
IRELAND (IRL)	1171	-0,8
SWEDEN (SWE)	1214	3,5
DENMARK (DNM)	1283	3,3

Table 5: The difference between the GINI coefficient of 2016 and 2004

In all of the countries included in the research, GNP increased in the observed period. However, while GNP increases the GINI index does not decrease as one would like to see. On the contrary, the worst trends regarding the equality can be observed in the category C. For example, Austria, Germany, the USA, Sweden and Denmark have excellent results regarding the GNP, but at the same time they have had an increase in the GINI coefficient. The only country (in the last category) where the GINI index falls is Ireland. It should be noted that Denmark and Sweden have GINI coefficients among the lowest in the world (in the period 2004-2016 Sweden was below 29,6, Denmark was never above 28,5 while for comparison the GINI coefficient in the USA is constantly above 40. However, in this analysis we were not interested in the absolute values of GINI coefficients but rather in the trends of change. As one can see on the Figure 14, in most of the countries covered by this study the wealth redistribution mechanisms cannot keep pace with the GNP growth. Countries with a moderate increase in GNP (B category) have the best results regarding the GINI coefficient. Among them, the only “intruder” is France, which had a sharp drop in GNP between 2014 and 2016, which is why it ended up in the middle of the table. By the 2014 France had an average increase of \$ 1196 per year and a GINI increase of 1.7 which would put her in the Category C. If we exclude France and Ireland from the study, we get a graph (Figure 14) that confirms the hypothesis that wealth is most evenly distributed when GNP growth is moderate.

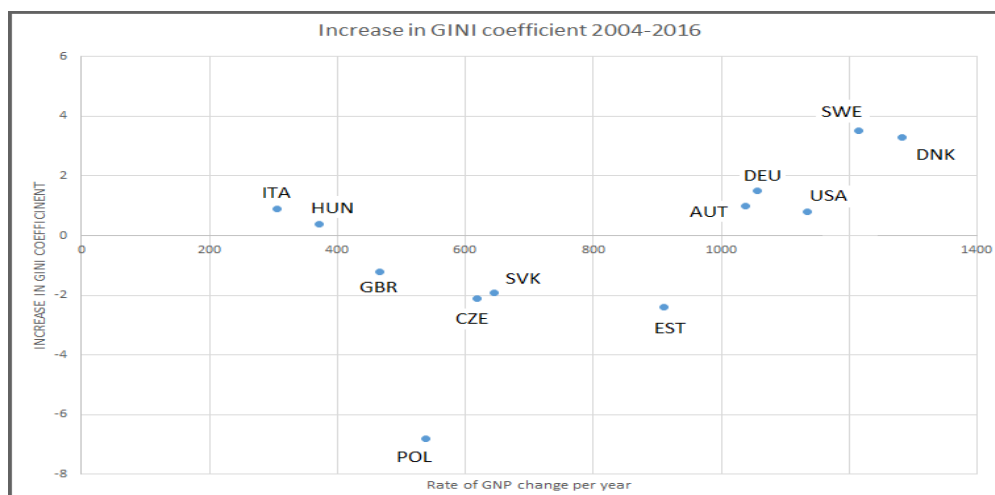


Figure 14: Gini index decreases with the moderate GNP growth

## 5. CONCLUSION

Paradoxically as it may seem the egalitarian society does not come automatically with prosperity. As we have seen the rapid GDP growth is often accompanied with unevenly distribution of wealth i.e. with the growth of GINI index. The behavior of the GINI index may be illustrated with “the funnel model”. While GNP grows, the speed of the wealth distribution saturates at a certain value, just as the flow of fluid saturates when the funnel is filled. The flow through the funnel cannot be increased above the maximum. Similarly, the speed of the wealth redistribution can be increased only if the GNP growth is accompanied with the number of companies, employment, higher wages and higher taxes for the rich [12]. It seems that countries with moderate increase in GNP have the best results regarding the equality. Despite all its limitations of as a measure of the social inequality, the Gini index was and still is the most used method. All of the tests performed in this research have shown very weak, or no correlation at all between GNP growth and Gini index. It is (naively) expected that, due different social and fiscal politics, or clearly emphasized fight against poverty, or welfare state policy in general, that new value, created through the GDP growth, shall be more evenly distributed. It is widely thought that Gini index is about to get smaller in direction that more people shall be included in wealth distribution as they are included in the creation of wealth. Contrary to expectations, nowadays, society is rather Pareto optimal, 80 percent of wealth is created by 20 percent of the population, thus, 20 percent of the population owns 80 percent of wealth. The fact that the wealthiest nations with large GNP per capita, such as Sweden, USA, Denmark or Netherlands have Gini index growth along with GNP growth, means that wealth is more and more concentrated. Research also showed that in the periods with the low rate of GNP growth, Gini index diminishes, and in the periods of intensive GDP growth, it grows as well.

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# THE SHARING POWERS IN THE CONSTITUTION OF FEDERAL STATES: THE APPLICABILITY OF DECENTRALIZATION

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## ABSTRACT

*This paper focuses on the applicability of federal system as a legal-political means in providing Minorities Rights and managing the relationship among various constituent groups as a real foundation of decentralization principle in sharing powers between constituent units. The federal system can be realized through the establishment of federal constitutions. We exemplify Iraq as a federal model of multi-culturalism state that accommodating with new development of democratic principles, which associate with diversity and decentralization in sharing power. The Iraqi constitution is approved through referendum, the Kurdistan population is also participated in this referendum, where the Kurdistan entity and equality among its national and religious components has been de jure recognized. Article 117(1) identify the Kurdistan as a sovereign federal unit enjoying legal-political competences. The study suggests a legal solution to minimize the conflicts between Iraqi entities, legal approach to resolve the ambiguity in several articles: 112(1), 116, 117(2), and 140(2).*

**Keywords:** *Federal system, sharing powers, decentralization, constitution, Kurdistan Region, Iraq*

## 1. INTRODUCTION

The federal principles are closely associated with democracy and diversity, the injection of democratic principles into constitutions of federal states is the main objective in establishing federal system. The modern federal idea for most a democratic system implies respect for people, cultural identities and their political and economic choices. The Democratic Constitutions is set out the federal principle in which encompass the level of local government authority and activity can do what, and then also guarantee Rights and freedoms. These points are basic to the defining element of federal concept, namely that a federal country is one where power is at once divided among federal entities and autonomous regions, and coordinated with the central government. In a dynamic and modern federal system there are no senior or junior governments such as cases in German and federal Belgium, just different entity performing different things within a common legal and political framework. Therefore, the federal idea implies an ongoing indeed never-ending dialogue and competition among entities. There are significant matters in each federation about foreign affairs, fiscal issues, and defense and security issues. The federal authority has exclusive jurisdiction over the latter. There is a growing consensus of regional and state governments including autonomous units, this step increases both transparency and accountability. In this context the federal concept re-emerging in many multinational religious and ethnic states, for example in the constitution of Ethiopian's



federation<sup>1</sup>. Furthermore, this constitution provides solution for inequality among entities. The objective of this study is to show how the federal system is workable and suitable in a country which represents multi-ethnic, religious, cultural diversity, and aspiration of local communities for obtaining self-rule which can be achieved within the framework of federal constitution. Therefore, decentralization in sharing power will avoid separatism movement, economic disadvantage of people, and terrorism. This paper also targets how is in a democratic environment federalism is workable as a reliable solution in many countries by solving conflicts between ruling majority and suppressed Minorities and settlement of disputed issues between local authorities and central government interests. The final target of this paper deals with Iraqi situation, we will investigate and analyze the internal conflicts that have currently taken place in Iraqi Society internal war, conflicts, terrorism as well. In order to identify the historical origin of existing conflicts and to seek the best legal framework in which to manage these differences and to avoid more war, devastation. All these important issues shall be addressed in the coming study.

## 2. HISTORICAL BACKGROUND OF FEDERAL CONCEPT

The new general notion of the issue of federalism in this century has begun after the collapse of Soviet Block and the falling of Berlin Wall and increasingly traced from the beginning of the 1990. As a result of these series of events, many internal conflicts of Socialist and Soviet system have turned to International conflicts<sup>2</sup>. The new situation has reached the level of threatening international peace and security. The recent development in the area of international relations was brought about the fact that the international community and the United nations cannot sit idly by as an onlooker without getting involved, on the other hand the reason behind the escalation of humanitarian disasters was due to internal conflicts and civil wars in many parts of the world specially in ex-socialist countries. These countries were faced consequently in several cases the applicability of international law has become the only option, because Chapter seven of UN states: when there are serious violations of international humanitarian law and international conventions, the SC of UN has an obligation to act according with the Charter to intervene for applying international law and to prevent further escalation of conflicts and preventing more atrocities from happening. The above-mentioned development at the international level has raised a new tendency of the federal system as a relevant instrument and proper recipe for providing best solution for minorities conflicts and internal wars. Federalism's contribution to the preservation and development of minority culture and languages, could also contribute to the pacification of inter-ethnic relationship<sup>3</sup>. This form of democratic government based on decentralization of power as a mean of managing the cultural diversity and multi-ethnic society problems as a valid option could satisfy the demands of local authorities and solving the problem of many federal territories. This new form of government has been suggested by many scholars in the field of political science and law that federalism employed as a legal and political framework, which can be significant instrument in recognizing the diversity and political independence for many cultural identities living within multi-national states<sup>4</sup>. In the past decade, world politics has known new developments, distinguished by a growing interdependence, the development of the European Union, as well as the increase of federalist solutions in conflict management studies, taking into account non homogeneous

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<sup>2</sup> S. Ali T. Hassan, For Kurdistan Statehood. International Law, Minorities's Rights, The Right of Self Determination, 2015.

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states and international guarantees <sup>5</sup>. The development of contemporary integrative and differentiative political processes: a growing decentralization in industrialized states; the development of new international organizations coordinating or integrating nation-states—the most prominent case being the European Union—; the use of federal instruments to manage domestic conflicts or, more broadly, to accommodate multinational states; and last but not least, the attempts to solve the current financial crisis with supranational tools<sup>6</sup>.

### 3. CONSTITUTIONAL AND GOVERNMENTAL MODELS IN A FEDERAL SYSTEM

Constitution is the basic fundamental law of a state which sets out how that state will be organized the powers and authorities of government between different political, legal units, and citizens that have been contributed among federal components. In this context the constitution is a statement of the basic principles and laws of nation, in addition the main law is regulating the rights and the freedom of states citizens. In federal states, the federal constitution sometimes come into force if it is approved by a majority of subjects of the federation (parliament of states, provinces, autonomous region. In terms of sharing power, the federal constitution allocates power between the national and state regional governments. In a federation, the division of power between federal and regional governments is usually outlined in the constitution. Almost every country allows some degree of regional self-government, in a federation the right to self-government of the component states is constitutionally entrenched. Components of federal states often possess their own constitutions which they may amend as they see fit, although in the event of conflict the federal constitution usually takes precedence <sup>7</sup>. In terms of structure of federal constitution where the division of power has been enshrined and the component states have been provided according to federal constitution the right to establish its own constitution, example Canadian constitution provides Quebec with self-constitution of the Quebec entity, Scotland as well. The structure of Iraqi constitution adopted 2005 has incorporated mechanism to protect the right of Kurdistan entity to enjoy independent institutions right as referred in Article 120-Constitution of Iraq “Each region shall adopt a constitution of its own that defines the structure of powers of the region, its authorities, and the mechanisms for exercising such authorities, provided that it does not contradict this Constitution”, provides the right of Kurdistan region to has its own constitution <sup>8</sup>.

### 4. EXCLUSIVE POWERS

There are several characteristics shared by all federal systems in general in terms of sharing powers. These powers can be defined in three aspects: (1) in the field of defense (2) in the field of foreign affairs (3) in the field of economy and revenue. These aspects exclusively are belonging to the central authority. However, in some federal countries the demand for more decentralization of power among entities and autonomous regions in the realization for allocating the power in some areas have been provided according to special agreement or special position of perspective entity in question. In Canada for example French speaking entity of Quebec has been granted special powers in the field of culture affairs. The constituent states of the Canadian province of Quebec claim for themselves a measure of international personality

<sup>5</sup> Lépine Frédéric, « A Journey through the History of Federalism. Is Multilevel Governance a Form of Federalism? », L'Europe en Formation, 2012/1 (n° 363), p. 21-62.

<sup>6</sup> Watts, Comparing Federal Systems, Third Edition. Thomas Hueglin and Alan Fenna, Comparative Federalism: A Systematic Enquiry (Peterborough, Ontario: Broadview Press, 2006). A Global Dialogue on Federalism, a collection of seven edited books on the federal comparative studies of states, published by the Forum of federations, IACFS, and McGill-Queen's University Press.

<sup>7</sup> Federalism, Wikipedia contributors, Wikipedia, The Free Encyclopedia, 1 June 2020, <https://en.wikipedia.org/w/index.php?title=Federalism&oldid=960219438>

<sup>8</sup> Iraqi constitution, Article 117-second provision ‘This Constitution shall affirm new regions established in accordance with its provisions’. <https://www.wipo.int/edocs/lexdocs/laws/en/iq/iq004en.pdf>.

and enter into agreements directly with foreign states <sup>9</sup>. Moreover, when Australia enters into a treaty with other states, the treaty presumably applies both to the constituent's states of the federation and to the Australian's many external territories <sup>10</sup>. In these formulations the recognition that states or provinces in federal systems have separate legal systems and, in accordance with domestic constitutional principles, may have exclusive competence to implement the treaty in question <sup>11</sup>. These kinds of competence excursive by constituent states cooperatively with the central government is a good example of sharing power under umbrella of cooperative federal model. Cooperative federalism is a model of intergovernmental relations that recognizes the overlapping functions of the national and state governments. This model can be contrasted with the model of dual federalism, which maintains that the national and state governments have distinct and separate government functions <sup>12</sup>. In contrast, Asymmetrical federalism refers to a federal system of government in which power is unevenly divided between states <sup>13</sup>. In asymmetrical federalism some states have greater responsibilities or more autonomy than others. An asymmetric federation must have a federal constitution and all states in federation have the same formal status as state <sup>14</sup>. It is worth-mentioning in this context to give a modern example of a form of federal government based on literature and expert, German and Brussels are a good example of diversity in forming federal government and contributing the competence among entities and self-governance units. The combination of these units produces a complex configuration, both the Flemish and the Francophone communities have jurisdiction over educational and linguistic matters within the Brussels region, making the non-territorial aspect of their operation indispensable <sup>15</sup>. The structure is highly asymmetrical, as the Germans have only a community and Brussels has only a region. In addition, the Flemings have fused their community and region administrations to produce a more unified Flemish structure <sup>16</sup>. The Francophone community, however, remains separate both from the Wallonia region and from the Brussels capital region <sup>17</sup>.

## 5. CONSTITUTIONAL DIVISION OF COMPETENCES IN FEDERAL SYSTEM

This part includes the effectiveness of federal system as a legal and political framework for the solution of existing conflicts among federation components, exemplifying many multinational and religious societies which have successfully provide the best framework solution for ending these conflicts. On the other hand, providing opportunities for these components to obtain adequate competence and to participate in running the country's affairs and sharing economic benefits (gas and oil revenue) with ruling majority. These important matters shall be enshrined in the federal constitutions and several examples will be provided in this regard.

### 5.1. From principle of centralization to decentralization

There is a huge difference between the federations in terms of degree of centralization and decentralization of powers between entities among federations. In this section we try to select

<sup>9</sup> Balkin, R. (1998). *International Law and Australian Federalism*. Edited by Brian R. Opeskin and Donald R. Rothwell. Victoria: Melbourne University Press, 1997. Pp. xviii, 374. Index. *American Journal of International Law*, 92(4), 793-796. doi:10.2307/2998151.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid.

<sup>13</sup> Agranoff, Robert. "Federal Evolution in Spain." *International Political Science Review / Revue Internationale De Science Politique*, vol. 17, no. 4, 1996.

<sup>14</sup> Tarlton, C. D. (1965). Symmetry and asymmetry as elements of federalism, a theoretical speculation. *The Journal of Politics*, 27(4): 861-74.

<sup>15</sup> Sherrill Stroschein, What Belgium Can Teach Bosnia: The Uses of Autonomy in 'Divided House' States, *Journal on Ethnopolitics and Minority Issues in Europe*. Issue 3/2003.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

several models of contemporary federal system, that is relevant to our study in applying the principle of decentralization and division of competences between constituent units:

- 1) Belgian government was highly centralized; virtually all-important functional responsibilities and fiscal resources and powers rested with the national government<sup>18</sup>. As a result of the reforms, new sub-national governmental institutions have been created, and many of the central government's functions and fiscal resources have been devolved to these new institutions<sup>19</sup>. The author added that the Belgian government used a process of decentralization, as a solution for the existing cultural and linguistic conflicts in Belgium. Belgium approaches in applying the principle of decentralization have been developed and enshrined for satisfying the demand and interests of communities and regions as stated in article 2 of Belgium constitution. As a member of Re-Bel initiative form, I am witnessing the continuous growing tendencies of the concept decentralization development with participation of all communities and regions representatives. I am trying in this paper to bring this model into insight to be workable and incorporate to Iraqi system, in particular to be apply to Kurdistan Region of Iraq.
- 2) The decentralization of power among components and how the federal system have worked out in providing Canadian Sovereign entities with authority to run their own affairs in many aspects: sharing, administrative and financial powers. We can exemplify the Quebec entity as a model for contributing the power in within the framework of Canadian federal system. One of the most significant elements is binational nature of Quebec entity with French-Canadians entering the new state as a political community, concentrated in the province of Québec, sharing the French language and Catholic religion<sup>20</sup>. As Jan has suggested, ethno-linguistic heterogeneity favors decentralization in federations and, with the establishment of a majority French-speaking and Catholic province of Québec, the Canadian federation continued making claims for further decentralization, for example, in the policy field of gave a majority of French-Canadians “their” government<sup>21</sup>. Nevertheless, Québec governments, especially but not solely when formed by the PQ (1994–2002 and 2012–2014), culture and in the fiscal sphere more generally<sup>22</sup>. As well As in the field of international relation Canadian province of Quebec claim for themselves a measure of international personality and enter into agreement directly with foreign states<sup>23</sup>. The asymmetric Quebec model of decentralization is quite similar to the federal entity in Kurdistan Region of Iraq.
- 3) United Kingdom is the only country in Europe which does not have a written Constitution, but the basic foundation written law was the Magna Carta. Currently the state structure is established based on the concept of devolution of power, and government power delegated from central government to components levels (constituent units). One of the subjects of this devolution system is the legal status of Scotland entity within the framework of UK system. We have found the legal status of Scottish entity relevant to our case study in this paper, especially in the field of decentralizing system.

<sup>18</sup> Todman, L.C., "The Decentralization of the Belgian Government", Andersson, A.E., Harsman, B. and Quigley, J.M. (Ed.) *Government for the Future (Contributions to Economic Analysis, Vol. 238)*, Emerald Group Publishing Limited, Bingley, pp. 153-187. 1997.

<sup>19</sup> Ibid.

<sup>20</sup> André Lecours, *Dynamic De/Centralization in Canada, 1867–2010*, *Publius: The Journal of Federalism*, 49(1), Winter 2019, 57–83.

<sup>21</sup> Erk Jan. *Explaining federalism. state, society, and congruence in Austria, Belgium, Canada, Germany, and Switzerland*. London: Routledge. 2010.

<sup>22</sup> Lecours, André, “Dynamic De/centralization in Canada, 1867–2010,” *Publius: The Journal of Federalism*, 2017.

<sup>23</sup> Balkin, R.. *International Law and Australian Federalism*, 92(4), 793-796. 1998.

Recently, during the pandemic outbreak crisis (Covid-19) the tendency for more independence has been growing intensively in Scotland. Besides, Scotland has been holding twice referendum for obtaining its own independence, still pro –independence group promulgating for exercising the right of self-determination.

## **6. DISTRIBUTION OF POWERS AND IRAQI CONSTITUTION-2005**

In this section we will concentrate on the Iraqi situation and the applicability of constitution provisions. Two important points will be dealt with: (1) the applicability of Articles of existing constitution that provide the Rights of Minorities and the legal statues of entities, municipalities as well, and their participation in running its own affairs, (2) in the field of sharing powers between the central government and Kurdistan entity according to article 112, particularly oil and gas revenue . Since the establishment of federal Constitution 2005, the relations between Central Government and Kurdistan institutions increasingly getting worst over many issues. Especially in the field of defense and security and in the field of oil and gas revenue as well as the question of article 140 about disputed areas. Analyzing the provisions of constitution that defining the mechanism of sharing powers between the central government and entities, which led to many conflicts between these two sides, therefore we try to propose the suitable solution for existing conflicts. In relation to that we will view the present negotiations which are going on between two parties (Central Government and Kurdistan Entity) aimed at finding the legal framework which is workable in applying the decentralization system which is the core of modern federal system.

## **7. THE APPLICABILITY OF DECENTRALIZATION SYSTEM IN IRAQ**

According to federal constitutions, every entity has its own competencies and sharing power with central government, which is either lead by prime minister or local government. Scotland as an example that leads by prime minster, in Russian federation Chechnya republican leads by president of this local government. The mixed model between these two latter examples is applied in Kurdistan Region of Iraq (KRG) that is similar to the Chechnya Republic system in one way, where the KRG has a president and prime minister. The distribution of competencies between the central federal government in Baghdad and the regional levels (KRG) according to article 116 in Iraqi constitution is defined in constitution-2005. The article 116 states “The federal system in the Republic of Iraq is made up of a decentralized capital, regions, and governorates, as well as local administrations”<sup>24</sup>. Recently the ongoing dispute between entities in federal Belgium over local revenue issues is still facing federal authority. The same conflicts are existing between central government and Kurdistan Region concerning decentralization and sharing power on disputed areas, like Shengal and Ninawa valley. However, the constitution of Iraq has come force and explaining in article 117(2) that this Constitution shall affirm new regions established in accordance with its provisions<sup>25</sup>. Several law experts found ambiguity in this article and they suggest to put into practice and activate this provision of constitution that allow the promotion through establishing more autonomous region for constituents’ unit like Yezidi in Shengal and Christian in Ninawa Valley. Indeed issues of federal system at center of active political legal discussion is in every part of the globe, particularly in areas where conflict resolution is critical necessity, but unfortunately after the establishment of new Iraqi federal constitution in 2005, many issues between central government and Kurdistan region has been continuing over the allocation of budget and oil and gas sectors, which remain unsolved, as well as the issue over disputed areas and Article 140(2) remains unsolved so far<sup>26</sup>.

<sup>24</sup> Iraqi Constitution, 2005.

<sup>25</sup> ‘This Constitution shall affirm new regions established in accordance with its provisions’. <https://www.wipo.int/edocs/lexdocs/laws/en/iq/iq004en.pdf>.

<sup>26</sup> Article 140(2): The responsibility placed upon the executive branch of the Iraqi Transitional Government stipulated in Article 58 of the Transitional Administrative Law shall extend and continue to the executive authority elected in accordance with this

Our perspectives regarding these conflicts are to overcome the disagreements between the central government and Kurdistan entity over natural resources and disputed area. Analyzing the sensitivity of the situation, we presume the international involvement and mediation will be helpful in finding the compromising solution for all conflicting matters based on Iraqi Federal Constitution. The dynamic development of these relations, currently lead to promote another scenario suggests that Iraqi constitution shall be subjected to amendment to accommodate with new development in the whole country and demands, and preferences of local regions and municipalities (constituent units) to be taken into consideration by central authority due to the emergent of new tendencies toward further decentralization. To support this new tendency, the article 116 of Iraq constitution concerning the sharing power between central and local components states that “The federal system in the Republic of Iraq is made up of a decentralized capital, regions, and governorates, as well as local administrations”. However, this article is still not being activated and did not apply accordingly.

## **8. DECENTRALIZATION AND RESPONSIBILITIES TO DRIVE ECONOMIC GROWTH (FISCAL DECENTRALIZATION)**

The exploration and production of oil in Iraq started as early as the 1920s. After several decades of war and sanctions, Iraq against the backdrop of its post-conflict setting, besieged by competing political, ethnic and sectarian struggles. After this process a new opportunity emerged to invest oil and gas in this country, which is building up this sector as a priority for the central level. While at the local level, this sector starting exploration and production of oil and gas only in 2006, the Kurdistan regional government (KRG) concluded more than 50 production-sharing contracts (PSCs) with international oil companies (IOCs). The development of major oil and gas reserves in the autonomous Kurdistan Region of Iraq (KRI) is dating back no earlier than 2005. Despite promising geological signs, political conditions largely prevented exploration and production until the US-led coalition for removal of the Saddam Hussein regime. The story since then has attracted major media interest, perhaps even more than has been devoted to the larger fields in the south of Iraq like Basra city. The Kurdish oil is important for various reasons. It represents the rare case, in recent history, of the discovery of a large new onshore conventional petroleum province. It illustrates the development of such a province under conditions of moderate technical challenge but major and volatile political uncertainty. Considered as a unit, the KRI could soon emerge as a significant oil producer on a par with, or even exceeding, Oman, Colombia, or Azerbaijan and, like them, effectively outside OPEC<sup>27</sup>. Initially the contracting partners were minor oil companies such as Gulf Keystone, Genel and Western Zagros. Gulf Keystone discovered the giant Shaikhan field with 14 billion barrels of oil in place. It was one of the world's largest onshore discoveries in more than 20 years. In 2012, ExxonMobil pioneered as the first major IOC (International Oil Company), followed by Chevron, Total and Gazprom. The changes and the progress made by Kurdistan autonomous region within the Iraqi country have obtained many powers after the recognition of Iraqi constitution since 2005, including legislature, executive, and judicious powers, in addition to the significant development of petrochemical reserve. Furthermore, the KRG has proven the development of many oil-fields, beside gas-fields, primary and secondary schools, higher education within the Kurdistan entity, for example in August, 2019 the KRG exported 272,000 barrels per day, and the KRG sold crude oil and condensate worth more than 8.3\$ billion in 2019, up from 2018 7.75\$ billion, however the crude oil were sold to local refineries or to local sales for domestic use because KRG government is not allow to sale the crude oil internationally

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Constitution, provided that it accomplishes completely (normalization and census and concludes with a referendum in Kirkuk and other disputed territories to determine the will of their citizens), by a date not to exceed the 31st of December 2007.

<sup>27</sup> Robin Mills, *Under the Mountains: Kurdish Oil and Regional Politics*. WPM 63, Oxford Institute for Energy Studies (Registered Charity, No. 286084). January 2016.

and there is many ongoing negotiation and legal discussion between the central government and Kurdistan Regional Government in this regard. Pursuant to Iraqi constitution, 2005, Article 112(1) states “The federal government, with the producing governorates and regional governments, shall undertake the management of oil and gas extracted from present fields, provided that it distributes its revenues in a fair manner in proportion to the population distribution in all parts of the country, specifying an allotment for a specified period for the damaged regions which were unjustly deprived of them by the former regime, and the regions that were damaged afterwards in a way that ensures balanced development in different areas of the country, and this shall be regulated by a law”<sup>28</sup>. The article 112(1) is focused on the present oil and gas fields (refers to August 2005), therefore the non-producing fields are not falling within the shared oil and gas fields jurisdiction between central authority and the Kurdistan Regional Government. If we interpretate the text of Article 112(1) we can come to a conclusion that all the exploration and production oil and gas fields within the Kurdistan territory blocks after 2005 could be belong to Kurdish people. unfortunately, this article not put into practice accordingly, and the oi-gas revenue still remain unsolved problem between these central and local governments. Many politicians and legal experts in field of economy and law have controversial ideas about this article that have two aspects:

- **The first aspect:** The central authority in Baghdad believes illegal that KRG to export oil and gas or sign contracts with foreign oil companies, and the central government disagree with this interpretation of the Iraqi Constitution and believes that the KRG lacks the essential constitutional authority to regulate the management of oil and gas sector. This disagreement between central government and KRG, lead the central government in Baghdad to proceed and raise these revenue problems in the Federal Supreme Court in 2018, but the decision still in pending trail.
- **Second aspect:** The Kurdistan authority believes that the hydrocarbon and mineral on or under the surface of the Kurdistan territory after August 2005 all belong to the Kurdistan Region of Iraq within the meaning of the Iraqi Constitution Article 112(1). Therefore, the Kurdistan authority or local government step the position that the non-explored or non-produced crude oil or gas fields after August 2005 do not fall within the shared jurisdiction of the Baghdad central government and the Kurdistan Government, and, therefore, the Kurdistan Government as a local federal unit has exclusive jurisdiction over such fields.

Consequently, we have two important legal suggestions for solving these pending cases between central government in Baghdad and local government of KRG:

- 1) Amendment of a few articles in Iraqi Constitution concerning sharing jurisdiction in oil and gas sector and other minerals within the territory of KRG. Based on Article 112(1) As long as negotiations not reaching any positive agreement between central government and local government, and because KRG economically has potential advanced progress in oil and gas sector that advantaged in this area which attract many international oil companies and also the new economic model for gas discoveries and production in several parts of Kurdistan Region, as a legal scholar and economic experts we recommend the amendment and interpretation of article 112(1) by law to extend this article for more public service and to give a clarification, and a new tendency for more applying decentralization principle and satisfy the demands and interests of local population. Aimed at ending the dispute between central government and local authorities, for example KRG, Basra, also we propose Kirkuk City to give more competences to run their economic and administrative affairs since Kirkuk population disadvantaged from benefit of national resources (oil and gas) and petrodollar program.

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<sup>28</sup> Iraqi Constitution, 2005.

- 2) Fiscal decentralization is the best solution to solve these conflicts between central government and KRG. The fiscal decentralization is associated with developing national income. In particular, the decentralization of revenue-raising powers has a stronger effect on performance than the decentralization of spending. Therefore, the ongoing new tendencies in some local regions, example Scotland, Northern Ireland, Wales and other local government within the UK framework, another example in Belgium country is Antwerp Province which considered as a capital of the Flemish Region, these two examples support the KRG arguments for providing further fiscal decentralization rather than stagnation which put obstacles in the economic growth and prospers life of KRG' population. Therefore, these new international experiences in such countries are growing and rapidly increasing the demands of a radical decentralization of powers within the central government.
- 3) Holding referendum is another proposal for attending more radical decentralization based on local citizens votes to determine their preferences to avoid and minimize the political conflicts between central government and local government (KRG).

The impact of fiscal referendums on policy decisions of subnational governments is of interest of local citizen. For example, in Swiss cantonal level, all cantons know a derivative of the fiscal referendum. The fiscal referendum can be differentiated according to five categories in case of Swiss federation: the fiscal referendum for public expenditures, for public-sector bonds, for taxes, for holdings on enterprises and for purchases of real estate <sup>29</sup>. Furthermore, the number of signatures required to qualify for ballots and the time span within which the signatures have to be collected for the optional fiscal referendum is also very diverse among cantons in Swiss federation <sup>30</sup>. It differs from 0.49 percent of signatures from all voters in the canton of Obwalden (OW) compared to 4.28 percent of signatures in the canton of Jura. The time span for collecting the signatures varies from 30 days to 90 days among cantons with an optional fiscal referendum. Thus, the institutional variation on the Swiss sub-federal level provides a laboratory to investigate the impact of fiscal referendums on government centralization. This is a study case of Swiss federation according to above mentioned-published paper. With regard to the application of decentralization in the fiscal area of KRG we can exemplify the model of Swiss cantons, more supportably by Oates, 1972 theory which proposes his Decentralization Theorem as a guideline for the distribution of fiscal competencies among different tiers of government: "In the absence of inter-jurisdictional externalities and economies of scale in the provision of public services, decentralization of government activities is preferable" <sup>31</sup>. Following the Swiss empirical model and Oates theory for fiscal decentralization, the Kurdistan Region (KRG) could negotiate further with central government for holding referendum to polarize of fiscal decentralization between these two sides. In many federal countries like Swiss ...the fiscal decentralization is obtained by fiscal referendum in canton levels based on percentage of the voters. The economic curve of KRG is developing and rising upward after attracting many international and giant private companies to discover, explore, and produce oil within many geological blocks of Kurdistan Region (see the below map for more details). In addition to oil revenue the KRG holds three percent of proven global gas reserves, which is estimated at 200 trillion cubic meters. These reserves put the region at the eighth largest proven reserves in the world after the United Arab Emirates and more than that which Iraq has (112 trillion cubic meters) <sup>32</sup>.

<sup>29</sup> Schaltegger, Christoph A. and Feld, Lars P., On Government Centralization and Budget Referendums: Evidence from Switzerland (December 2001). CESifo Working Paper Series No. 615.

<sup>30</sup> Ibid.

<sup>31</sup> argues that decentralization is appropriate if residents in different sub-federal jurisdictions have different tastes for public services. OATES, W.E. (1972), Fiscal Federalism, New York.

<sup>32</sup> Mohammed Hussein, Challenges of the Iraq Kurdistan's oil sector, KCCRC.



Therefore, the public services of KRG population needs to gain more political stability with central government in Baghdad for holding a fiscal referendum and to resolve other suspending economic problems with central government of Iraq.

## 9. CONCLUSION

The paper attempts to explore the dynamic development and growing tendencies of the applicability of federal models where the decentralization systems have become relevant means for sharing power in the multi-states and diversity societies and providing equal opportunity for constituent units to participate in decision making. In terms of promoting new mechanism and strategy in implementing decentralization system is suitable to Iraqi case, such a mechanism is workable in many federal countries regarding the decentralization system. On the other hand, the practical implementation of decentralization mechanisms was applied in Belgium model and Canadian United Kingdom (Scotland), Swiss, and Russian federations are successfully deemed to reduce and pacificate the existing conflicts and disagreements between central governments and federal entities, autonomous regions over sharing competencies with central federal governments. The existing disputes between central government and federal entities is one of the key factors which lead to growing ideas and theories for applying the democratic means and to address the interests and demands of local citizens or communities to satisfy their participation in running their local affairs with the central federal government. The imperative points in this paper are to improve the connection between the Iraqi central government in Baghdad and Iraqi federal components particularly KRG. We will give the priority solution to reduce these disputes and conflicts as the following:

- 1) We conclude that the fiscal decentralization in Iraqi federal model should be given a priority regarding public services and communities demands to satisfy their preferences.
- 2) To control and avoid more polarization of Iraqi society over the issue of distribution of wealth and revenue.
- 3) The paper also raises the issues of many models of fiscal decentralization in Belgium, Canada, Swiss, UK, and Russia in other federal countries to be applied in Iraqi federal system which is apparently proposed in this paper as a solution of current disagreement between central and local governments and constituent units.

Additionally, the paper addresses several options and solutions for minimizing the risks of escalation of more conflicts and disagreement between central government and federal components of Iraq. One of the options is the amendment of articles 112(1) of Iraqi constitution concerning the fairly distribution of national revenue and fiscal decentralization. The most significant option is the ultimate referendum on fiscal decentralization based on citizen votes and preferences which is highly recommended. Another option is the reactivation of articles 116 and put it into practice, the similar approach is recommendable in dealing with second provision of article 117(2). As far as article 140(2) concerning the disputed area, we propose to be reframed and rectified accordingly. Finally, the obvious shortcomings of the federal constitution texts in disregarding of the principle of self-government which is the most important principle of federal system are to be rectified.

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# A SYSTEMATIC LITERATURE REVIEW OF SUPPLY CHAIN RELATIONSHIP AND SUSTAINABILITY

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## ABSTRACT

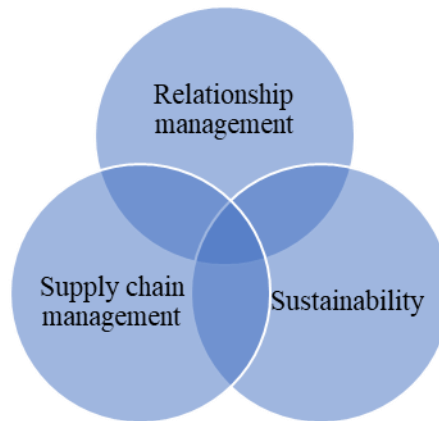
*The economic context of the last decades has been marked by many changes that continue to challenge the management strategies of companies. Nowadays, companies are increasingly interested in sustainability as a key element to improve their efficiency and effectiveness. However, they need to integrate sustainable practices in their supply chains more effectively. Stakeholders play an essential role in enhancing supply chain sustainability and firms' performance. Many recent studies highlighted the importance of sustainable supply chain from different perspectives. The current review explores the relational perspective and its contribution to sustainable development and firm competitiveness. To this end, a systematic literature search was conducted, in accordance with PRISMA guidelines, on science direct database for publications between 2011 and 2021, in order to provide a comprehensive analysis on supply chain relationship and sustainability. This resulted in 50 selected academic articles which are analyzed and categorized by NVivo software. The findings reveal that a successful sustainable supply chain requires several elements such as stakeholders' commitment and innovation to achieve sustainable objectives. This review helps to develop a general understanding of the relationship between the key concepts and also provides future research directions that can be studied in the Moroccan economic context.*

**Keywords:** *supply chain management, supply chain relationship, sustainability, systematic literature review*

## 1. INTRODUCTION

Currently, environmental issues have become a preoccupation for most of companies. These companies are putting an effort to reduce carbon emissions, using less energy and water while maintaining their economic competitiveness (Chen, Wang and Chan, 2017). In fact, to ensure a sustainable tomorrow, companies should recognize that they have important economic, social and environmental responsibilities and are committed to making a difference. The ones that seize that opportunity to create value by upgrading the whole supply chain, will find their success is in a word: sustainable. In some ways, sustainable development is the most important conversation taking place in our society today due to the benefit that it can generate. In its broader definition, sustainable development is defined as “a development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987 as cited in (Chen, Wang and Chan, 2017). While the sustainable supply chain (SSCM) is referred to as “the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements.” (Seuring and Müller, 2008).

Hence, sustainable supply chain has several challenges to consider, particularly that of maintaining a relevant network of partners, which is resilient enough to offer the same sustainability in all conditions. This paper conducts a systematic literature review aimed at collecting, analyzing relevant papers, and exploring the intersection of literature illustrated in Figure 1 in the area that overlaps supply chain management, sustainability, and relationship management. by combining them in a research field.



*Figure 1: Intersection of literature*

Few papers have examined literature in the past, regarding the impact of supply chain network on the sustainability of firms and their competitiveness. In summary, the review is guided by the following research question: Does the relationship aspect of the supply chain, contribute to a sustainable development and firm competitiveness?

To answer the above question, this article is structured as follows: First, we briefly outline the background of the research. Second, we present the methodology used and the objectives of the study. Third, we illustrate the descriptive results and the discussion. And finally, we summarize conclusions and some directions for future research.

## **2. RESEARCH BACKGROUND**

To provide a general understanding for this review, we briefly introduce the key terms: supply chain management (SCM), relationship management (RM), and sustainable supply chain management (SSCM).

### **2.1. Supply chain management**

Since its appearance, the concept of supply chain management has not ceased to be developed in line with the evolution of the economic context of logistics. Many academics and consultants have made efforts to evolve it to reflect the knowledge gained through experiences, to cope with market volatility, and to meet customer demand. Mentzer JT. (2001) as cited in Chin, Tat and Sulaiman. (2015) defined supply chain management as “a network consists of all parties involved (e.g., supplier, manufacturer, distributor, wholesaler, retailer, customer, etc.), directly or indirectly, in producing and delivery products or services to ultimate customers – both in upstream and downstream sides through physical distribution, flow of information and finances”. The main objective of supply chain management is “to provide the right product to the right customers at the right cost, right time, right quality, right form and right quantity” (Basher, V. 2010 cited in Chin, Tat and Sulaiman, 2015). Supply chain management comprises upstream and downstream members and covers several dimensions, including the relational aspect, according to Seuring and Müller (2008) cited in Bhutta *et al.* (2021) an effective supply

chain requires successful relationships at different levels of the organization, such as relationships with suppliers, customers, employees, and the community. In fact, coordination between partner organizations in a supply chain network requires significant engagement at the strategic level.

## **2.2. Relationship management**

Relationship management was initially developed by the marketing field, which then was adapted into the SCM domain (Gupta *et al.*, 2019). Relationship management drives firms to identify and manage relationships with their key stakeholders including suppliers and local community that are fundamental for success and sustainability (ISO, 2015b as cited in Bastas and Liyanage, 2019). Through engaging, collaborating, and managing relationships, the capability of organizations to identify, integrate and improve triple bottom line (TBL) sustainability is highly increased (Aquilani *et al.*, 2016; Garvare and Isaksson, 2001 as cited in Bastas and Liyanage, 2019). A large number of studies have analyzed inter-organizational relationships such as collaboration within the supply chain. In SCM collaboration means: “two or more independent companies work jointly to plan and execute operations with greater success than when acting in isolation” (Simatupang and Sridharan, 2002 as cited in De Stefano and Montes-Sancho, 2018). The stakeholder’s collaboration needs to be based on coordination and cooperation activities (Spekman *et al.*, 1998 as cited in Lo *et al.*, 2018). Establishing cooperative relationships is necessary for firms to survive in a competitive environment (Liu *et al.*, 2021).

## **2.3. Sustainable supply chain management**

Today, firms have changed their focus and are beginning to address environmental, economic, and social issues in their supply chains. This has led to the emergence of new concepts, including the transition from a supply chain approach to a sustainable supply chain approach, known as sustainable supply chain, green supply chain, responsible supply chain, etc. (Centobelli *et al.*, 2021). Seuring and Müller (2008) define sustainable supply chain management as: “the management of material, information, and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements.”. This definition demonstrates the link between supply chain management and sustainable development. The SSCM has been highlighted by many authors as a new opportunity and a new vision for sustainable manufacturing. Indeed, focal firms have to develop a strategy to promote sustainability throughout the supply chain to avoid any negative associations that could affect their reputation. (Cote *et al.*, 2008 as cited in Kumar and Rahman, 2015).

## **3. OBJECTIVES AND RESEARCH METHODOLOGY**

### **3.1. Purpose of the research**

A systematic literature review methodology was selected, in order to have a representative understanding of the existing knowledge. Fink (2005) presents the following definition: “A literature review is a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners”.

The aim of this review is:

- To summarize the literature about the supply chain relationships and the sustainability in the last ten years and analyze it from a descriptive prescriptive;
- To identify the impact of the supply chain relationships on the sustainability and competitiveness of firms;

- To investigate the linkage between the supply chain relationship and sustainability;
- To highlight the gaps that can be a lead for future research.

### 3.2. Research methodology

To address the research objectives, the review methodology is conducted by following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol (Liberati *et al.*, 2009), Figure 2 illustrates the research process.



Figure 1: Research process

#### 3.2.1. Search strategy

In this systematic literature review, we applied a search strategy to identify relevant papers. The bibliographic database used in the search was Science Direct, which contains numerous scientific documents. From our research subject, we defined the following keywords: "Supply chain relationship" AND "sustainability". On the search, 915 results were found in this database. which was conducted on November 28, 2021.

#### 3.2.2. Selecting criteria

The selection criteria were based on the PRISMA Statement (Liberati *et al.*, 2009). The search focused on the mapping of existing literature on supply chain relationships and sustainability. The analysis period covered in this study went from 2011 to 2021 (Table 1). the rest were excluded from the search. A total of 220 results were excluded at this round. We used the keyword, "relationship management" in (title, abstract, keywords) filter to focus on management field and we've excluded 563 results.

<b>Database</b>	Science direct
<b>Keywords</b>	"Supply chain relationship" AND "Sustainability"
<b>Article title, Abstract, keywords</b>	Relationship management
<b>Year-wise</b>	2011 to 2021.
<b>Publication type</b>	Research paper and reviews.

Table 1: Database search string  
(Source: Self elaboration)

We've eliminated conference papers, books, and book chapters.

#### 3.2.3. Quality assessment

After the extraction of 121 references, we used as a reference manager the ZOTERO to collect and examine papers. To ensure the quality and relevance of the references included in the review process, we read the titles, abstracts, and keywords, of these papers and made a preliminary judgment if it was suitable for inclusion in the following analysis. Therefore, we found 71 papers did not relate to the theme. In this stage, a total of 50 papers were selected and analyzed by NVIVO software. Figure 3 shows the literature inclusion and exclusion at every stage (Page *et al.*, 2021).

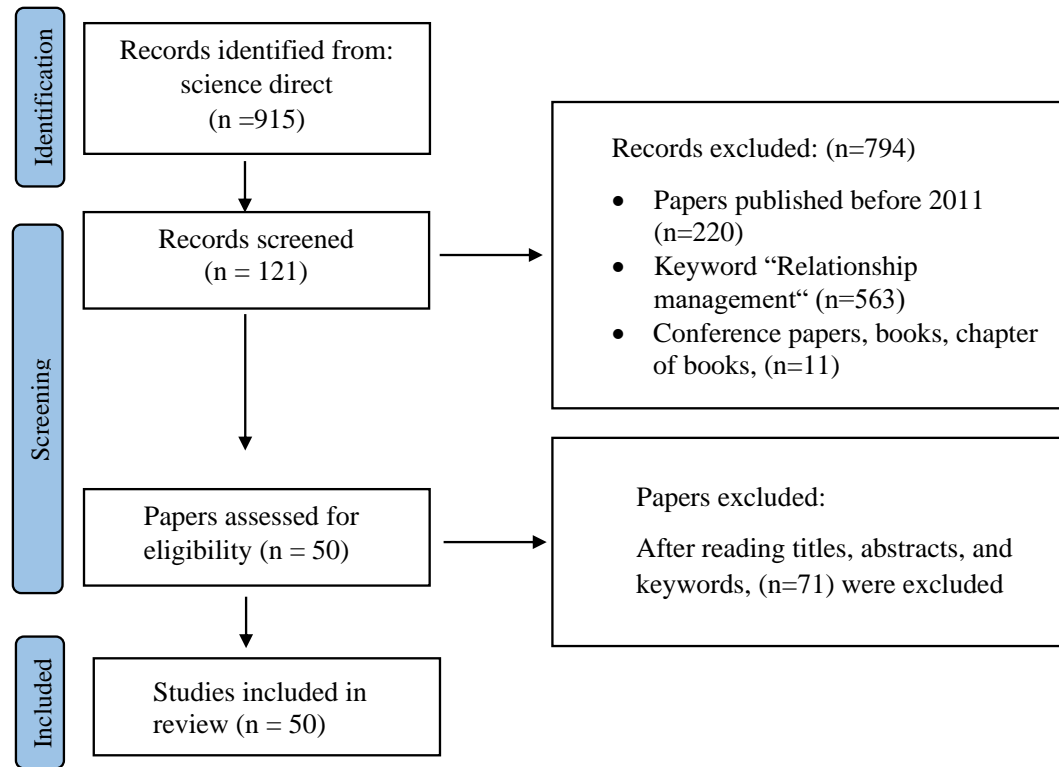


Figure 2: PRISMA flow diagram

## 4. RESULTS AND DISCUSSION

This section presents a descriptive analysis of the literature selected and illustrates an overview of the important findings of the research.

### 4.1. Descriptive analysis

A descriptive analysis was used to assist an overview for literature selected, by analyzing the content of the references. In the first step, we elaborated a text analysis to the most frequent words on the articles and were identified based on the word cloud in NVivo Figure 4. Then, we generate the characteristics from NVivo to Excel in order to elaborate a descriptive statistic based on the 50 papers in term of papers published over time and the distribution of papers by journal.

#### 4.1.1. The word cloud

After analyzing the content of these 50 articles, the most commonly used words in papers were determined through Nvivo software. We found that “Supply chain” was the most common word used 5308 times, followed by “management”, “environmental”, “performance”, and “sustainability” used successively (4327; 3289; 2947; 2655) times. Those common words were mapped in the cloud words map presented below.

Figure following on the next page



*Figure 3: Word cloud*  
(Source: Self elaboration)

This figure shows the most common words in larger policies, while the less common words are shown in smaller policies. Based on the grouping of keywords with similarity, Table 2 introduces the five categories that we generate from the documents.

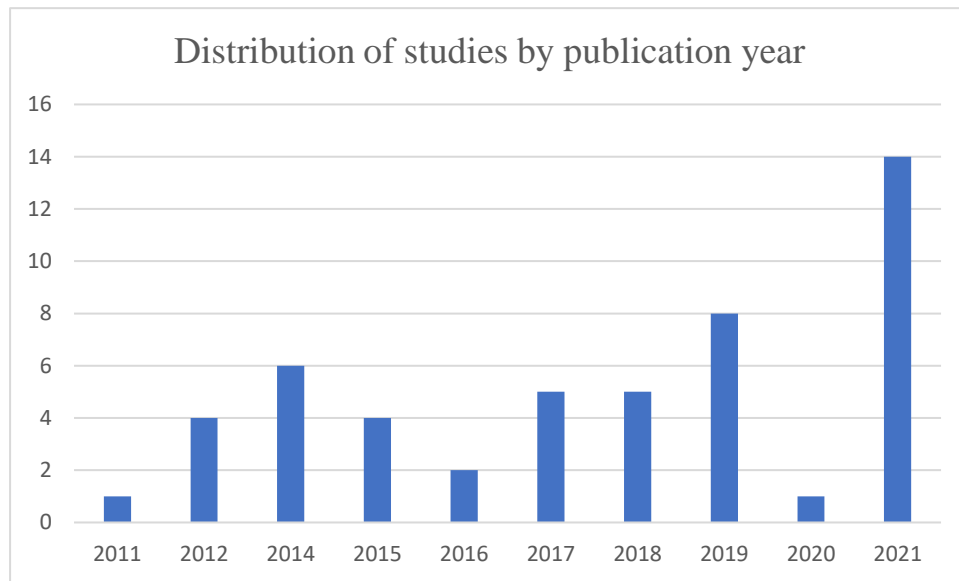
Category	Keywords
Management	Supply chain management; marketing; purchasing; procurement; lean manufacturing.
Relationships	Supplier; relationship; collaboration; customer; organizational; buyer; network; relational; corporate; partners; organizations; cooperation; stakeholder; trust; power, members; commitment; coordination; partnership; retailer; employees; ethics; culture; engagement; b2b; interorganizational; community; cluster; leadership
Sustainability	Environmental; sustainability; green; sustainable; development; environment; clean; circular economy; emissions; energy; waste; recycling; iso; reverse; water; pollution; ecological; gas, resources; oil
General industry	Performance; business; production; firms; industry; companies; manufacturing; products; remanufacturing; enterprises.
Technology	Data; innovation; technology; blockchain; transparency; communication; online; digital; electronic.

*Table 2: Keywords groups  
(Source Self elaboration)*

#### 4.1.2. Distribution of papers by years

To illustrate the number of papers published across the time period, we studied papers from 2011 to 2021 (see Figure 5).



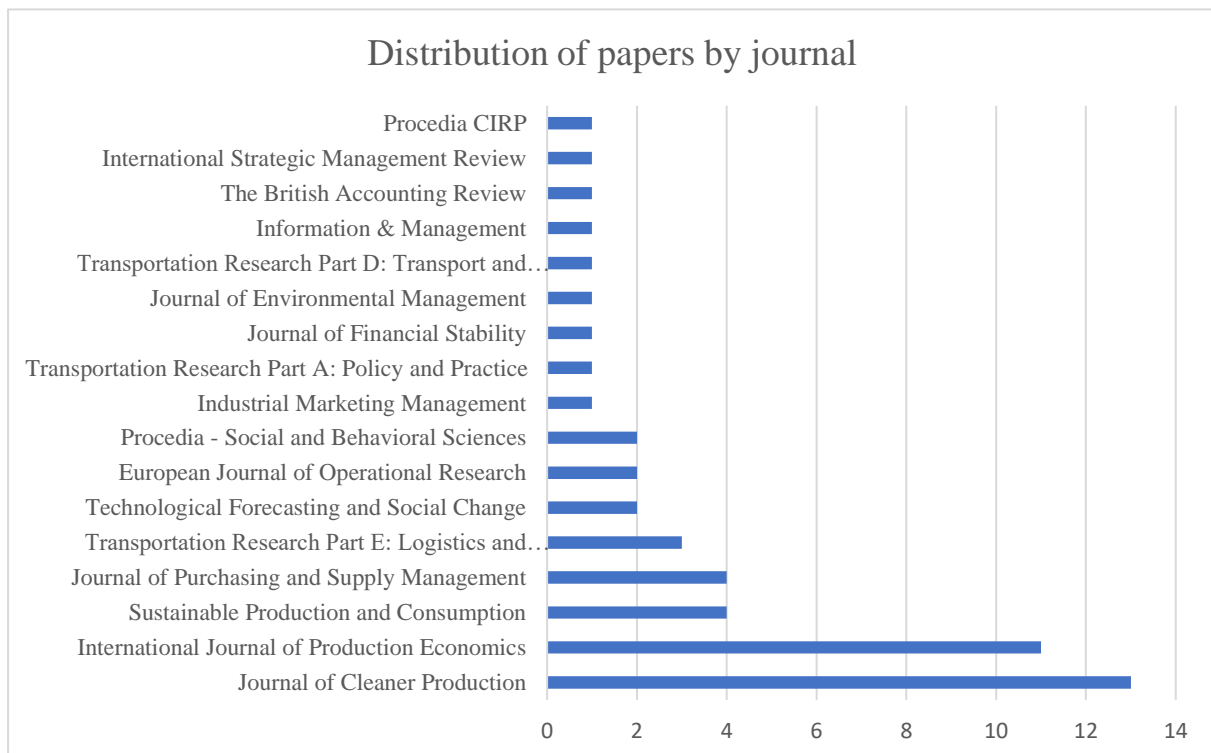


*Figure 5: Year-Wise Publications across the period studied  
(Source: Self elaboration)*

We notice from the graph, that there was a relative increase in the number of papers in 2021 compared to the previous years, except for 2020 which had a negative pattern that can be related to the pandemic. However, in general, it shows that more and more researchers are interested in this topic. and this may appear as an indicator of the growing importance of supply chain relationships and sustainability.

#### *4.1.3. Distribution of papers by journals*

The selected papers are distributed into 17 different journals (See Figure 6).



*Figure 6: Distribution of papers by journal  
(Source: Self elaboration)*

The 50 articles were published in 17 journals. As illustrated in Figure 6, papers were most frequently published in *the journal of cleaner production* (13 papers), followed by the *International Journal of Production Economics* (11 papers). There is an equal distribution for *the sustainable production and consumption* and *the Journal of purchasing and supply Management* (4 papers). *Transportation Research Part E: Logistics and Transportation Review* have (3 papers). For *Technological Forecasting and Social Change*, *European Journal of Operational Research* and *Procedia - Social and Behavioral Sciences* each one has (2 papers). While the rest is distributed between: *Industrial Marketing Management*, *Transportation, Research Part A: Policy and Practice*, *Journal of Financial Stability*, *Journal of Environmental Management*, *Transportation Research Part D: Transport and Environment*, *Information & Management*, *The British Accounting Review*, *International Strategic Management Review* and *Procedia CIRP* (1 paper).

## 4.2. Discussion

This section will highlight some of the important findings of the research and underline some limitations of this paper. The main purpose of this paper is to provide a comprehensive understanding of the field study.

### 4.2.1. Findings from the literature review

To elaborate our discussion concerning the results of the descriptive analysis presented above, we selected papers that included discussions on supply chain relationships and sustainability. Most of works collected in this study discussed the importance of the relational aspect in improving the sustainability of supply chain. By focusing on relationship management, effective relationships with stakeholders like: suppliers, customers, and other members of the supply chain can help to improve the efficiency and effectiveness (Gupta *et al.*, 2019). Niesten *et al.* (2017) stated that collaboration enhances sustainability by reducing waste and improving the firm performance. Moreover, to achieve sustainability the organizations need to integrate the stakeholders in their practices (Bhutta *et al.*, 2021), as they can foster the effective and efficient sustainable SCM (Govindan *et al.*, 2016). According to Bastas and Liyanage (2019), the stakeholders are considered as a strategic factor for the integration of sustainability in the intra and inter-organizational process. However, many firms have implemented sustainable practices into their supply chains due to several pressures (Lin and Sheu, 2012), the government instructions, and the increasing of the public awareness (Bhutta *et al.*, 2021). Furthermore, Supply chain relationships differ depending on the sector, business-to-business (B2B) and business-to-consumer (B2C). Based on the study of Hoejmose, Brammer and Millington (2012), B2B supply chains are less likely to implement green SCM practices. Green initiatives have been a focus of B2C supply chains, but this issue is becoming increasingly important for B2B supply chains, as business consumers are more requiring "green" performance from their suppliers. The authors find that green practices in B2B supply chains are much underdeveloped than B2C supply chains. Therefore, understanding the pressures (internal and external) relating to the adoption of green supply chain management practices and the performance implications are essential for strategic management of environmental, economic, and operational performance by manufacturing companies (Lin and Sheu, 2012). Many authors have argued the importance of the supply-side in the implementation of sustainability practices (Chin, Tat and Sulaiman, 2015). The buyer-supplier relationship is considered as a key part of the sustainable process. Thus, to improve the sustainable performance and green the entire supply chain, suppliers need to have high sustainable standards (Kumar and Rahman, 2015; Centobelli *et al.*, 2021). Hence, the sourcing strategy and the decision-making by the buyers to purchase the products/services are powerful tools (De Stefano and Montes-Sancho, 2018).

As mentioned Burritt and Schaltegger (2014): Considering KPIs while supplier selection will improve the sustainability performance of firms, based on the "environmental performance, health and safety, reduction of waste and packaging material, use of carbon-efficient, logistics transport .... ". According to (Zhan *et al.*, 2021) in a long-term buyer-supplier relationship, managers generally tend to evaluate suppliers more constructively when suppliers share managers' collective attitudes and strategies for specific sustainability dimensions. In other words, sustainable practices of suppliers play an essential role for a buyer to improve environmental performance (Liu, Zhang and Ye, 2019). Therefore, we can notice that the previous studies agree on the important role of stakeholders particularly the supply side, and the collaboration of supply chain members in the sustainable process. While only a few papers have emphasized the importance of innovation and communication:

Bhutta *et al.* (2021) believe that sustainable development requires sustainable innovation, Govindan *et al.* (2016) and (Neutzling *et al.*, 2018) as well share the same point of view that collaboration and innovation are important to achieve sustainable development in the supply chain. In addition, by adopting the new technologies, the cooperation between buyer and supplier can be easy by facilitating the transfer of the knowledge and communication and also can foster the low-carbon production (De Stefano and Montes-Sancho, 2018). Similarly, Niesten *et al.* (2017) found that the adoption of sustainable technologies can be accelerated through the collaboration between the stakeholders. Collaborative relationships-based resources have a significant relationship with industry 4.0 (I4.0) adoption also with sustainable manufacturing (Bag *et al.*, 2021). However, focusing on communication and collaboration will be an effective way to enhance the environmental and social sustainability performance of external supply chains (Jadhav, Orr and Malik, 2019). Firms need to strengthen their relational bonding with their supply chain partners to exchange knowledge and resources effectively, green supply chain practices are linked to green innovation performance (Li, Zhou and Wu, 2017).

In summary, the findings of this study underline that to ensure a sustainable supply chain, the involvement of all stakeholders in the process is indispensable. To achieve successful collaboration between these parties, using innovation will facilitate their communication and information flow. We thus remark that SCR practices could improve the sustainability performance (Kumar and Rahman, 2015; Liu *et al.*, 2021), and the competitiveness of firms, also it may result a competitive advantage in the global supply chain (Govindan *et al.*, 2016; Li, Zhou and Wu, 2017).

#### 4.2.2. Limitations

It is necessary to mention that this literature review has some limitations that offer the possibility for the development of future studies. In this context, the important limitations are:

- This analysis aimed only at papers in English with a management focus. This excludes papers in other languages;
- The data sources were limited in one database "Science direct", resulting in the absence of some relevant papers;
- The year-wise of study;
- The keywords searching was another limitation of the study. It can be developed with more different keywords; some papers may have the same research focus, but with different keywords used.

## 5. CONCLUSION

In this paper, we have conducted a brief systematic literature review. To provide an overview of the existing literature on ‘supply chain relationship and sustainability’, published during the period between 2011 and 2021 in the Science Direct database. In total, 50 articles were analyzed and we notice that various studies have explored the interaction between the SSCM and performance but only a few studies have been treated the relational approach, especially in the Moroccan context. Moreover, there is a lack of academic research that gives a detailed understanding of how sustainability impacts supply chain relationships and deal with innovation. For instance, the implementation of industry 4.0 and its impact on the sustainability of the supply chain network. Future research would develop the effect of innovation in relationship management and sustainability on the supply chain in the Moroccan context.

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# THE IMPORTANCE OF FOREIGN WORKERS FOR THE DEVELOPMENT OF THE ECONOMY IN VARAŽDIN COUNTY

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## ABSTRACT

*Increased migration to the Republic of Croatia increases the number of foreign workers available on the labor market. In recent years, Varaždin County has recorded a significant growth of foreign workers in various industries. The secondary research analyzed the number of foreign workers in 2019 and 2020 who are currently registered in Varaždin County. Conducted interviews with companies operating in the food, footwear, textile, and pharmaceutical industries collected qualitative data on the importance of foreign workers both for the companies themselves and for the county's economy. The research provides answers to questions about the long-term need for foreign workers, their involvement in business processes, possible barriers they face (linguistic and technological), but also sees the problem of their inclusion in the local community in terms of prejudice, culture and language.*

**Keywords:** *foreign workers, inclusion in society, labor force, Varaždin County*

## 1. INTRODUCTION

Frequent newspaper articles about the new workforce in Varaždin County raise questions about the needs of these workers and why such workers are employed. As these workers have recently come from distant countries such as Nepal and the Philippines, the question arises as to how employers choose them, but also how they fit into our culture and how much they can communicate with the employer regarding language and cultural differences. Many newspapers and portals, such as Regionalni.hr, Večernji list, Varaždinske vijesti, eMeđimurje, Danica.hr, Jutarnji list, Međimurske novine, and Moj-posao wrote about the large influx of foreign workers from distant countries and gave examples of companies that employ foreign workers, but also the stories of workers who came to work in Varaždin County. The aim of the paper is to determine the importance of foreign workers in Varaždin County and the reasons for their employment. In order to achieve the goal, three research questions were appointed which will be answered through primary qualitative and quantitative research:

- 1) Is there a long-term need for foreign workers in Varaždin County?
- 2) What are the problems of involving foreign workers in business processes?
- 3) What are the problems of including foreign workers in the local community?

So far, only a few surveys have been conducted in Croatia that has in some cases surveyed foreign workers. In 2013, Božić, Kuzmanović, and Barda conducted research on "Foreign workers in Croatia: origin, status, orientations" which was aimed at shedding light on the social

position of immigrants, demographic characteristics, geographical origin, manner and reasons for arrival, discrimination, etc. (Božić, Kuzmanović and Barada, 2013). In 2012, Čačić-Kumpes, Gregurović, and Kumpes researched "Migration, integration, and attitudes towards immigrants in Croatia", which was conducted before Croatia acceded to the European Union and was based on the assumptions of changing the migration pattern. The mentioned research assumed that with the entry of Croatia into the EU, there will be an increased arrival of foreign workers. Attitudes towards foreign workers, their influence on culture, the values of Croatian society, and social distance towards them, on a sample of 1,300 adult citizens of the Republic of Croatia, were also examined (Čačić-Kumpes, Gregurović and Kumpes, 2012). In 2018 and 2019, Ana Šijaković studied the safety and foreign workers. The lecture on "Safety and health protection of foreign workers - the role of occupational safety experts" examines the involvement of occupational safety experts in building a safe environment and the integration of foreign workers, which results in increased health risks (Krišto, Kovač and Šijaković, 2018). In his work, Šijaković deals with the topic "Occupational safety and foreign workers in the Republic of Croatia" in which he refers to the Law on Occupational Safety and Employment of Foreign Workers and their compatibility with the Laws in the Republic of Croatia (Šijaković 2019). The latest research is by the authors Ferjanić Hodak, Kesar, and Matečić who study foreign workers and their impact on the hotel industry. From the presented research so far, it is evident that no author has studied foreign workers in Varaždin County, and has not studied the specific number of workers, countries they come from, employers' satisfaction with them, their adjustment to work, and integration into society, which is all shown by this research.

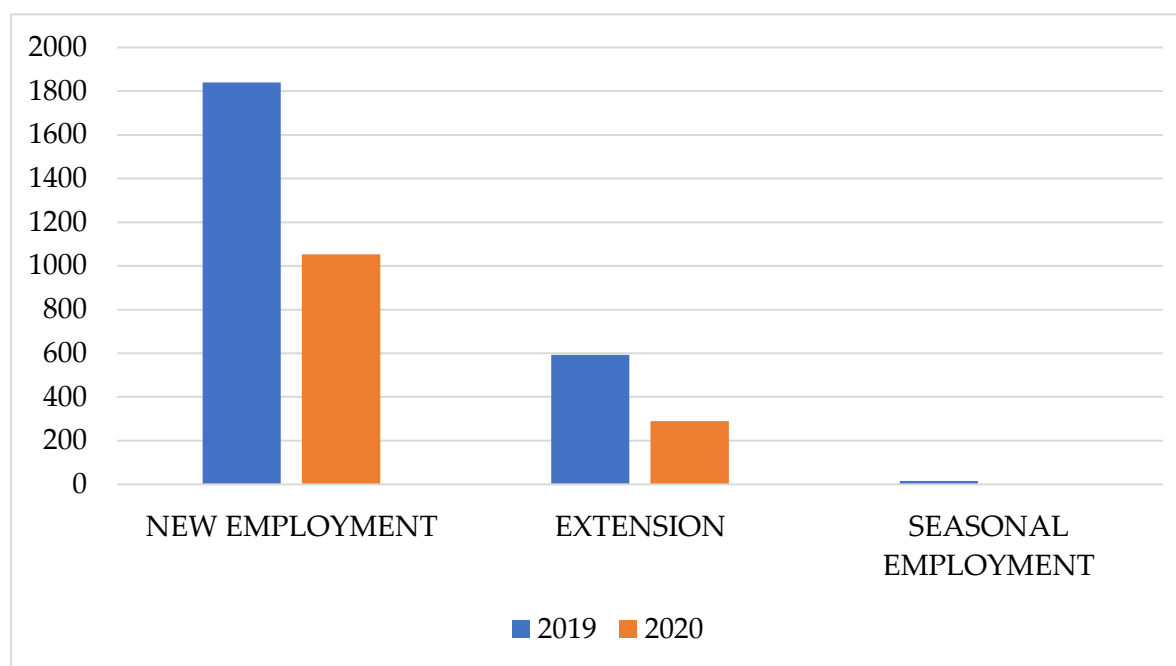
## 2. WORK OF FOREIGNERS

The labor force of a country consists of all people who are employed and those who are actively looking for work (Benić, 2011). According to the Labor Act (Zakon o radu. NN 93/14, 127/17, 98/19) in the Republic of Croatia, these are people older than fifteen who do not attend compulsory primary education. According to the Ordinance on active job search and availability for work, active job search includes the participation of an unemployed person in counseling, individual consultations, group information, workshops for career development skills, defining and implementing activities and goals of the Professional Plan, defining and implementing activities and goals of the Agreement inclusion in the labor market, the process of professional selection, the process of professional guidance and other activities for the purpose of preparation for employment. In the Republic of Croatia, a third-country national may work with a residence and work permit or a work registration certificate only for jobs for which it has been issued and with the employer with whom he has established an employment relationship. The residence and work permit is obtained, except for the fulfilled conditions, based on an employment contract (written confirmation of the concluded contract or appropriate proof of work), proof of acquired educational qualification and qualification, and proof of registration of a company, trade and similar in the Republic of Croatia (Središnji državni portal, 2020). Due to the growth of the economy and increased emigration, the Republic of Croatia has been constantly increasing quotas for labor imports in recent years (Novi list). In 2019, that quota amounted to 55,100 residence and work permits, and this year, in 2020, it amounts to 78,470 residence and work permits. Given the situation caused by the COVID-19 pandemic, ie the closure of borders, travel restrictions, and the general reduction of employees, in 2020, until November 27th, only 37,133 (47.32%) residence and work permits were used, while on that day there were in the process of obtaining 5,705 residence and work permits. The highest number of issued residence and work permits in 2020 was granted in the Construction industry, 22,331 of them until November 27th and 3,689 which are still in the process, i.e. the quota has been fulfilled in the amount of 78.14% (Ministarstvo unutarnjih poslova, 2020).

The Construction industry employs the most foreign workers, and this activity has "Extremely hard, insecure and mostly low-paid work (compared to the tertiary sector even in Croatia) which often requires readiness for mobility depending on the company's field of work, with constant exposure to weather conditions it is not attractive to Croatian workers" ( Božić, Kuzmanović and Barada, 2013).Migrants in Croatia face the problem of unemployment, lack of language skills, discrimination in the labor market and non-recognition of qualifications, as well as difficult access to retraining programs. The Center for Peace Studies states that when migrants get a job, they are usually underpaid and do not comply with the qualifications of migrants, and are often in inadequate working conditions and violate workers' rights (Lider media, 2020).

### 3. PRESENTATION OF RESEARCH RESULTS

For the research, primary research was conducted on the analysis of the number of foreign workers in 2019 and 2020 according to the data obtained from the Varaždin Police Department. Quality research was also conducted through interviews with executives in five companies employing foreign workers. These companies operate in the textile, footwear, food, and pharmaceutical industries. The analysis of data obtained from the Varaždin Police Administration established that in 2019, 1480 new employments of foreign workers were registered in Varaždin County, 562 workers requested an extension of employment, and 15 of them were employed seasonally. From January 1st, 2020 to July 1st, 2020 in Varaždin County, 1,053 new employments of foreign workers were registered, 289 of them requested an extension of employment, and only 1 worker was employed seasonally. Listed data is shown in Chart 1 and it can be concluded that the increased trend of employment of foreign workers continues because the number of new employees reached 71.15% of the total number in just 6 months this year.

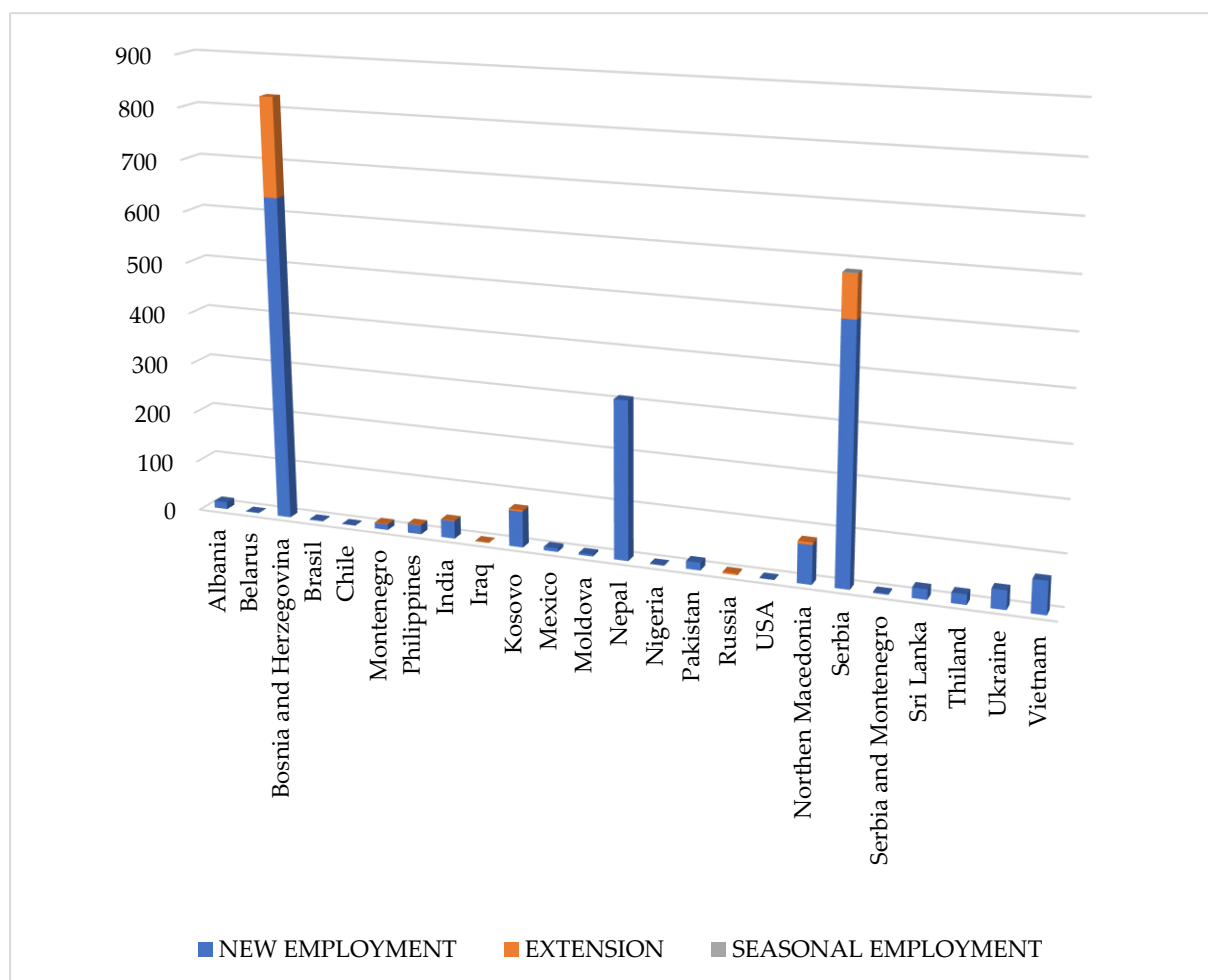


*Graph 1: A number of foreign workers in Varaždin County  
(Source: Authors)*

Graph 2 shows the number of foreign workers in Varaždin County by citizenship in 2019. Foreign workers come from many countries, but as expected, most of them are from Bosnia and Herzegovina, and Serbia, as they are the closest countries, both geographically and culturally, and linguistically.

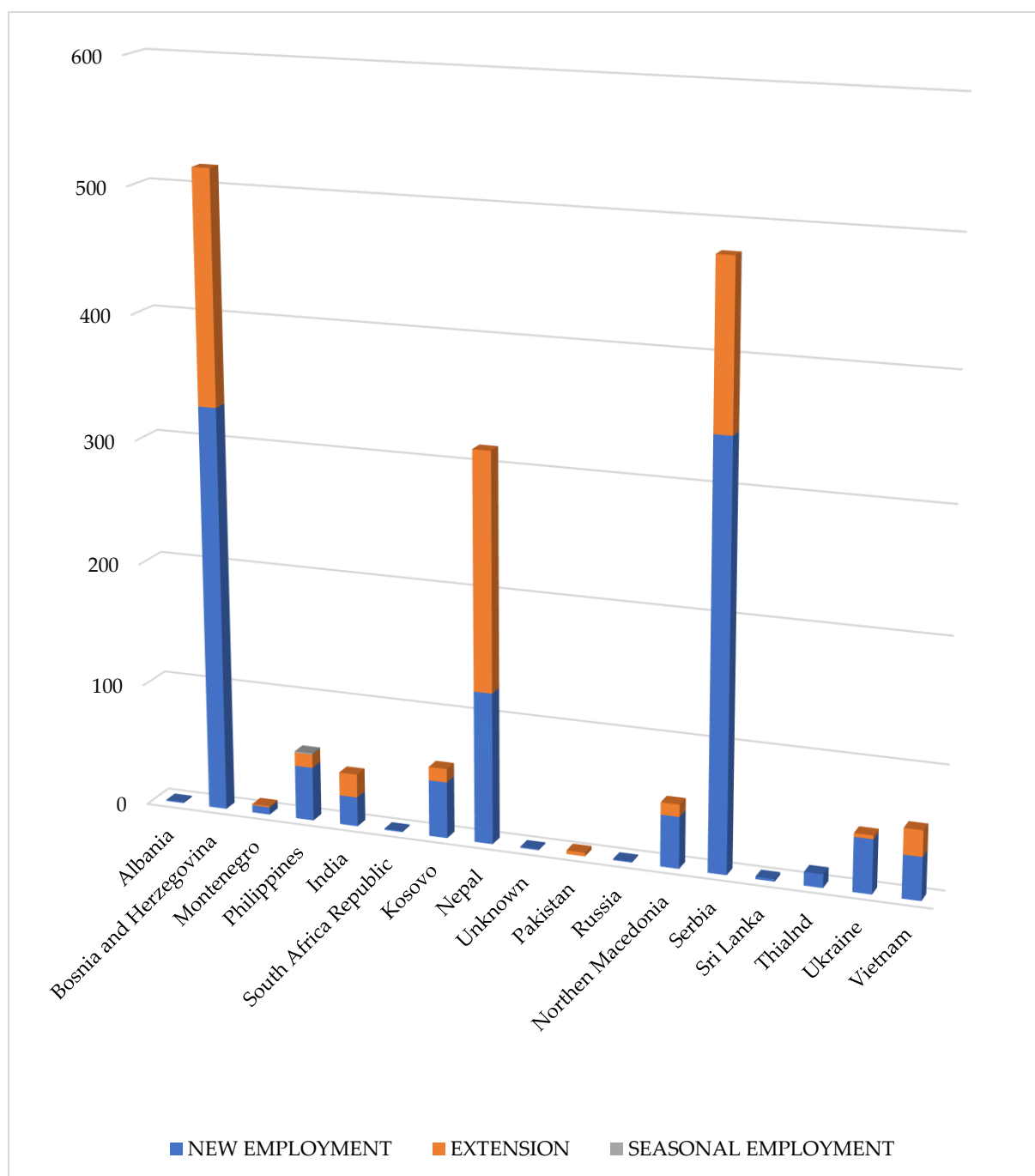


The total number of new employees from Bosnia and Herzegovina was 635, and the number of people seeking extension of employment in the same year was 192, while the number of citizens from Serbia who are newly employed was 499, and those who requested extension was 82. What is more and more common today is the employment of foreign workers from distant countries, and as can be seen from the chart in 2019, most foreign workers are from Nepal and slightly less from Vietnam. The number of new employees from Nepal was 310 and they make up the new workforce in Varaždin County.



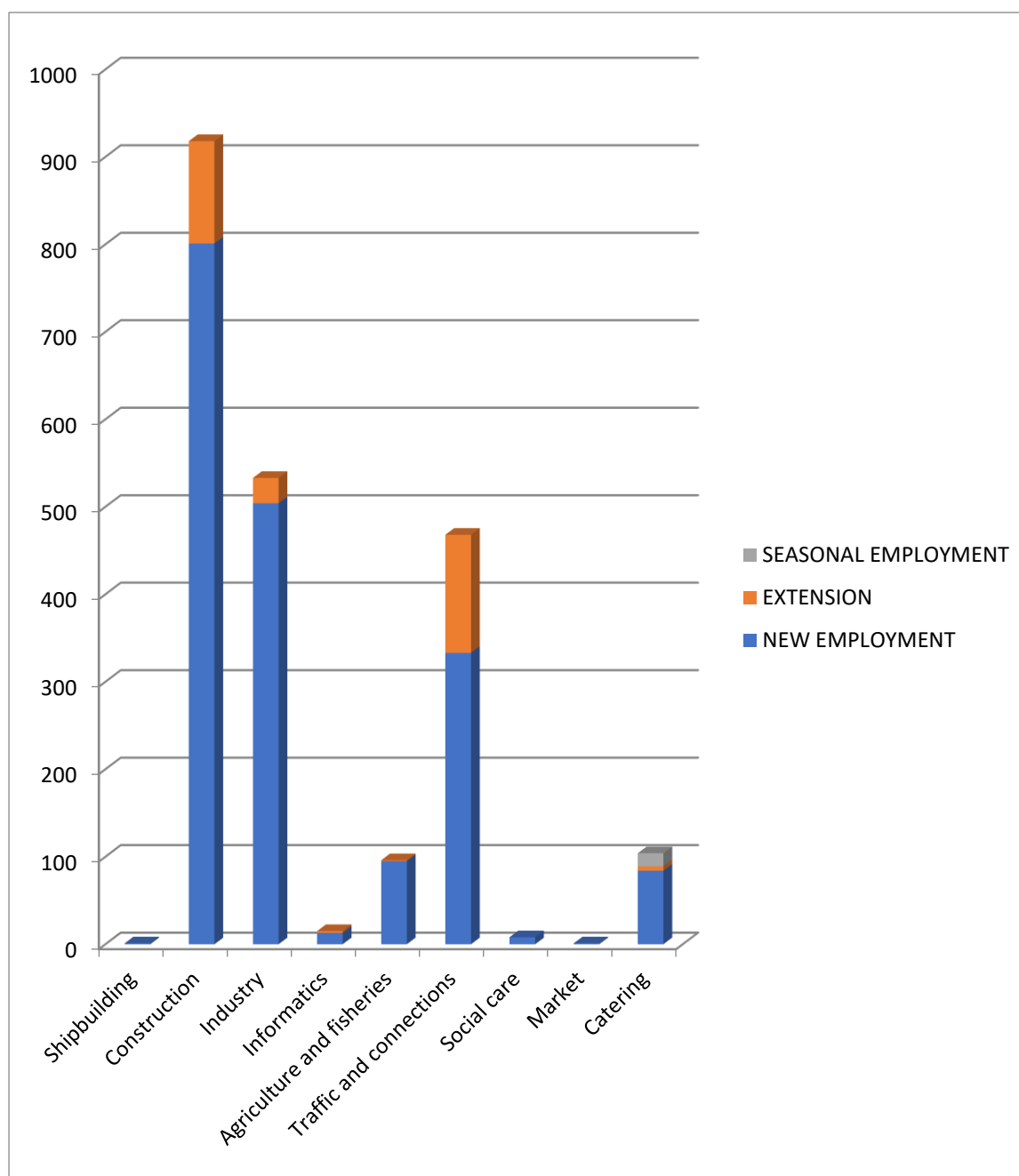
*Graph 2: A number of foreign workers in Varaždin County by citizenship from 1st January 2019 to 31st December 2019 years  
(Source: Authors)*

As in 2019, in the first half of 2020 the largest number of newly employed foreign workers, as well as those seeking employment extensions come from Bosnia and Herzegovina and Serbia, followed by workers from Nepal, Vietnam, Ukraine, and the Philippines, which is visible from chart 3. The total number of new employments from Bosnia and Herzegovina in the first half of 2020 was 329, while the number of people seeking extension was 187. Interestingly, in the first half of 2020, the number of new employees from Nepal was 129, which is 41, 61% of the total number of new employees from the same country in 2019. As for extensions, the number of people from Nepal whose employment was extended was 187, while the year before no one asked for an extension because in 2018 there were still no registered new employees from Nepal. The number of new employees from Vietnam was 35, while the number of new employees from Ukraine was 44, and from Thailand 11.



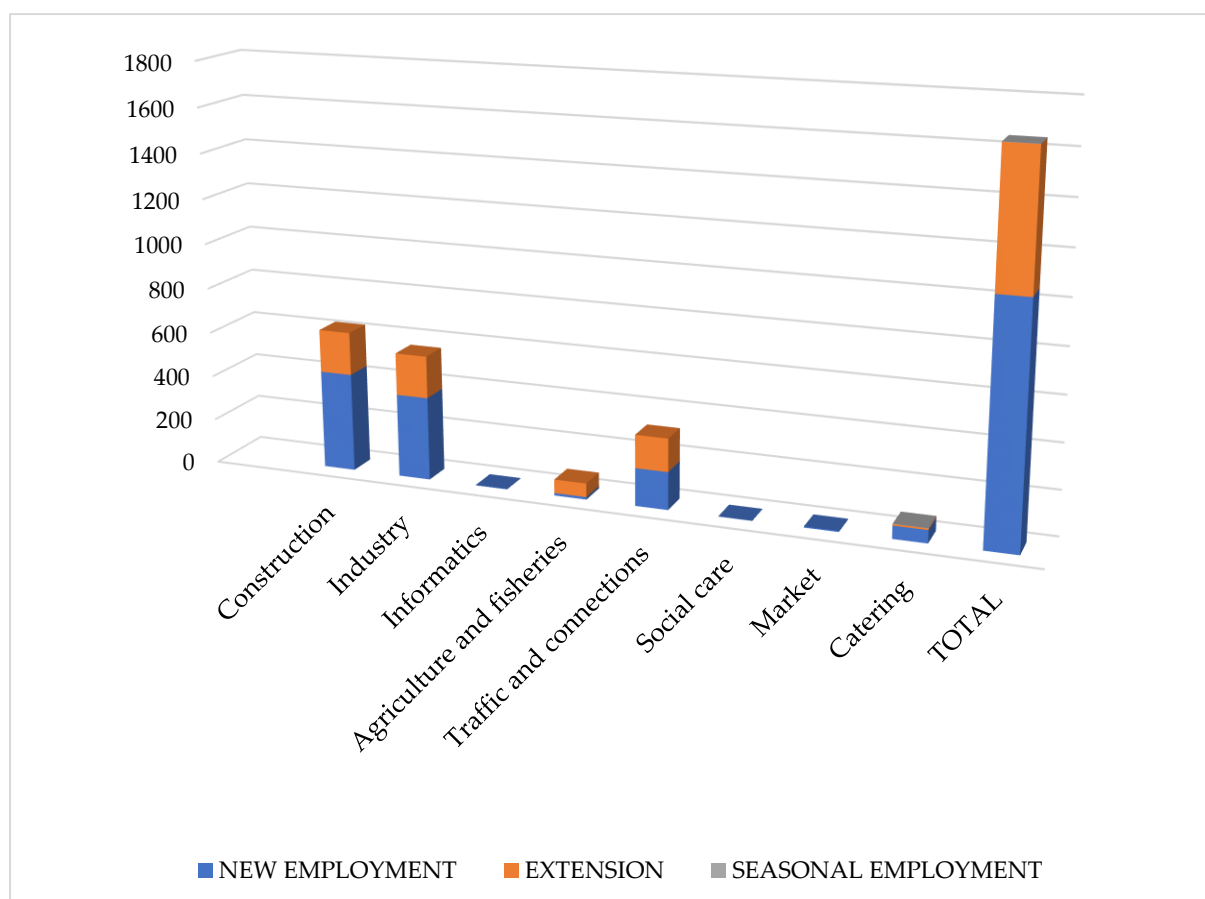
*Graph 3: A number of foreign workers in Varaždin County by citizenship from 1.1.2020. to 1.7.2020. years  
(Source: Authors)*

Graph 4 shows the movement of employed foreigners according to the type of activity in which they are employed in 2019. It can be seen that the largest number of foreigners in Varaždin County is employed in construction, 801 new employees. Immediately after construction follows the industry in which the number of newly employed foreigners increased by 504 people and traffic and communications in which the number of newly employed foreigners increased by 333. Also, in these three activities recorded the largest number of extensions of employment of foreigners. Regarding the seasonal employment of foreigners in Varaždin County, in 2019 there were only 15 people in the hospitality industry.



*Graph 4: Statistical overview of employed foreigners in Varaždin County by activity and activities from 1.1.2019. to 31.12.2019. years  
(Source: Authors)*

Graph 5, which shows a statistical overview of employed foreigners in Varaždin County by activity in 2020, shows that in the first half of 2020 there was an increase in the number of new employees and extensions of employment in the same activities as in the previous year. The only difference is that in the first half of 2020, a larger number of employment extensions were recorded than in the previous year. Numerically, there are 438 more new employees in construction than in the previous year, 371 in industry, and 168 more in transport and communications. Regarding the extension of employment, the number of foreigners with extended employment was 190 in construction, 187 in industry, and 147 in transport and communications. Only one foreign person was employed seasonally in the first half of 2020.



*Graph 5: Statistical overview of employed foreigners in Varaždin County by activities from 1.1.2020. to 1.7.2020.  
(Source: Authors)*

Qualitative research was conducted through interviews with leading people in five companies in Varaždin County that employ the largest share of foreign workers. Selected companies operate in the textile industry, food industry, footwear industry, and pharmaceutical industry. In order to get answers to the research questions, a total of eight questions were asked in the interview:

- 1) Why did you involve foreign workers in the work of your company?
- 2) Do they satisfy their qualification profession?
- 3) Are their work habits and knowledge in line with the business processes they perform?
- 4) Did you have problems with their accommodation? If you had, how did you solve it?
- 5) Did foreign workers have problems integrating into the local community?
- 6) Are you more satisfied with foreign workers compared to our workers?
- 7) Do you estimate that in the future you will need more or fewer foreign workers?
- 8) Are you ready to finance the project of their education and inclusion in society?

As an introductory question, the first question was asked about the citizenship of foreign workers they employ. Three surveyed employers answered that most foreign workers come from Nepal, and two of the three mentioned that they have employees from the Philippines and Vietnam, India, and Ukraine. One employer replied that their foreign workers came from India, while one employer replied that most foreign workers came from Bosnia and Herzegovina. Almost all interviewees had the same answer to the first question and stressed that they hired foreign workers precisely because of the lack of domestic labor. Some also noted that they have job ads open all year round, but that there are no interested parties.

Work permits that once had to be secured are now obtained automatically through the Croatian Employment Service if there are not enough staff on the job market. As far as the qualification profession is concerned, most of them have a secondary education, but since they do physical work, no specific prior knowledge in any job is required. Also, most companies provided education upon their arrival at work. The mentioned training was attended by the heads of departments, but also masters who were in the capacity of mentors and note that they learn very quickly and within half a year they mastered jobs better than certain domestic workers. One employer pointed out that before they arrived in Croatia, they provided videos showing them where they would work, what their jobs would be, and what was expected of them, because they wanted to ensure transparency and show them everything they could expect so as not to nothing else said. They conducted an interview with the agency through which their arrival was secured, in which they presented their qualifications so that employers would be aware of their qualifications. Furthermore, as far as work habits are concerned, everyone agreed that they are very good workers, extremely disciplined, with high work ethic and looking to work overtime hours, holidays and public holidays. All respondents who employ Nepalese workers emphasize that these workers came here to earn money and that their goal is to earn money for a house and a bicycle in Nepal in a few years due to the extremely high poverty there, so it is not a problem for them to work any working hours. They are very efficient and take care to follow all the rules and norms so as not to get fired and not to be sent back to the countries they come from but to have their contract renewed on an annual basis. All employers were ready for the arrival of foreign workers and provided them with accommodation. Employers who employ workers from distant lands provided them with houses and apartments that were waiting for them, while one employer had mobile homes built within the factory. The employer who employs workers from Bosnia and Herzegovina replied that he also had no problem with accommodation because these are workers who provided accommodation themselves before they came to Croatia or were accommodated with relatives who have lived here for years. One employer notes that they used the statutory decision made by the Republic of Croatia in which the cost of rent is recognized if the same rent is for the accommodation of labor, but also that if one of the foreign workers decides to find their accommodation, bears the cost of the rent. To the fourth question, related to problems with inclusion in society, employers answer that there were no problems. Domestic workers have accepted foreign workers very well, they hang out with them privately outside of the work, the neighbors do not complain about them and they are very tidy. They are very good in English, but there is always at least one who uses English much better than the others. Over time, they also master the basics of the Croatian language and can agree on certain work tasks in the Croatian language. In larger companies, they have one person in charge of working with foreigners, who visit them regularly, provides them with medicines, communicates with doctors, and even provides food. One employer pointed out that he provided them with bicycles so that they could move freely and faster. Foreign workers respect the religious holidays celebrated in Croatia, and employers also respect their religious holidays and allow them free days. Satisfaction with domestic and foreign workers is equal, and all the benefits that domestic workers have, foreign workers also have and they are not discriminated in any way. In the future, employers believe that more foreign workers will be needed, but due to the current situation with the COVID19 pandemic, they are not sure whether domestic workers will be available on the stock exchange. If the trend continues as in previous years, they will have to hire more foreign workers, as certain companies would not be able to do the job and they would have to reject certain contracts and orders. All employers are ready to co-finance a project that would provide additional education to foreign workers to adapt more quickly and easily to the jobs they work in, new technologies, but also to acquire the required education and the project of inclusion in a society where they learn language and culture.

#### 4. CONCLUSION

Due to a large number of emigrants and the lack of domestic population in the labor market, more and more employers are opting to hire foreign workers. The largest number of foreign workers are still workers from neighboring countries, Bosnia and Herzegovina, Serbia, and Northern Macedonia, but in the last two years an increasing number of workers from distant countries such as Nepal, the Philippines, and Vietnam was recorded. The pandemic caused by the COVID19 virus has put employers in an unenviable situation where they do not know what their business will be like in the future and are not sure whether domestic workers will be available on the job market or will still have to hire foreign workers. Three of the five companies surveyed stressed that their jobs had increased during the pandemic and that they would need more foreign workers, in the long run, to be able to do all the work. It can be concluded that the answer to the first research question "Is there a long-term need for foreign workers in Varaždin County?" is positive and that more foreign workers will be needed in the long run. Also, in the qualitative research, the answer to the second research question "What are the problems of involving foreign workers in business processes?" and the third research question "What are the problems of involving foreign workers in the local community?" was obtained. The research shows that there are not many problems with foreign workers, most of them manage to solve the training internally with their workers who conduct training, and when it comes to language, they trust at least one employee who speaks English relatively well. They respect the culture, but when they come to the country, the owners of the company also introduce them to it in order to better fit the society. In order to offer them help, i.e. so that more companies would not have to educate workers internally and thus lose continuity in the work of domestic workers, the question of financing the project of education and inclusion of foreign workers in society was raised. All companies agreed to participate in the co-financing this type of training and that such a project would help them to integrate foreign workers into society as soon as possible, but that they would benefit from the fact that in this type of training is possible to obtain the necessary education for work in their company. When implementing such a project, it is important to distinguish the inclusion of highly educated professionals from people with secondary education and to apply a different approach. The perception of hiring foreign workers depends on the people themselves and at first most of them were repulsed, but as they were forced to hire foreign workers due to lack of staff and the foreign workers proved to be good and hardworking workers, the perception of foreign workers changed. It is important to note that the state for foreign workers coming from Nepal, Vietnam, the Philippines, and other countries that have only recently begun to make the labor in the Republic of Croatia, does not represent any cost to the Republic of Croatia but quite the opposite. Tax, surtax, pension, and social security are paid for these workers, and there is no pension for such workers. If there were not such workers, production in some companies would stop and the above would not be paid and thus fill the state coffers. It is necessary to strictly delimit foreign workers who have recently entered the European Union without a passport and other documents, by the force, from workers who are employed regularly, come with papers, are duly registered, work continuously, and came through various agencies legally, and which are studied in this paper.

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## GENERATION Z AND COVID-19 PANDEMIC: PERCEPTIONS AND PROSOCIAL BEHAVIOR ANALYSIS

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### ABSTRACT

*Having been living with COVID-19 pandemic for over two years many issues regarding it have been open for scientific interest, not only in the area of health and medicine but also of different social, economic, cultural and other issues. One of the major areas studied is the prosocial behavior of citizens, i.e. adherence to prescribed measures, as a main factor to control the pandemic. Different generations bear different individual costs – economic, social, emotional and others in order to contribute to prosocial behavior adoption and to the efficiency of prescribed measures. One of the major issues in this context is the emphasized criticism of younger generations as irresponsible and dismissive of COVID-19 risks and public health. The aim of this study is to analyze the perceptions and behaviors of Croatian generation Z with respect to COVID-19 pandemic and evaluate their prosocial behaviors and behavioral intentions. The study was conducted during the second wave of COVID-19 pandemic and included a sample of 442 Croatian participants aged 18 – 25, so called generation Z. Descriptive statistics, correlation and regression analysis were used to identify major characteristics of their prosocial behavior, behavioral intentions and perceptions about the pandemic and efficiency of prescribed measures. Measures regarding social distancing were found to be the most difficult and the least adopted. Low institutional trust turned out to have a significant impact on prosocial behavior adoption. This calls for careful design of communication strategies and social marketing approach to generation Z in order to motivate them for personal responsibility in the pandemic context.*

**Keywords:** COVID-19, generation Z, institutional trust, prosocial behavior

### 1. INTRODUCTION

Having been living with COVID-19 pandemic for over two years many issues regarding it have been open for scientific interest, not only in the area of health and medicine but also of different social, economic cultural and other issues. Although research identifies Generation Z as realistic and social change-oriented (Hope, 2016), one of the few stereotypes is the widespread claim and perception of young people as irresponsible and dismissive of COVID-19 risks and public health (Nivette et al. 2021: Cohen, Hoyt and Dull, 2020). Since very little is known about how the COVID-19 pandemic affects adolescents and their social behavior (van de Groep et al., 2020), the aim of this study is to analyze the perceptions and behaviors of Croatian generation Z with respect to COVID-19 pandemic and evaluate their prosocial behaviors and behavioral intentions. The paper analyzes their interest in being informed, their trust in different media and institutions that regulate and provide information regarding COVID-19 pandemic and how these institutions influence their behavior. Furthermore, the paper analyzes their perception of the existing measures' effectiveness. In the context of behaviors, two types were measured: active, which involves doing something to control the pandemic, like wearing face



mask, controlling body temperature, using disinfectants and similar; and passive which involves avoidance of risky situations like avoiding shaking hands; avoiding being in groups, keeping social distance, etc. Regarding behavioral intentions, the paper analyzes respondents' intentions to get vaccine and to actively help in different activities in fighting the pandemic.

## **2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW**

The COVID-19 pandemic came across as a strong negative externality in many aspects of individual life. People from all generations bear different individual costs – economic, social, emotional and others in order to contribute to prosocial behavior adoption and to the efficiency of prescribed measures. Van Lange et al. (2013) define it as free-willing involvement in tradeoff between self and collective interest. Some studies have identified age as an important factor that relates to variation in the perceived costs and benefits of prosocial behaviors aimed to reduce the spread of the virus which might impact their readiness and willingness to engage in these behaviors (Yin et al, 2021; Eurofound, 2020). Therefore it is important to evaluate the perceived costs for different generations in order to find the best way to motivate prosocial behavior. Younger people, for example, experience higher costs associated with disruptions to their daily life routines, stronger costs of cancelling their social events, relatively larger economic losses which is quite a different situation compared to older generations, many of whom may be retired and/or receive government support as a stable income. On the other hand, older generations experience greater benefits from costly prosocial behaviors to curb the spread of the virus, including a reduced chance of contracting COVID-19 and the maintenance of a well-functioning health care institution, which they may personally need to treat diseases (Yin et al. 2021).

### **2.1. Prosocial behavior**

In the context of COVID-19 pandemic, prosocial behavior can be defined as adherence to restrictive measures imposed by the government in order to control the disease spread. Two types of prosocial behavior can be identified: active, which involves doing something to control the pandemic, like wearing face mask, controlling body temperature, using disinfectants, getting vaccination and similar; and passive which involves avoidance of risky situations like avoiding shaking hands; avoiding being in groups, keeping social distance, etc. Prosocial behaviors during the pandemic present a range of notable costs to individuals, from disrupting daily plans, to loneliness and economic hardship. Yet, these same behaviors offer benefits of protecting individuals from exposure to the virus, reducing the spread of the virus, and maintaining well-functioning healthcare institutions (Jin et al. 2021). The costs and benefits of these behaviors can vary to a large extent between different generations. However, available studies give no clear answer to these differences. While Jin et al. (2021) found no consistent support for hypothesis that age has a clear, robust association with prosocial motivations and behaviors, or support for behavioral regulations, Cutler et al. (2021) study confirmed that older age is associated with increased prosocial behavior (social distancing) in context of COVID 19 pandemic, and Mayr and Freund (2020) found that older adults show an increased concern for the well-being of other people in general.

### **2.2. Trust in institutions and prosocial behavior/behavior change**

Studies relying on institutional theory emphasize institutional trust as one of the major factors for people's compliance with different political measures. These measures also include a number of non-medical measures prescribed in order to fight the pandemic. Some studies on the topic in the COVID-19 context indicate lower fatalities and more social distancing (Oksanen et al. 2020; Barrios and Hochberg, 2020). On the other hand, direct contribution of institutional trust on willingness to implement prosocial behavior in context of COVID-19 pandemic was

found negligible (Guglielmi et al. 2020). The evidence shows that support for government measures declined as the pandemic prolonged, meaning that prescribed measures were not efficient, in UK, Germany, USA by 10% (Life with corona, 2020). Since it can be said that the COVID-19 pandemic has greatly impacted on people's trust in institutions and in service providers (governments have been rated 6.2 and national healthcare system 6.4 on 1-10 scale) (Eurofound 2020), it can be discussed if this can be a reason for non-compliance with measures, i.e. avoidance of prosocial behavior.

### 3. RESEARCH

A COVID-19 and youth project was created with university students of the Croatian university who participated in online research. The students were encouraged and incentivized to recruit further participants to obtain a richer subject pool in terms of geographical and other characteristics. Neither participation nor recruitment was compulsory. Those who participated (n=30) recruited other participants from all Croatian regions. Our procedures resulted in a final sample of 442 Croatian participants aged 18 – 25, of which 76.1 % were females.

#### 3.1. Sample description

Altogether 436 respondents belonging to generation Z in Croatia have participated in the study.

*Table 1: Sample description*

		N	%
Gender			
	Male	104	23,9
	Female	332	76,1
Place of residence			
	City/town	332	76,6
	Village	81	18,6
	Suburbs	21	4,8
Household income			
	Up to 5000 kn	80	18,3
	5001 – 7500 kn	93	21,3
	7501 – 10 000 kn	113	25,9
	10 001 – 15 000kn	85	19,5
	More than 15 000 kn	65h	14,9

*Source: Authors*

Respondents have been exposed to COVID-19 at different levels: at the time of research (end of 2019/beginning of 2020) the majority (78.9% themselves and 32.4% close contacts – family and friends) have not been exposed to the virus at all. 13.3% of respondents have experiences self-isolation personally as well as 26.8% of their close contacts. Altogether 7.1% of respondents got infected, but had only home treatment, while 0.5% had complicated symptoms and had hospital treatment. 1.1% of respondents had a fatal outcome in their close contacts (family or friends) due to COVID-19.

#### 3.2. Research results and discussion

The questionnaire contained three parts: socio-demographic with special regard to exposure to pandemic, behavior and attitudes regarding pandemic and institutional trust. Regarding generation Z behavior in the context of COVID-19 pandemic, respondents have evaluated their behavior and perceived difficulties with adopting prescribed behavioral measures.

The results are following: the most difficult type of prescribed behavior was found to be:

- 1) limited social gatherings (average 3.76 on 5-point Likert scale)
- 2) avoidance of larger groups of people (3.385)
- 3) keeping social distance (3.014)
- 4) wearing face masks (2.807)
- 5) body temperature control (2.156)
- 6) intensified hygiene procedures (1.268)

At the same time, their actual behaviour, i.e. the level they implemented requested behaviour was the following:

- 1) intensified hygiene procedures (4.539)
- 2) wearing face masks (4.399)
- 3) avoidance of larger groups of people (3.557)
- 4) limited social gatherings (3.521)
- 5) body temperature control (3.484)
- 6) keeping social distance (3.431)

These rather low values related to social distancing corroborate with global research results (Life with corona, 2020) showing that among those below the age of 26, only 38% report keeping a physical distance. On the other hand, new hygiene procedures and wearing face masks seem not to be a problem. However, a Swiss study of young population in their 20-ies shows opposite results: non-compliance with hygiene-related COVID-19 measures was reported more often ( $M = 1.77$ ,  $SE = 0.05$ ) than non-compliance with social distancing measures (Nivette et al. 2021). As in many other countries, there was no public participation in development of these measures in Croatia, although research shows that public participation helps to achieve a particular goal, like increasing citizens' acceptance of COVID-19 policies or restoring public trust. Greater public support for measures during a crisis can increase citizens' compliance, which in turn is likely to increase the effectiveness of non-pharmaceutical measures (Steel Fisher et al., 2012). The exposure to Covid 19 pandemic has forced the population to change daily behaviour. However, the large majority of respondents (over 75%) considers the prescribed measures as inefficient, as it is depicted in Table 2.

*Table 2: Perception of pandemic measures efficiency*

		Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid	Yes	106	24,3	24,3	24,3
	No	330	75,7	75,7	100,0
	Total	436	100,0	100,0	

*Source: Authors*

Respondents have indicated that the exposure to the pandemic (any level) has mostly influenced the change in their behaviour (average 3.092). The next most influential trigger for behaviour change were the announcements by national pandemic headquarters (2.759) followed by social networks (2.365) while the least influential were general media advertisements regarding pandemic (2.303). However, all these values are rather low and cannot explain the behaviour change. Other studies confirmed the mortality risk perception (Abel, Byker and Carpenter, 2021) and perceived vulnerability and responsibility of young people (Hellemann, Dorrough, and Glöckner, 2021) as important factors for social behavior change. Next part of the study was the insight into respondents' trust to different institutions and sources of information regarding pandemic.

The results are the following:

- 1) National pandemic headquarters (2.399)
- 2) Other influential people (politicians, sportsmen, celebrities and similar) (2.310)
- 3) Government of Croatia (2.172)
- 4) Foreign media (2.154)
- 5) Local media (1.961)

It is evident that the level of trust is almost extremely low, and that could probably explain the relatively low level of acceptance of measures in the pandemic. Eurofound study (2020) shows quite similar results - rather low levels of trust in institutions: healthcare system (6.4 on 1-10 scale) national government (4.8) and news media (4.6). In case of Croatian generation Z the highest level of trust in national pandemic headquarters can be seen as positive, although the second is the trust in celebrities and influencers, who often have no scientific background for the statement they make. Maybe for that reason, the perception of health system efficiency is perceived as very low, as it is shown in Table 3.

*Table 3: Perception of health system efficiency for fighting the pandemic*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not at all	45	10,3	10,3	10,3
	Mostly not	92	21,1	21,1	31,4
	Niether yes, nor no	206	47,2	47,2	78,7
	Mostly yes	70	16,1	16,1	94,7
	Totally yes	23	5,3	5,3	100,0
	Total	436	100,0	100,0	

*Source: Authors*

Only 21,4% of respondents consider Croatian health system efficient in fighting the pandemic, while 31,4% thinks it is partly or fully inefficient. The last part of the study deals with the behavioral intentions, i.e. the intention to get vaccinated and to get actively involved in different activities that may help fighting the pandemic. Presumably related to the perception of inefficient health system during the pandemic, the number of those that are willing to get vaccinated is very low – only 28% of respondents are willing to take it, as it is shown in Table 2.

*Table 4: Plan to get vaccination*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	122	28,0	28,0	28,0
	No	314	72,0	72,0	100,0
	Total	436	100,0	100,0	

*Source: Authors*

It seems that the situation regarding the vaccination hasn't improved a year after, either. A recent study of Croatian students' population (AZVO, 2021) shows that 60% of respondents do not support the obligatory vaccination for students and staff at the university as a measure. Regarding intention to get actively involved in other prosocial behaviors, our respondents have shown the greatest interest to actively support those suffering from the disease (52,1%) and to report violation of prescribed measures (25,7%).

*Table 5: Willingness to engage in prosocial activities*

	Frequency	Percent
Promotional materials distribution	35	8
Social media activities	63	14
Helping those in self-isolation	227	52,1
Reporting violation of measures	112	25,7

*Source: Authors*

Several studies found that individuals who perceive a high risk of contracting or being harmed by the virus, who seek out more information, have trust in the government, and feel a moral obligation to comply are more likely to adopt preventive measures (Clark et al. 2020; Bults et al., 2015). Other important factors that contribute to prosocial behavior seem to be gender (female) and level of education (higher) (Brouard, Vasilopoulos and Becher, 2020). A German study (Hellmann, Dorrough and Glöckner, 2021) identified individual responsibility and the vulnerability of the target population as key elements of prosocial behavior. They recommend information campaigns about the risks and consequences for people that are particularly vulnerable to COVID-19 as a way to increase prosocial behavior. Next issue was to find out if low level of institutional trust can be correlated with irresponsible behavior that was, to a certain extent, also found in this study, particularly in context of socially-related behavior. Variables “prosocial behavior” and “institutional trust” were computed. “Prosocial behavior” variable consists of six items as mentioned above. Cronbach’s alpha for this variable is .842. The variable “institutional trust” consists of two items (trust in national pandemic headquarters and trust in Government of Croatia). Other items have tested in the questionnaire were omitted while they represent unofficial sources. Cronbach’s alpha for institutional trust was .911. Correlation results are presented in Table 6.

*Table 6: Correlation between prosocial behaviour and institutional trust*

		Prosocial behavior	Institutional trust
Prosocial behavior	Pearson Correlation	1	.238**
	Sig. (2-tailed)		.000
	N	436	436
Institutional trust	Pearson Correlation	.238**	1
	Sig. (2-tailed)	.000	
	N	436	436

\*\*. Correlation is significant at the 0.01 level (2-tailed).

*Source: Authors*

The results imply strong positive correlation between the two variables, meaning that higher levels of prosocial behaviour are related to higher levels of institutional trust. Furthermore, regression analysis indicates that there is statistically significant positive impact of institutional trust on prosocial behaviour. The analysis is shown in Table 7.

*Table following on the next page*

Table 7: Regression analysis

**Model Summary**

					Change Statistics					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. Change	F
1	.238 <sup>a</sup>	.057	.055	.85508	.057	26.153	1	434	.000	

Predictors: (Constant), Institutional trust

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.122	1	19.122	26.153	.000b
	Residual	317.321	434	.731		
	Total	336.443	435			

a. Dependent Variable: Prosocial behaviour

a. Predictors: (Constant), Institutional trust

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	3.385	.095		35.694	.000
	Institutional trust	.191	.037	.238	5.114	.000

a. Dependent Variable: Prosocial behaviour

Source: Authors

These results show that generation Z finds social distancing of any kind as the most difficult measure and norm to keep. Previous study in Croatia (Leko Šimić and Pap, 2020) also indicates that generation Z has perceived their quality of life worsened during the pandemic, mainly due to social distancing measures.

**4. LIMITATIONS AND FURTHER RESEARCH**

There are several limitations in this study. It has to be taken into account that it is based on Croatian sample only, and some studies confirm the importance of national culture and context for this type of research. Furthermore, socio-demographic characteristic were not taken into account to get more precise of the generation Z highest risk groups. This certainly leaves space for further development of this study. Finally the most important limitation of this study is that the pandemic is so dynamic with changes in mortality rates, vulnerability, healthcare capacities and measures which makes the authors uncertain of the existing results relevance right now.

**5. CONCLUSION**

The aim of this study was to get a deeper insights of generation Z perceptions and prosocial behavior in the context of COVID-19 pandemic. Widely accepted stereotype is that Generation Z is irresponsible and dismissive of COVID-19 risks and public health, and not willing to adopt the prescribed measures to a significantly higher extent than older generations. Research results indicate that generation Z find it most difficult to adopt different measures related social distancing, and these are the measures that they least adhere to.

On the other hand, they do not find it difficult to wear face masks, measure body temperature and apply higher hygiene standards. The major problems identified within the study are their perception of inefficiency of prescribed measures and consequently lower acceptance of them as well as low intention to get vaccinated. Moreover, low institutional trust was found to be significant factor of lower adherence of prescribed measures and prosocial behavior.

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## **ECONOMY POTENTIAL OF CROP BIOMASS IN VUKOVAR-SRIJEM COUNTY, CROATIA**

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### **ABSTRACT**

*The key industries in Croatia include agriculture, food processing, aquaculture and forestry. The gross value added (GVA) of the primary sector (including forestry) amounts 3.9 % of Croatia's total GVA in 2017, compared to EU-28 where this sector accounted for 1.6 % of GVA. In the total value of agricultural production of the Republic of Croatia in 2020, the most important is plant production (61,5), while livestock production share in total agricultural production amounts 38.5 %. The aim of paper was to determine biomass economy and technical potential of the most important cereals (wheat, barley, maize), industrial crops (sunflower, sugar beet, rapeseed, soy bean), vineyards and fruit (apple) at the Vukovar-Srijem County. Review literature and available statistical data presents the basis for research conduction aimed to determine proper methods to calculate potential for harvest residues utilization of the most important field crops in the VS county. Based on the available data, the technical potential of cereals in 2020 was calculated, which amounted 276.662,89 t, industrial crops 157.896,19 t, vineyards 157.896,19 and fruits (apples) 5.531,02 t. The research results show that large quantities of biomass are available in Vukovar-Srijem County as a raw material for further processing into organic fertilizers, substrates, compost, products for pharmaceutical, cosmetic, food and animal feed industry.*

**Keywords:** biomass, field crops, technical potential, Vukovar-Srijem County

### **1. INTRODUCTION**

European Union annually is producing 1.3 billion tonnes of waste, and more than 50 % - 700 million tonnes of that presents agricultural waste (Pawelczyk et al., 2005). Considering the

projected one third increase in world population by 2050 (UNDESA, 2015), the most favourite estimates indicate that we need to increase agricultural and food production by two thirds by 2050 to feed an additional number of people to adequate levels of nutrition (FAO, 2009). Having on mind the impacts of climate change on agricultural systems, higher temperatures and changes in global precipitation patterns increase the likelihood of reductions in crop yields and the proliferation of weeds and pests on agricultural land (Nelson et al, 2009). Most agricultural and industrial waste is incinerated or not properly disposed, and improper disposal of waste from agriculture is an environmental and climatic problem that has a detrimental effect on human and animal health (Sadh et al., 2018; Gontard, 2018). Field residues are residues that are present in the field after the process of crop harvesting. These field residues consist of leaves, stalks, seed pods, and stems, whereas the process residues are residues present even after the crop is processed into alternate valuable resource (Lončarić et al., 2021; Golubić et al., 2018). Agricultural residues refer to the part of plant material that remains after harvest such as straw, stalks, stems and leaves. Residues can be divided into primary and secondary agricultural residues (Golubić et al, 2018). Primary agricultural residues remain on the soil after harvest or pruning and fruit collection (orchards and vineyards), and secondary residues are formed by processing and include molasses, pulp, bark, root, husks, etc. Both primary and secondary agricultural residues are used as food or substrate in livestock, returned to the soil to improve soil properties or in further processing for energy production (Baruya, 2015; Golubić et al., 2018). For most crops, primary residues are produced in quantities approximately equal to the weight of actual crop production, and the amount of secondary residues varies depending on the crops and processing methods (Baruya, 2015). The aim of this paper is to determine the economic potential of agricultural residues of the most important cereals and industrial crops in the Vukovar-Srijem County and to estimate their annual potential for utilization.

## 2. MATERIAL AND METHODS

Vukovar-Srijem County was chosen to determine the economic potential because it represents one of the most intensive plant production areas with the soil of the best quality among the counties in the Republic of Croatia. Data sources on areas (ha), production (t) and yields (t / ha) of the most important field crops in Vukovar-Srijem County in 2020 were data from the Paying Agency in Agriculture, Fisheries and Rural Development (2020) and data from the Central Bureau of Statistics (2020). To calculate the technical potential of harvest residues in Vukovar-Srijem County for 2020, the RenewIslands ADEG methodology was used according to the research of Scarlat et al. (2010), Ćosić et al. (2011) and Asakereh et al. (2014). The technical potential of biomass was calculated for harvest residues of wheat, barley, maize, sunflower, rapeseed, soybean and sugar beet. The technical potential of wheat and barley biomass is obtained by subtracting from the total amount of harvest residues of the mentioned crops the amount of residues required for fertilization, soil protection and livestock production. Finally, the technical potential of biomass in maize, sunflower, rapeseed, soybean and sugar beet is obtained by subtracting from the total biomass potential the amount needed to leave for soil protection and the amount that remains in the field (losses) during harvest.

## 3. RESULTS WITH DISCUSSION

Vukovar-Srijem County has a total of 128,778.54 ha of arable land and 21,945 arable plots (PAAFRD, 2020). Maize and wheat are the main cereals in the Republic of Croatia and thus in Vukovar-Srijem County. The largest part of arable land in Vukovar-Srijem County in 2020 was sown with maize (30,896.46 ha), wheat was sown on 29,121.40 ha, and barley on 9,413.97 ha (PAAFRD, 2020). Considering oilseed, sunflower (11,629.90 ha), soybean (24,616.81 ha) and oilseed rape (6942,81 ha) were the most cultivated oilseeds in the county. Sugar beet was sown on 4,216.61 ha in VS County (PAAFRD, 2020).

According to Kyeyzyuk et al. (2020), uncertainty of future research in the field of exploiting the potential of agricultural crops is represented by trends in the development of agriculture itself in the future. The same author argues that many studies primarily evaluate the current potential of plant residues based on available statistics. Different yields of agricultural crops and expected quantities in the future also represent another source of research uncertainty, as well as climate change, extreme weather conditions and limited availability of organic and mineral fertilizers. Regional differences in terms of soil fertility and nutrient deficiencies should also be taken into account. Overall, the approach to estimating the amount of agricultural residues depends on the purpose of the research. Sustainability of agricultural production should be taken into account when removing crop residues from the field, as agricultural residues play an important role in the agronomic system with direct and indirect impact on physical, chemical and biological properties of soil, and excessive residue removal can impair soil productivity in the long run (Kyryzyuk et al., 2020). Soil is a non-renewable natural resource and should be managed in a sustainable way, and organic matter such as crop residues are among the most important factors in soil fertility. However, agricultural residues, in addition to maintaining the level of organic matter in the soil, can also be used for energy production. The primary advantage of biomass is its renewable nature and thus it can be the basis for planning sustainable development that includes the rational use of energy (Nakomčić-Smaragdakis et al., 2015). Good practice in the management of agricultural residues includes their use in the conservation of soil organic matter and the collection of agricultural residues in order to create added value (Bilandzija et al., 2018). According to research by Bilandzija et al. (2018) 80% of the total agricultural land in Croatia is used for the production of field crops with an annual biomass production of 3,372,205 t. Table 1 shows the characteristics of crop residues used in this study according to the results of Scarlat et al. (2010) and Čosić (2011), based on which the technical potential of biomass (t) of crop residues for Vukovar-Srijem County in 2020 was calculated (Table 2 and Table 3).

Crop	Biomass	Harvest ratio	Biomass required for soil protection	Biomass required for livestock	Harvest losses
Wheat	straw	0,8-1,6 (-)	1,0 - 2,0 t/ha	0,5 -1,0 (t/head)	-
Barley	straw	0,8-1,3 (-)	1,0 - 2,0 t/ha	0,5 -1,0 (t/head)	-
Maize	maize stalks	0,9-1,2 (-)	50,00%	-	20,0 (%)
Sunflower	straw and leaves	2,2-3,2 (-)	50,00%	-	20,0 (%)
Rapeseed	straw and leaves	1,4-2,0 (-)	50,00%	-	20,0 (%)
Sugar beet	leaves and top of sugar beet rooth	0,12-0,14 (-)	50%	-	5%
Soybean	straw and leaves	0,76-3,50 (-)	30%	-	15%

*Table 1: Characteristics of harvest residues  
(Source: Scarlat et al. (2010) and Čosić et al. (2011))*

The total production of crop residues in the field represents the total biomass potential. However, the total potential of biomass cannot be fully exploited because part of the harvest residues needs to be plowed (30-70%). Harvest residues are an important source of organic matter for the soil, including the supply of carbon (especially cereal straw, which is an important

non-fossil source of carbon), nitrogen and other nutrients and also play an important role in preserving soil water and protecting soil from erosion (Bavrka et al., 2019, Glavaš et al., 2014, Karan and Hamelin, 2020). Furthermore, part of the harvest residues is needed for livestock production, and part remains in the field due to the impossibility of collection (Ćosić et al., 2011). The technical potential of cereals, oilseeds and sugar beet is calculated on the basis of the total biomass potential (total amount of straw, stem or corn). Data on total harvest residues (straw, stems and leaves) cannot be found in literature data and statistical databases and should be calculated as the product of cereal or oilseed production (t) and harvest ratio (-) which represents the ratio of grain weight to weight of straw, maize stalks or stalks and leaves. Actual field measurements would probably be the most accurate and the most precision method for determining the technical potential of biomass, but, as harvest residues are rarely traded on the market, and due to time and cost constraints associated with measurement, this method is rarely performed or not performed at all. Therefore, the statistical and empirical calculation methods are used for evaluation of technical potential of biomass (Karan and Hamelin, 2020). The yield of crop residues varies more than the yield of the crop itself because it depends on the variety, agronomic conditions, harvesting technique and cutting height (Scarlat et al., 2010). The total potential of wheat biomass is 260.927,74 t, and barley 58.743,17 t (Table 2), and from the total potential should be subtracted the part of straw that remains for soil protection (in this calculation is 2.0 t / ha) and biomass required for livestock (0.6 t / head for wheat straw and 0.5 t / head for barley straw, Table 1). The total potential of maize biomass is 292,156.93 t, sunflower 101.180,13 t, rapeseed 38.879,74 t, sugar beet 34.391,51 t and soybean 172.317,67 t (Table 3). The technical potential of maize stalks and harvest residues of sunflower, soybean, rapeseed and sugar beet (Table 3) represents only 30% of available raw materials for further processing while 70% is biomass needed for soil protection, fertilization and losses during harvest, which is in accordance of the other authors' research (Scarlat et al., 2010; Ćosić et al., 2011; Asakereh et al., 2014; Glavaš et al., 2014; Golubić et al., 2019).

	Total biomass potential (t)	Biomass required for soil protection (t)	Biomass required for livestock (t)	Technical potential of biomass (t)
Wheat	260.927,74	43.682,10	47.705,40	169.540,24
Barley	58.743,17	14.120,96	39.754,50	4.867,72

*Table 2: Technical potential of wheat and barley straw in Vukovar-Srijem County in 2020 (Source: author's calculation according to Scarlat et al. (2010); Ćosić et al. (2011); Asakereh et al. (2014); PAAFRD (2021) and CBS (2021); CAA (2020))*

	Total biomass potential (t)	Biomass required for soil protection (t)	Harvest losses (t)	Technical potential of biomass (t)
Maize	292.156,93	146.078,46	43.823,54	102.254,92
Sunflower	101.180,13	50.590,07	15.177,02	35.413,05
Rapeseed	38.879,74	19.439,87	5.831,96	13.607,91
Sugar beet	34.391,51	17.195,76	3.095,24	14.100,52
Soybean	172.317,67	51.695,30	25.847,65	94.774,72

*Table 3: Technical potential of maize, sunflower, rapeseed, sugar beet and soybean in Vukovar-Srijem County in 2020 (Source: author's calculation according to Scarlat et al. (2010); Ćosić et al. (2011); Asakereh et al. (2014); PAAFRD (2021) and CBS (2021); CAA (2020))*

The available amount of biomass is estimated based on the harvest index, which for most cereals is 1:1 / 1:2. These ratios represent the approximate values, which are related to agro-ecological specificities of the cultivation area and agro-technical measures applied during the arable crops cultivation (Bilandzija et al., 2018). According to the data in Tables 2 and 3, wheat (169.540,24 t), maize (102.254,92 t), soybean (94.774,72 t) and sunflower (35.413,05 t) have the highest technical potential of biomass. These results are in accordance with the research of Scarlat et al. (2010). These authors calculated the share of various crop residues in the EU27 and the contribution of wheat in the production of straw (dry matter) is highest (42.2%) followed by maize and barley (18.8%), rapeseed (6.9%) and sunflower (5.2%). For the 10-year period, a variation of crop residue production between 200 and 305 M dry tonnes/year at EU level was established. According to some researcher (Bilandzija et al., 2018 and Golubić et al., 2019) maize (52,292 MJ / ha-1) has the greatest technical potential and energy yield per hectare, followed by sunflower (49,191 MJ / ha-1), although it is grown on much smaller areas than maize and wheat with an energy yield of 39,730 MJ / ha-1. Generally, agricultural waste is a huge pool of untapped biomass resources that may even represent economic and environmental burdens. They can be converted into bioenergy and bio-based products by cascading conversion processes, within circular economy and residual resources should be considered. Environmental and economic consequences of agricultural residue management chains are difficult to assess due to their complexity, seasonality and regionality (Gontard et al., 2018). According to Bilandzia et al. (2018), Croatia has large amounts of residues suitable for green energy production are generated every year, such as corn stalks, wheat and soybean straw and vine pruning residues, which would ensure a significant increase in total energy production, increase the share of renewable energy in total energy and reduce imports. Biomass from agricultural residues, except for energy production, can be used in a number of other ways, in agriculture most often by returning organic matter to the soil, in vegetable production or livestock, as a raw material in industry, for animal feed, for polishing in the metal industry, in construction as a building material or insulation, for the cosmetics industry, etc. (Glavaš et al., 2014; Nakomčić-Smaragdakis et al., 2015). Organic waste management in agriculture should be improved by optimizing the even distribution of manure according to soil fertility. Then, the biological stabilization of all organic residues from agriculture and the food industry should reduce nutrient losses, carbon and nitrogen emissions and increase the fertility value of biologically stabilized organic matter - composting and vermicomposting (Lončarić et al., 2021). The use of biomass of crop residues to return organic matter to the soil represents a significant potential for the production of organic fertilizers and substrates whose use in crop production can significantly contribute to preserving soil fertility. In Vukovar-Srijem County, the total technical potential of analyzed crops' biomass was 434,559.10 t on 128,778.54 ha, which is 45.33% of the total biomass potential and represents important potential in the production of organic fertilizers and other products.

#### 4. CONCLUSION

Biomass from agriculture is the least used biological resource, although one of the most accessible and economically viable resources. The aim of this paper was to calculate the technical potential of the most important cereals and industrial crops produced in 2020 in the Vukovar-Srijem County. According to the results, Vukovar-Srijem County has a large amount of biomass available during one year. In 2020, 276,662.90 t of biomass obtained from cereal crop residues and 157.896,19 t of industrial crop residues (oilseeds and sugar beet) remained available for further processing in the County. Based on the achieved results, we can conclude that VS County, as an agricultural region, produces large amounts of agricultural waste that can be the raw material for the production of new value-added products, as fertilizers, compost, products of food and pharmaceutical industry, animal feed, electric power, etc.

At the same time, proper management of agricultural waste contributes to the preservation of the environment and soil fertility.

**ACKNOWLEDGEMENT:** *The paper is part of the research on the project KK.01.1.1.04.0052 "Innovative production of organic fertilizers and substrates for growing seedlings" funded by the Operational Program Competitiveness and Cohesion 2014-2020.*

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## OVERVIEW OF RESEARCH CONDUCTED IN THE FIELD OF STAKEHOLDER ANALYSIS – SYSTEMATIC REVIEW

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### ABSTRACT

*The word “stakeholder” was introduced by Freeman in year 1984 and defined as “any group or individual who can affect or is affected by the achievement of the organization's objectives” and launches new views on the organization and its influence as well as the influence of interest groups on it. Paper analyzes contemporary studies in literature in the field of stakeholder analysis by reviewing articles published in scientific journals indexed in Scopus in the field “Business, Management and Accounting”. Bibliometric analysis was performed on a sample of 550 documents based on a scientific search strategy run on Scopus database from 1988 until January 2022. Biblioshiny, web-based application included in Bibliometrix package developed in R-language was used for the study. The top five countries in terms of publications in the field of stakeholder analysis are USA, United Kingdom, Australia, Netherlands and Italy while the most important countries for international cooperation in the field of stakeholder analysis is Hong Kong. In research interval two periods experienced increased scientific interest in the management of stakeholders. In the period around year 2008 and 2015, have led the authors to characterise the strong link between the stakeholder management field and the development phases of the quality management system and the increasing impact of sustainability and sustainable development concepts in the organisation management.*

**Keywords:** stakeholder analysis, strategical management, bibliometrix, R-package, biblioshiny

### 1. INTRODUCTION

For a long time key information for the company's business and survival in the market was the voice of the customer. This way most companies developed their products and services, or defined strategic directions of development taking into account the wishes and needs of customers and studying the competition and their relationship with the customer. However, in year 1984 Freeman introduced and defined a word stakeholder as “any group or individual who can affect or is affected by the achievement of the organization's objectives” (Freeman, 1984) and launches new views on the organization and its influence as well as the influence of interest groups on it. With the occurrence and development of quality management systems as a new managerial concept in addition to the customer for the organization all interest groups became important but at first regarding to the managing and organizing company. However, in year 1987, when the first norms regarding quality management systems appeared until today, class 9 norms underwent a series of revisions that in some ways adapted to the new business conditions in the environment. Not only has the concept of quality undergone a transformation from the field of quality control to a comprehensive concept of quality of life, yet the omnipresent concept of sustainable development has significantly influenced on changes,



especially in the part of changing the concept of voice of customer (VOC) in voice of stakeholders (VOS). Today, the VOS is not only crucial for the strategic positioning of the organization and the direction of development, but the demands of interest groups are lowered through the process all the way to product development. The goal of this paper is to make a systematic analysis of previous research in the field of analysis of interest influential groups and their impact on the managing of organizations.

## 2. STAKEHOLDER ANALYSIS

Interest-impact groups are those individuals or groups that influence the organisation and are influenced by its operations. Each interest group brings something into this relationship to get something in return (Hoyle, 2018). The beginnings of reflection towards relations with interested parties certainly started to manage customer relations then with suppliers and the evolution continued on all interested parties. This sequence of developments was followed by the development of new concepts of management and business models, in which the concept of sustainability and sustainable development has also played a significant role in the quality management concept. Following a well-known conference on sustainable development Rio 20, it was decided that society's immediate future task would be to develop the SDGs, including the goal of developing business models based on stocks and stakeholders (Geoghegan, 2013:4). At the same time, the concept of the quality management system and the new revisions of the standards related to this area (ISO 9000ff) put the relationship management at the core of the concept and disseminate this aspect from the supplier to all interested parties. The importance of stakeholders was gained in the 2008 revision of the ISO 9001:2008 standard which looked at five stakeholders and it was required in norms to analyse and take into account their requirements. A particular focus on this was given in the next 2015 review, when this number is extended to 15 interested parties that have a more or less significant impact on the organisation's operations and the key to success is linked to the successful identification of the optimal fulfilment of all the demands of the parties concerned, taking into account the importance and the power of each individual. Therefore, one of the key tasks of any successful organisation is to continuously monitor and analyse the demands of interested parties and to enable the implementation as far as possible of the organisation's operations. As mentioned above, the quality management system as an umbrella standard determining the quality of the organisation's management defines a total of 15 interested parties:

- In almost all organisations, customers are considered to be one of the key interest-impact groups and it is extremely important to build a good relationship with them. This good relationship is based not only on the sale of goods or services, but also on communication and mutual respect. The main task of the organisation is to identify and understand each issue and problem of the buyer and of course to find ways to resolve them for mutual satisfaction.
- Suppliers are those individuals or groups who provide products or services to the organisation in return for money and of course to comply with agreed terms. They are usually bound by a contract for breaches of which there are consequences. The organisation expects the supplier to deliver resources in a timely and consistent manner. The focus is on building a stable, long-term relationship with trust. There are two types of supplier for the contract company or institution: internal and external. Internal suppliers refer to the company's workers who need to deliver a specific product or service within a given time limit. For example, an internal supplier is departments that create financial reports or market studies. While external suppliers are institutions, companies or individuals supplying with necessities for the proper functioning of the company. External suppliers would be e.g. companies selling raw materials for companies. Suppliers can also be classified according to the type of goods and services they offer, mainly divided into three

categories, namely: suppliers of goods, are those who offer tangible and necessary tangible products on the market, companies that produce items, or goods for resale; then service providers, defined as companies or individuals delivering intangible goods, online service providers can be found among service providers and so on; and a third category are providers of resources or suppliers in themselves, economic resources, in particular loans, capital and partners, banks, government, etc. can be found among them.

- Employees are those individuals who work directly for the organisation and in return receive a salary and other contractual benefits, as well as certain security and status. The organisation should establish operating conditions for the management of employees, i.e. each employee should comply with these working conditions prescribed by the organisation.
- A company refers to the community in which the organisation operates. A distinction is made between the physical community and the virtual community. When talking about a physical community, then the organisation should respect its culture and standards. When referring to the virtual community, it is necessary to recognise the fact that much of the business of all organisations has moved online. The internet provides the organisation with a way to communicate quickly and easily with many more people than before. If the organisation learns to use it for its own benefit, business growth and development is almost certain (Freeman et al, 2007)
- Investors are all those who invest money in an organisation, such as shareholders, owners, banks, etc. or anyone who is linked to it financially.
- Competitors in those organisations that are on the same market and offer the same or similar product or service should be well monitored and analysed by each organisation in order to identify their strengths and weaknesses and exploit them for its own benefit. Fair competition in the economy is the only permissible form of business competition, ensuring business models and customs and acting within the framework of existing regulations. It is achieved in free competition in the choice of production orientation, in attracting customers with lower prices, favourable sales conditions and permissible means of advertising, and in finding more convenient times and markets for product and service placement. Unfair competition represents unfair market competition, the conduct of an economic operator (trader) which is contrary to good commercial practices. Unfair competition is considered to be advertising or offering goods and services by providing information that exploits the other trader's reputation, its products and services, the provision of information about another trader, where its reputation may be detrimental to the latter's reputation, the unlawful acquisition or unlawful exploitation of the other trader's trade secret, the sale of products bearing labels or data that are confusing, the unjustified use of the name or other trader's name or other designation, the concealment of a lack of goods or services on the market, etc.
- The legislator, local and national institutions that issue laws and rules that the organisation must comply with in the course of its business. These institutions shall provide support to organisations in exchange for compliance with their provisions.
- Various associations and organisations are all organisations or associations that may influence changes in the social, economic or legal aspects of the organisation's environment (associations for environmental protection, animal protection, chambers of commerce, etc.).
- Media are the main means of mass communication and the organisation's main means of communication towards the public. They have a major influence on the organisation, because of their distribution and reach to a large number of people, they can change the perception of an organisation.

The basis for a successful management of an organisation's relations with its interest-impact groups is the acceptance by the organisation that the interests of each other are interactive and interlinked. The organisation should also accept that each member of an interest group does not have to belong to only one group, and must adapt its approach to this. The organisation must also not ignore the mutual relations between the various interest groups, as well as their communication and cooperation. Developments and changes in the market or organisation environment may also change the demands of interested parties. The organisation is required to anticipate and respond to these changes and set its priorities accordingly (Post, Preston and Sachs, 2002).

### 3. RESEARCH METHODOLOGY

Paper reviews contemporary studies in literature related to stakeholder analysis using bibliometric techniques of 550 articles in English language published in the journals indexed in Scopus in the field "Business, Management and Accounting" from 1988 until January 2022. Research were focused on the peer-review journals that are cited in Scopus. Table 1 present research strategie. Search was conducted using the scientific database Scopus in January 2022. Through the first part of the search Scopus was checked using keywords "stakeholder analysis". This approach resulted in 2314 hits. In the next step, research was limited to papers in the field of business, management and accounting. This approach resulted in 687 hits. In the next step research was limited to the articles. This approach resulted in 553 hits. Finally, in the last step non-English language articles were thrown out and that limitation gives 550 scientific articles. Bibliometric analysis was done by biblioshiny, web-based application included in Bibliometrix pacage developed in R-language.

Search strategy	Hits	Time span	Indexes
(TITLE-ABS-KEY ("stakeholder analysis"))	2317	1986-January, 2022	Scopus
AND (LIMIT-TO SUBJAREA, "BUSI")	687	1988-January, 2022	Scopus
AND (LIMIT-TO (DOCTYPE, "ar" ) )	553	1988-January, 2022	Scopus
AND ( LIMIT-TO ( LANGUAGE , "English" ) )	550	1988-January, 2022	Scopus

*Table 1: Scopus search strategy*

### 4. RESULTS AND DISCUSSION

Figure 1 presents number of studies by year. In 2009, publications in the field of stakeholder analysis has increased rapidly and after 2012, there has been a renewed increase in interest following the Rio conference on the definition of global Sustainable Development Goals (SDGs), one of which is linked to business models tailored to stakeholders' demands.

*Figure following on the next page*

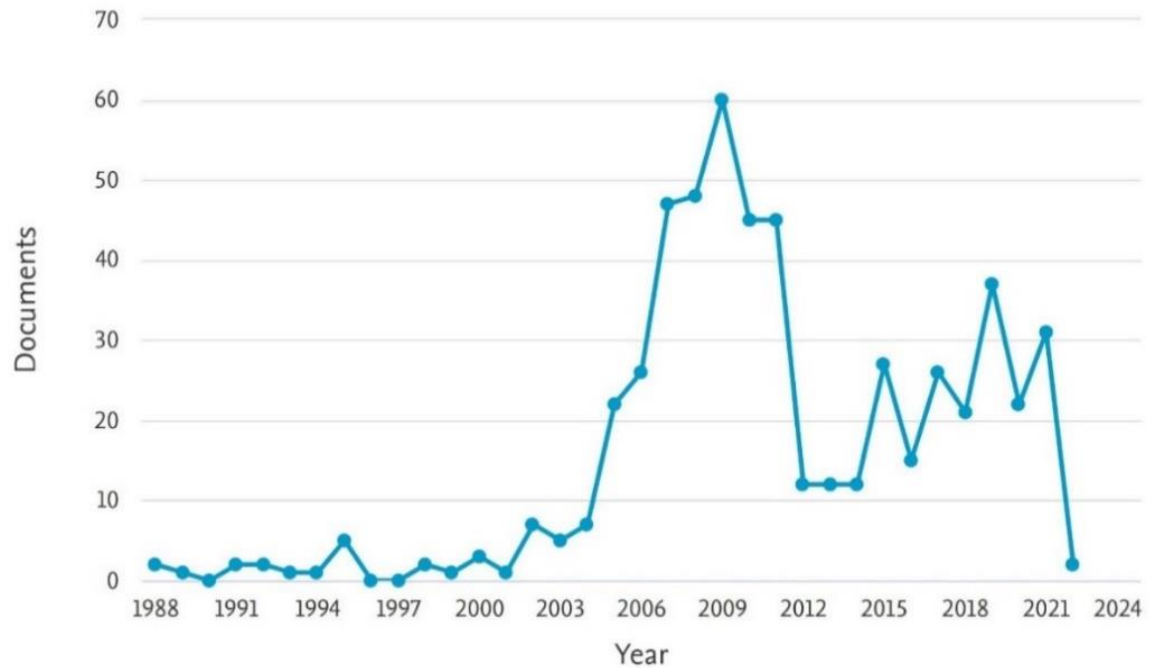


Figure 1: Documents by year  
(Source: authors' work)

Figure 2 illustrates corresponding author's country and collaboration between authors from different countries. MCP measure the international collaboration intensity of a country. For each country, MCP indicates the number of documents in which there is at least one co-author from different country. SCP indicates, for each country, the number of single country publications.

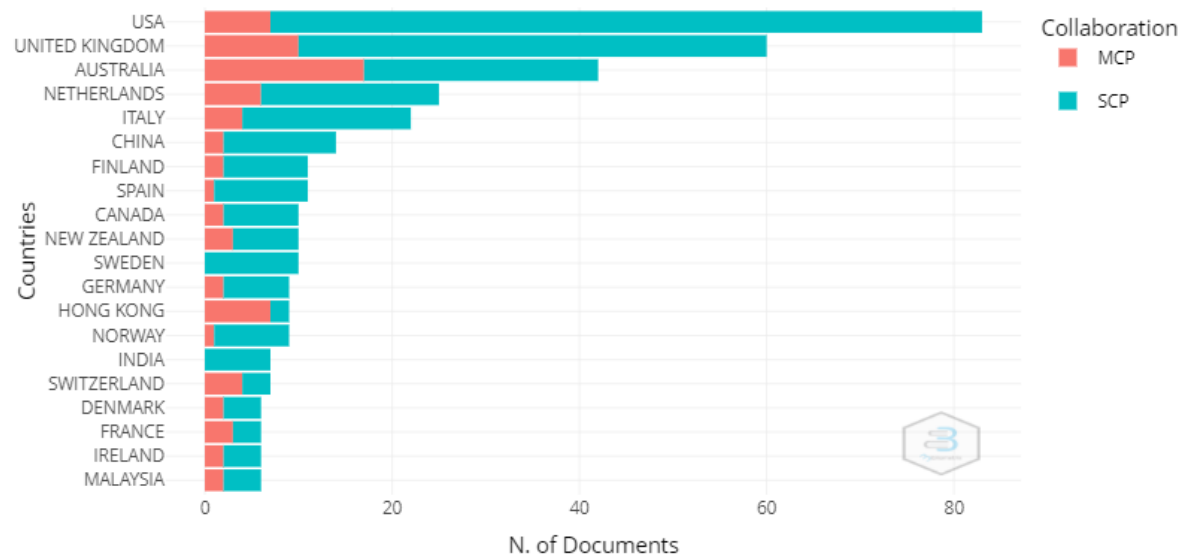


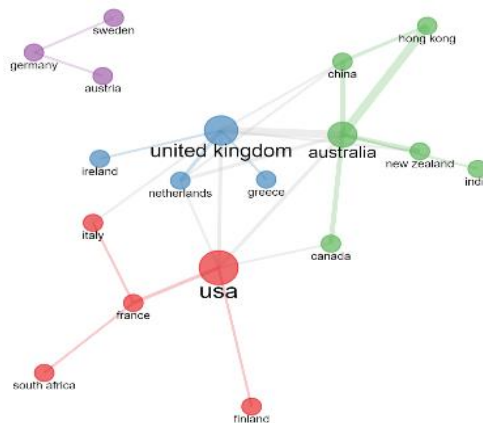
Figure 2: Corresponding author's country  
(Source: authors' work using bibliometrix in R software)

The top five countries in terms of publications in the field of stakeholder analysis are USA, United Kingdom, Australia, Netherlands and Italy while the most important countries for international cooperation in the field of stakeholder analysis is Hong Kong with MCP ratio 0,7778 while Sweden and India has no international collaboration.

Country	Articles	SCP	MCP	MCP_Ratio
USA	83	76	7	0,0843
UNITED KINGDOM	60	50	10	0,1667
AUSTRALIA	42	25	17	0,4048
NETHERLANDS	25	19	6	0,24
ITALY	22	18	4	0,1818
CHINA	14	12	2	0,1429
FINLAND	11	9	2	0,1818
SPAIN	11	10	1	0,0909
CANADA	10	8	2	0,2
NEW ZEALAND	10	7	3	0,3
SWEDEN	10	10	0	0
GERMANY	9	7	2	0,2222
HONG KONG	9	2	7	0,7778
NORWAY	9	8	1	0,1111
INDIA	7	7	0	0
SWITZERLAND	7	3	4	0,5714
DENMARK	6	4	2	0,3333
FRANCE	6	3	3	0,5
IRELAND	6	4	2	0,3333
MALAYSIA	6	4	2	0,3333

*Table 2: Most relevant countries by corresponding author  
(Source: authors' work using bibliometrix in R software)*

Five research were publisher from corresponding authors from Austria, Brazil and South Africa. Two papers from Austria were published with international collaboration, while for Brazil and South Africa that was a case for one paper. Authors from Indonesia, Israel and Singapore published 4 articles, from each country, with no international collaboration. Three papers with international collaboration on one paper were published from corresponding authors from Czech Republic, Greece and Iran while three papers with no international collaboration were published from authors from Poland, Portugal and Cyprus. Furthermore, 2 papers were published from corresponding authors from Egypt, Korea and Nigeria. Egypt without international collaboration while Korea and Nigeria with MCP ratio 0,5. Authors from Argentina, Belgium, Costa Rica, Georgia, Ghana, Kenya, Lebanon, Oman, Pakistan and Romania published one paper without international collaboration and authors from Japan, Luxemburg, Serbia, Thailand and Tunisia published one paper with international collaboration.



*Figure 3: Collaboration network by countries  
(Source: authors' work using bibliometrix in R package)*

Figures 4 and 5 are showing analysis of 10 most frequent keywords, authors or countries from which the corresponding author came and the sources. From the results, it can be concluded that the vast majority of the authors involved in the stakeholder analysis are related to the USA, United Kingdom and Australia, and the most frequently published magazines are related to project management.

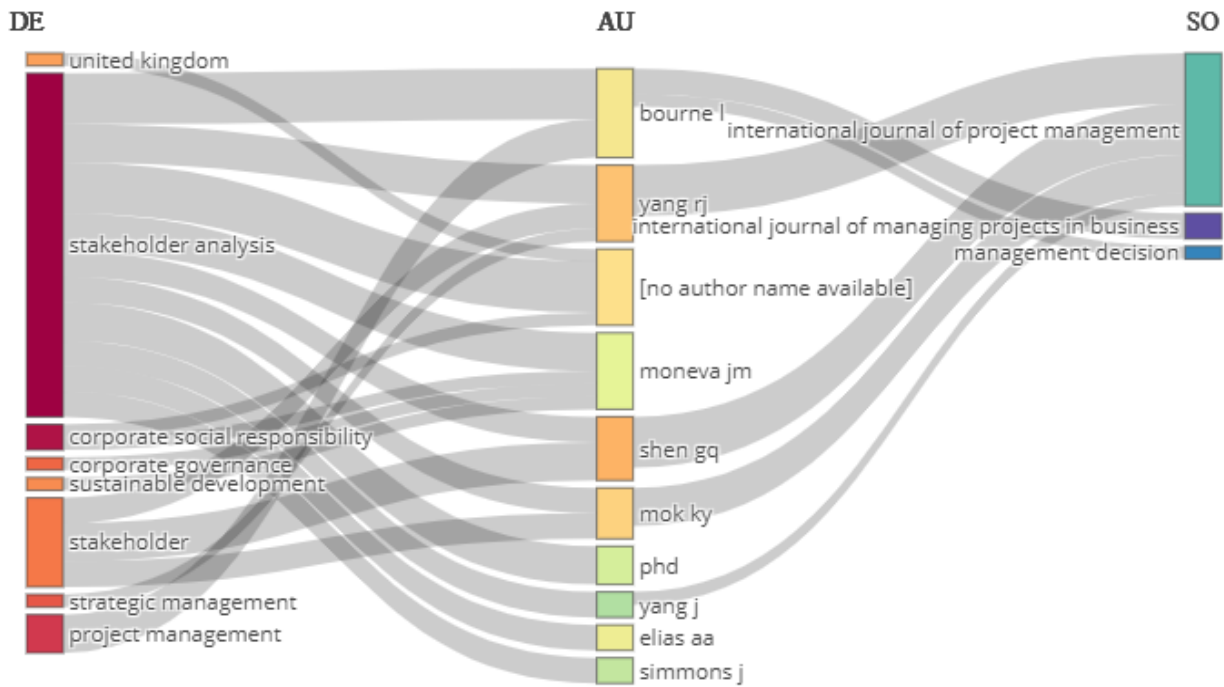


Figure 4: Three-fields plot according to the 10 most frequent keywords, countries by corresponding author and sources  
(Source: authors' work using bibliometrix in R software)

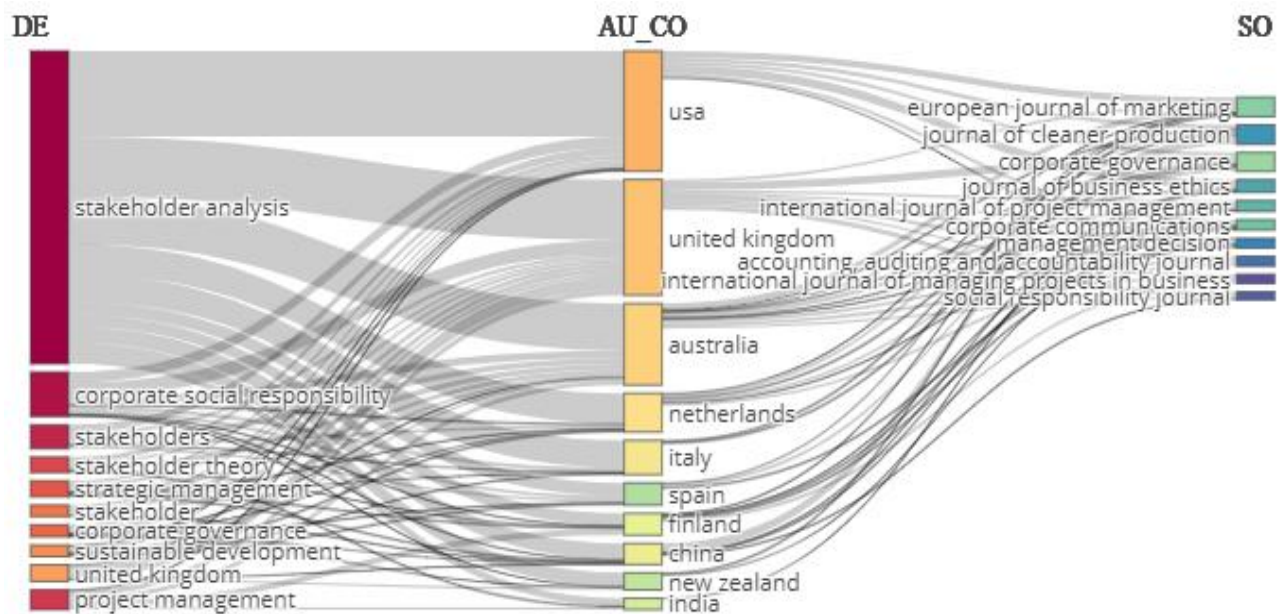


Figure 5: Three-fields plot according to the 10 most frequent keywords, authors and sources  
(Source: authors' work using bibliometrix in R software)

	<i>Authors</i>	<i>Title</i>	<i>Year</i>	<i>Country</i>	<i>number of citations</i>	<i>key features of the article</i>
1.	<i>John M. Bryson</i>	<i>What to do when Stakeholders matter</i>	2004	USA	671	<i>stakeholder identification and analysis techniques</i>
2.	<i>Maingnan I., Ferrell O.C., Ferrell L.</i>	<i>A stakeholder model for implementing social responsibility in marketing</i>	2005	Netherlands, USA	375	<i>using stakeholder model for implementing CSR in marketing</i>
3.	<i>Cronin Jr., J.J., Smith, J.S., Gleim, M.R., Ramirez, E., Martinez, J.D.</i>	<i>Green marketing strategies: An examination of stakeholders and the opportunities they present</i>	2011	USA	347	<i>using stakeholder analysis to determine how marketing research can address the gaps in the literature in terms of the 3P perspective</i>
4.	<i>Kovács, G., Spens, K.</i>	<i>Identifying challenges in humanitarian logistics</i>	2009	Finland	291	<i>categorization of challenges according to their stakeholder environment</i>
5.	<i>Mok, K.Y., Shen, G.Q., Yang, J.</i>	<i>Stakeholder management studies in mega construction projects: A review and future directions</i>	2015	Hong Kong, Australia	271	<i>identified four major research topics: “stakeholder interests and influences”, “stakeholder management process”, “stakeholder analysis methods” and “stakeholder engagement”</i>
6.	<i>Bourne, L., Walker, D.H.T.</i>	<i>Visualising and mapping stakeholder influence</i>	2005	Australia	248	<i>insights into a tool that one of the authors has developed to help map, and thus visualise, stakeholder power and influence within the performing organisation</i>
7.	<i>Olander, S.</i>	<i>Stakeholder impact analysis in construction project management</i>	2007	Sweden	233	<i>using stakeholder analysis based on the stakeholder impact index as a planning and as an evaluation tool</i>
8.	<i>Frow, P., Payne, A.</i>	<i>A stakeholder perspective of the value proposition concept</i>	2011	Australia	221	<i>explores the development of value propositions in key stakeholder market domains</i>
9.	<i>Welch, M., Jackson, P.R.</i>	<i>Rethinking internal communication: A stakeholder approach</i>	2007	UK	206	<i>improve internal communication by proposing stakeholder theory</i>
10.	<i>Huang, C.-L., Kung, F.-H.</i>	<i>Drivers of Environmental Disclosure and Stakeholder Expectation: Evidence from Taiwan</i>	2010	Taiwan	194	<i>stakeholders’ influence on environmental disclosure</i>

*Table 3: Most relevant articles by number of citations  
(Source: authors’ work)*

The most cited article “What to do when Stakeholders matter” focuses specifically on how and why managers might go about using stakeholder identification and analysis techniques in order to help their organizations meet their mandates, fulfill their missions and create public value. A range of stakeholder identification and analysis techniques is reviewed. Five stakeholder identification and analysis techniques are particularly relevant to helping organize participation: a process for choosing stakeholder analysis participants; the basic stakeholder

analysis technique; power versus interest grids; stakeholder influence diagrams; and the participation planning matrix (Bryson, 2004). Article “A stakeholder model for implementing social responsibility in marketing” providing a comprehensive managerial framework to understand and provide a well balanced and integrated stakeholder orientation for implementing corporate social responsibility in marketing. The focus was to prove a methodology, specifically the steps, for using a stakeholder model for the organizational level that encompasses functional level marketing CSR decisions (Maignan, Ferrell and Ferrell, 2005). In article “Green marketing strategies: An examination of stakeholders and the opportunities they present” authors review and integrate the literature surrounding green initiatives in various business disciplines and offer a series of guiding research opportunities to advance the marketing discipline. To accomplish that goal, authors generated an overarching framework that is based on stakeholder theory in terms of the 3P concept as the basis for the literature investigation. More specifically, they denote how the marketing discipline can reach the relevant stakeholders to increase emphasis on green-related issues (Cronin *et al.*, 2011). Paper “Identifying challenges in humanitarian logistics” shows that some disasters defy a categorization between natural and man-made causes. Challenges of humanitarian logisticians depend not only on the disaster at hand, but also on the local presence of their organization. The most emphasized challenge is the coordination of logistical activities. Challenges can be managed better if attributing them to different stakeholder environments. To be able to mitigate the challenges of humanitarian logisticians in Ghana, stakeholder theory was used to identify the origin of these challenges in terms of coming from an input/output environment, i.e. the supply chain, the competitive environment, here composed of other humanitarian organizations, regulatory environment, or internal stakeholders (Kovács and Spens, 2009). Paper “Stakeholder management studies in mega construction projects: A review and future directions” undertakes a systematic overview of stakeholder management articles in relation to mega construction project, published by academic journals from 1997 to 2014, aiming to depict the latest research development of that field (Mok, Shen and Yang, 2015). The purpose of paper “Visualising and mapping stakeholder influence” was to describe some tools that not only identify stakeholders but also measure their potential influence and impact. The authors have presented ideas about developing and managing stakeholder relationships with the model of the “stakeholder circle” as a tool for visualising stakeholder influence to several large groups of professional project managers and had favourable feedback on these occasions. Subsequent paper reports on the effectiveness of the stakeholder circle. Research continues on a number of case studies, but data analysis is not sufficiently advanced to discuss testing the stakeholder-circle model in this paper (Bourne and Walker, 2005). Stefan Olander in article “Stakeholder impact analysis in construction project management” stated that stakeholder analysis based on the stakeholder impact index can be used as a planning and as an evaluation tool. As a planning tool, it can be used proactively to structure the project stakeholders and their potential impact on the project. As an evaluation tool, it can be used to evaluate the stakeholder management process during the project and after project completion. Before each major decision in the project, a stakeholder analysis should be conducted in order to obtain feedback on how alternative ways to proceed will affect the positive input and negative impact from project stakeholders (Olander, 2007). Paper “A stakeholder perspective of the value proposition concept” provides a theoretical contribution to the marketing literature by exploring the application of the customer value proposition concept to other stakeholder markets. Authors conclude that the value propositions (VPs) have a key role to play in co-creating value between various stakeholders, acting as a value alignment mechanism within a marketing system and that Service-Dominant (S-D) logic helps enterprises address VPs in a more holistic and integrated manner. An iterative framework is proposed that couples the stakeholder concept and value co-creation (Frow and Payne, 2011).



Paper “Rethinking internal communication: A stakeholder approach“ addresses gaps in the literature on internal communication. It does that by conceptualising a multidimensional stakeholder approach summarised in the Internal Communication Matrix which could be used to supplement other forms of internal situational analysis and as an analytical tool which may be applied to the strategic analysis, planning and evaluation of internal communication. The paper introduces the concept of internal corporate communication and argues that it should be a key focus for corporate communication theory and practice as it concerns all employees (Welch and Jackson, 2007). Article „Drivers of Environmental Disclosure and Stakeholder Expectation: Evidence from Taiwan” investigates stakeholder expectations associated with corporate environmental disclosure. Aim was to gain insight as to how stakeholders’ influence on environmental disclosure varies according to financial performance (Huang and Kung, 2010).

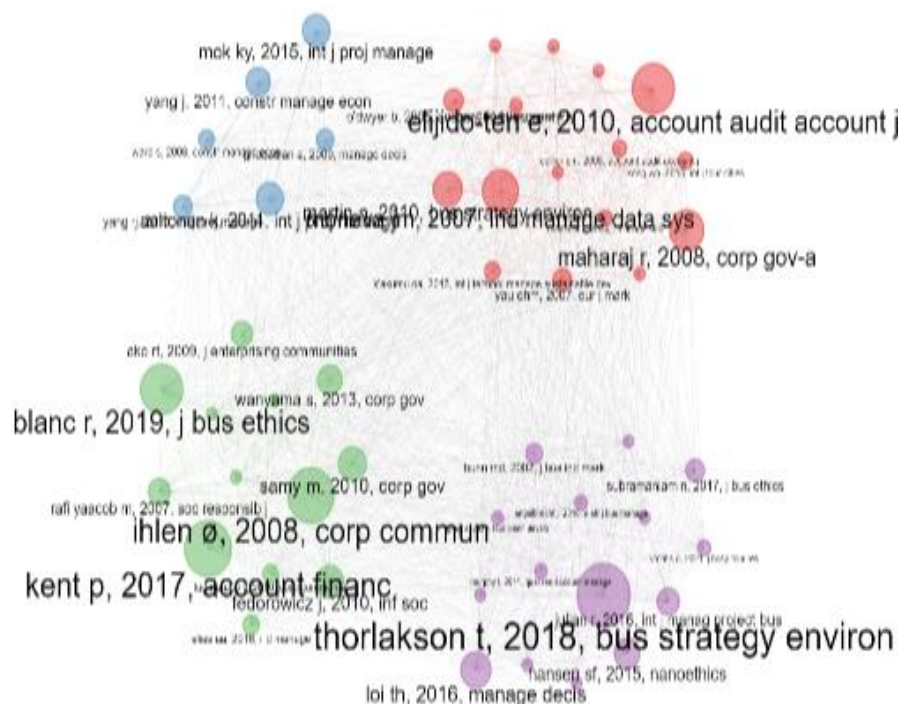


Figure 6: The cluster map of the influential documents by bibliographic coupling  
(Source: authors' work using bibliometrix in R software)

A single item of reference used by two papers was defined as a unit of coupling between them (Kessler, 1963). A bibliographic coupling network can be obtained using the general formula:  $B_{coup} = A \times A'$  where  $A$  is a  $Document \times Cited$  reference matrix. Element  $b_{ij}$  indicates how many bibliographic couplings exist between documents  $i$  and  $j$ . The strength of the bibliographic coupling of two articles,  $i$  and  $j$  is defined simply by the number of references that the articles have in common, as given by the element  $b_{ij}$  of matrix  $B_{coup}$ . (Aria and Cuccurullo, 2017) Using the 50 most bibliographically – coupled studies, network map as shown in Figure 6 was build. The same four clusters were obtained for bigger number of studies.

## 5. CONCLUSION

The key drivers of reflection and research relating to the relationship management of the stakeholders are certainly two significant concepts. On the one hand, the concept of sustainable development which in addition to the economic aspect focus also on environmental and sociological aspects, with which the importance of the stakeholders has become extremely significant.

The second concept is the concept of quality management that incorporated relationship management into the core principles of the concept by auditing the quality management system and standards for certification and monitoring, taking into account the demands of all interested parties. Consequently, both the growth and development of research in this field, which is perceived by step-by-step frequencies with specific activities and developments at global level in relation to sustainable development, as well as revisions and editions of new standards, as well as the development of new standards in the field of corporate social responsibility (CSR), which is largely based on the concept of sustainability and sustainable business for organisations.

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## SELF-IDENTIFICATION OF START-UPS

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### ABSTRACT

*The paper covers a self-identification analysis of start-ups in a semi-peripheral country. We use artificial intelligence-based (AI) natural language processing (NLP) analysis on interviews with Hungarian start-up's founders to examine how start-ups' self-identification changes along lifecycles based on venture capital investment and inherent classification. Thus, we examine which system process and corresponding category system promote a company to define itself as a start-up. Our results show that start-up identity is not constructed as a constant entity but as a constantly changing space, which can be divided into well-defined segments and outlines the action horizon of the given economic organisation.*

**Keywords:** *Start-up, Business Identity, Natural Language Processing, Text Mining, Artificial Intelligence*

### 1. START-UPS, CHANGE OF VARIETY

The self-identification of firms largely determines the event horizon of their economic transactions (Seppänen et al., 2015). As a result, analysing the identity of businesses can help us gain a deeper understanding of the actions and long and short-term economic strategies that a particular company implements. Although we already have pervasive literature on the identity of businesses, in the case of start-ups, this line of research still holds many unanswered questions (Sutton, 2000). In the literature, start-up self-identification is usually seen as an unchanging entity. This definition is crystal clear as the entrepreneurial idea emerges and unchangeably follows the company until its exit (Dufour et al., 2018; Jawahar-McLaughlin, 2001; Lester et al., 2003). This is because theorists mostly focus on start-ups in the epicentres of start-up ecosystems (Silicon Valley, Tel-Aviv). Consequently, fewer discourses are available about start-ups operating in semi-peripheral economies. In our study, we supplement these theories by focusing on start-ups operating in Hungary, a country with a semi-peripheral economy, and examine how variable the self-identification of start-ups is in this context. Thus, we examine start-up identity through lifecycle theories. Although there are several lifecycle theories for start-ups (Dodge-Robbins, 1992; Downs, 1967; Dufour et al., 2018; Greiner, 1972; Jawahar-McLaughlin, 2001; Lester et al., 2003; Lippitt & Schmidt, 1967; Mintzberg, 1984; Scott, 1971), in this paper, we use lifecycle theories approached from the point of view of venture capital investments. A series of lifecycle models based on venture capital investment was opened by Lyden (1975), who typified lifecycle thinking in his model, starting with a mapping of the resources required like a capital investment. Later, theories related to the source of financing are fulfilled in the work of Paschen (2017), who tried to synthesise the basis of all life-cycle models, and at the same time, identified that start-ups need resources, especially financial resources. In his model, he distinguished three categories: 1) the pre-start-up phase, which refers to the period before the actual enterprise, 2) the start-up phase, and 3) the growth phase. In the pre-start-up phase, the problem is clarified; the business idea and the fitness of how well the company managed to offer a solution to the problem, i.e., the validation of the product/service, are conducted. At this stage, companies operate without capital investment or with meager investments. In the start-up phase, market entry, branding, and the real market validation of the product appear, usually accompanied by a small amount of capital investment, called a seed investment, or a smaller amount of investment from an angel investor. Finally, in the third phase, the growth phase, market penetration comes to the fore, accompanied by

increasing amounts of venture capital investments (from Series A to Series J) as well as crowdfunding-based capital investment. In our model, we separated four investment phases: the Preseed phase (which is the same as Paschen's pre-start-up phase), the Seed phase (this corresponds to the start-up phase in the original model), the Series-A phase (which corresponds to the very beginning of the growth phase), and the Series-B stage (which corresponds to the beginning of the growth stage). With them, we could transform the theory to the size and peculiarities of the Hungarian start-up world. These phases were critical because Hungary, located within the Central and Eastern European region, is a valuable and emerging segment of the global start-up ecosystem, supported by the increase in the volume of venture capital investments from 2018 (Invest Europe, 2019; Molnár-Jáki, 2020). However, the Hungarian start-up ecosystem differs far from the start-up ecosystems of the leading countries in both volume and size (Radácsi-Filep, 2021; Fazekas-Becsky-Nagy, 2019).

## **2. TEXT MINING AND ARTIFICIAL INTELLIGENCE: DATA AND ANALYSIS METHODS**

One of the most evolving methodological directions in economics and social sciences is interpreting texts using data and quantitative text analysis (Sebők et al., 2021). Natural language processing (NLP) became one of the leading methodological trends with the Big Data Revolution when diverse, non-linear, large-scale, heterogeneous databases appeared (Gosztonyi, 2021). As in the case of the complex methodologies brought to life by Big Data, the inductive direction plays a key role in automated text analysis instead of the deductive theoretical directions. Hence, it is especially suitable for exploratory research. Our research topic (domain) is start-up companies in Hungary, with a research corpus of 12 documents. The unstructured dataset underlying the documents consisted of three waves of semi-structured interviews with start-up founders. The first two waves occurred in 2019 and 2020 when the research group of Budapest Business School University of Applied Sciences conducted repeated semi-structured interviews with four start-ups, including individual and group interviews. This was followed by the 2021 research, in which individual interviews were conducted with six other Hungarian start-up founders. Consequently, a very heterogeneous data set of 24 interviews were made available for our research. In the first step in designing the corpus, we developed the common categorisation based on which each interview became classifiable. This categorisation adapted Paschen's (2017) investment capital-based start-up lifecycle categorisation to a semi-peripheral country (Table 1). The corpus categorisation included four categories, a) start-ups in the idea stage, for which no capital has been raised yet (PreSeed), b) start-ups after a small initial investment (max. HUF 10 million) (Seed), c) start-ups after the first investor's capital injection (Series-A), and finally d) start-ups after two or more large investments (Series-B). After creating the framework, we classified the individual and group interviews as well as the interviews recorded in the different waves. The interviews – group and individual interviews – could be treated as a joint document for a given start-up. Even interviews recorded in different waves could be treated as one if there was no lifecycle change between the two waves.

*Table following on the next page*

Start-up	Year	Start-up Lifecycle			
		PreSeed	Seed	Series-A	Series-B
Branding	2020	1			
Day2Day	2020			1	
Lockhek	2020		1	1	
Emed	2020			1	
ViddL	2021				1
Édes Város	2021			1	
Badrockfarm	2021			1	
Briefly	2021			1	
IBookR	2021		1		
Pentech	2021				1
<b>Total</b>		<b>1</b>	<b>2</b>	<b>6</b>	<b>2</b>

*Table 1: Thematic classification of corpus documents based on venture capital lifecycle categorisation (N = 12)*

Table 1 shows that the investment lifecycle categories covered a very different number of items. At the same time, Series-A start-ups contribute to 50% of the total sample. On the other hand, the Preseed category accounted for only 8.3% of it. This indicates a strong heterogeneity among the sample numbers per category – an important limitation of our analysis. After sample categorisation, the interview questions were removed from the corpus. The documents were tokenised (broken down into word units) and lemmatised (condensed)<sup>1</sup>. During our analysis, we used stop-word filtering with the Hungarian stop-word file of the quanteda R program package (Benoit et al., 2018). On the other hand, we built a specific custom stop-word file for the corpus. We performed several NLP analyses on the start-up corpus to run our results and models through multi-segment validation. Using NLP descriptive statistics, such as term frequency (TF) and TF-IDF (inverse document frequency), we examined the corpus and corpus lifecycle elements to explore what defining terms appear in the text. Relationships between these terms were later explored with n-gram networks (Liu, 2010). We also used n-gram (a term that combines n amounts of words) analysis that builds relationships through dependencies by exploring the syntactic relationships of characteristic words (Kuzminov et al., 2018). Based on the set theory, we also examined how many a priori categorization that we had set up (based on lifecycle venture capital) covers the corpus categorisation and what other possible categorisation can be discovered in the corpus. We did this by text comparison and used two types of indicators to prepare for this: the Jaccard index and the Cosine distance. Finally, we used these results in our topic modelling analysis, which is an unattended machine learning technique based on artificial intelligence, in which the algorithm performs groupings using document properties and model estimates (Sebők et al., 2021). The disadvantage of topic modelling is that it is not possible to measure the performance of the machine procedure (Sebők et al., 2021), which is a limitation of the method. That is why we used the deductive methodological elements (TF-IDF, n-gram) during the synthesis, for which the error of machine performance has already become quantifiable. The synthesis was finally performed by word embedding, in which we followed the bag of words method based on unsupervised artificial intelligence. We aimed to explore and synthesise contextual meanings.

### 3. RESEARCH QUESTIONS AND HYPOTHESES

Our study explores the lifecycle-based evolution of start-up self-identification and inherent self-identification categories. Consequently, in our exploratory research, we seek to answer the

<sup>1</sup> The lemmatisation was performed with the magyarlanc 3.0 java based program (Zsibrita et al., 2013). Our code used for lemmatisation was as follows: java -Xmx1G -jar magyarlanc-3.0.jar -mode morphprase -input \*.txt -output \*.txt (\* indicates the file name).

extent to which the self-identification of start-up firms varies as a function of their lifecycle and what self-identification categories can be identified in the segments of different lifecycles. Consequently, our central research hypothesis is as follows:

- H<sub>1</sub>: The self-identification of start-ups operating in semi-peripheral countries is not constant but shows a variable nature along their lifecycle, organised into well-defined separate categories.

The central hypothesis of our research was supplemented with three sub-hypotheses. We first examined what dominant self-defining clusters appeared in the corpus, based on Paschen's (2017) lifecycle-based venture capital investor model and how they can be theoretically classified.

- H<sub>1.1</sub>: Based on Paschen's (2017) model, the self-identification of start-ups operating in semi-peripheral countries can be grasped, and markedly distinct differences can be detected along with the clusters of self-definitions.

Secondly, we examined the sub-hypothesis: what other identity categorisation can be formed from the corpus by a set-theory-based inductive method, beyond the a priori categorisation of hypothesis 1.1.

- H<sub>1.2</sub>: A different (not venture capital based) self-identification categorisation can be set up for the examined start-ups with the help of artificial intelligence,

Finally, we examined whether the self-identification categories of sub-hypotheses H<sub>1.1</sub> and H<sub>1.2</sub> can be synthesised, in our third sub-hypothesis.

- H<sub>1.3</sub>: Life-cycle-based self-identification categories based on capital investment and the topic model complement each other, i.e., deductive a priori and inductive machine learning self-identification categories can be synthesised.

#### 4. START-UP IDENTITY CLASSIFICATION BASED ON THE LIFECYCLES AND VENTURE CAPITALS

As the first step in examining the lifecycle-based identity of start-ups operating in a semi-peripheral economy like Hungary, we examined the sample corpus's term frequencies (TF). The results of our word frequency analysis are summarised in Table 2. Depending on the number of lemmas, sub-corpus of different sizes are created along with the investment lifecycles. The largest sub-corpus was given by the Series-A and the smallest by the PreSeed sub-corpus. However, it can be seen from the average word frequencies that all the sub-corpus can be characterised by the same word frequencies (2.4 std: + - 3.8). However, there is a difference in the most frequently used words. The Series-A sub-corpus stands out in this category. This implies that our corpus is skewed towards the Series-A category. The PreSeed category is not rightly represented in the sample.

Lifecycles	N of Lemmas	Wordcount mean	Std dev	Min wordc.	Max wordc.
PreSeed	1036	2,36	3,76	1	61
Seed	1777	2,41	4,01	1	76
Series-A	6274	2,42	3,91	1	99
Series-B	1941	2,40	3,70	1	47
<b>Total Corpus</b>	<b>11028</b>	<b>2,41</b>	<b>3,87</b>	<b>1</b>	<b>99</b>

*Table 2: TF distributions of the corpus by investment lifecycles*

In addition to word frequency, let's move on from the most commonly used indicator to the TF-IDF weighting, which calculates the inverse of word-document frequency (Aizawa, 2003). Based on the TF-IDF indices, after a log-log normalisation, it became comparable to what extent the documents classified into investment lifecycles differ from the average text corpus<sup>2</sup> (Figure 1).

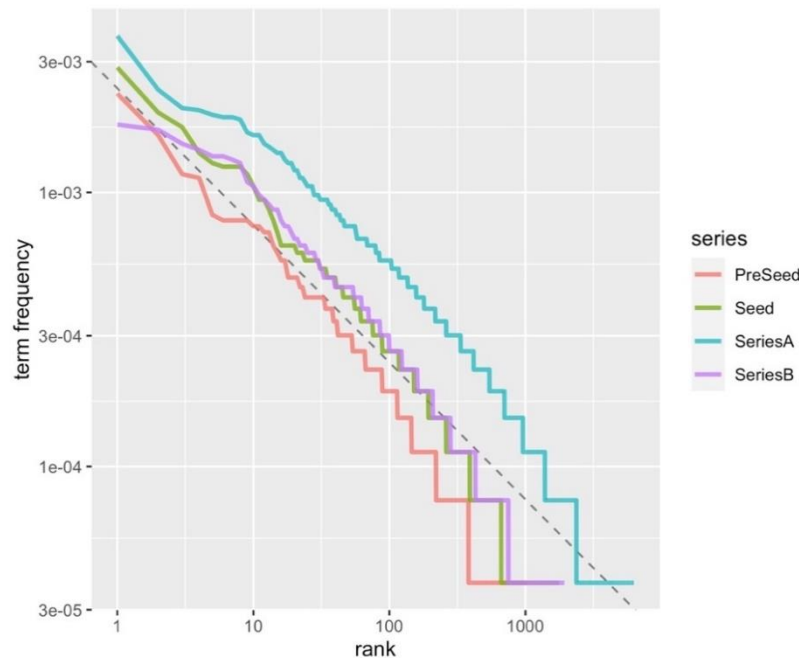


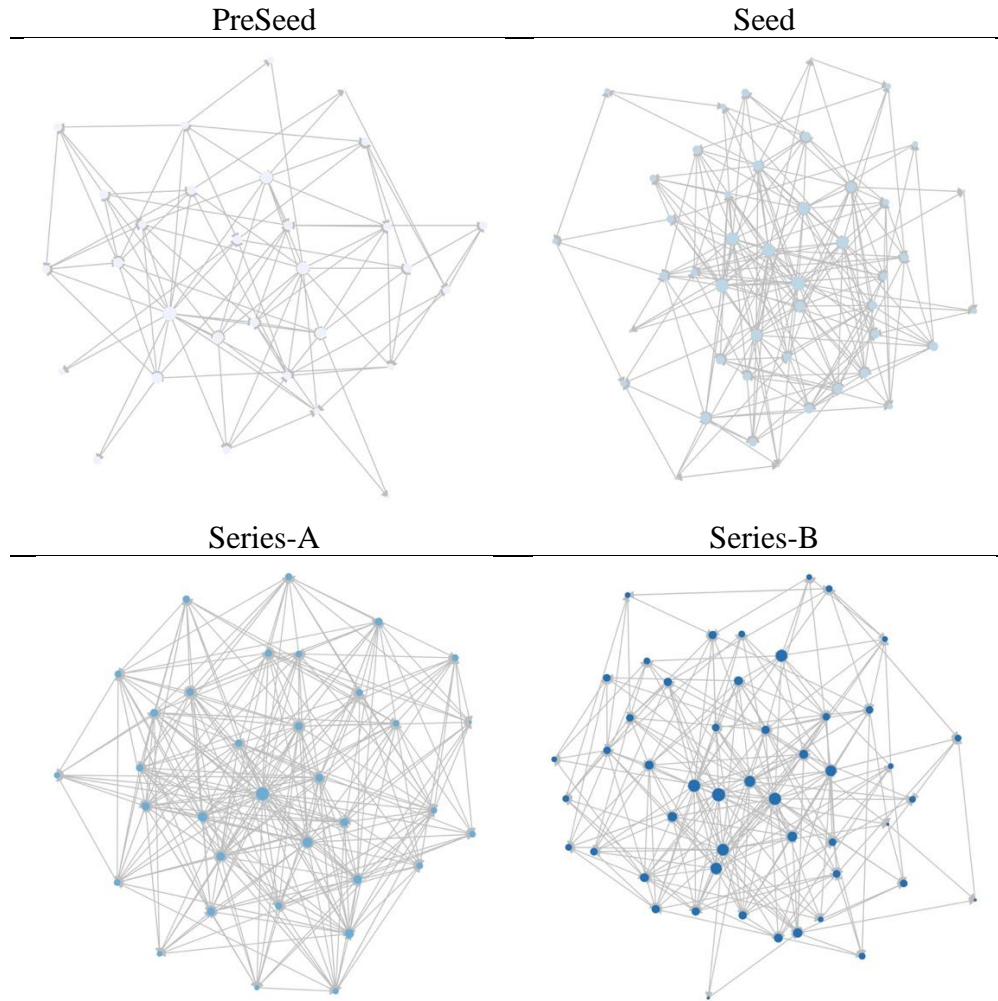
Figure 1: TF-IDF index of documents classified by investment lifecycle in a log-log system

It can be seen from the figure that the TF-IDF values of the lifecycles differ significantly. For example, the difference based on the largest lemma is between the Series-A and PreSeed lifecycles. On the other hand, the Series-B and Seed categories documents follow a fairly identical TF-IDF index. All this supports that they are drawn up with characteristically separable document sets based on investor lifecycles. We created a network of word contexts using bigram analysis to capture exactly what expressions and semantic relationships differ from the narratives of lifecycles' stages. As a result, the lemmas were divided into two-element series, which created an opportunity to identify the relationships and trends, and patterns between the lemmas (Kwartler, 2017; Schütze et al., 2008). With descriptive network statistics of bigram networks (Table 3), it can be seen that we encounter networks with different edge numbers, of which the Series-A network stands out in its size (3,896 lemmas and 14,326 edge numbers, connections). The network of narratives can also be divided into a large number of subnet units denoted by the high diameter number (15–22). However, relatively close interoperability develops between these categories, as shown by the relatively low average road length values.

	PreSeed	Seed	Series-A	Series-B	Corpus
Nodes	1024	1479	3896	2209	5961
Edges	2316	4036	14326	5279	25957
Density	0.0022	0.0018	0.0009	0.0011	0.0007
Diameter	20	15	15	22	17
Ave. path	5.5	4.9	4.6	6.0	4.6

<sup>2</sup> The intercept value of the normalised linear line is 2.42, while its slope value is -0.54.



*Table 3: Descriptive statistics of Bigram networks**Figure 2: Bigram networks of lifecycles*

The bigram networks made it possible to examine the different word relationships and self-defining narratives of the four lifecycle stages. In the PreSeed phase, the densest relationships are formed based on work (money – work), which is primarily interpreted in a positive context, but not in a start-up system but a short-term (year-month) and project-based (project) context. In addition, we encountered a predominance of verbs (start) to mark the beginning in the network. It is also important to point out that words related to the start-up form (start-up idea) are highly peripheral. In the Seed phase, on the other hand, the narration about the organisation changes, the organisational form appears in the narrative space (company – enterprise – founder), and the importance of teamwork stands out (people – team), but work is still highlighted in a positive context (successful – work). Moreover, the concept of the investor emerges and the suitability of the product, i.e., as the appropriate answer to the given problem (investor – MVP), is tested. In the Series-A bigram network, the narrative changes again. Here, the start-up form and the related terminologies appear in the central position of self-identification (start-up – idea). The focus on competitors also surfaces (see – do – competition). The concept of time (time – short) reappears and plays a central role in the narrative, and work continues to be constructed in a positive context (love – work). In the Series-B category, the start-up form appears strongly as a self-identification (company – start-up). The concepts of market and partnership dominate the narrative. However, time (years) remains an important narrative-forming terminology, and the concept of success appears and is incorporated into self-identification.

Therefore, based on the categorisation, start-ups go through a strong self-identification change along the investment stages, moving from project-based work, through enterprise and firm, to continuous self-identity with start-up as a form of enterprise. As a result, new innovation and technology-focused enterprises are increasingly defining themselves as start-ups.

## 5. TOPIC MODELLING – DEVELOPING AND SYNTHESISING A NEW CLASSIFICATION

Although the lifecycle classification based on the investor decisions presented earlier has proven to be a successful way of capturing identity, it is nevertheless worth examining the documents to see if it shows a different classification structure. For this, we used one of NLP's unsupervised machine learning methodologies, the topic modelling. Before constructing our topic model, we examined the distance between the texts with Jaccard similarity and Cosine distance to get a more accurate picture of whether an inherent typology can be formed from the texts. Based on the two distance measurement values, we got a different picture of the text relationships. Thus, topic modelling provided an appropriate methodology for forming our classification, automatically categorising groups using the frequently occurred terms and forms categories. For the process a triple cluster group design seemed to fit the corpus best. After determining the number of clusters, we used a probability-based Latent Dirichlet Allocation to determine the topic clusters of the documents. As a result of our topic modelling, three well-separable clusters were formed based on the lemma-topic probabilities (Fig. 3). The first cluster (1) had lemmas that represent the “classical entrepreneurial approach”. It is a self-identity in which the creators of a narrative establish a company they would like to work in and seek an answer to a particular problem with it. In the second cluster (2), the algorithm classified terms that could be described by the terminology “money-making idea”. In this self-identity, those working in an economic organisation want to implement an idea that can quickly generate capital. Finally, the third cluster (3) summarised the definition of “start-up” found in the literature: operating a specifically pioneering business form that successfully achieves its goal in a short period of time.

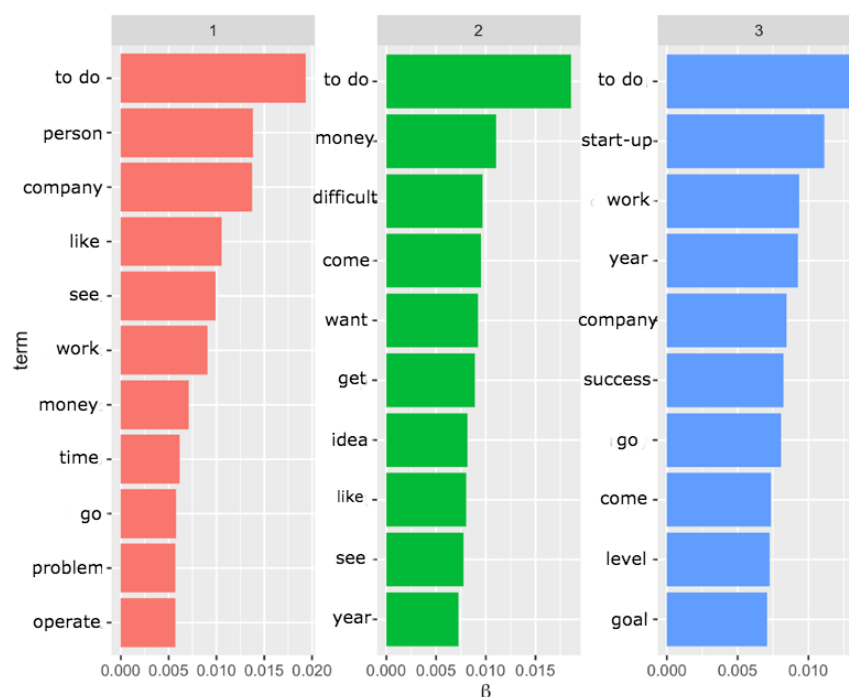


Figure 3: Result of topic modelling based on lemma-topic probabilities

Figure 4 describes how these three topics can be compared in parallel with the investment lifecycle model.

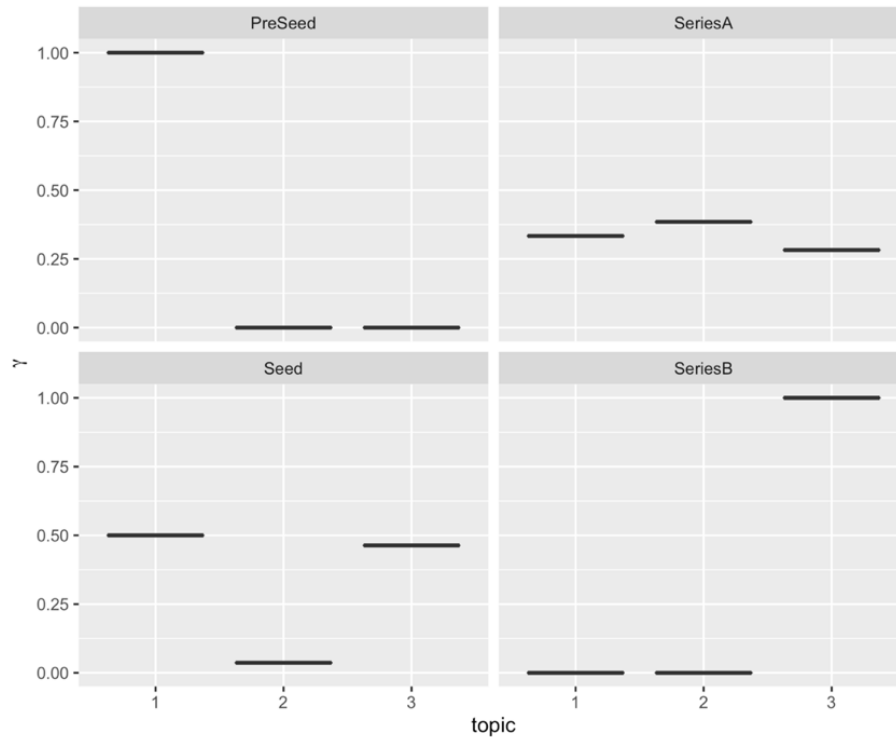
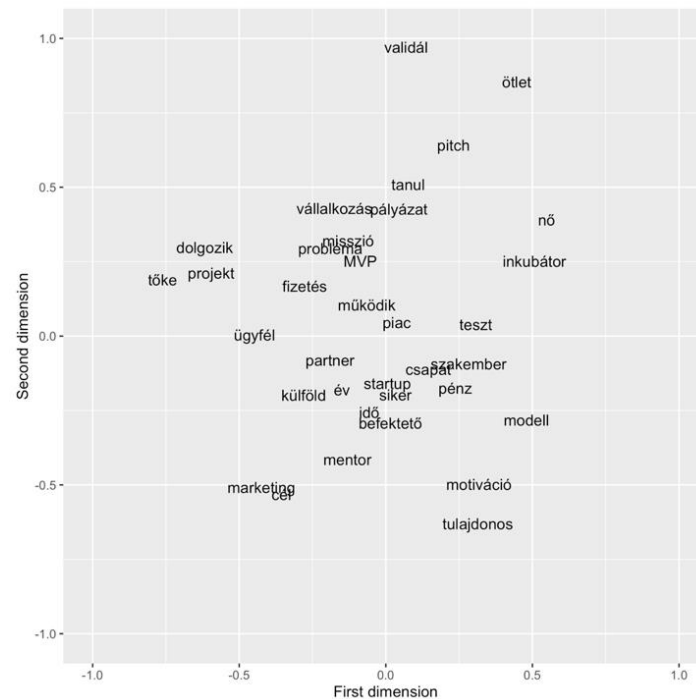


Figure 4: Investment lifecycle level distribution along the three topic model categories

Based on the investment lifecycle and topic probability, it can be seen that the first topic dominates the PreSeed stage, that is, the classic entrepreneurial spirit. In the Seed stage, the previous image disintegrates and dominance is divided between the classic entrepreneurial spirit and the concept of start-up. This is accompanied by the appearance of the second cluster in the Series-A phase, that is, the implementation of the money-making idea. Finally in the Series-B sub corpus we can observe the primacy of the classic start-up theme. All this means that start-ups start their self-identification using the classic entrepreneurial approach, in which the start-up approach appears only tangentially, but this is later supplemented by an idea-based identification as a result of investments, which ends with complete identity in the case of successful start-ups. In the next step of synthesis, we used word embedding based on artificial intelligence and unsupervised learning (Sebők et al., 2021). We analysed the semantic relations based on the previously explored topics, clusters, and results, so that the stretched narrative space consists of four lemmas, the four clusters described earlier: project, enterprise, idea, and start-up. In the multidimensional narrative space, the four self-definitions differ markedly. However, let us see which lemmas can be related to the given categories, and which concepts are narrated by the given self-definition categories<sup>3</sup> (Figure 5).

<sup>3</sup> The following lemmas were used for word embedding: "startup", "enterprise", "idea", "project", "MVP", "customer", "channel", "partner", "money", "investor", "mentor", "problem", "motivation", "loves", "success", "work", "exit", "goal", "time", "idea", "year", "woman", "incubator", "mission", "faith", "new", "informal", "model", "validate", "network", "pitch", "works", "application", "risk", "capital", "test", "learn", "salary", "marketing", "networking", "partner", "strategy", "abroad", "specialist", "market", "owner", "owner", "motivation", "award", "team" (in Hungarian: "startup", "vállalkozás", "ötlet", "projekt", "MVP", "ügyfél", "csatorna", "partner", "pénz", "befektető", "mentor", "probléma", "motiváció", "szeret", "siker", "dolgozik", "exit", "cél", "idő", "ötlet", "év", "nő", "inkubátor", "misszió", "hit", "új", "informális", "modell", "validál", "network", "pitch", "működik", "pályázat", "kockázat", "tőke", "teszt", "tanul", "fizetés", "marketing", "networking", "partner", "startégia", "külföld", "szakember", "piac", "tuljaddon", "tulajdonos", "motiváció", "díj", "csapat")



*Figure 5: Start-up identity word embedding-based narrative space supplemented with highly correlated lemmas*

We do not aim to sharply delimit the boundaries between identity clusters, but it is important to highlight the conceptual attributes of different self-defining clusters. The “Project” cluster contains the lemmas of working, capital, and customer (which can also be linked to start-up). It can be concluded from this that this initial, PreSeed self-definition phase essentially involves the creation of a capital-oriented alternative job opportunity, which, however, primarily encapsulates customer-oriented rather than problem-oriented thinking. The other large self-definition cluster, Seed, is drawn around the entrepreneurial mind cluster. The problem-oriented product/service development approach already appears here, and in connection with this, the concept of MVP tested on the market, as well as long-term thinking in the concept of mission. In this case, the raising of capital takes place primarily through grants, which is the main investment flow for start-ups in this self-identification. An important feature of this stage is also the learning process as a state of self-definition, that is, learning both business and operational skills are an inherent part of the identification of start-ups. The idea-based category (Series-A), the fourth major category, is closest to the business self-definition but, at the same time, markedly different from it. It can be considered a kind of start-up self-identification anteroom; when the identity construction of companies shifts towards pitching and validation, then the concept of growth in self-definition appears, and the role of incubator houses is strengthened. Finally, the start-up category (Series-B) compresses the broadest spectrum of concepts. Apparently, the concept of testing on a market basis, the involvement and retention of teams and professionals, and the formation of partnerships are strongly linked to it. At this stage, investors appear strongly in the self-identification space, which brings with it a relatively rapid and foreign-focused development. In this self-identification category, the concept of success and profit generation (money) also appears. An important element of this category is also the mentor, who constantly helps with the above processes. Marketing and branding are an important part of self-identity, but they are a bit detached from the concept, which can be traced back to the fact that, in most cases the interviewees see their biggest shortcomings in this concept, so it is understood that it landed a little bit farther in the narrative space.

We also find another identity-forming lemma to be slightly detached from the categories and thus important to cover. The concept of owner/founder, however, is closest to start-up identification: it detaches from it, which may be mainly due to the fact that companies in the start-up self-identification stage are in many cases no longer 100% owners of the company they started, so the concept does not form closely a part of self-identification. As a summary of our research results, we publish the verification of our hypotheses in Table 4. Our hypotheses were considered accepted in all cases, which means that based on Paschen's (2017) model, the identity of start-ups can be captured and marked differences can be detected in them based on the lifecycle formation of venture capital investments. Based on this, four well-distinguishable self-identification categories can be established among the operating start-ups in semi-peripheral: the PreSeed category, the Seed category, and the Series-A, and Series-B identity categories.

<b>Hypothesis</b>	<b>Decision</b>	<b>Based on</b>
H <sub>1</sub>	Accepted	N-gram analysis, Topic modelling, Word embedding
H <sub>1.1</sub>	Accepted	N-gram analysis
H <sub>1.2</sub>	Accepted	Topic modelling
H <sub>1.3</sub>	Accepted	Word embedding

*Table 4: Verification of hypotheses*

With the help of topic modelling, it was also proved that three inherent identity clusters other than the lifecycle can be set up on an inductive basis, which we call the entrepreneurial category, the idea-based category, and the start-up category. Finally, it was also proved that a priori and inductive categorisations can be synthesised to draw a four-element self-identification system for start-ups, which is the project-based phase related to pre-seed investment, the enterprise-based phase related to seed investments, the idea-enterprise and start-up identity phase related to series-A an investment, and the start-up phase related to series-B investment. In summary, it has been proven that the self-identification of start-ups is under constant change, which can be organised into well-defined identity clusters.

## 6. CONCLUSION

We examined the identity of start-ups operating in semi-peripheral economies (e.g. Hungary) using text mining and unsupervised machine learning based on artificial intelligence. In our study, we looked at the extent to which self-identity can be disaggregated in relation to the concepts of the start-up entrepreneurial form, that is, to what extent the identity can be treated as a constant and to a variable concept in the case of start-up companies. We did all this because corporate identity research has already highlighted that, in the case of economic organisations, identity is present as an action phenomenon, and companies with different identities carry out different market movements and transactions and apply different strategies. For this reason, it was worth examining the identity of start-up companies operating in a semi-peripheral economy, because as a result of our study it can be stated that in the classical sense, start-up economic transactions is expected from companies only after series-B investments. Up to this point, companies work with a constantly changing and heterogeneous set of identities, which, however, can be categorised according to investor lifecycles. In the pre-seed blackening phase, economic entities do not identify themselves as enterprises but primarily as a project coupled with a very positive job concept and constructed primarily as an entity separate from the world of wage labour. In the seed investment phase, this identity is polarised and classic start-up elements appear in the identity of companies. However, these are not constructed within a start-up conceptual network but a conceptual framework of the classic entrepreneurial spirit. This is complemented by the concept of idea-based, quick profit for companies in the series-A investment lifecycle stage, pointing to another identity shift.

Finally, in the case of companies with series-B investments, we can find complete self-identification with the start-up form. In this case, along the classic start-up definition, organisations define themselves as an idea-based, fast-growing, global, risk-dependent, successful economic entity. In summary this means that, in the case of countries with a semi-peripheral economy, there are start-ups with other economic actions along their investment lifecycles, and although start-up terminology could be applied to all of them, up to series-B, companies do not follow start-up action and strategy due to their self-identification, rather actions that are much closer to a classical business strategy and economic transactions. During the change, the new types of work and then the entrepreneurial spirit are acquired by the entrepreneurial groups, and the concepts of rapid growth and profit are built on this, which create complete self-identity with the concepts of start-up. Consequently, in the case of semi-peripheral countries, the companies that operate start-up businesses go through a much slower identification process than in the case of start-ups that operate in the start-up epicentres.

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## MULTIFUNCTIONAL ASPECT OF HUNTING TOURISM – THE CASE OF CROATIA

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### ABSTRACT

*The rural area of Croatia is a biodiverse area with great potential for the development of various forms of tourism. Many forms of tourism have a great and diverse impact on society in the modern world as the human need for leisure and recreation grows with the development of the economy. Croatia is suitable for development of hunting tourism because it is extremely rich in agricultural areas, forests (43.5% of the total land area), rich stock of wild animals and it has geographic biodiversity. Hunters were mostly people of higher purchasing power, who wanted to enjoy the intact nature, watch and hunt animals, enjoy the gastronomic specialties prepared of the same game, and experience an until then undiscovered special tourist offer which differed from the usual ones. The aim of this paper was to identify the habits and preferences of hunters in eastern Croatia and to suggest better conditions and guidelines for the development of hunting tourism. Although respondents are satisfied with the supply of catches ( $M = 4.03$ ) in eastern Croatia, the disadvantages are reflected in the organization of*

*the hunt, high prices, insufficient promotional activities and inappropriate legislation. This paper gives suggestion and opportunities for hunting tourism development in order to achieve multifunctional rural development.*

**Keywords:** *biodiversity, Croatia, hunters, multifunctional development, tourism*

## 1. INTRODUCTION

The rural area of Croatia is a biodiverse area with great potential for the development of various forms of tourism. Namely, the concept of rural tourism has evolved and changed from its beginnings to the present. From the 1950s when it was just another form of tourism, poorly developed in infrastructure, to the present day, because of its role in the revitalization and transformation of rural areas, it stands out as a separate part of tourism and represents not only economic activity but also an element of integral development rural areas and rustic planning. Due to its character and the valorization of the natural characteristics of space as economic resources, rural tourism is also an important link in the chain of sustainable development (Lukić, 2002). Rural tourism is an organizationally more demanding and personalized form than Mediterranean tourism, which is not given enough attention and importance. The forms of rural tourism are evolving with regard to tourism demand (Sudarić et.al., 2017). By the production diversification of the basic product system (Tourism Development Strategy in the Republic of Croatia, 2013) the importance of hunting tourism is specific for the region of eastern Croatia, and this type of tourism activity is the activity that can have a significant impact on the economic prosperity of rural areas. The primary motive for hunting, providing food and livelihood, is becoming almost negligible in relation to the new motives for hunting, which are sports and recreational enjoyment of nature. Hunters, as bearers of hunting activities, take care of the preservation of the plant and animal ecosystem, and at the same time, through hunting tourism and trophy shooting, they strive to generate additional income and economic benefits for both hunting and the wider community (Tolušić et. al., 2020). Hunters were mostly people of higher purchasing power, who wanted to enjoy the intact nature, watch and hunt animals, enjoy the gastronomic specialties prepared of the same game, and experience an until then undiscovered special tourist offer which differed from the usual ones (Milojica et.al., 2014). The aim of this paper is to identify the habits and preferences of hunters in eastern Croatia, given the qualitative and quantitative characteristics of respondents, differentiate, and propose better conditions and guidelines for the development of hunting tourism in Croatia.

## 2. MATERIAL AND METHODS

The survey on hunting habits and preferences was conducted in the area of eastern Croatia, where the largest number of hunting grounds is located. In fact, this area has a specific geographic and climatic diversity, which causes a significant biodiversity and relatively preserved rich natural resources, particularly flora and fauna. The study used a highly structured quantitative questionnaire conducted by (CATI - Computer Assisted Telephone Interviewing) telephone interviewing or e-mail. 141 respondents participated in the study. All respondents are male (100%). By age, respondents were most represented by middle-aged people aged 30 to 60 years (81.6%), and by far less represented respondents were younger than 30 years (10.6%) and older than 60 years (7.8%). According to the level of education respondents with secondary education (73.8%) dominate, then those with higher education (13.4%), primary education (8.5%), and least of the respondents are ones who have completed specialized studies or doctorate (4.2%). The data collected were analyzed by one-variant (absolute and relative frequency, mean, standard deviation) and two-variant statistical analyzes (chi-square). The SPSS 23.0 computer program was used to analyze the data. The paper presents differences that are statistically significant at the 5% significance level. The non-parametric test (chi-square) tried to establish whether there was a difference between the observed frequencies and the

expected frequencies of the respondents with regard to the reasons for hunting (type of hunting) and age, i.e. education and hunting experience. A simple analysis of variance was used from the parametric tests. The research was based on the analysis of primary and secondary data sources, and synthesis and descriptive methods were applied in the interpretation of the obtained results and the formation of conclusions.

### 3. RESULTS AND DISCUSSION

There are 63.682 hunters in the Croatia according to the Central Bureau of Statistics (2020). The total number of hunters increased by 4,6% compared to the 2019 and the number of members of associations by 6.2%, while the number of hunters-in-training, that is, future hunters decreased compared to 2019. Almost 90% of hunters hunt for small game, and only 10% hunt big and trophy game. Croatia needs a better and more diverse offer in hunting tourism. According to the Milošević et al (2014), Croatia needs not only better organization and promotion, but also better conditions for hunting tourism development, because the hunter is a guest who spends up to three times more than a regular tourist. Foreign hunters in Croatia give up to 70% of their spent money for hunting, while only 30% spend on tourist services and facilities. In the developed part of the world, the ratios are reverse, respectively, hunter's accommodation, restaurant and extra-board services bring around 70% of income, and pure hunting represents only 30% of total profit. The conducted empirical research investigated the motives for hunting, the type and hunting frequency and hunting subjects. Respondents could have chosen more reasons to go hunting (multiple answers).

		f	%	Natural habitat	Social event	Meat	Trophies	Nature	Other
Gender	Male	141	100	37,6	70,9	6,4	25,5	51,1	7,1
	Female	0	0	0,0	0,0	0,0	0,0	0,0	0,0
Age	< 30	15	10,6	53,3	60,0	0,0	33,3*	60,0*	0,0
	30 - 40	38	27,0	44,7	57,9	10,5	36,8*	73,7*	5,3
	40 - 50	41	29,1	36,6	85,4	9,8	29,3*	53,7*	9,8
	50 - 60	36	25,5	30,6	69,4	2,8	13,9*	33,3*	11,1
	> 60	11	7,8	18,2	81,8	0,0	0,0*	9,1*	0,0
Education	Primary school	12	8,5	33,3	66,7	0,0	16,7	41,7	0,0
	High school	104	73,8	37,5	73,1	6,7	26,9	53,8	5,8
	BSc	5	3,5	40,0	100,0	0,0	20,0	60,0	0,0
	MSc	14	9,9	28,6	57,1	14,3	35,7	50,0	28,6
	Specialist study	1	0,7	100,0	0,0	0,0	0,0	0,0	0,0
	PhD.	5	3,5	60,0	60,0	0,0	0,0	0,0	0,0
Hunting experience (in years)	< 5	13	9,2	46,2	46,2	0,0	15,4	76,9*	0,0
	6 - 10	25	17,7	40,0	60,0	8,0	24,0	56,0*	12,0
	11 - 15	21	14,9	38,1	71,4	4,8	33,3	66,7*	0,0
	16 - 20	22	15,6	45,5	86,4	4,5	40,9	45,5*	0,0
	21-25	28	19,9	46,4	85,7	14,3	35,7	60,7*	10,7
	26-30	12	8,5	8,3	91,7	0,0	8,3	16,7*	0,0
	> 30	20	14,2	25,0	50,0	5,0	5,0	25,0*	20,0

f – frequency \* statistically significant

*Table 1: Distribution of answers with regard to the most common reason for going hunting (in%)*  
(source: authors)

The largest number of respondents chose hunting event with the emphasis on socializing (70.9%) as the reason for going hunting, while the next largest was the stay in nature (51.1%). The least attractive reasons for going hunting are meat / game (6.4%) and trophies (25.5%).

Data analysis showed that the age of the respondents and some of the reasons for hunting (trophies and spending time outdoors) correlated. Specifically, age has been shown to be related to whether the respondent chooses trophies or the stay in nature as a reason for hunting. Younger people cite stays in nature and trophies more as a reason to go hunting, while older people are more interested in hunting as a place to socialize. A statistically significant difference was shown with the “hunting experience” and “spending time in nature” variables. It is not unexpected, since the respondents with shorter hunting traineeships are mostly young people (partial correlation). No statistically significant correlation was found between the education variable and any variable describing the reason for hunting ( $p > 0.05$ ) (Table 1.).

	1+2 (%)	3 (%)	4+5 (%)	M	SD	MIN	MAX
Accommodation facilities / hunting lodges provide full service (accommodation, meals, entertainment)	1,6	23,6	74,8	3,97	0,734	2	5
Hunting companions are competent persons	4,1	17,9	78,0	4,01	0,784	2	5
I am satisfied with the catch offer	3,2	17,1	79,6	4,03	0,789	1	5
The price of hunting (accommodation, game) in the Republic of Croatia provides the expected value	5,7	33,3	61,0	3,73	0,821	2	5
Hunting costs in the Republic of Croatia are the same as in the surrounding countries	12,6	32,8	54,6	3,52	0,982	1	5

*Table 2: Level of satisfaction in hunting in eastern Croatia  
(source: authors)*

According to the table 2. the most significant satisfaction in hunting in the eastern part of Croatia is with offer of catch among 5 different categories'. Respondents evaluated accommodation facilities, hunting companions, price and hunting costs. They are most satisfied with the offer of catches ( $M = 4.03$ ), while they are least satisfied with the fact that the costs of hunting in the Republic of Croatia are the same as in the surrounding countries ( $M = 3.52$ ). Most respondents go hunting once a week (78.6%). Fewer respondents go every day (9.3%), while of 7.9% go once a month. Although hunters are happy with the supply of catches, the deficiencies are reflected in the organization of the hunt, high prices, insufficient promotional activities and inadequate legislation.

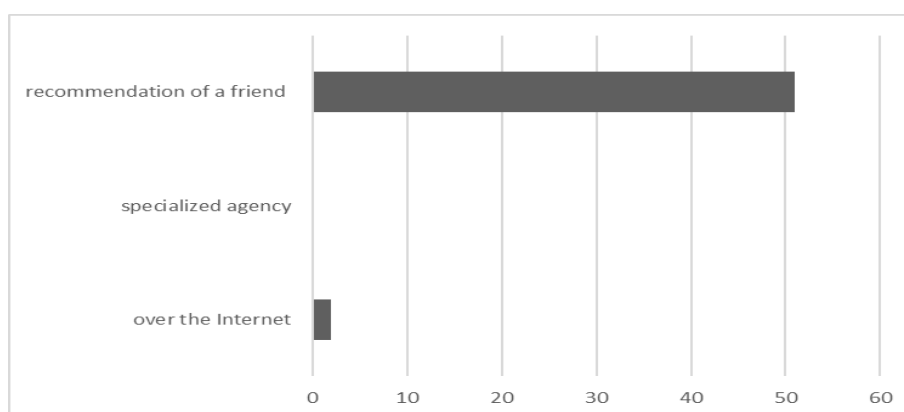
*Table following on the next page*

		f	%	Falconry	Small game with dogs	Large game with dogs	Propulsion hunting	Hunting reception	Others
Gender	Male	141	100	2,9	75,7	44,3	50,7	74,3	5,0
	Female	0	0	0,0	0,0	0,0	0,0	0,0	0,0
Age	< 30	15	10,6	0,0	73,3	53,3*	60,0*	100,0*	0,0
	30 - 40	38	27,0	5,4	83,8	54,1*	64,9*	81,1*	0,0
	40 - 50	41	29,1	0,0	65,9	53,7*	58,5*	70,7*	4,9
	50 - 60	36	25,5	2,8	77,8	19,4*	25,0*	63,9*	11,1
	> 60	11	7,8	9,1	81,8	45,5*	45,5*	63,6*	9,1
Education	Primary school	12	8,5	8,3	83,3	41,7	33,3	66,7	0,0
	High school	104	73,8	1,0	75,7	45,6	50,5	76,7	5,8
	BSc	5	3,5	0,0	80,0	20,0	40,0	60,0	0,0
	MSc	14	9,9	7,1	71,4	42,9	64,3	78,6	0,0
	Specialist study	1	0,7	0,0	100,0	100,0	1,4	100,0	0,0
	PhD.	5	3,5	2,0	60,0	40,0	60,0	40,0	20,0
Hunting experience (in years)	< 5	13	9,2	8,3	50,0	8,3	50,0	83,3	0,0
	6 - 10	25	17,7	4,0	76,0	52,0	52,0	84,0	4,0
	11 - 15	21	14,9	0,0	85,7	52,4	42,9	71,4	9,5
	16 - 20	22	15,6	0,0	72,7	77,3	78,7	77,3	0,0
	21-25	28	19,9	0,0	78,6	42,9	60,7	71,4	0,0
	26-30	12	8,5	0,0	75,0	25,0	16,7	58,3	8,3
	> 30	20	14,2	10,0	80,0	25,0	40,0	70,0	15,0

f – frequency \* statistically significant

*Table 3: Distribution of responses with respect to the most common type of hunting (source: authors)*

Respondents were able to choose more than one type of hunting to deal with. The largest number of respondents stated that they are engaged in small game with dogs (75.7%), while the next largest is hunting with welcome (74.3%). Falconry is the least represented (2.9%). Education and hunting experience are not statistically significantly correlated with hunting type, but age is. Specifically, there is a statistically significant correlation for the age and hunting variables of large game with dogs and the variables age and hunting with dogs. Propulsion hunting and big game hunting with dogs are more inclined to young people (Table 3.).



*Graph 1: Communication methods for choosing hunting destination in eastern Croatia (source: authors)*

When asked if they go hunting abroad, 64.4% of respondents said no. Of the respondents who go hunting abroad (37.6%), as many as 96.3% choose a hunting destination on the recommendation of a friend / acquaintance of the hunter, 3.7% in person via the Internet, and no one chooses a destination through a specialized agency. Activities in the promotion and encouragement of hunting tourism should be focused on online promotion of specialized agencies. An attractive and targeted offer should be designed so that those interested can be informed (Graph 1.) In addition to hunting, hunters need to facilitate marketing communication related to proper information, organization of hunting, but also the offer of various packages of services. According to the authors Florijančić et al. (2010) hunting tourism is very poorly represented in strategic determinants but also in marketing activities. Namely, the goal is to approach each hunter individually, and to adapt the services to the wishes of the hunters. There are no customized promotional tools in the field of hunting tourism in eastern Croatia. Some hunting grounds have their own websites, but according to research, the information of potential hunters is most often recommended by other hunters, which was confirmed by research (96,3% respondents). For the further development of hunting tourism, taking into account the multiplicative effects in tourism, the recommendations are:

- Strengthen and adjust marketing communication
- Improve the organization of different offers through joint / individual service packages
- Develop additional facilities during hunting tourism (multifunctional development)

Hunting should not be just a service, but an unforgettable experience that includes a multiplicative effect on the basic activity - hunting. Positive economic factors of tourist consumption in the destination are realized through the multiplied effect of money, i.e. the circulation of money through business sectors, when production and sales are improved. The money that tourists spend directly represents direct income. This consumption circulates to other business entities that provide goods and services to tourists, which serve vacations (for example, accommodation, meals, excursions, etc.) (Miličević, Trišćić, 2019). In accordance with the above, higher consumption would be reflected in a greater hunting experience, which finally affects the development of the hunting destination. The Republic of Croatia has a long hunting tradition and has potential capacities, which makes it an attractive destination for many domestic and foreign hunters. But also, as Tarnaj (2000) states, the potentials of hunting tourism are not even close to being used. This is supported by data from the Central Bureau of Statistics, which show that, for example, eastern Croatia, which is considered to have the highest quality and richest hunting grounds as well as a hunting tradition, has the lowest number of overnight stays (0.5%). Kovačević and Kovačević (2006) state that the problems of hunting tourism refer to inadequate accommodation offer, unsettled statistical sources, incompetence of employees in the field of hunting tourism, lack of promotion, marginalization of the role of hunting tourism in development strategies and other important problems. It should be noted that the creation of an attractive hunting and tourism product is a long and expensive process, which is cost-effective only if it is valorized by polyvalent values, i.e. tangible and intangible effects. (Tarnaj, 2000).

#### 4. CONCLUSIONS

The beginnings of the development of rural tourism can be found in the 11th century, when the aristocracy of that time spent their free time hunting various game. Due to tradition and capacity, hunting and hunting tourism can be an important component of continental tourism in eastern Croatia that extends the tourist season and can have a strong impact on multifunctional development. Hunting tourism as a high-income tourism can promote the economic development of a certain area.

Namely, it is a multifunctional form of rural tourism because it not only covers hunting but can include many more motivational elements such as gastronomy, relaxation, recreation and so. From the study it can be concluded that the respondents value the social element and the stay in nature the most. Due to the fact that eastern Croatia has a resource base for the development of hunting tourism, further guidelines are reflected in better promotion, organization and education of current and future hunters.

**ACKNOWLEDGEMENT:** *This paper is part of research team Biodiversity in the function of sustainable development at the Faculty of agrobiotechnical Sciences Osijek, Croatia.*

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## PANEL VAR ANALYSIS OF THE INTERDEPENDENCE OF CAPITAL STRUCTURE AND PROFITABILITY

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### ABSTRACT

*In the last few decades, considerable attention has been paid to determining the capital structure in order to achieve optimal efficiency of the companies. For companies, whether private or public, capital structure management is of great importance. Therefore, the aim of the research is to determine the interdependence of capital structure and profitability of large Croatian companies using the VAR model panel. With respect to the temporal and spatial component, the variables (Capital Structure – SCAP; Debt Ratio – DA; Return on Assets – ROA; Return on Equity – ROE) are structured as balanced panel data. In order to determine the mutual causality between the observed variants, the Granger causality test for the data plate and PVAR was performed, as part of which the analysis Forecast Error Variance Decomposition and the analysis of the Orthogonal Impulse Response Function were processed. The sample includes large Croatian companies that are active, while variables as panel data are obtained from the financial statements for the period from 2016 to 2020. The obtained research results show a significant cause of variability in capital structure and indebtedness from profitability.*

**Keywords:** Capital structure, Indebtedness, Profitability, ROA, ROE, PVAR model

### 1. INTRODUCTION

Financial research intensively deals with the issues of how companies choose their capital structure and what factors influence the capital structure. A key issue in the area of corporate finance deals with the optimal capital structure of a companies. In theory, there are a number of possible explanations for the designed choice of capital structure. All theories of capital structure management coexist since there is no clear concept of a perfect capital structure. The aim of the research on the structure of capital is to discover which motives shape the structure of capital and its impact on the success of the companies. The company's management decides on the distribution of equity and debt capital depending on certain influential factors. A key factor for adequate capital management is the separation of corporate control (management) and ownership, as a conflict of interest is created between managers and business owners. These conflicts affect important company decisions about capital structure. From the above arises the subject of research, to prove the extent to which the capital structure and profitability of the companies are related. The choice of the optimal capital structure is one of the fundamental research questions. Capital structure is the ratio of external capital to the share capital of a company. The optimal capital structure provides a lever that maximizes the market value of the company where capital costs are minimized. There are two indicators that can be used to measure the capital structure, namely: the degree of indebtedness, and the ratio of equity and debt capital. To calculate these ratios, estimating the value of capital is crucial. Equity and debt can be valued at book or market value. However, due to the availability of data in the research, measurement according to book values prevails, as applied in this research.



## 2. THEORETICAL OVERVIEW

Every company has two basic sources of financing at its disposal: its own sources of financing (as its own capital) and other people's sources of financing (as debt obligations). It is difficult to determine the optimal capital structure. The liabilities of the company's balance sheet show the structure of the source of financing called the financial structure. From the financial structure of the company arises the structure of capital, which largely shows the financial stability of the company. Capital structure actually denotes the ratio between two types of capital: debt (foreign) and equity. Decisions on capital structure are very important for the long-term successful operation of a company. They are closely related to the business strategy of the company, specifically to investment decisions and dividend policy (Vidučić, 2001). Decisions on company financing are extremely important because they affect the success and significantly contribute to the development of the company and achieving a competitive position in the market. The management of the company must choose the capital structure that will increase the value of the company. The capital structure as defined by Abor and Biekper (2005) is a specific mixture of debt and equity that a company uses to finance its business. Capital structure decisions are one of the key financial decisions that financial managers have to make, such as investing, financing and paying dividends (Abor, 2007). For any company, the choice between debt and equity is crucial. Capital structure decisions are vital to a company's financial well-being and capital structure policy is assumed to be a way of creating company value (Tamulyte, 2012). Companies can choose from many alternative sources of capital or a combination of them, such as: leasing, warrants, bonds, etc. Theories of capital structure are divided into (Tilehnoei and Shivaraj, 2014; Backer and Wurgler, 2002; Jensen, 1986; Andani and Alhassan, 2012; Berger Berger and udell, 1998; Frank and Goyal, 2003):

- 1) Miller-Modigliani Theory
- 2) Traditional Compromise Theory
- 3) Agency Model
- 4) Model Asymmetric Information
- 5) Market Time Theory
- 6) Free Cash Flow Theory
- 7) Life Cycle Theory
- 8) Joint Investment Theory

*Miller-Modigliani theory* explains the impact of capital structure on the value of a company. It was created in 1958 as a tax version or theorem on the insignificance of debt where it was determined that the capital structure is irrelevant to the value of the company in a perfect market. The value of a company does not increase by borrowing. The value of the indebted company is the sum of the market value (price) of other people's sources (debt) and the market value (price) of shares (Bogović, 2011). Leaving the fact of the existence of a perfect market in 1964, MM supplemented its theory by introducing a corporate tax, but not a personal tax (dividend tax), information asymmetry, bankruptcy costs, and the company's management's preference for certain types of financing. Corporate tax, in addition to the value of the company, also affects the cost of equity financing. Financial risk is an additional risk for owners (shareholders) who incur because the company is financed by borrowing (Tilehnoei and Shivaraj, 2014). Company indebtedness leads to an increase in the value of shares, ie an increase in shareholder wealth. The value grows because the interest tax shield appears when borrowing. Tax protection is calculated as the product of the total amount of other people's sources (debt) and the profit tax rate. MM theory suggests maximum corporate indebtedness, but recent research indicates that retained earnings are a cheaper way to finance. If the company borrows more, the risk of default is increased and higher interest rates have to be paid.

With the growth of indebtedness, the value of shares decreases because those who participate in risky debt bear part of the company's operational risk. Higher indebtedness transfers risk from shareholders to bondholders. *The traditional theory* of compromise in defining the capital structure attaches importance to the cost of financing and the financial risk of the company. This theory considers that the optimal capital structure is one in which the minimum cost of financing a company is the weighted average cost of capital – WACC (Vidučić, 2001). The weighted average cost of capital is the total cost of financing and represents the sum of costs of financing with own and other people's capital, where the weights are the shares of individual types of financing in total sources – equity and other sources (debt). Other people's sources (debt) are cheaper ways of financing and the lower the WACC, the higher the value of the company. Financial management will choose the level of foreign sources (debt) that will have a minimum WACC and a maximum value of the company (Ehrhardt, 2001). When a company is unable to meet its obligations, it falls into a financial crisis that can eventually result in bankruptcy. By borrowing heavily, the company reduces its profits, due to the need to settle obligations to creditors. Therefore, when considering the optimal capital structure, the costs of financial difficulties that nullify the benefits of the interest tax shield should also be taken into account (Tilehnoei and Shivaraj, 2014). If the indebtedness is higher, the possibility of a financial crisis or bankruptcy is also higher, and the value of the company decreases. It is necessary to achieve a capital structure that includes the level of indebtedness where the value of the interest rate tax shield will eliminate the costs of financial instability. Owners (shareholders) accept borrowing as a source of financing only if a higher return on interest is expected on borrowed capital. *The agency model*, or trade off theory, expands MM's theory of the irrelevance of capital structure by introducing real-world factors such as the cost of financial hardship (bankruptcy) and agency costs. The optimal capital structure is achieved when the benefits (tax protection) and borrowing costs are equal. When the tax shield is greater than the cost of borrowing, the value of the company will grow. However, there are differences in the optimal capital structure between industry and enterprise. Financial difficulties arise when a company is unable to meet its obligations to creditors or when it is late in settling. When a company is unable to meet its obligations, bankruptcy ensues, new owners become creditors, and old ones lose their ownership (Serrasqueiro and Caetano, 2015). The possibility of financial difficulties is small with a low level of indebtedness while the benefit of debt (tax protection) is greater than the cost of other people's sources (debt). But rising debt increases the possibility of bankruptcy. As the possibility of bankruptcy grows, so does the value of the company. Agency costs arise from conflicts of interest between principals and agents. Agency theory seeks to create a capital structure that will reduce agency costs and achieve maximum company value. Conflict between the manager (agent) and the owner (principal), in addition to seeking greater benefits from the manager, can also occur when managers will not put much effort into finding the best way to finance, if this decision does not affect his bonus or salary. Conflicts of interest also arise when managers prefer short-term projects in relation to long-term more profitable projects. Conflict between managers and owners can be reduced by increasing the share of managers in total ownership, which would increase his efforts to achieve greater value of the company (Vidučić, 2012). In case of disagreement between the owner and the manager about business decisions (payment of dividends, bankruptcy, etc.) can be resolved by borrowing. By borrowing from a company, creditors can at some point seek to initiate bankruptcy and thus help the owners when bankruptcy is the best solution. Conflict between shareholders and creditors most often arises because each shareholder thinks and takes those measures that benefit him, rather than looking at what is good for the company. In crisis situations, shareholders may aspire to those financing decisions that are high risk and the continued operation of the company is questionable (Dierker et al., 2019).

They are also ready to accept investments whose net present value is negative if there is a possibility of increasing the value of the company when these investments are realized. *The asymmetric information model* is divided into: signaling theory and stacking procedure theory (Demirgunes, 2017). The asymmetry of information in these models arises between managers and other employees of the company on the one hand and external investors on the other. Signaling theory claims that managers or other employees have more information about innovation opportunities or a company's perspective. This means that managers will turn to issuing bonds rather than issuing shares so as not to share profits with new shareholders. Managers are encouraged by bonuses, and the reason given is the higher value of the company, so the higher the bonus of the manager. The theory of the matching process starts from the information of asymmetry between managers and external investors and defines the order of financing preferred by managers (Stacks et al., 2019). Managers prefer to finance new investment projects, they will first resort to internally generated cash, then low-risk debt instruments (bonds). It will then turn to hybrid securities (convertible bonds), and will eventually resort to issuing ordinary shares. In this theory, the company will use those indicators that allow the payment of dividends to investment opportunities. There is no optimal indicator of the relationship between other people's sources (debt) and equity that the company strives for in the long run, but it reflects the profitability of the company's operations in previous periods and the need for additional external sources of funding in the future. When internal financing is used, a stable dividend policy is implemented. External financing is used when companies do not have enough internal funds. Highly profitable companies are first financed by internal funds or small risky debt. Low-profit companies resort to external borrowing (Ripamonti, 2020). The above means that managers will reach for the source that is safest for them and will first provide them with funds to finance new projects. There is no optimal structure because funding depends on a lack of internal resources. *The market time theory* of capital structure predicts that the company's current capital structure is the cumulative result of past attempts to time-determine the market value of shares. This theory assumes that firms determine the time of their share issues when the share price is considered overvalued and repurchase their own shares when they are undervalued in the market. Thus, price fluctuations affect the capital structure of a firm (Backer and Wurgler, 2002). Also Graham and Harvey (2001) found that managers try to measure time in the stock market, and that an important factor for issuing or buying back own shares is whether they are overvalued or undervalued. *The free cash flow theory* of capital structure predicts the direct effect of profitability on leverage. According to this theory, when the level of profit is high, there is a high probability that company managers will use the excess money to pay excessive additional benefits to themselves (Jensen, 1986). The implication of the theory is that companies with higher levels of profit tend to use more debt than low-profit companies and a positive relationship between profitability and all forms of leverage is expected (Andani and Al-hassan, 2012). *Life cycle capital structure theory* assumes that a company's access to sources of financing depends on the stage of the company's development. It is assumed that the new company relies on the initial capital of the owner because newer companies do not represent a safe way to invest for financing through external sources, through financial institutions (Berger and Udell, 1998). This theory defines that the age and extent of a company's growth and development affects its financial leverage. *The theory of the capital structure of joint venture capital*, co-investment of stakeholder capital defines the willingness of stakeholders (shareholders, employees, business partners) for valuable capital co-investment (Frank and Goyal, 2003). Some companies resort to small debt by raising capital by co-investing stakeholders, which has a significant impact on capital structure and leverage. Given the presented theories of capital structure, none can be preferred as superior because the choice of capital management for company management is a demanding process to achieve long-term business success.

### 3. PREVIOUS RESEARCH

Research on the structure of capital and its impact on business performance has been conducted mostly in developed countries. Research in Croatia is focused on researching the structure of capital and its impact on financial success and excellence. Učkar (2007) conducted a survey of twenty Croatian companies listed on the Zagreb Stock Exchange, explaining which theories of capital best explain the value of companies. The analysis covered the period from 2000 to 2006. The obtained results showed that earnings per share, debt-to-equity ratio and multiple interest rates have a positive effect on stock prices, while debt-to-assets ratio and current liquidity have a negative impact on stock prices. Pervan and Mlikota (2013) conducted a survey on Croatian companies for the period from 1999 to 2009. Dynamic panels were used to prove the relationship between indebtedness, company size, concentration in industry measured by concentration index (CP) and Herfindahl-Hirschman index with company profitability. The obtained results showed a negative impact of indebtedness on profitability, while other variables have a positive impact. Arsov and Naumoski (2016) conducted research on post-transition countries (Croatia, Serbia, Macedonia and Slovenia) on a sample of 172 companies. The determinants taken into the research are: size, profitability, tangible assets, growth, risk, tax protection and shareholders (owners). The results of the research indicate that a higher ratio of indebtedness in the total capital structure is represented in larger companies. Size and growth have a positive relationship, while tangible assets, profitability, risk, tax shield and ownership have a negative impact on indebtedness. The negative impact of profitability on indebtedness was noticed, it was noticed that companies investing in fixed assets are more indebted, while companies that do better are less indebted. Škufić, Mlinarić and Družić (2016) conducted research on companies in the manufacturing sector operating in Croatia in the period from 2003 to 2014. The study examines the impact of indebtedness, Herfindahl-Hirschman index, liquidity, productivity on profitability. The results of the research show that HHI and productivity have had a positive impact, and indebtedness and liquidity have a negative impact on profitability. The negative impact of indebtedness, in addition to profitability, has on business excellence itself. The higher the share of indebtedness in the capital structure, the lower the profitability, ie business excellence. Šarlija and Harc (2016) conducted a survey on 500 small and medium-sized Croatian companies on the impact of the determinant of indebtedness in relation to growth, size, profitability and the share of tangible assets for the period from 2005 to 2011. the negative impact of size and profitability is visible. The impact of growth on indebtedness could not be determined because the data were not statistically significant. While the share of tangible assets has a positive impact on indebtedness and thus indicates that in Croatia it is primarily financed by internally generated cash. In a survey conducted on a sample of 956 Croatian companies in the food industry (Pervan, Pervan and Ćurak, 2017). In the covered period from 2005 to 2014, it was proven that the size and solvency have a positive impact on profitability, and the age and liquidity of the company have a negative impact. The older the company, the less it adapts to new market conditions.

### 4. METHODOLOGY AND MODEL SPECIFICATION

In a number of previous studies, the authors have examined different modalities of the relationship between capital structure in relation to profitability. As previously stated in the theoretical overview, large companies are more likely to resort to external sources of financing, and those that are older. Therefore, the main goal of the research is to examine the capital structure of large Croatian companies, their indebtedness and the impact of capital structure on business profitability. The company's financial policy means that managers must find possible sources of financing for new investment projects, for which the company's management is responsible. There are basically three alternatives to choose from, namely financing through retained earnings, or through borrowing, or through equity.

As a result, a company's capital structure typically includes all three components. These three components of the capital structure are directly related to the ownership structure of the companies (Prasad, Green and Murinde, 2001). Based on the theoretical analysis, the following research hypotheses are set:

- Hypothesis zero  $H_0$  - there is no significant mutual causality of profitability with capital structure and indebtedness ratio
- Alternative Hypothesis  $H_1$  - there is a significant mutual causality of profitability with capital structure and indebtedness ratio, and there is a significant mutual causality of capital structure and indebtedness ratio with corporate profitability

In accordance with the above, the relevant sample of 378 large companies registered in the Republic of Croatia was determined. This sample was selected because of current theoretical knowledge and research that has shown that large companies are more prone to borrowing, while large companies have a separate function of financial management from management or ownership of the company. This research covers a period of five years, from 2016 to 2020, due to the availability of financial data for the companies in the sample, the financial statements were taken from the digital Croatian Chamber of Commerce. From the financial statements for the covered period, the operationalization of variables was made as follows.

The variables of the Structure capital are:

- Structure capital (SCAP), measured by the ratio of Total Liabilities and Assets
- Debt ratio (DA), measured by the ratio of Total Liabilities to Total Assets

The variables of Profitability are:

- Return on Assets (ROA), measured by the ratio of Operating Profit and Total Assets
- Return on Equity (ROE), measured by the ratio of Net Profit to Equity

Considering the temporal and spatial component, the variables are structured as balanced panel data, ie a total of 189 observations for each variable. Given the hypotheses and the goal of the research, the statistical program *r* was used for data analysis. To determine the mutual causality between the observed variables, the Granger causality test for the data panel was performed (Dumitrescu and Hurlin, 2012). A Panel vector autoregressive models – PVAR was conducted, which included the analysis of the Forecast Error Variance Decomposition – FEVD and the analysis of the Orthogonal Impulse Response Function – OIRF. Parameter estimation in the PVAR model was performed using the Generalized Method of Moments where the unobserved individual panel effect was removed by Forward Orthogonal Transformation – FOD. For the stability of the initiated regression equations, a polynomial matrix was used and a partial unit root test was performed for all variables based on the extended Dickey-Fuller test adapted to the panel formulation to examine the stationarity of the variables.

## 5. RESULTS OF THE RESEARCH

Prior to the launch of the Panel VAR model, a Levin-Lin-Chu test was performed for the initial model formulation. The unit root test (LLC) set to the null hypothesis of the test indicates that the data series contains the unit root, and for  $H_1$  the series is stationed. With the possibility of an error of 0.05, the null hypothesis is rejected, ie all variables are stationed in levels in their original form.

*Table following on the next page*

Variable	Number of shifts (lags)	Test value	<i>p</i> -Value
SCAP	0	-3,58	0,00
DA	1	-1,88	0,01
ROA	0	-8,86	0,00
ROE	0	-12,92	0,00

*Table 1: Levin-Lin-Chu unit root results  
(Source: Author's own research)*

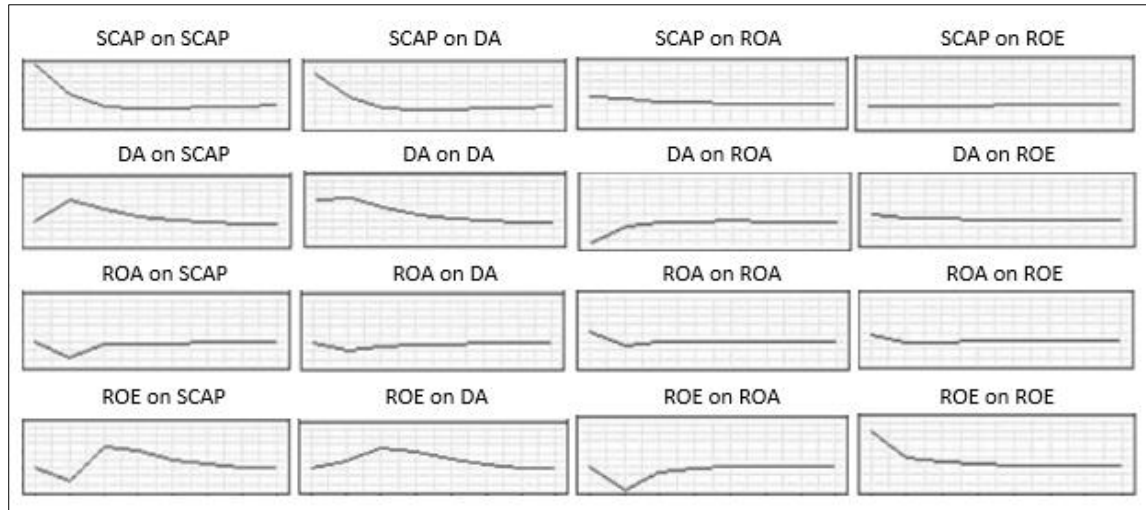
After the obtained results of the unit root, a model of vector autoregression on variables expressed in the original form was started. With the data shown in Table 2, a first-order PVAR model was selected, with a single shift lag variable compared to the two- or three-shift models.

Number of shifts (lags)	BIC	AIC	HQIC
1	-2.178,03	-880,02	-1.485,06
2	-2.101,05	-828,36	-1.384,65
3	-1.803,46	-758,06	-1.267,87

*Table 2: Criteria for selecting the number of shifts  
(Source: Author's own research)*

Further data processing was used to analyze the eigenvalue model for the regression equations in the model. If the solution is a unit root then some or all of the variables in the PVAR model are integrated of the first order, which means that there is cointegration between them. From the above, we conclude that the PVAR model is stable because all module values are inherent to less than one (0.5984; 0.5982; 0.3010; 0.3009). In accordance with the set hypothesis  $H_1$  Granger's test of suitability adapted to the panel data model with a given level of significance of 0.05, the test results show high causality between the observed variables. The analyzed data show a significant mutual determination of the observed variables, except in the case of indicators of capital structure, as causal variables, on profitability as responsive variables. However, profitability (ROA & ROE) has a significant impact on SCAP and DA indicators. But the indicator of capital structure does not show significant causality on profitability. To determine the direction of influence of variables, graphical representation 1 shows the orthogonal impulse response function, while the results of the function confirm the Granger test of determinism, as well as the decomposition of variance. For the profitability indicator as a response variable to the positive impulse of the capital structure, the reaction is minimal, which additionally confirms the absence of causality, ie the variation of the profitability indicator is weak with the variation of the capital structure indicator. In the case of a positive shock of the indebtedness indicator according to the ROA indicator, the reaction is negative in the first time interval, after which the reaction to the impulse shock decreases. Furthermore, due to the positive shock of the indebtedness according to ROE, the reaction is positive in the initial period, after which it returns to zero. Observing the values of the orthogonal impulse response function for the capital structure and indebtedness indicators as response variables, it can be seen that they respond positively to the impulse shock of the ROA and ROE indicators. The results are also in accordance with the Granger test, ie the decomposition of variance, which can be seen in Table 3.

*Graph following on the next page*



*Graph 1: Graphical representation of the Orthogonal Impulse Response Function  
(Source: Author's own research)*

Based on the obtained results so far, the analysis of variance decomposition was analyzed by error analysis. Decomposition of variance determines how much variation of one observed variable is described by the occurrences of that same variable, if other variables in the model. A detailed presentation of the orthogonal composition of the model variance for all four variables (SCAP, DA, ROA, ROE) is shown in Table 3, while the interpretation of the results was made in accordance with theoretical assumptions of capital structure variables, indebtedness indicator and profitability.

Responsive variable	Number steps	SCAP	DA	ROA	ROE
SCAP	1	1,00	0,00	0,00	0,00
	2	0,68	0,19	0,05	0,05
	3	0,54	0,20	0,06	0,16
	4	0,51	0,18	0,05	0,26
DA	1	0,70	0,25	0,00	0,00
	2	0,50	0,42	0,02	0,02
	3	0,37	0,36	0,02	0,27
	4	0,37	0,34	0,02	0,29
ROA	1	0,13	0,60	0,51	0,00
	2	0,08	0,35	0,40	0,45
	3	0,10	0,34	0,60	0,40
	4	0,10	0,35	0,60	0,40
ROE	1	0,00	0,03	0,02	0,92
	2	0,00	0,03	0,02	0,92
	3	0,01	0,03	0,03	0,90
	4	0,01	0,04	0,02	0,90

*Table 3: Projection of Orthogonal Decomposition of Variance  
(Source: Author's own research)*

Analysis of the data from Table 3 of the orthogonal deposition variance projection for the SCAP capital structure variable shows that 26% of the variation explains the ROE variable profitability indicator, which is consistent with the previous Granger causality test. It is evident that a large part of the variations of the capital structure indicators can be explained by the variations of the indebtedness indicators, which is in line with the theoretical knowledge and the connection between these indicators.

Variations in the indebtedness indicator up to 29% explain the variance of the ROE variables, while 37% of the variation in the indebtedness indicator variable is described by the variance of the capital structure, which is expected due to the consequent correlation of these indicators. Observing the obtained variances of the ROA indicator, there is a great correlation with the variations of the indebtedness ratio, ie it is described with a maximum of 35%, while both indicators of profitability, Return on Assets and Return on Equity are largely described by their variation, which is to be expected. It is stated in accordance with the results of Granger causality according to which there is no significant causality from the variable Capital structure (SCAP) to the variables ROA and ROE.

## 6. CONCLUSION

Numerous scientific literature on capital structure management suggests that an appropriate capital structure ratio is at the core of corporate financial decisions. In accordance with previous research and theoretical assumptions, the aim of the research is to use a panel VAR analysis to determine the interdependence of capital structure and indebtedness with the profitability of the company (ROA and ROE indicators). The sample includes large active companies of the Republic of Croatia with panel data for the period from 2016 to 2020. Analysis of mutual determination of panel data variables Capital structure (SCAP), Debt ratio (DA), Return on Assets (ROA) and Return on Equity (ROE) is Granger's test of causality as part of which the analysis Forecast Error Variance Decomposition and the analysis of the Orthogonal Impulse Response Function were processed. With the optimal number of shifts of all variables, a unit root test and a model stability test were performed, which showed that the variables were stationed in their original form, thus rejecting the possibility of long-term association between variables. According to the Granger causality test for a statistical significance interval of 0.05 with an optimal number of shifts of one, the test results show high causality between the observed variables in the short run. The data show a significant interdependence of variables from the panel model and it is found that the profitability of the company observed through the variables ROA and ROE significantly affects the indicators of capital structure and indebtedness, while the results of Orthogonal Impulse Response Function variables are consistent with Granger test. A significant part of the variation in capital structure and indebtedness is related to the Return on Equity indicator, while the Granger causality test also shows the same. From the analyzed data, a conclusion is made about accepting the alternative hypothesis  $H_1$  – there is a significant mutual causality of profitability with capital structure and debt ratio, and there is a significant mutual causality of capital structure and debt ratio with corporate profitability. Significant causality of ROA and ROE variables on capital structure variables (SCAP) and indebtedness ratio (DA) is confirmed, while variations in SCAP and DA indicators show partial causality of ROA and ROE variables.

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## THE ROLE OF SOCIAL NETWORKS AND INTERNET COMMUNICATION AMONG HIGH SCHOOL STUDENTS

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### ABSTRACT

*Our society uses internet on daily bases not only for business purposes but private ones as well. The amount of online communication is rising exponentially each day and is becoming an important part of social life. Social media usage is particularly increasing among young people. The main aim of this research was to explore the habits and attitudes regarding the usage of social networks among high school students on one Croatian High school. The core sample consisted of 60 high school students, aged between 14 and 18, who completed the Social Network Usage Questionnaire (SNU) online which was designed for the purpose of this research. The results showed that high school students spend between 1 and 5 or more hours per day on social media. The majority of participants use social platforms such as Instagram, You Tube and Facebook. Elements of risky behavior linked with excessive usage of internet which include accepting unknown friend requests on Facebook have also been detected. Participants believe that it is not acceptable to use Internet during their free time with the family. The results of this research can be used for educational purposes such as training for high school students with emphasis on practicing online communication skills. Moreover, including teachers and parents in the training can only be beneficial. This training could be helpful in terms of providing useful information about the content with high standards of quality as well as recognizing potentially risky behavior on internet that needs to be avoided.*

**Keywords:** *Internet, social media, high school students*

## 1. INTRODUCTION

### 1.1. Theoretical Background

Social networks and social media play an important role in our society. People use them for different purposes. Social networks are therefore a social structure of interaction between individuals which are directly or indirectly based on a common thread of interest (Bandgar, 2014) and are used as e-communication tool for different areas of human communication such as communication in culture, education, health, industry etc. During e-communication, business organizations need to consider interaction visibility to the general public through comments and posts (Ramčić – Salkić, 2020). Communication rules change according to different fields of human activity. Rules for communication in science are developing and research results could be used in different areas of human work for virtual Internet age (Maljković, 2013.). Social media are primarily used to transmit or share information with a broad audience (Hartshorn, 2010 in Edosomwan et al, 2011). Facebook and Instagram, as one of the most popular social media platforms, are becoming an important tool in different areas of human life. Social media establishes a communication channel between the government and the citizens; it serves as a platform for gathering information from the citizens such as their needs or concerns (Cabre Olive et al, 2017).

It can be used for getting an insight into citizens' view in regard to different social issues in order to identify their relevance. Furthermore, the advantage of collecting, processing and gathering information via social media is well researched in marketing and economy (Lozančić, 2018).

### **1.2. Duration and type of social media used by students**

Research conducted by Rattinger (2018) showed that 96% of high school students preferred social media platforms are Instagram, Facebook and Snapchat. Each of the respondents has a profile on two or three different social media platforms. High school students usually spend 2–3 hours per day surfing the social media. The main purposes for using social media are chat messaging or sharing photos and videos. The majority of high school students consider that they have high competences for independent usage of social media. There is statistically significant difference in frequency of social network usage according to gender of high school students: Female students spend more time on social media compared to their male peers (Rattinger, 2018). Vidak and Žada (2018) conducted the research on the core sample of 285 respondents (79.3% were female and 20.7% male), aged 18–24 years (62.8%). Respondents reported that they spend more than 4 hours per day using social networks (22.5%), 37.9 % use social networks 2–4 hours per day, 30.2 % use social networks 1–2 hours per day and only 9.5 % use social networks less than 30 minutes per day. The majority of them use Facebook, Instagram and Twitter. The ethical rules as well as rules for polite communication on social media such as Facebook, Instagram and Twitter are an important part of private and formal communication (Vidak and Žada, 2018). Young's respondents (aged 13–35) reported that they use social media for reading news or to communicate with family and friends. Facebook is the most used type of social media among students (Ridout, 2020.). Students' expectations and anticipated interactions are different for different types of social media, depending on the network size and network diversity (Bazarova and French, 2017). Different types of social media are linked to individual preferences of their users. Čelik (2019) found out that intrinsic and extrinsic social media users prefer different virtual activities linked to the amount of information gathering and communication, socialization, addiction and violence.

### **1.3. Impact of social media on students' social life**

Usage of digital media has impact on the interpersonal relationships in the family. It is not seldom that usage of video...usage of video conferences and digital devices decreases parental attention to young children. This lack of attention can reflect on children's behaviour (Wiederhold, 2020). Communication on social network depends on the age group. Foreign words and abbreviations are differently used by different age groups of users. This can lead to the loss of communication quality or misunderstandings (Popović, 2012). The evaluation of adolescents' feedback on positively and negatively framed Instagram posts could indicate possible mental health status such as depression or anxiety (Bushman et al, 2021). There are gender differences in regard to risky behaviour on internet: male students are more often included in the virtual violence and are more exposed to virtual addiction. For instance, addictive young social media users in Germany (aged 27) developed anxiety symptoms during the Covid-19 pandemic (Brailovskaia and Margraf, 2021). Research results (Buljan Flander et al., 2020) indicated that the impact of social media could be linked to different types of risk behaviour. Furthermore, students' preferences for different social media are constantly changing. Education and training for teachers, parents and students play an essential role in preventing future risk behaviour among adolescents in digital environment.

#### 1.4. Research goals

The main goal of this research is to get an insight into the usage of social networks among high school students in one Croatian high school from students of Business Administration Program. Specific goal of the research is to explore the time and duration of different social media usage among students.

## 2. METHODOLOGY

### 2.1. Participants

The respondents were high school students aged between 14 and 19, who attend Business Administration Program (N=60). The majority of respondents were female N=52 (86.7%) and N=8 (13.3%) male. There were N=11 first grade students (18.3%), N=12 second grade students (20%), then N=20 third grade students (33.3%) and there were N=17 fourth grade students (28.3%).

### 2.2. Measuring methods

The Social Network Usage Questionnaire (SNU) was developed for the purpose of this research. The questionnaire contains 26 items, two of them are related to demographic issues and the rest is related to the research content, designed in form of multiple-choice questions and scales.

### 2.3. Data collection

The survey was conducted in February 2020. Written permissions from the school principal and parents were obtained prior to the survey. Students' participation was on voluntary bases and anonymously.

## 3. RESULTS AND INTERPRETATION

Results are interpreted in terms of duration and type of social media usage in school. Possible risk behaviour on internet is addressed in terms of accepting unknown friend request on Facebook.

### 3.1. Duration and type of social media usage by adolescents

Respondents were asked to report how many hours per day they spend using the internet. Results are presented in Figure 1.

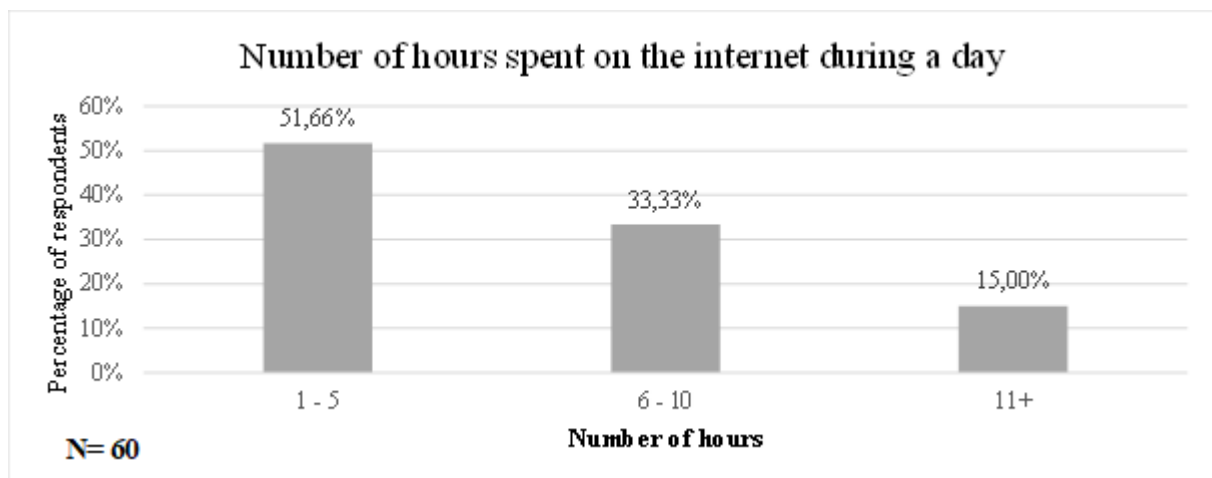


Figure 1: Number of hours that students spend on internet during a day

The majority of students N=31 (51.66%) spent between 1–5 hours online, N=20 (33.33%) of students who use the internet between 6–10 hours a day, whereas N=9 students (15%) spent more than 11 hours per day online. The presented numbers of hours include using internet for private as well as for school purposes.

Respondents were asked to report which type of social network they use the most. The results have shown that students usually have profiles on 2 to 3 different social media platforms. Which type of social media platform prevails among the respondents can be seen below in Figure 2.

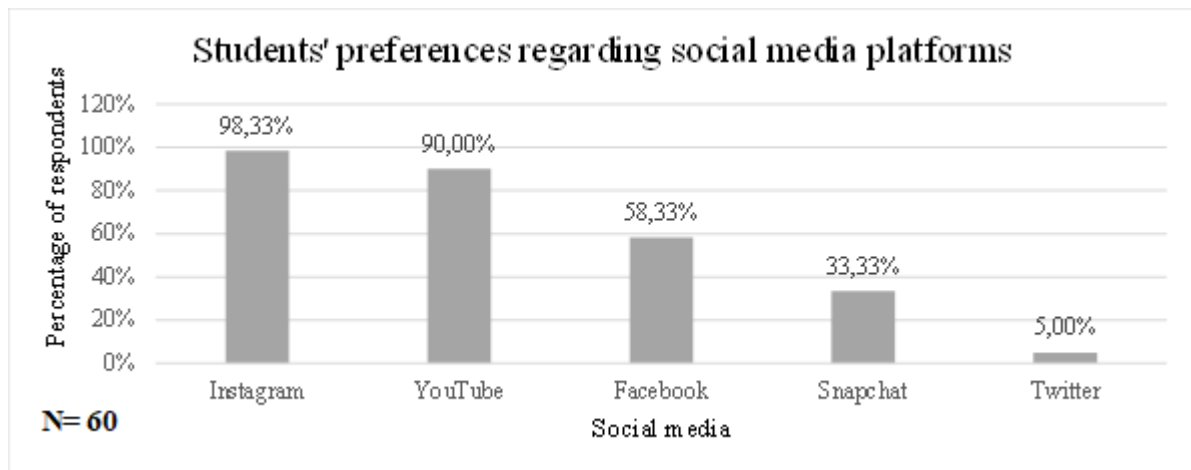


Figure 2: The type of social media preferred by high school students

The results have shown that the most preferred platforms by far are Instagram N=59 (98.33%) and YouTube N=54 (90%) followed by Facebook N=35 (58.33%). Approximately 1/3 of the respondents have Snapchat profile N=20 (33.33%). The least used platform among the respondents is Twitter N=3 (5%).

### 3.2. Reasons and purposes for using social media at school and home

Students were asked give information about the reasons for using social networks. They reported that social networks are mainly used for communication and socialization during free time or for gathering information and communication at school. The results are presented below in Figure 3.

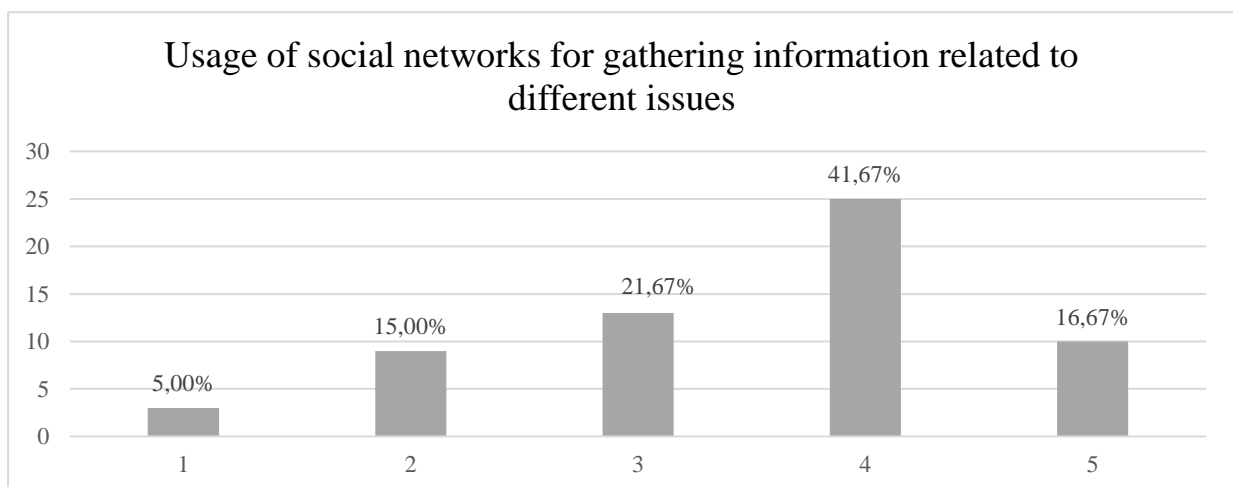
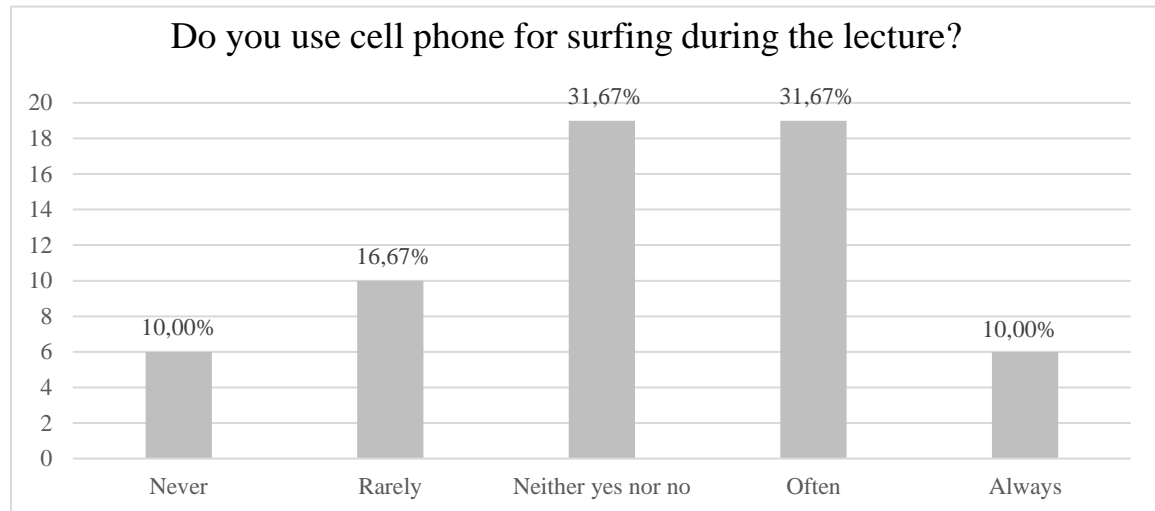


Figure 3: Usage of social networks for school purposes  
(Legend: X= 1=never, 5=always; Y=number of students)

The majority of students use social media always  $N=10$  (16.67%) or very often  $N=25$  (41.67%) for gathering information related to different educational issues. The  $N=13$  respondents' feedback is undecided  $N=13$  (21.67%), while  $N=9$  (15 %) and  $N=3$  (5%) rarely or never use social media for school purposes.

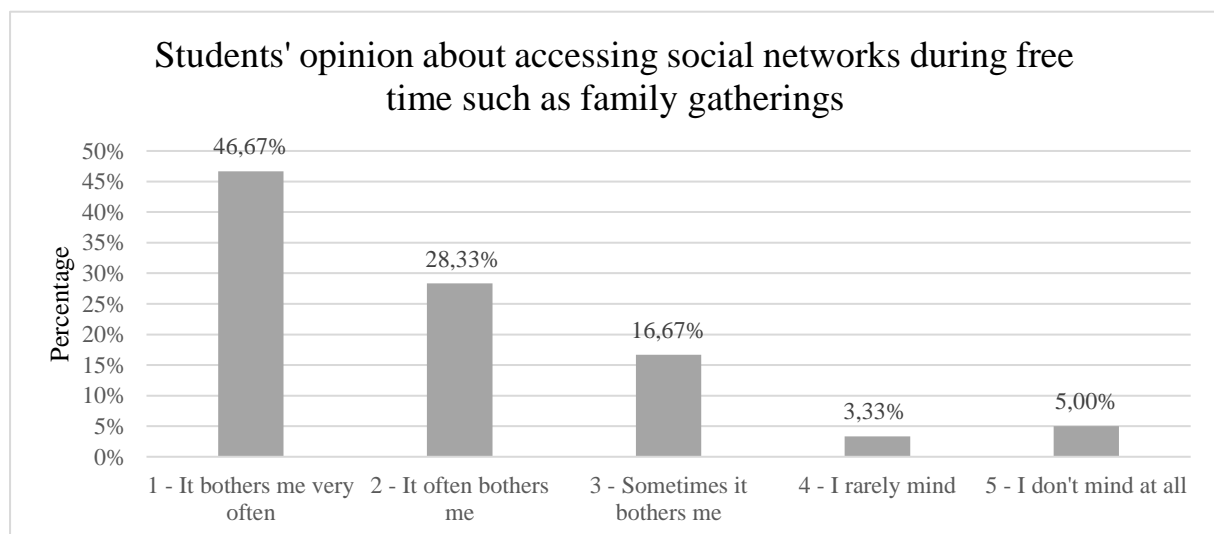
Students were asked if they are surfing the internet during the lectures. Results are presented below in Figure 4.



*Figure 4: Usage of social networks and internet during the class  
(Legend: X= 1=never, 5=always; Y=number of students)*

Results presented in Figure 4 show that only  $N=6$  (10%) of students never check internet or social media during the class. There are  $N=6$  (10%) students who are always or  $N=19$  (31,67%) very often checking the internet during the lecture in their class.

In regard to using social media during their free time, i.e. family gatherings, students were asked whether or not the usage of social media bothers them during these socializing events. Results are presented below in Figure 5.



*Figure 5: Students' opinion about accessing social networks during free time such as family gatherings*

Results have showed that the majority of students are against checking messages during free time, such as family gatherings. Nearly half of the students  $N=28$  (46.67%) reported to be very often bothered when someone is checking information on social media during family gathering. Almost  $N=17$  (28.33%) are often bothered and  $N=10$  (16.67%) are sometimes bothered when other members check information on social media during socializing events such as family gatherings (Figure 5).

### 3.3. Accepting unknown friend requests

One of the students' behaviour on social networks that is linked to risk behaviour is accepting friend requests from people that they do not know. Results are presented in Figure 6.

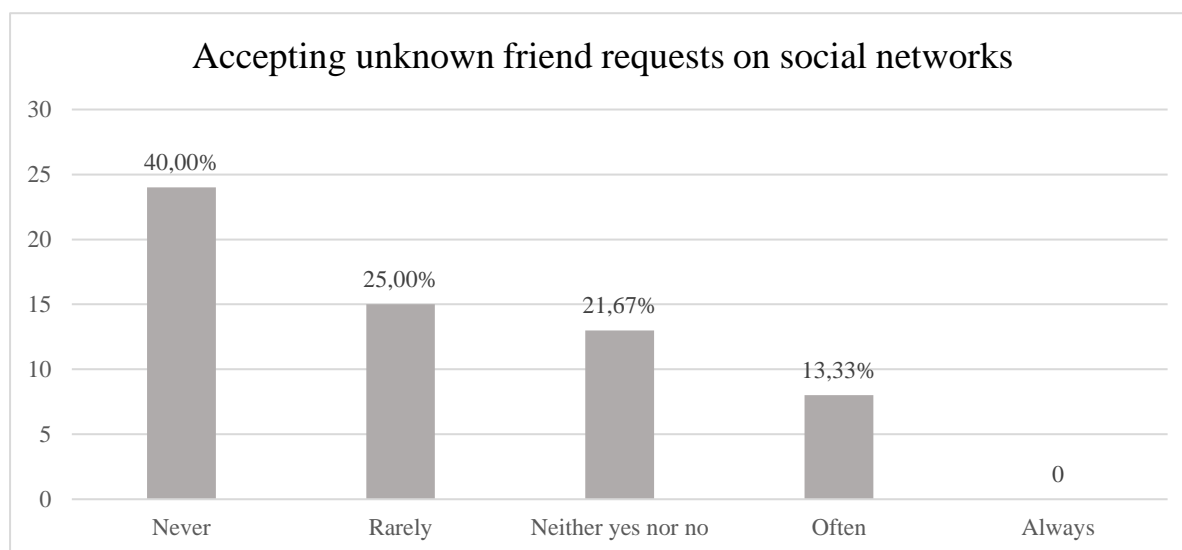


Figure 6: Accepting unknown friend requests on social networks  
(Legend:  $X = 1 = \text{never}$ ,  $5 = \text{always}$ ;  $Y = \text{number of students}$ )

Approximately  $N=24$  (40%) of respondents never accept online friend requests from people that they do not personally know and  $N=15$  (25%) accept them rarely. Slightly fewer respondents  $N=$  (21.67%) remained undecided. With  $N=8$  (13.33 %) students reported that they often accept friend request from the people that they do not know, this behaviour could be interpreted as risk behaviour. Students' risk-taking behaviour in virtual environment is assessed through accepting new friend request from people that they do not know.

## 4. CONCLUSION

The usage of internet and online communication on social networks are becoming important part of high school students' life. Students reported that half of them spend 1–5 hours per day and approximately half of them spend from 6 and up to more than 11 hours per day online. Similar results were found by Vidak and Žada (2018), as in their study the respondents reported that they spent more than 4 hours per day online (22.5%). The most popular social network among the Croatian high school students is Instagram. Nearly all of them have Instagram profile (98.33%). Similar results were obtained in Rattinger's study (2018), where he found out that 96% of high school students preferred Instagram to other social media platforms. Results of this research showed that more than half of the students use social network for educational issues (58.34%), but there are nearly 35.27 % students who use the internet on their cell phones during class time. Some students accept unknown friend request on social media, while 40% of the students reported that they never accept unknown people as their friends on social media profile. Students reported that social media usage impacts their social life.



Similar results were found by other scholars such as Wiederhold (2020) or Popović (2012). The results of this research could be used for educational purposes or to design training for parents, students and teachers in order to establish communication rules on social media platforms that would ensure safe and risk-minimizing behaviour among students.

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## EXEMPTIONS FROM PAYING VALUE ADDED TAX FOR MEDICAL SERVICES RELATED TO COVID-19

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### ABSTRACT

*In the period of the COVID-19 pandemic, citizens' health is among the key goals of every government and as a public good must be ensured through an accessible, functional, and effective public health system. Taxation policy measures give taxation benefits for health services provided related to the COVID-19 pandemic. Consequently, Council Directive (EU) 2021/1159 of 13 July 2021 amending Directive 2006/112/EC as regards temporary exemptions on importations and on certain supplies was brought in in response to the COVID-19 pandemic (OJ L 250, 15. 7. 2021.). In this paper, the stated Directive (which is being applied in the Republic of Croatia) will be analysed from a legal perspective, as well as other legislative taxation measures undertaken at European Union related to the COVID-19 disease. Also, cases of the illegal use of VAT taxation exemptions (fraud) related to providing medical services for COVID-19 because the fact should not be overlooked that, according to European Commission Reports, member states have recorded losses in VAT taxation revenue estimated at 140 042 billions of Euros representing a total revenue loss of 11% at European Union level.*

**Keywords:** *value added tax (VAT), COVID-19, health services, Council Directive (EU)*

### 1. INTRODUCTION

The World Health Organization (WHO) declared on 11 March 2020 the global pandemic of COVID-19 and since then the world has been in an extraordinary state or so called “new normal” (Kunji et al., 2021, p. 16). The outbreak the COVID-19 pandemic has resulted in a serious health, as well as economic crisis and in an unprecedented fall in economic activity in recent history. The answer from COVID-19 policies in most countries has had direct and great impact on fiscal systems. Measures undertaken in all public policies to contain or lessen the pandemic are reflected in fiscal policies in all their segments, which is particularly evident in the outgoing and incoming segments of the fiscus because it impacts on budgets and their profit and cost (Žunić-Kovačević, 2021, p. 483). In countries with poorly regulated healthcare systems and a weaker scope of fiscal and monetary policies, in confronting the pandemic, factors which limit the capacity to meet health and economic challenges dominate. Therefore, international and European coordination with elements of financial support will be necessary as additional measures, especially fiscal policies, which such countries undertake at a national, individual level (Žunić-Kovačević, 2021, p. 485). Consequently, directives, regulations and decisions are introduced at European Union level related to combatting the COVID-19 pandemic. Thus have the European Parliament and EU Council introduced REGULATION (EU) 2021/522 of 24 March 2021 establishing a Programme for the Union’s action in the field of health (‘EU4Health Programme’) for the period 2021-2027 and repealing Regulation (EU) No 282/2014. The „EU Health” programme is the European Union ‘s ambitious response to COVID-19. With this programme, should promote activity in areas which could show the existence of added Union value. That activity should include, among other things, strengthening the exchange of the best practices among Member States, supporting networks to exchange knowledge or mutual learning, resolving transnational health threats in order to lessen risks of such threats and mitigate their consequences, resolving certain issues related to internal markets in conjunction with whom the Union can attain high quality solutions within the Union, by

which liberates from potential innovations in health, and improved effectiveness by avoiding doubling up on activities and optimizing the use of financial means. Taxation policy measures provide tax rebates (benefits) for offering health services related to COVID-19. Therefore, further on in this paper more will be said on exempting value added tax for health services related to COVID-19 in the Republic of Croatia and other legislative measures at European Union level.

## **2. IN GENERAL ON VALUE ADDED TAX**

Value added tax is tax which is calculated and paid in all stages of production and transport cycle but in a way that at each stage only the value-added amounts achieved at that particular phase of the aforementioned cycle is charged (Jelčić et al., 2008, p. 389). In general, the accepted opinion is that extending the application of value added tax in contemporary taxation systems is the most important change to have occurred in the area of taxation in the last 30 years (Messere, 2001, p. 264). At the level of the European Union, the fundamental Directive in the area of value added tax is COUNCIL DIRECTIVE 2006/112/EC of 28 November 2006 on the common system of value added tax (OJ L 347 11. 12. 2006.) The basic characteristics of value added tax is that it is tax of a consumption type the application of which rests on the following starting rules: 1) every delivery of goods and services must be taxed with value added tax if it is not exempt by a special provision, 2) not a single delivery of goods and services must be subject to value added tax more than once, 3) value added tax in the delivery of goods and services for businesses purposes must be deducted via „pre-tax“ to achieve the principle of neutrality in entrepreneurial activities, 4) every entrepreneur requests from their supplier (entrepreneur) to stipulate on invoices the calculated value added tax so they can deduct it as „their pre-tax“ (Birk et al., 2016, pp. 476-508, Tipke et al., 2021, pp. 1037-1267). Tax exemptions are a fundamental element of every taxation system of sales tax (value added tax). The reasons for prescribing tax exemptions in the system value added tax are various depending on the aims one wants to achieve (Jelčić et al., 2008, pp. 423-424). So, for example, goods for export are exempt from paying value added because the taxation of them is done according to taxation regulations of the country importing and in that way the principle of destination is achieved as one of the important principles of value added tax. However, besides this exemption, on the sale of certain goods and services exemption from paying value added tax is prescribed or the application of zero tax rate for at least the three following important reasons: 1) non-taxable goods by which the regressive activity of value added tax is mitigated (food), 2) goods used extend to wider population (education, health, culture, social and religious institutions services), 3) services considered to be too difficult to tax for value added tax (financial services). Services which extend to the wider population (education, health, culture, social and religious institutions services), as already stated are usually exempt from the value added tax system but do not have the right to deduct it as pre-tax. Given that value added in these kinds of services are exempt from paying value added tax, and it makes up the biggest part of the price which the final consumer pays, consumers in that way get a cheaper price for these services (Jelčić et al. 2008, p. 424).

## **3. EXEMPTION FROM VALUE ADDED TAX – COVID-19 IN THE REPUBLIC OF CROATIA**

Regulations on value added tax regulate exemption from paying value added tax for services related to medical treatment and other medical protection. Exemptions for medical treatment and medical protection services when this activity is carried out pursuant to special legal regulations on medical care (Dojčić et al., 2020, p. 94). Provisions Article 39 paragraph 1 point b) Value Added Tax Act prescribe exemption from paying value added tax for hospital and medical care and closely related activities performed by bodies governed by public law and,

under conditions which are socially similar to the conditions applied to bodies governed by public law, hospitals, medical centres or medical diagnostics centres and other similar acknowledged institutions. Health care institutions in particular include medical surgeries/centres, medical centres and medical diagnostic centres, emergency, polyclinics, general and specialist hospitals and clinics. What is meant by service is explained in provision Article 50 paragraph 2 Rulebook on Value Added Tax. Services are considered to be: services of stay and food for patients and accommodation for parents with children during hospital treatment by referral for hospital treatment pursuant to certain regulations, institutional services carried out by public health activities directly linked to treatment with health care which is carrying out hygienic - epidemiological health protection of the population, services of issuing and extending health care cards, vaccination services, implementing programmes related to out of hospital treatment, implementing out of hospital specialist-conciliary health protection and so on. What is not to be considered as services is explained in provisions Article 50 paragraph 3 of the Rulebook on Value Added Tax. Not considered as services are: 1. services not related to medical treatment and health care in particular renting and using premises within the hospital, medical centres, health resorts and similar institutions, various payments for accommodation and/or using televisions, telephones and internet, additional laundry services and parking within the hospital, health resort or similar institution, sporting-recreational services within the health resort such as renting bicycles, using pools or courts for sport and so on, on duty medical services, 2. services not carried out for the purposes of medical care and are related to court expert witnessing, expert witnessing for court and other proceedings such as establishing paternity, various kinds of ground analysis, establishing if water fit for drinking, objects for general use, services for testing the air, training of medical and other workers and other such institutional services carrying out public health activities. The above-mentioned delivery of goods and carried out services, like health care services done by health institutions for domiciliary health care, are exempt from paying value added tax when these services are carried out by bodies, that is, legal entities with public powers or other organizations of a similar nature on the basis of public powers (Article 50 paragraph 1 Rulebook on Value Added Tax). Pursuant to Article 39 paragraph 2 Value Added Tax Act, exemption from paying value added tax on the above-mentioned delivery of goods and carried out services is not applied if: a) those supplies of goods or service are not necessary for VAT exempt supplies or b) their primary purpose is to generate additional income for the persons by performing supplies directly competing with the supply of taxable persons calculating VAT. Provisions Article 39 paragraph 1 point c) d) e) g) p) Value Added Tax Act exemption from paying value added tax is for: 1) providing medical care as part of medical and auxiliary medical profession (physicians' services, dental technicians, dentists, nurses, midwives, physiotherapists, psychologists and biochemical laboratory services related to medical treatment) independent of their legal form, if services and delivery of goods is carried out according to specific regulations which regulate their activity, 2) supply of human organs, blood or mother's milk, 3) services provided by dental technicians and the supply of dental/prosthetic substitutes supplied by dental technicians and doctors of dental medicine, independent of their legal form, if the services and delivery of goods are carried out pursuant to specific regulations regulating their activity, 4) services and supply of goods related to social care, including those who supply them to nursing homes and homes for the elderly, institutions, bodies governed by public law and other similar persons, pursuant to specific regulations in the area of social care. Services and delivery are understood to be all those services and deliveries which can be done pursuant to specific regulations in the area of social care which ensure users of social care stay, food, health care, upbringing and education, psychosocial rehabilitation, care and other similar needs, 5) transport services for sick and injured persons in vehicles specially made for that purpose, performed by authorized persons, on the condition that these services are carried out by authorised persons pursuant to regulations

on health protection. Pursuant to Article 44 paragraph 1 point 10, 11, and 12. of the Value Added Tax Act, the following are exempt (related to health services) from paying value added tax: 1) Import of therapeutic substances of human origin and reagents for determining blood type and tissue type used for non-commercial medical or scientific purposes, of laboratory animals specially bred and sent without consideration for the purposes of scientific research, of biological or chemical substances intended for public or private institutions mostly engaged in education or scientific research and the import of pharmaceutical products for human and animal medicinal use at sporting events, 2) The import of goods specially made and adapted for education, employment or social rehabilitation or blind or other physically or mentally handicapped persons, when imported by institutions or legal persons registered for education and providing assistance to such persons, and obtained without consideration and without commercial intent of the donor, 3) Import of goods obtained for free to meet basic human needs, imported by state and other humanitarian and charitable legal persons and institutions for free distribution to persons in need and in order to collect funds for the benefit of persons in need in occasional charity events. VAT exemption shall also apply to the import of equipment sent for free by a sender outside the European Union to the aforementioned organizations and institutions in order to meet their operational needs and achieve their humanitarian goals. Exemption shall not apply to alcohol and alcoholic beverages, tobacco products, coffee and tax and to motor vehicles, other than emergency medical assistance vehicles. Now a few examples from taxation practices related to value added tax and the COVID-19 pandemic within the Republic of Croatia will be listed. According to the opinions of the Central Taxation Department Office in Zagreb (Class: 410-19/20-02/261 of 12. 10. 2020.), services of testing for COVID-19 are carried out for the purposes of health protection are value added tax exempt on the basis of Article 39 paragraph 1 point b) The Value Added Tax Act, independent of whether COVID-19 testing is carried out on the basis of a doctor's referral or upon personal request requiring payment (for travel abroad, at the request of an employer). Given the current situation, in business practice it is often the case that hotels from the Croatian Department of Health (HZJZ) order COVID-19 testing for hotel guests. the bill for testing carried out HZJZ sends to the hotel and attached sends a list of people tested. The costs of testing for each individual guest is borne by the hotel in that the cost of testing is separately shown on the hotel bill. According to the Central Taxation Department Office in Zagreb (Class: 410-19/21-02/132 of 7. 5. 2021.), this involves re-invoicing hotel costs to guests, and not passing items on the hotel accommodation bill. Therefore, testing costs which the hotel had for each individual guest are costs which the hotel imposes on the guest are so calculated cost actually is compensation for costs borne by the hotel, which comprises the base on which it calculates and pays value added tax. The case from practice is interesting, that is, it raises the question of whether pharmacies can apply exemption from value added tax when offering COVID-19 testing services? The answer to this question was given by the Central Taxation Department Office in Zagreb in its opinion (Class: 410-19/21-02/295 of 15. 11. 2021) in which it states: „We are of the opinion that pharmacies, on the basis of the activities they carry out, and which include supplying and making of medicines and the supply of medical products, cannot be considered as another acknowledged institution of a similar nature in Article 39 paragraph 1 point b) Value Added Tax Act. Therefore, for the services of COVID-19 testing value added tax exemption is not applicable as prescribed in Article 39 paragraph 1 point b) Value Added Tax Act, but rather this is delivery which is value added taxable“. In keeping with the afore-mentioned, pharmacies must calculate value added tax on services of testing for COVID-19 at the rate of 25%.

#### **4. TEMPORARY EXEMPTION WHEN IMPORTING AS AN ANSWER TO THE COVID-19 PANDEMIC**

Soon after declaring the pandemic, the Commission of the EU, with the intention of combatting it, brought in extraordinary measures in the area of value added tax. So the Council of the EU brought in COUNCIL REGULATION (EU) 2020/521 of 14 April 2020 activating the emergency support under Regulation (EU) 2016/369, and amending its provisions taking into account the COVID-19 outbreak (OJ L 117 15. 4. 2020.). The stated Regulation comprises common provisions: 1) In order to ensure equal treatment and a level playing field for Member States, it is necessary to allow for retroactive eligibility of costs as of the date of activation of the emergency support, including for actions already completed, provided they have started after that date, 2) To alleviate the acute strain on the medical workforce and on State resources due to insufficient capacities of essential public services, and to maintain the viability of the healthcare system, a temporary reinforcement and exchange of medical professionals, as well as the treatment of patients from other Member States, should be supported financially or by organisational means, 3) Financial support should also cover training for professionals in healthcare and logistics in view of the fight against counterfeiting of healthcare supplies, 4) In view of the large-scale consequences of COVID-19, a rapid and comprehensive engagement of all relevant partners is required, including public authorities, public and private primary and hospital care suppliers and nursing homes. Activities to relieve pressure on the health infrastructure and to support groups of vulnerable persons at risk are needed, 5) In order to address supply shortages, production capacities for essential medical products such as medication, diagnostic tests, laboratory supplies, and protective gear, should be supported and funding should be provided to maintain a stock of those products, 6) Additional or alternative testing methods to increase capacity and relevant medical research should be assisted by financial and/or organisational means, 7) Contracting authorities from Member States are facing considerable legal and practical difficulties in purchasing supplies or services in emergency situations. In order to allow contracting authorities to derive maximum benefit from the potential of the internal market in terms of economies of scale and risk-benefit sharing, it is of utmost importance to extend the possibilities for the Commission to purchase supplies or services on behalf of Member States. The Commission should be enabled to conduct the relevant procurement procedures. Where a contracting authority of a Member State conducts certain parts of the procurement procedure, for instance the reopening of competition under a framework agreement or the award of individual contracts based on a dynamic purchasing system, that contracting authority would be responsible for the stages it conducts, 8) For emergency situations, where it is necessary to carry out a joint procurement between the Commission and one or more contracting authorities from Member States, it should be made possible for Member States to acquire, rent or lease fully the capacities jointly procured, 9) The Commission should be allowed to buy, stock, resell and donate supplies and services, including rentals, to Member States or partner organisations selected by the Commission. The COUNCIL DIRECTIVE (EU) 2021/1159 of 13 July 2021 amending Directive 2006/112/EC as regards temporary exemptions on importations and on certain supplies was brought in in response to the COVID-19 pandemic (OJ L 250, 15. 7. 2021.), that is, the COMMISSION DECISION (EU) 2021/2313 of 22 December 2021 on relief from import duties and VAT exemption on importation granted for goods needed to combat the effects of the COVID-19 outbreak during 2022 was brought in (notified under document C(2021) 9852). By the stated Directive or Decision 1. Goods shall be admitted free of import duties within the meaning of Article 2(1), point (a), of Regulation (EC) No 1186/2009 and exempted of value added tax (VAT) on the imports within the meaning of Article 2(1), point (a), of Directive 2009/132/EC, where the following conditions are fulfilled: (a) the goods are intended for one of the following uses: (i) distribution free of charge by the bodies and organisations referred to in point (c) to the persons

affected by or at risk from COVID-19 or involved in combating the COVID-19 outbreak; (ii) being made available free of charge to the persons affected by or at risk from COVID-19 or involved in combating the COVID-19 outbreak while remaining the property of the bodies and organisations referred to in point (c); (b) the goods satisfy the requirements laid down in Articles 75, 78, 79 and 80 of Regulation (EC) No 1186/2009 and Articles 52, 55, 56 and 57 of Directive 2009/132/EC; (c) the goods are imported for release for free circulation by or on behalf of State organisations including State bodies, public bodies and other bodies governed by public law or by or on behalf of organisations approved by the competent authorities in the Member States. 2. Goods shall also be admitted free of import duties within the meaning of Article 2(1), point (a), of Regulation (EC) No 1186/2009 and exempted of VAT on the imports within the meaning of Article 2(1), point (a), of Directive 2009/132/EC, where they are imported for release into free circulation by or on behalf of disaster relief agencies in order to meet their needs during the period they provide disaster relief to the persons affected by or at risk from COVID-19 or involved in combatting the COVID-19 outbreak. The requesting Member States should inform the Commission of the nature and quantities of the various goods admitted free of import duties and VAT with a view to combatting the effects of the COVID-19 outbreak, of the organisations they have approved for the distribution or making available of those goods and of the measures taken to prevent the goods from being used for purposes other than to combat the effects of this outbreak. The requesting Member States should ensure that such duty relief and VAT exemption are correctly applied in line with customs and VAT legislation and to prevent any fraud, evasion, avoidance or abuses. Taking into consideration the extreme challenges that the requesting Member States face, relief of import duties and exemption of VAT should be granted in respect of importations made from 1 January 2022. The relief should remain in place until 30 June 2022.

## **5. TEMPORARY EXEMPTION RELATED TO VACCINES AND IN VITRO DIAGNOSTIC MEDICAL PRODUCTS RELATED TO COVID-19**

The EU Commission 17 June 2020 published a European Union strategy on COVID-19 injections. The intention of the strategy is to ensure injections for the population of the European Union that is, speed up development, production and distribution of COVID-19 injections given that effective and safe injections against COVID-19 appear to be by their nature a lasting solution against the pandemic. Given that regarding injections there is dubiousness (reliability, accessibility, distribution and so on.), in the fight against COVID-19 the development and distribution of appropriate in vitro diagnostic medical equipment (testing kits) seems crucial. Since the COVID-19 pandemic outbreak, the pharmaceutical industry has developed various tests (testing kits) which detect: a) existence of the virus (most representative are PCR test and Antigen test), and/or b) existence of antibodies against the virus (the most representative test of antibodies in the blood). The European Union will try to achieve its strategy against COVID-19 in two fields: firstly, ensure the production of enough injections for European Union needs, secondly, by using the existing regulatory, financial, advisory and other accessible means during the creation of a necessary regulatory framework (Mijatović, 2021, p. 172). COUNCIL DIRECTIVE 2006/112/EC contains tools allowing Member States to partly alleviate the cost of COVID-19 vaccination and testing, notably through a VAT exemption without deductibility for hospital and medical care and a reduced VAT rate available for vaccines. However, that Directive does not allow Member States to apply a reduced VAT rate to the supply of COVID-19 in vitro diagnostic medical devices or services closely linked to such devices. Nor does it allow Member States to grant an exemption with deductibility of VAT paid at the preceding stage in respect of the supply of COVID-19 vaccines and in vitro diagnostic medical devices or services closely linked to such vaccines and devices. Given the urgency of the situation connected to the COVID-19 pandemic, they brought in COUNCIL DIRECTIVE (EU)

2020/2020 of 7 December 2020 amending Directive 2006/112/EC as regards temporary measures in relation to value added tax applicable to COVID-19 vaccines and in vitro diagnostic medical devices in response to the COVID-19 pandemic (OJ L 419, 11. 12. 2020.). The afore stated Directive regulates, that is, the following Article is inserted in Directive 2006/112/EC: Article 129a 1. Member States may take one of the following measures: (a) apply a reduced rate to the supply of COVID-19 in vitro diagnostic medical devices and services closely linked to those devices; (b) grant an exemption with deductibility of VAT paid at the preceding stage in respect of the supply of COVID-19 in vitro diagnostic medical devices and services closely linked to those devices. Only COVID-19 in vitro diagnostic medical devices that are in conformity with the applicable requirements set out in Directive 98/79/EC of the European Parliament and of the Council or Regulation (EU) 2017/746 of the European Parliament and of the Council and other applicable Union legislation shall be eligible for the measures provided for in the first subparagraph. 2. Member States may grant an exemption with deductibility of VAT paid at the preceding stage in respect of the supply of COVID-19 vaccines and services closely linked to those vaccines. Only COVID-19 vaccines authorised by the Commission or by Member States shall be eligible for the exemption provided for in the first subparagraph. 3. This Article shall apply until 31 December 2022.

## **6. MISUSE OR FRAUD RELATED TO COVID-19**

The international monetary fund estimates that, due to tax evasion, governments yearly lose around 3 billion American dollars. The European Parliament estimates that in the European Union this reaches an amount of 825 billion Euros and the deficit in the charging of value added tax is mainly caused by evasion, and amounts to 147 billion Euros yearly, of which 50 billion Euros goes on transborder fraud within the community with an unknown salesperson so-called „Circular Fraud “ (Orrit, 2020, p. 6). One should not overlook the fact that according to the EU member state Commission report, a loss of value added tax income has been noted and is estimated at 140 042 billion Euros, which represents a total loss of income of 11% at European Union level (Chastel, 2020, p. 2). In practice there are cases of abuse, that is fraud, related to COVID-19. At the request of the European Public Prosecutor's Office Guardia di Finanza from Ravenna, more than 11 million Euros was seized (4.2 million Euros profit from evading customs and value added tax and around 7 million Euros of profit from fraud) by the director of two Italian companies for smuggling personal protection equipment. In the period from April to August 2020 during the first phase of the COVID-19 pandemic, a company with headquarters in Faenza which sold paramedical products, imported protective equipment (surgical masks, FFP2 masks, protective clothing and glasses, face visors and footwear) for tens of millions of Euros from China via a special customs procedure of „direct release“. This customs procedure implies value added tax and customs exemption for personal protective equipment if delivered directly and without commercial fees, to public health institutions combatting the pandemic. However, instead of directly delivering personal protective equipment to government bodies, the company systematically placed the goods with another private company – for which it was uncovered that its mother company was connected with the same company director – at a significantly higher price (Guardia di Finanza, 2021). The existing European Union rules on value added taxation rates are almost 30 years old and need adjusting that is harmonisation with common priorities of the European Union, especially protection of public health. Work is also needed on the global battle against misuse, fraud, that is, tax evasion and evading paying value added tax. European Union Ministers of Finance have agreed on updating existing rules regulating value added tax rates for goods and services. More specifically, with new rules, the list of goods and services will be updated to which all Member States must apply reduced value added tax rates. New products and services added to the list include those protecting public health, which are environmentally friendly and support digital transition.



After the rules are enacted, Member States will for the first time be able to exclude from value added tax goods and service considered as basically essential. Furthermore, till 2030 Member States will not be able to apply reduced rates and exemptions to goods and services considered harmful to the environment (indirectly to health) and to the aims of the European Union in the area of climate change (Badnjak, 2021).

## 7. CONCLUSION

In order to achieve improvement in the thinking and planning of the global health system, countries must take care of the following: political duties and leadership, economic capital, coordination of management, harmonisation of policy, and developing capacity of the public health system (public private partnership, investing and so on) (Freyer, 2014, pp. 2-8, Metzner, 2014, pp. 5-43, Lošin, 2015, pp. 3-12). The COVID-19 pandemic has encouraged up till now unnoted measures at national and European Union level in order to offer support to businesses of Member States and ease their recovery. In other words, COVID-19 has subjected the entire European Union and world, to up until now unprecedented pressure. Many countries had to face the spreading of the virus in the community. European Union Member States introduced measures for mitigating social and economic effects, such as maintaining functioning of the internal market, supporting the transport and tourist sector, protecting jobs and support for health care services for vulnerable groups. Just and effective taxation will become more important in months and years to come because the European Union and global community is trying to recover from the consequences of the crisis caused by COVID-19. As emphasised in communication of the Commission of the EU „Europe at work: recovery and preparation for the next generation”, we need to ensure that solidarity and justice be the foundation of recovery, that is, the Commission of the EU will intensify the battle against fraud and other dishonest practices. Health care systems of European Union Member States are a key part of a high level of social protection and cohesion in Europe. In the context of economic recovery and the sustainability of health systems, it is necessary to urgently limit the value added tax gap among European Union Member States in order to halt the socio-economic crisis after the COVID-19 pandemic (Chastel, 2020, p. 2). That gap can be decreased by simplifying the systems of application of value added tax and the battle against fraud. On the other hand, EU Member States who submit a request should advise the Commission of the EU about the nature and quantity of various goods exempt from customs and value added tax in the aim of battling the effects of the COVID-19 pandemic, and on the organizations approved for sharing or offering those goods and services about the measures undertaken to avoid that those goods be used for other purposes apart from for the battle against the effects of the pandemic. Member States of the European Union who have lodged a request should ensure that such exemption from customs and value added tax is applied correctly pursuant to the *Acquis Communautaire* of the European Union, that is, the legislation on customs and value added tax to prevent all types of possible misuses, fraud, that is, evasion. It is necessary to strengthen public health systems to effectively combat COVID-19 in order to save lives, citizens' health and the economy, as well as to respond adequately to the challenges of the chronically non-infectious and urgently infectious diseases. Moreover, it is necessary to modernise hospital systems, plan development of human resources and ensure quality medical-technological equipment, together with digitalization and strengthening outpatient hospitals and reduce waiting lists.

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# **EFFECT OF NIGER STATE RICE INVESTMENT CONSORTIUM PROJECT ON COMMERCIALIZATION LEVELS OF SMALLHOLDER FARMERS IN NIGER STATE, NIGERIA**

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## **ABSTRACT**

*The study assessed the effects of Niger State Rice Investment Consortium (NSRIC) project on commercialization levels of smallholder rice farmers in Niger State, Nigeria. A total sample size of 234; made up of 117 participants and 117 non-participants drawn from 12 localities in three (3) Local Government Areas (LGAs) were selected through multi-stage sampling technique. Data were collected from primary source using well-structured questionnaire administered by the researcher and with the assistance of well-trained enumerators from the Niger State Bureau of Statistics (NSBS). Data were analyzed using descriptive statistics, household commercialization index (HCI), Tobit regression model and Henry Garrett technique. The result of HCI revealed the mean household commercialization indices of 67.25%, 31.57% and 49.41% for participant, non-participant and pooled sample, respectively. The Tobit regression analysis disclosed that the coefficients of household size and extension contact were negative but however, significantly influenced smallholder level of rice commercialization. The coefficient of gender, farm size, quantity of rice produced, NSRIC project participant, access to market information, unit price of product, irrigation, access to tractorization and training were positive and significantly influenced smallholder rice commercialization. The costs and returns analysis revealed that the farmers earned N123,684.08 and N46,872.14 for participants and non-participants, respectively. It was recommended that governments at all levels should develop appropriate policies and strategies to promote the commercialization of smallholder Agriculture in the State and farmers themselves should form and maintain effective farmer groups to take advantage of better market prices for their products through their collective bargaining power.*

**Keywords:** *Commercialization, Consortium, Smallholder, Rice, Food Crop*

## **1. INTRODUCTION**

Agricultural transformation and modernization thrives well when there is a shift from low-productivity, subsistence farming to high productivity, Commercial agriculture (Olanrewaju, 2016). These changes in turn trigger sweeping structural changes that ripple through the broader economy. At the macro level, agricultural transitions pave the way for economic diversification into services and manufacturing.

At the household level, transformation enables agricultural specialization as well as diversification into non-farm activities (Haggblade and Hazell, 2010; IFAD-IFPRI). The transformation of agriculture is about more than just the marketing of agricultural outputs, though it also involves the substitution of non-traded inputs to traded inputs and the marketing of household's labour supply. This means that households increasingly base their production and input use decisions on the principles of profit maximization, which increases the strength of the linkage between these household and the market (Jaleta *et al*; 2009). Due to low farm production and productivity, majority of subsistence farmers are not even self-sufficient in food, and deliver meager amounts of farm output to consumers and agro-processing industries (markets). The agricultural sector is dominated by resource poor smallholder farmers, often solely engaged in subsistence farming activities, while the agribusiness sector is in its infancy. Barret (2008) asserted that the smallholder farmers who engage in subsistence agriculture have low marketable surplus causing them to be in low equilibrium poverty trap. Rios *et al* (2008) also reported that the poorest people in the world are farmers with low agricultural productivity and low commercialization levels. Increasing either one could help to improve the other, and both could boost rural economies and living standards; higher productivity levels could drive commercialization levels since households with higher productivity are more likely to have crop surpluses above their immediate consumption needs (Rios *et al*. 2008). Intensification is an important mechanism for transforming subsistence smallholder farmers into economically viable and commercially orientated farming units (Seng, 2016). The subsistence oriented smallholders have the greatest need to commercialize to satisfy growing demand and partake in the resultant incomes-mediated benefits (Kiraten *et al*; 2012). Furthermore, a significant leap that African agriculture needs to make to reduce poverty and ensure food security is to graduate from the low productivity subsistence farming to high level commercial productivity (Siziba *et al*; 2011). However, commercialization, along with specialization, intensification and developments of markets and trade, are fundamental building blocks for achieving economic growth (Tun *et al*; 2015). Agricultural Commercialization is viewed as the Process by which farmers increase their productivity by producing more output per unit of land (and labour), produce and thus increase their market participation with the attendant beneficial effect of higher incomes, poverty alteration and living standards (Jayne *et al*; 2011). In other words, commercialization of smallholder agriculture can be defined as a shift from subsistence to more market-oriented and sustainably farming that could result to productivity growth, income growth, embayment growth, and poverty reduction (Carletto *et al*; 2017). Consistent with this, therefore, any pathway that can lift large numbers of the rural households out of poverty will require some form of transformation of smallholder agriculture into a more commercialized production system (Oluwande and Mathenge, 2012), which is key towards economic growth and development for many agriculture dependent farmers in developing counties, as well as successful industrialization (World Bank, 2008 and Mitiku 2014). According to Muriithi and Matz (2014), the roles of commercialization include increased diversity of marketed commodities at a National level and increased specialization at regional and farm levels, linking power between input sides of market, increased demand for modern technologies which promotes the input side of production and facilitating the development and advancement of technological innovations. The use of modern technologies can result in higher productivity or products entering markets. Agricultural commercialization usually takes a long commercialization process from subsistence to semi-commercial and then to a fully commercialized agriculture. In subsistence production, the farmer's motive is self-sufficiency by using mainly non-traded and household generated inputs. The objective and the input sources change in semi-commercial farms into generating surplus agriculture outputs and using both traded and non-traded farm inputs.

Olanrewaju (2016) stressed that in a fully commercialized agriculture, inputs are predominantly obtained from markets and profit maximization becomes the farm household's driving objective. Although the net welfare gain from agricultural commercialization at the household level is universally accepted, there is no common standard for measuring the degree of household commercialization. The author stated that some literatures have considered a dichotomy between food and cash crops and examined the household resource allocation decisions to these crops as a proxy to the level of a smallholder commercialization. Others use different types of ratios such as marketed outputs or inputs to the total value of agricultural production or total household income. In the dichotomy between food and cash crops, food crops are assumed to be used only for home consumption where as households are considered as not sellers in the cash crop output markets and not buyers in the input markets for cash crops. Salami *et al.* (2010) added that improved market participation is a strategic precondition for transformation of the agricultural sector from subsistence to commercial production. Many countries and International Development Agencies give due concern to intensification and commercialization of smallholder farming as a means of achieving poverty reduction and thus have reflected it in their official policies (Poulton and Leavy, 2007). In line with these policy thrust, the Federal Government of Nigeria (FGN) in recent times has consistently promoted the increasing commercialization of agricultural production through its different schemes, policies and programmes. Consistent with this, and in order to enhance productivity and commercialization in agriculture, the Niger State Government (NGSG) is deliberately taking advantage of the diverse agricultural resource endowments to develop an agricultural sector that will guarantee food security, reduce rural poverty and accelerate economic development of the State (Niger State Vision 3:2020, 2008). The Niger State vision 3:2020 plan was conceived to revitalize and regenerate the agriculture sector in partnership with the private sector to emerge as the major pillar of economic growth. Similarly, the new Agriculture Regeneration Programme will be undertaken, aimed at greater orientation towards increasing agricultural production and commercialization of smallholder agriculture (Niger State Vision 3:2020, 2008). The Niger State Rice Investment Consortium Project was established to promote smallholder commercialization of agricultural production and changing the mindset of the farmers towards viewing agriculture as a business (Ministry of Agriculture and Rural Development, 2014). Nonetheless, as part of the efforts to enhance productivity and commercialization in agriculture, as well as bridge the widening nutritional gap and persistent food insecurity in Nigeria, the government developed policies to commercialize agriculture with the main objectives of improving the efficiency of agricultural production systems as well as improving access to markets for targeted value chains among small and medium scale commercial farms (Nwachukwu and Ezech, 2007). Consistent with these policies thrusts and in the urge for transforming the subsistence-oriented production system based on the concept of Commercial Agriculture Development Programme (CADP) that encourages smallholder farmers to become market oriented (National Bureau of Statistics [NBS], 2010). In addition, the Growth Enhancement Programme (GEP) of the Agricultural Transformation Agenda (ATA) and the Anchor Borrowers Programme seek to increase competitiveness and enhance integration of farmers into domestic and international markets and create economic linkage between smallholder farmers and reputable large-scale processors with a view to increasing agricultural output and significantly improving capacity utilization of processors (Federal Ministry of Agriculture and Rural Development [FMARD], 2011; and Central Bank of Nigeria Anchor Borrowers' Programme [ABP], 2016). The aim is to enhance Nigeria's comparative advantage and translate it into competitive advantage in producing the needed volumes and quality of commodities on a timely basis, reduce the level of poverty among smallholder farmers and assist rural smallholder farmers to graduate from subsistence to commercial production levels.

In line with these policy thrusts, the Niger State Rice Investment Consortium (NSRIC) project is a deliberate policy by Niger State Government to transform the predominantly smallholder subsistence agricultural production system to a modernized and commercial oriented system. It was on this premise that the study assessed the effects of Niger State Rice Investment Consortium (NSRIC) project on commercialization levels of smallholder rice farmers. The specific objectives were to: estimate the commercialization levels of NSRIC project participating and non-participating smallholder rice farmers; assess the determinants of agricultural commercialization of smallholder rice farmers; and estimate the costs and returns associated with smallholder rice farmers under the project.

## **2. MATERIALS AND METHODS**

### **2.1. The Study Area**

The study was conducted in Niger State, Nigeria; specifically in three sample Local Government Area (LGAs) of Gbako, Lavun and Wushishi. The State lies on latitude  $8^{\circ}20'N$  and Longitude  $3^{\circ}30'E$  and  $7^{\circ}40'E$ . The State is bordered to the North by Zamfara State, West by Kebbi State, South By Kogi State, South-West by Kwara State, North-East by Kaduna State and South-East by Federal Capital Territory. The State also has an International boundary with the Republic of Benin, along Agwara and Borgu LGAs to the North-West (Niger State Bureau of Statistics, NSBS; 2014). Niger State is one of the largest States in terms of land mass in Nigeria, covering about  $86,000\text{km}^2$  (8.6million hectares), representing 9.3% of the total land area of the country, and out of which 85% is arable (Niger State Vision 3:2020, 2008). Similarly, an estimated 80% of the  $86,000\text{km}^2$  of the land area is suitable for agriculture (arable) and the range of crop species that can be produced is wide, given the soil texture and climatic condition. Furthermore, the State has an estimated 682,331 hectares of irrigable land of which only 25% has been developed. Only 105,556 hectares is put to use annually with about 26, 500 hectares being cultivated during the dry season (Niger State Vision 3:2020, 2008). The 2006 National Population and Housing Census in Nigeria put Niger State's population as 3,954,772 comprising of 2,004, 350males and 1,950,422 females. The estimated projection of population based on 3% growth rate per annum is 5,168,063 made up of 2,619,268 males and 2,548,795 females in 2015. Niger State experiences distinct dry and wet seasons with annual rainfall varying from 1,100mm in the Northern parts to 1,600mm in the Southern parts. The average annual number of raining days ranges between 187 and 220 days.

### **2.2. Sampling Procedure and Sample Size**

A multi-stage sampling procedure was adopted to draw up sample for the study. The first stage involved purposive selection of six (6) LGAs noted for their level of involvement and participation in the NSRIC project (project area). The LGAs are Agaie, Edati, Gbako, Katcha, Lavun and Wushishi. The second stage involved the random selection of three (3) LGAs also based on the participation in NSRIC project. The LGA include Gbako, Lavun and Wushishi. The third stage involved the selection of two villages each from the three (3) LGA selected, making a total of twelve (12) villages. The fourth stage involved the stratification of the respondents into NSRIC project participating and NSRIC project non-participating smallholder rice farmers based on the list of participants that was accessed from NSRIC Project Implementation Office (PIO) and village listing survey of 2014 from Ministry of Agriculture and Rural Development. This sampling procedure was applied to project non-participants who live in nearby villages outside the NSRIC project villages but with socio-economic and biophysical characteristics comparable to the NSRIC project villages and in the same LGAs. This stratification provided a good control group for comparing participants and non-participants. Finally, 10% of the smallholder rice farmers were randomly selected from each of the villages-following Usman (2013); Akinola *et al.*(2013) and Mutabazi *et al.*(2013).

A total of two hundred and fifty (250) questionnaires were distributed comprising 130 for NSRIC project participants and 120 non-participants. In all, a total of 234 were retrieved (117 for NSRIC project participants and 117 for non-participants, respectively (Table 1).

*Table 1: Household Sampling Frame and Size*

Category	LGAs	Villages	Sample Frame	Sample Size @10%
Participants	Gbako	Edozhigi	200	20
		Gbadafu	190	19
	Lavun	Gbara	220	22
		Sheshibikun	202	20
	Wushishi	Wushishi	160	16
		TunganKawo	190	19
Non-Participants	Gbako	Sheshiko	202	20
		WuyaSuman	190	19
	Lavun	Latiko	202	20
		Sossa	220	22
	Wushishi	Rogota	170	17
		Kasakogi	190	19
Total		12	2,336	234

*Source: NSRIC and VLS, 2016*

### 2.3. Method of Data Collection

Both primary and secondary data were employed for this study. Primary data were collected with the aid of well-structured questionnaire and pre-test questionnaire. Information elicited for include, access to credit, crop production estimates, agricultural input usage and costs, output levels, prices as well as commercialization constraints facing the smallholder rice farmers in the study area. Secondary data on the other hand, were obtained from Niger State Ministry of Agriculture and Rural Development, Niger State Bureau of Statistics and Niger State Agricultural Mechanization Development Authority on LGAs and villages as well as on village listing survey. Data collection for the study lasted for three (3) months (August to October, 2015). Data collection was carried out by the researcher assisted by trained enumerators.

### 2.4. Analytical Techniques

Descriptive statistical and economic tools were used in analyzing the data collected. These tools include descriptive statistics, household commercialization index, Tobiccensored regression and farm budget model. Descriptive statistics such as frequency distribution tables, cross tabulations, averages/means, and percentages were employed to summarize the data on socio-economic variables of smallholder rice farmers in the study area. Household commercialization index was used to investigate the level of commercialization among smallholder rice farmers. The Tobitregression analysis model was used to investigate the determinants of agricultural commercialization among smallholder rice farmers. The farm budget model was used to estimate the costs and returns associated with smallholder rice farming. The Ordinary Least Square (OLS) was used to estimate the effect of NSRIC project on income of smallholder rice farmers, and the Henry Garrett's Ranking Technique was used to assess the commercialization constraints faced by smallholder rice farmers in the study area. The Household Commercialization Index (HCI) was employed in assessing the level of commercialization among smallholder farmers in the study area. The HCI (defined as the sum of the value of household crop sales as a proportion of the value of household crop sales expressed in percentage terms); measures the extent to which household crop production is oriented toward the market.



Furthermore, the HCI measures the ratio of the gross value of crop sales by household  $i$  in year  $j$  to the gross value of all crops produced by the same household  $i$  in the same year  $j$  expressed as a percentage. If the index is zero, it would signify a totally subsistence oriented household and if the index is close to 100, it would signify the higher degree of commercialization. HCI is expressed mathematically as:

$$HCI_i = \left[ \frac{\text{Gross value of crop sales hh } i \text{ year } j}{\text{Gross value of all crop production hhi year } j} \right] \times 100 \dots (1)$$

where;

$HCI_i$  = the extent of  $i$ th household commercialization level. That is, it measures the degree to which a household sells its output to market. The index captures the variation in terms of the intensity of crop commercialization across households. For the study, commercialization level is grouped into three categories; low (25% output sold), medium (26% - 50% of output sold) and high with >50% of output sold (World Bank, 2007; and Martey, 2012).

Tobit model was selected in this study because of its decomposability into two different types of elasticity that enable us to determine not only the decision to participate in the market (commercialization), but also to determine the intensity of commercialization. Tobit model assumes that both the decision to commercialize and the level of commercialization are determined by the same variables and those variables that increase the probability of commercialization also increase the amount of sales. The Tobit model was adopted to assess the determinants of the decision to participate in the market (Commercialize) as well as the intensity of commercialization by smallholder rice farmers. Most studies have modeled agricultural commercialization as a two-step analytical approaches involving the undesirable decision to commercialize and the observed degree or extent of commercialization. Tobit model parameters do not directly correspond to changes in the dependent variables brought about by changes in independent variables. The marginal effect on the level/intensity of commercialization due to changes in the explanatory variable is given by:

$$\left( \delta_\epsilon \left[ \frac{y_i}{x_i} \right] \right) / (\delta x_i) / \left( \frac{\beta_{Qxi}}{\partial} \right) \dots (2)$$

The Marginal effects also account for the probability of being commercialized. A Tobit model provides a single coefficient for each independent variable despite two distinct types of dependent variables (censored and uncensored). The tobit model is appropriate when the dependent variable is censored at some upper or lower bounds as an artifact of how the data were collected (Sebatta *et al.*, 2013; and Kabiti *et al.*, 2016). The Tobit model assumes that the observed dependent variable  $y$ , for observations  $i = 1, \dots, n$  satisfy:

$$y_i \text{ Max} = (y_i^*, 0) \dots (3)$$

where; the  $y_i^*$  are latent variables generated by the classical regression model:

$$y_i^* = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 \beta_3 + \dots + \beta_k X_k + \mu_i) \dots (4)$$

$$y_i = \begin{cases} y_i^* & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases} \dots (5)$$

$$y_i^* = \beta_0 + X\beta_1 + \mu_i, X \sim N(0, \delta^2) \dots (6)$$

As proposed by Tobin (1958), the model describes the relationship between non-negative dependent variable  $y_i^*$  and an independent variable (or vector)  $X_i$ . Tobit model assumes that there is a latent or unobserved variable  $y_i^*$  which linearly depends on  $X_i$  via a parameter  $\beta$  which determines the relationship between the independent variable  $X_i$  and the latent variable. Furthermore, there is a normally distributed error term  $\mu_i$  to capture random influence on this relationship. The empirical model to assess the unobservable decision to commercialize and the intensity of agricultural commercialization of participating and non-participating smallholder rice farmers is specified as:

$$y_i^* = \beta_0 + \beta_1 AGEHH + \beta_2 GEND + \beta_3 MAST + \beta_4 EDUHH + \beta_5 HHSI + \beta_6 FEXP + \beta_7 FMSIZ + \beta_8 EXTCNT + \beta_9 MASSOC + \beta_{10} CQTY + \beta_{11} CRDT + \beta_{12} MKTFO + \beta_{13} PRICE + \beta_{14} NSRIC + \beta_{15} DISMKT + \beta_{16} IRR + \beta_{17} MECH + \beta_{18} TRAIN \dots (7)$$

where;

- $y_i^*$  = the dependent variable representing (HCL),  $X_i$  = a vector of independent variables, and  $\beta$  = a vector of unknown coefficients and  $\mu_i$  = the error term assumed to be normal with zero mean and constant variance.
- $y_i^*$  = Household commercialization index;  $\beta_0$  = Constant;  $\beta_1 - \beta_{18}$  = Coefficients estimated;  $X_1$  = Age of the farmer (in years);  $X_2$  = Sex of the Household head (Male = 1, Female = 0);  $X_3$  = Marital Status (married = 1, Otherwise = 0);  $X_4$  = Level of Education (in years);  $X_5$  = Household size (in Numbers);  $X_6$  = Farming Experience (in years);  $X_7$  = Farm size (ha);  $X_8$  = Extension Services (Number of contacts);  $X_9$  = Membership of cooperative (member = 1, non-member = 0);  $X_{10}$  = Quantity of crops produced (in kg)
- $X_{11}$  = Access to credit (Access = 1, Otherwise = 0);  $X_{12}$  = Access to market information (Access = 1, Otherwise = 0);  $X_{13}$  = Unit price of output (₦);  $X_{14}$  = NSRIC Project (participating = 1, Not-participating = 0);  $X_{15}$  = Distance to market (in km);  $X_{16}$  = Access to irrigation (Access = 1, Otherwise = 0);  $X_{17}$  = Access to mechanization (Access = 1, Otherwise = 0);  $X_{18}$  = Training and Capacity building (Number of trainings)

To estimate the cost and returns associated with smallholder rice farming enterprise in the study area, farm budget model using Net Farm Income (NFI) analysis was employed. The farm budgeting technique involving the use of Gross Margin (GM) and NFI to determine the profitability of production and is conventionally operationalized leading to the determination of costs and revenue or return for a given production period. It is expressed as:

$$NFI = GFI - TVC - TFC \quad \dots (8)$$

$$GM = TR - TVC \quad \dots (9)$$

where;

NFI = net farm income; GFI = gross farm income; TVC = total variable cost; and TFC = total fixed cost.

### 3. RESULTS AND DISCUSSION

#### 3.1. Household Commercialization Index

Table 2 present the household commercialization index (HCL) of the sampled farmers. The proportion of rice sold by majority of NSRIC participants (71.79%) producing households ranged from 51-75 whereas proportion of rice sold by 76.92% of non-participant producing households ranged from 26-50. The mean household commercialization indices were 67.25%, 32.57% and 49.41% for participant, non-participant and pooled sample, respectively.

The household commercialization index indicates that 67.25%, 31.57% and 49.41% for participant, non-participant and pooled sample, respectively. The household commercialization index indicates that 67.25%, 31.57% and 49.41% of total production is sold by the participant, non-participant and pooled sample households, respectively. Thus, NSRIC project participating households are considered moderately commercialized, as their sales' percentage is well above the midpoint but less than the threshold level (75%). The result further revealed that household commercialization index ranges from 0% to 86.86% through the study area. This indicate that the most commercialized farmers sell about 86.86% of the total produced rice and the least commercialized household did not sell at all. This result is in consistent with the findings of Ele (2013) and Osmani and Hossain (2015) who reported that the degree of commercialization in Nigeria is moderately high (about 60.40%). However, the finding validates that of Ndanitsa (2005) in his study of *fadama* crop production in Niger State, Nigeria, where he revealed that most output (rice) by farm households goes into family consumption and gift to friends/relatives.

*Table 2: Household Commercialization Levels*

HCL	NSRIC Participant		NSRIC Non-Participant		Pooled	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
0.0-25	0	0.00	15	12.82	15	6.41
26-50	7	5.98	90	76.92	97	41.45
51-75	84	71.79	12	10.26	96	41.03
76-100	26	22.22	0	0.00	26	11.11
Total	117	100.00	117	100.00	234	100.00
Mean	67.25		31.75		49.41	
Minimum	44.05		0.00		0.00	
Maximum	86.85		54.76		86.85	
Standard Deviation	9.56		12.03		20.91	

*Source: Field survey, 2016*

### 3.2. Categorization of household commercialization levels

The result of the categorization of the level of commercialization of respondents is presented in Table 3. The estimates of the levels of rice commercialization were used to characterize farmers according to low, medium and high commercial farmers. Abera (2015) categorized households who sell 25% and below of their output as low commercial farmers, those who sell between 26 and 50% as medium commercial farmers, and above 50% as high commercial farmers. Following these categorization, sampled households in the study area were categorized. Accordingly, result of the analysis in Table 3 indicates that 0 and 29.91% of participants and non-participants are categorized as low commercial farmers, respectively. This implies that most non-participants of NSRIC were low commercial farmers than the participants. Furthermore, 5.98% and 66.67% of participants and non-participants are categorized as medium commercial farmers. With respect to high commercial farmers, 94.02% and 3.42% of participants and non-participants are categorized as high commercial farmers, respectively. This is an indication that more NSRIC project participants are high commercial farmers than non-participants. These categorization means that the smallholder rice farmers in the study area that are fully commercialized are producing mainly for the market for income generation, which those that are commercializing on a medium scale are producing both for consumption and for sale, while those that are not commercialization at all are producing mainly for consumption, in line with the findings for Osmani *et al.* (2014) and Kabit et al. (2016).

Table 3: Categorization of Commercial Levels

HCL	NSRIC Participant		NSRIC Non-Participant		Pooled	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Low	0	0.00	35	29.91	35	14.94
Medium	7	5.98	78	66.67	85	36.32
High	110	94.02	4	3.42	114	48.72
Total	117	100.00	117	100.00		100.00

Source: Field survey, 2016

### 3.3. Determinants of Smallholder Rice Commercialization

The estimated coefficient of the determinants of smallholder rice commercialization as well as the marginal effects is presented in Table 3. The diagnostic statistics of the model such as the F-value and Pseudo R<sup>2</sup> were high and significant at ( $P < 0.000$ ) which indicates that the explanatory variables included in the Tobit model jointly influence the level of rice commercialization as well as indicating the goodness of fit of the model. The results obtainable from the Tobit model are the Maximum Likelihood Estimates (MLE) and the marginal effects. The marginal effects indicate the rice commercialization levels resulting from a unit change in the explanatory variables. The level of rice commercialization of smallholder households is significantly determined by gender, household size, farm size, extension contact, quantity produced, project participation, access to market information, unit price, irrigation, access to tractors and training. The coefficient of sex is positive and significantly influenced smallholder households' rice commercialization levels ( $\beta = 0.04, P < 0.043$ ). the result shows that gender of household head is significantly associated with increase in the level of rice commercialization. This is in line with the finding of Berhanu and Moti (2010) who both found that male headed households were more involved in on-farm production and were likely to sell more grain early when prices are still high, while majority of the female headed households are involved in post-harvesting processing and prefer to store more of their output for household food self-sufficiency. The coefficient of household size is negative and significantly influenced smallholder households' rice commercialization levels ( $\beta = -0.006, P < 0.012$ ). This suggests that a unit increase in the size of household is likely to decrease the probability of smallholder rice commercialization. The result showed that the smallholder rice farmers who had large household size had a higher probability of reducing the proportion of rice sold. This implies that the larger the household size, the less it is oriented toward the market. This gives the necessity to withhold more farm produce for home consumption. This result concurs with the findings of Apind *et al.* (2015); and Lawin and Zongo (2016). The coefficient of farm size is positive and significantly influenced farm households' rice commercialization levels ( $\beta = -0.052, P < 0.004$ ). Farm size indicates the potential to produce surplus for the market and significantly associated with a higher level of agricultural commercialization. Results revealed that an additional hectare of land used for rice production will lead to increase in the probability of smallholder rice commercialization. The finding is in line with the findings of Oluwande *et al.* (2010); and Martey *et al.* (2012) who all revealed that households with larger farm sizes are able to produce marketable surplus and hence participate more in the market. The coefficient of frequency of extension contact is negative and significantly influenced smallholder household's rice commercialization levels ( $\beta = -0.010, P < 0.004$ ). However, as the frequency of extension contact with extension agents increases, the probability of increase in smallholder rice commercialization level decreases. The plausible reason for this finding could be due to low extension agents to farmer's ratio and the fact that the primary function of the extension agents in Nigeria and especially in the study area is mainly restricted to dissemination of information and training of farmers on adoption of production technologies which may not

have anything to do with linking farmers to the markets or encouraging them to participate in output markets, in line with the findings of Abu (2013) and Boniphace *et al.*(2014).

*Table 4: Tobit Estimates of Determinants of Commercialization*

Variables	Marginal Effect	Standard Error	t-value	P> z
Constant	0.0045481	0.1473287	0.03	0.97
Age	-0.0003888	0.0010847	-0.36	0.720
Sex	0.0390797**	0.0192685	2.03	0.043
Marital status	0.0308246	0.019974	1.54	0.123
Educational level	0.0001112	0.0011527	0.10	0.923
Household size	-0.00058566**	0.0023423	-2.50	0.012
Farming experience	-0.001145	0.0011045	-1.04	0.300
Farm size	0.0529994***	0.0183669	2.89	0.004
Extension contact	-0.0104478***	0.0035912	-2.91	0.004
Membership of farmer group	0.0243732	0.0159457	1.53	0.126
Quantity produced	0.0000473***	6.94e-06	6.81	0.000
Access to credit	-0.0028291	0.151938	-0.19	0.852
Market information	0.0490023***	0.158874	3.08	0.002
Unit price	0.003723**	0.0015415	2.42	0.016
NSRIC participation	0.2230494***	0.0330614	6.75	0.000
Distance to market	0.0008836	0.0008599	1.03	0.304
Irrigation	0.00368066	0.156185	1.52	0.029
Access to tractors	0.0420027**	0.182421	2.30	0.021
Training	0.0118282*	0.0072682	1.73	0.084
Number of observations		231		
F(18,213)		57.64		
Prob>F		0.0000		
Pseudo R2		0.4278		

Note: \*, \*\*, \*\*\*significance at the 10%, 5% and 1% probability levels, respectively.

Source: Field survey, 2016

The coefficient of quantity produced is positive and significantly influenced smallholder households' rice commercialization levels ( $\beta = 0.00005$   $P < 0.000$ ). Quantity of rice produced is associated with higher level of rice sales. Results reveals that an increase in household quantity of rice produced necessitates the producer to market the excess after taking away the portion for household consumption and/or gift to friends/relatives, which result in an increase in the household output commercialization level. This implies that an additional bag (100kg) of rice produced leads to the probability of increase in the level of commercialization. This result is consistent with the findings of Abu (2015) and Kabiti *et al.*(2016) who both found out that surplus production serves as an incentive for a household to participate in market. Unit price had a positive and significant influence on smallholder household's rice commercialization levels ( $\beta = 0.0037$   $P < 0.016$ ). This agrees with the *a priori* expectation. An increase in the unit price of rice increase the probability of more quantity offered to the market, an indication of increased commercialization. This finding confirms the assertion from economic theory that output price is an incentive for farm households to supply more produce for sale, and is in consonance with the finding of Oluwande *et al.* (2010); and Martey *et al.* (2012) who all discovered that output price serves as an incentive for sellers to supply more produce to the market and influences level of market participation and commercialization. The coefficient of access to market information is positive and significantly influenced smallholder households' rice commercialization levels ( $\beta = 0.49$   $P < 0.002$ ). This is in agreement with the *a priori* expectation. This result indicates that the proportion of rice marketed increases in response to access to market information, an indication of increase in the probability of

smallholder rice commercialization. This suggests that access to output market information are expected to enhance skills and knowledge of farmers, guarantees producers flow of insights on market requirements and opportunity sets that enable farmers to plan effectively in line with the study of Abu (2015). The coefficient of NSRIC project participation was positive and significantly influenced smallholder households' rice commercialization levels ( $\beta = 0.223$   $P < 0.000$ ). Result revealed that NSRIC project participation will lead to an increase in the probability of smallholder commercialization. This implies that NSRIC project participants benefited from various services they were exposed to, which has tremendously and significantly enhanced their output, level of commercialization and income, which is usually the ultimate aim of all the intervention programmes, and is in line with the findings of Lawin and Zango (2016). The coefficient of irrigation was positive and significantly related to smallholder households rice commercialization levels ( $\beta = 0.024$   $P < 0.029$ ). An increase in availability of irrigation, will lead to an increase in the probability of practicing two-cycle production leading to additional marketable surplus and hence an increase in the level of commercialization. This implies that farmers having access to irrigation have opportunities to cultivate rice throughout the year (rain-fed and irrigated farming) and the produce would be over and above home consumption. This finding is supported by Kabit et al. (2016). The coefficient of access to tractors was positive and significantly influenced smallholder households' rice commercialization levels ( $\beta = 0.042$   $P < 0.021$ ). An increase in access to tractors will lead to increase in the probability of smallholder rice commercialization levels. The Agricultural Equipment Hiring Centre (AEHC) is a demand-driven model through which farmers get easy access to tractors, farm implements and other machineries, and the primary catalyst that aided the expansion of farm lands, timeliness of operations, reduction in drudgery and the ability to control weeds effectively. This implies that access to tractors leads to expansion and increase in the land areas under cultivation, with the attendant increase in the quantity of rice produced, marketable surplus and hence participate more in the market. This finding corroborates those of Boniphase et al. (2016). The coefficient of training was positive and significantly influenced smallholder households' rice commercialization levels ( $\beta = 0.011$   $P < 0.084$ ). This is in agreement with the *a priori* expectation. Participation in Farmer Business Schools (FBS) and Good Agricultural Practices (GAP) training packages mainly focused on specific crops, improve farmers' business market orientation and farm management skills to guide, educate and promote commercialization through changing the mindset of the smallholder rice farmers from more subsistence production to viewing farming as business. These findings are in tandem with the studies of Ojo (2011) that found that training and special skills acquisition has tremendously and significantly enhanced smallholder farmers' output, market participation and incomes, which are usually the ultimate objectives of intervention programmes.

### 3.4. Costs and Returns of the Rice Enterprise Respondents in Niger State

Result of the cost and returns analysis for rice enterprise is given in Table 5. Generally, it is evident from Table 5 that the imputed labour cost dominated production cost, accounting for 46.30% and 38.85% of the total cost of NSRIC participants and non-participants, respectively. The fixed cost representing depreciation on farm fixed assets was low, accounting averagely for 6.42% and 9.03% of the production cost for participants and non-participants, respectively. Similarly, the costs and returns analysis revealed that smallholder rice farmers in the study area earned positive net farm incomes of ₦123,684.08 and ₦46,872.14 for NSRIC project participants and non-participants, respectively. However, it is evident that, net income earned by the NSRIC participants was higher than that of non-participants. The implication of this positive gross return is that the NSRIC project may have contributed to increased incomes of the smallholder rice farmers in the study area.

*Table 5: Estimated Annual Costs and Returns Analysis of the Respondents*

Items	NSRIC Cost (N/ha)	Participant % of Total Cost	NSRIC Cost (N/ ha)	Participant % of Total Cost
<b>Variable Costs</b>				
Cost of seeds	13,568.38	13.05	20,310.30	24.43
Fertilizer	30,213.68	29.07	18,967.90	22.81
Agrochemicals	4,241.03	4.08	3,601.30	4.33
Labour	48,121.37	46.30	32,303.60	38.85
Transportation	1,130.77	1.09	449.10	0.54
Total Variable Cost	97,275.21	93.58	75,632.20	90.97
<b>Fixed Costs</b>				
Rent on Land	512.82	0.49	542.40	0.65
Depreciation on Farm tools	2,343.70	2.25	2,820.90	3.39
Payment of Interest	3,812.38	3.67	4,147.40	4.99
Total Fixed Costs	6668.91	6.42	7,510.60	9.03
Total Costs	103,944.12	100.00	83,142.80	100.00
<b>Returns</b>				
Gross income	227,628.21		130,014.96	
Gross margin	130,352.99		54,382.74	
Net farm income	123,684.08		46,872.14	
Return on Naira Invested	1.18		0.56	

*Source: Field survey, 2016*

#### 4. CONCLUSION AND RECOMMENDATIONS

The study concluded that participation in the Niger State Rice Investment Consortium Project had significant effects on commercialization levels and income of participants in Niger State, Nigeria. To increase further participation in the project, the following recommendations were made:

- 1) Government at all levels must develop appropriate policies, programmes and strategies to promote the commercialization of smallholder agriculture through vigorous campaigns, sensitization and training of farmers with marketing and negotiation skills.
- 2) Policy initiatives targeted at productivity enhancing mechanisms such as use of fertilizer, other agro-inputs as well as use of machineries be made available by Ministry of Agriculture and Rural Development to increase production of rice and commercialize their enterprise.
- 3) Policy thrust aimed at strengthening extension services delivery system are put in place, reducing the wide extension agent to farmer ratio, introducing market-linkage related packages and periodic training and upgrading of the skills of extension agents on most effective way of technology package and delivery.
- 4) Provision of information to smallholder farmers and supporting farmers to invest in mobile phones and radio sets in order to have access to real-time market information.
- 5) Organization of farmers into effective groups and associations to facilitate joint mobilization of resources to help one another and also strengthen access to information that will assist in improving the execution of their activities as well as better influence market prices for their products through their collective bargaining power.
- 6) Provision of small scale farmer managed irrigation schemes for supplementary irrigation to facilitate all year round farming and enhance productivity and commercialization.
- 7) More agricultural lands be made available to farm households to encourage mechanization, commercialization and economies of scale, and efforts should be made at upgrading roads and other rural infrastructures, e.g., establishment of more points of sale in farming communities as well as deepen collaborate with farming communities as well as deepen collaborate with the rural access and mobility project (RAMPII) to upgrade farm-to-market roads.

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## PERCEPTION OF CRITIQUE

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### ABSTRACT

*Criticism, as a result of critical thinking, conveys the well-founded opinion of the individual, which creates positive or negative emotions in the object of the criticized person. The extent to which these emotions affect the individual and his continued implementation of the criticized activity is a fundamental problem of this paper. The paper presents recent reflections on the impact of critique and answers questions about how an individual perceives a critique, is this positively or negatively colored experience. The research method used is a specially designed questionnaire and the sample is 519 respondents. Respondents accurately perceive critiques and the fact that they can be both, positive and negative, but in the case of emotions they experience from their own situations in which they have been criticized, they recognize negative emotions to a greater extent. No statistical significant differences were observed in the experience of negative emotions between men and women except for extreme negative emotions where women show a higher experience of extreme negative emotions when confronted with criticism. The results did not show a statistically significant difference with regard to the age of the respondents.*

**Keywords:** *Criticism, critical thinking, evaluation, employee monitoring, employee motivation, employee demotivation*

### 1. INTRODUCTION

According to Dewey (2011), thought as a concept is widely and freely used for everything that an individual becomes aware of, the process of thinking according to him is the process of becoming aware of something observed or perceived. Dewey believes that the meaning of a term should be limited to those beliefs that are based on some kind of evidence and that such thinking processes should be distinguished from those that have no basis in some evidence (argument). He believes that in cases where an individual does not seek a basis for a belief and does not examine the adequacy of the support of a belief, he is actually conducting a process of reflective thinking (ibid). Reflective thinking should be distinguished from critical thinking as the only one on the basis of whose processes one can conclude about instructive values. Creating a reasonable conclusion according to Dewey marks the completion of the study of facts, the verification and revision of evidence, the elaboration of the implications of different hypotheses, and the comparison of theoretical results with each other with known facts. According to some authors, the concept of critical thinking is insufficiently well defined, so Buchberger (2012) believes that it is a process of searching for and properly examining the basis or evidence for a particular belief. In any case, critical thinking is about determining the value of something by looking at all the characteristics, influences and interrelationships observed in a broader context. Based on this process of determination, criticism and a critique is created as a result of critical thinking. This suggests that criticism as a concept is not colored negatively or positively. It can be neutral, it can emphasize the negative aspects of the observed or, as a result of critical thinking, the positive elements stand out. Weeks et.al. (2008) state that fear of negative evaluation is a key feature of social anxiety disorder although they believe that there is also fear of positive evaluation and their research has shown that a positive evaluation is related positively to discomfort (associated with receiving positive feedback) and negatively to perception of the accuracy of the feedback.

This was confirmed by a recent study by Lipton et.al. (2016) who proved the existence of individual differences in the experience of fear of positive as well as negative evaluation. People are sensitive to criticism, and sometimes experience it on the basis of non-verbal signals (facial expressions, body movements, paralingual elements in the verbal expression of co-speakers) or even the lack of any signals or silence of the environment. Winton et al. (1995) proved that individuals with high social anxiety have a prejudice against identifying other people's emotional expressions as negative. In other words, such individuals will perceive criticism negatively when it is not clearly and unambiguously articulated, especially when they do not have a developed ability to distinguish different emotional states in others. In the field of human resource management, the employee performance management process is ubiquitous in modern workplaces, and Tweedie et.al. (2019) criticize the implementation of the process itself, believing that the only outcome of the process is found at observed undesirable outcomes that mostly end up at disciplinary levels. The performance management process should primarily serve as an element of the motivational system. Tweedie et.al. (ibid) start from the theories of recognition that are developed by Honneth and Dejours. They believe that recognizing the contribution of workers to production is a key factor in developing workers' ability through maintaining their autonomous and healthy self-perception (Honneth, 2010, Dejours, 2014). In this way, the performance management process can have a positive impact on employee well-being. Tweedie et.al. (2019) believe that in this sense there is significant room for process improvement, ie that recognition theories offer a framework for articulation and empirical research on how management of outcomes affects the basic mental health of workers and their functioning. In this paper the importance of critical thinking as a process on which the ultimate judgment depends - the criticism made is recognised. Given the importance of criticism due to the breadth and depth of the implications it achieves in communication, it should certainly be based solely on the process of critical thinking, and not on the process of reflexive thinking. Starting from communication as a fundamental process in the process of leading and motivating employees, the question arises as to how criticism affects the employee or how employees perceive it (positively or negatively).

## 2. RESEARCH METHODOLOGY

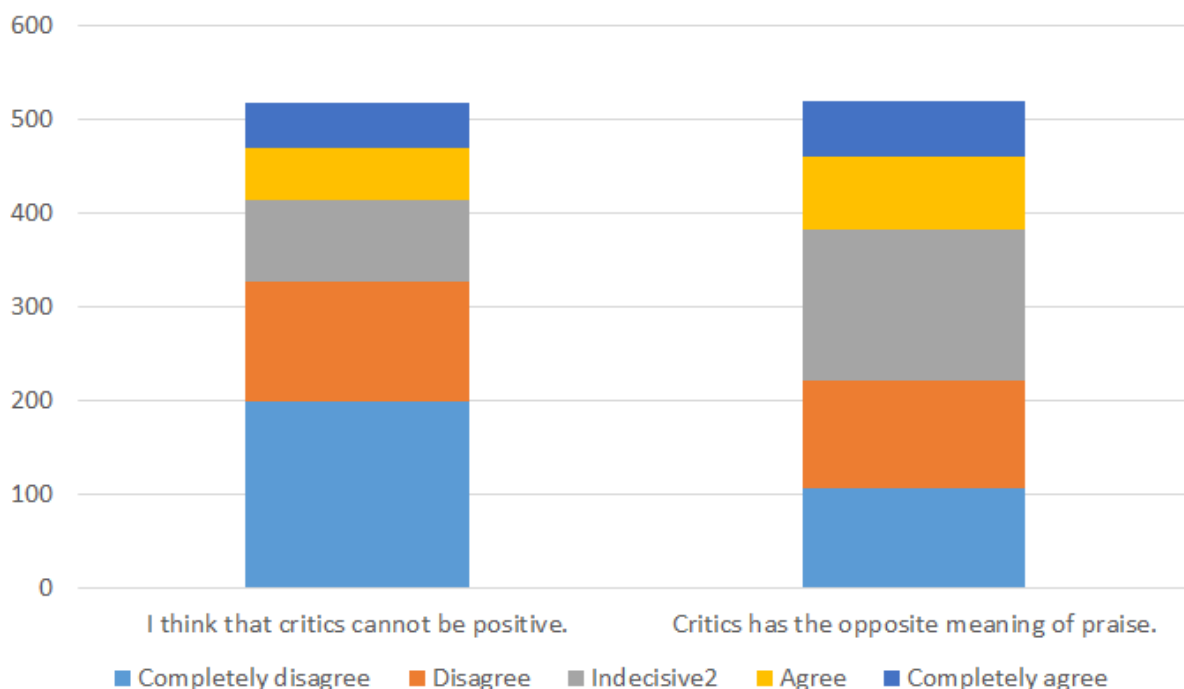
The research starts from the question of how people perceive criticism and whether it is common for criticism to be perceived a priori as negative, and therefore the following hypotheses have been set: H1 'Respondents believe that criticism is the opposite of praise.', H2 'Criticism mainly creates negative emotions in respondents', H3 There are differences in the emotional experience of criticism depending on the gender of the respondents', H3.1 'Female respondents experience more significant negative emotions when facing criticism than male respondents' and H4 'There are differences in the emotional experience of criticism depending on the age of the respondents', H4.1 'Younger respondents experience more significant negative emotions when facing criticism than older respondents'. A questionnaire was constructed and the survey was conducted in January 2022 on a random sample of 519 adult employees in Croatia. The total sample consists of 74.2% of female respondents and 25.8% of male respondents. The largest percentage of respondents, 64.2% of them are in the age group of 20 to 40 years old. Regarding the level of education, the highest percentage of 35.8% has a high school level, 30.6% have completed a three-year undergraduate study, and 24.1% of respondents have completed a five-year graduate study. A smaller percentage of respondents are self-employed (entrepreneurs), and the rest is evenly divided between employees in the private sector and employees in the relevant public administration. The whole area of Croatia is represented, ie all counties, but the largest percentage of respondents comes from the counties: the City of Zagreb (25.8%), Koprivnica-Križevci County (20.2%) and Varaždin County (19.5%).

Respondents were also selected according to the field in which they work, so the largest percentage of 47% is represented from the social field and 22.7% from the technical field. Smaller percentages include respondents from the humanities, biomedical and arts fields. Pearson Chi-Square test was used to determine the correlation of responses with regard to age and gender. The test was conducted for each statement.

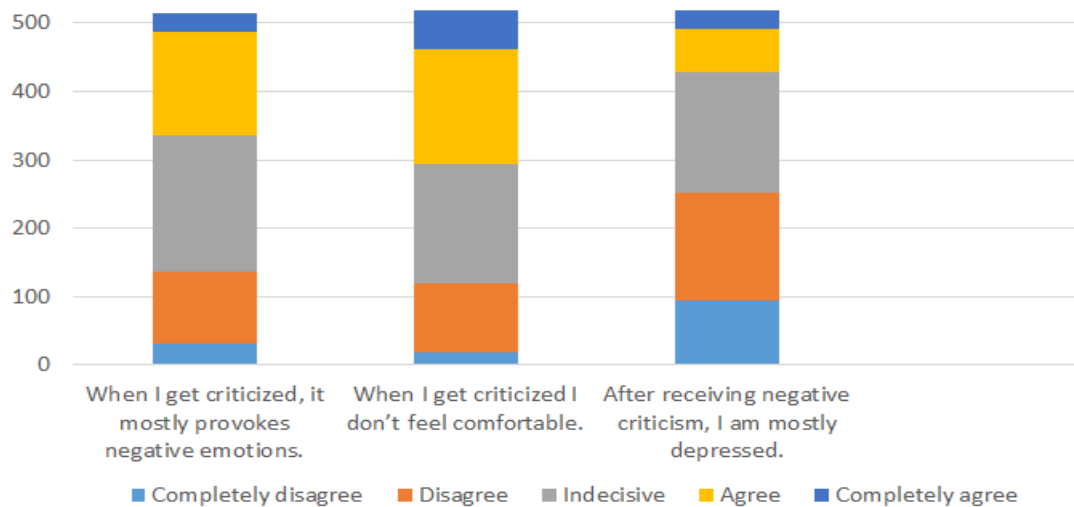
### 3. RESULTS

Initially, the research aimed to determine how respondents perceive the term criticism. Although the total number of respondents in as many as 63.3% disagree with the statement that criticism cannot be positive, 16.8% of respondents are undecided, and as many as 19.9% believe that criticism is not a positive term (graph 1). In the case of assessing the term in relation to its opposite meaning, a significant percentage of 26.2% of respondents believe that criticism and praise are opposite concepts, and 44.6% of respondents disagree with the above. In this case, a significant percentage of 31.2% of respondents cannot decide on their own position whether they consider criticism to be the opposite of praise or not (graph 1). When assessing their own emotional reaction when facing criticism, respondents find it more difficult to decide whether or not criticism creates negative emotion, so 38.8% are undecided while 26.4% do not feel negative emotion because of criticism, and 34.7% mostly experience negative criticism (graph 2). The largest percentage (43%) agrees with the statement that they do not feel comfortable in the situation of facing criticism, while only 23% of respondents disagree with the same. A large number of 34% of respondents are still unable to assess whether criticism mainly creates a feeling of comfort or discomfort (graph 2).

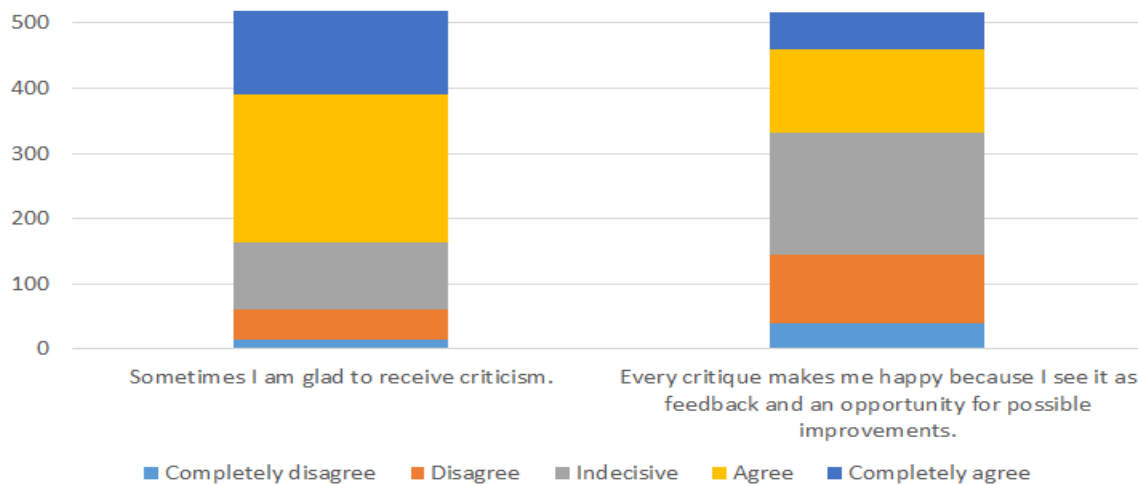
*Graph 1: Understanding criticism*



Extremely negative feelings associated with depressive states are not felt by 48.8% of respondents in the case of facing criticism while 17.4% raise negative feelings when criticised even more strongly. A total of 33.8% of respondents could not decide whether they felt depressed or not as a result of the criticism received (graph 2).

*Graph 2: Negative emotions associated with receiving criticism*

Respondents, there are 68.6% of them who agree that they are sometimes happy to receive criticism, while 11.6% say they are not happy and 19.8% are undecided (graph 3). It is followed by 36.9% of respondents who agree with the statement that they are happy with every criticism because they see it as feedback and an opportunity for possible improvements, and 27.9% of respondents are not happy with the criticism or do not see it as an opportunity for improvement. 36.2% of respondents could not decide whether they agree with this statement or not (graph 3).

*Graph 3: Positive emotions associated with receiving criticism*

Pearson Chi-Square test was used to determine the correlation of responses with regard to age and gender and was conducted for each previously mentioned statements but in the paper are shown results only for the general ones or the ones that showed statistically significant difference. For the statements 'When I get criticized, it mostly provokes negative emotions., 'When I get criticized I don't feel comfortable.' And 'Sometimes I am glad to receive criticism.' no statistically significant differences in responses between female and male respondents are found. Table 1 shows that there are no differences between male and female respondents with regard to the development of negative emotions when faced with criticism. The result of the Person Chi-Square test shows a coefficient greater than 0.05.

Table 1: Distribution of responses by gender (unpleasant emotions)

GENDER * CRITICISM_UNPLEASANT_EMOTIONS Crosstabulation			CRITICISM_UNPLEASANT_EMOTIONS					Total
			COMPLETELY DISAGREE	DISAGREE	NIETHER AGREE OR DISAGREE	AGREE	COMPLETELY AGREE	
GENDER	MALE	Count	12	26	52	36	6	132
		% within GENDER	9.1%	19.7%	39.4%	27.3%	4.5%	100.0%
	FEMALE	Count	19	79	148	115	22	383
		% within GENDER	5.0%	20.6%	38.6%	30.0%	5.7%	100.0%
Total	Count		31	105	200	151	28	515
	% within GENDER		6.0%	20.4%	38.8%	29.3%	5.4%	100.0%

## Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.351 <sup>a</sup>	4	.501
Likelihood Ratio	3.129	4	.537
Linear-by-Linear Association	1.608	1	.205
N of Valid Cases	515		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.18.

For the statement 'After receiving negative criticism, I am mostly depressed.' Statistically significant difference between females and males is found (table 2). Results of Pearson Chi-Square test in table 4 show that the difference between females and males is significant as the coefficient is less than 0.05.

Table 2: Distribution of responses by gender (extremely negative emotions)

GENDER * CRITICISM_DEPRESSION Crosstabulation			CRITICISM_DEPRESSION					Total
			COMPLETELY DISAGREE	DISAGREE	NIETHER AGREE OR DISAGREE	AGREE	COMPLETELY AGREE	
GENDER	MALE	Count	33	51	34	10	6	134
		% within GENDER	24.6%	38.1%	25.4%	7.5%	4.5%	100.0%
	FEMALE	Count	61	108	141	54	20	384
		% within GENDER	15.9%	28.1%	36.7%	14.1%	5.2%	100.0%
Total	Count		94	159	175	64	26	518
	% within GENDER		18.1%	30.7%	33.8%	12.4%	5.0%	100.0%

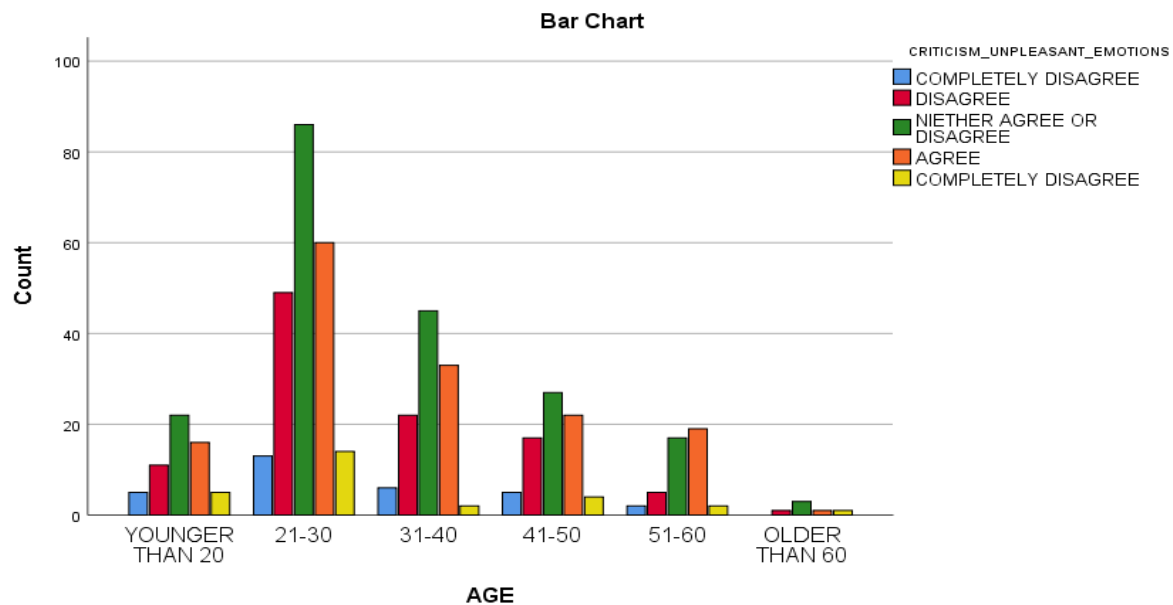
## Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.770 <sup>a</sup>	4	.005
Likelihood Ratio	14.994	4	.005
Linear-by-Linear Association	10.774	1	.001
N of Valid Cases	518		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.73.

Conducted analyses with the aim to determine correlation between development of negative emotions and age of respondents show that there are no statistically significant differences. Graph 4 shows relatively equal distribution of responses and table 3 presents the result of Pearson Chi-square test which proves no significance.

*Graph 4: Distribution of responses by age (unpleasant emotions)*



*Table 3: Pearson Chi-square test (negative emotions – age)*  
**Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.159 <sup>a</sup>	20	.870
Likelihood Ratio	13.815	20	.840
Linear-by-Linear Association	1.003	1	.317
N of Valid Cases	515		

a. 11 cells (36.7%) have expected count less than 5. The minimum expected count is .33.

#### 4. DISCUSSION

The results of the research suggest a significant opinion of the respondents that criticism can be positive as well as negative and they do not consider criticism to be the opposite of praise, which indicates a correct understanding of the term when it is necessary to define it. This suggests that the first hypothesis has not been confirmed. Regardless of that fact, it can be seen from Graph 2 that the critique develops more significant negative emotions. Respondents present conflicting opinions because when asked if they experience negative emotions, most express disagreement, while when asked another question, most respondents agree that they do not feel comfortable receiving criticism. The third statement related to the experience of negative emotions when receiving criticism shows that although a higher percentage of respondents do not feel depressed about it, there is still a percentage that shows agreement. It is observed in all three statements related to the occurrence of negative emotions that a statistically significant percentage of respondents cannot decide and cannot answer with certainty whether they experience negative emotions when faced with criticism.



A large number of respondents talk about positive feelings associated with receiving criticism and consider criticism as an opportunity to improve their performance but there is still a percentage of those who disagree with the statements about positive emotions. The hypothesis that 'Criticism mainly creates negative emotions in respondents' can be considered confirmed. From the first hypothesis it is evident that respondents accurately perceive criticism and they are aware it is a term that can be both, positive and negative. In the extension when they have to express their emotion in the situations in which they have been criticized, they recognize negative emotions to a greater extent. It could have different explanations. Either respondent positive criticism still do not experience as criticism, which means that when it comes to feelings, the perception of the concept of criticism is not so accurate, or our everyday life is such that we mostly experience negative criticism. It means that when it comes to the positive ones (which are actually praises) they are significantly rarer. The results show that there are no statistically significant difference between females and males when it comes to developing negative emotions when facing criticism. Each statement from the questionnaire was analysed and only in one statement that determines experiencing the extremely negative emotions (which respondents recognise and connect with the state of depression) the significant difference was found. Therefore generally it could be concluded that the hypothesis H3 'There are differences in the emotional experience of criticism depending on the gender of the respondents' and H3.1 'Female respondents experience more significant negative emotions when facing criticism than male respondents' is partially confirmed. It could be generally rejected but the significance in extreme negative emotions needs to be taken into account and should be the object of the future investigations. Results show no statistically significant differences according to the age of respondents and the hypothesis H4 'There are differences in the emotional experience of criticism depending on the age of the respondents' and H4.1 'Younger respondents experience more significant negative emotions when facing criticism than older respondents' are both rejected.

## 5. CONCLUSION

Research results draw attention to the notion of criticism in general. It is clear that criticism affects negative emotions and that either positive criticisms are lacking or they are insufficiently correctly perceived through feelings when we are exposed to critical observation (evaluation) by others. As the research shows significance in developing extremely negative emotions between females and males, it would be advisable to study the problem in depth in this regard and determine the reasons. The research shows the results on a large number of respondents but the results rely on the individual assessments of the respondents about their own feelings. The question is whether respondents have the same perception of the meaning of certain feelings and situations. Given the importance of motivation in the development of the individual and his/her productivity in various spheres of life and work, it would be necessary to further explore and study the negative emotions caused by criticism and determine their possible effects on the individual as the fundamental element of motivational process.

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## SHARED KNOWLEDGE AND CHANGES IN THE HIGHER EDUCATION SYSTEM IN BULGARIA

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### ABSTRACT

*This work attempts to discuss knowledge sharing as part of the Open Science movement. It attempts to briefly analyse its historical development and the options for modern implementation of the open science idea. It discusses the process of knowledge sharing as an element of recognition of scientific works and part of social development. It seeks a solution to the established national and other restrictions for sharing of knowledge, as well as its importance in the situation of limited sharing. The article also discusses the process of changes in the higher education system in Bulgaria related to the consolidation of Bulgarian universities.*

**Keywords:** *Knowledge, Open science, Regulation of knowledge, Bulgaria*

### 1. INTRODUCTION

The definition of Open Science states that it is a summarizing concept of the movement that aims to make research and research results accessible to all interested people, amateurs and professionals. It includes the publication of open research works, campaigns for open access, the encouragement of scientists to practice open-notebook science, and the facilitation of scientific work and the publication of scientific knowledge in general. The movement dates back to the 17<sup>th</sup> century with the advent of the first scientific journals, when the public need for access to scientific knowledge led groups of scientists to start sharing resources and working collectively (David, 2004a). Today, there is a debate about the extent to which scientific information should be shared (Nielsen, 2011). The conflict is between the desire of scientists to have access to shared resources and the desire of individuals to earn when others use their resources (David, 2004b). An article in the journal “Az Buki”, issue 1/2021, under the title “Open science - the mission is possible” makes an attempt to justify this possibility in Bulgaria (2021). The introduction of open access to scientific information and scientific data in our country is related to the priorities set in national strategic documents for the development of science, research, innovation and dissemination of scientific achievements. The Operational Plan for implementation of the first stage of the National Strategy for Research Development in the Republic of Bulgaria 2017 - 2030 and the national concept for application of the principle of open access to scientific information analyse the trends in the development of open science and set the necessary steps, actions and preconditions for approving the open access initiative. The creation of the Bulgarian portal for open access to scientific information is an important step in the process of development of open science in our country. The portal is maintained by the Minister of Education through the National Center for Information and Documentation (NACID) in implementation of a European recommendation dated April 25, 2018 on access to scientific information and its storage. The Bulgarian Open Science Portal is part of the implementation of the large-scale task to unite and freely access all results of research in Bulgaria, funded by public funds.

In addition, all scientists who wish to provide open access to their publications are encouraged to publish in the portal and its repository, even if they are not publicly funded. This will ensure the widest possible access to scientific publications and this will contribute to the development of science and its dissemination among society. Joint efforts and coordinated actions of all interested people will create the conditions for the success and sustainability of open science in Bulgaria. According to the Universal Declaration of Human Rights adopted by the United Nations, each person has the right to freely participate in the cultural life of society, to enjoy the arts, participate in scientific progress and enjoy its achievements. Everyone has the right to protect their moral and material interests that are the result of any work of science, literature or art of which they are an author. The genesis of open science movement is based on the inalienable human rights defined in Art. 27 of the UN's Universal Declaration of Human Rights. The phenomenon is multi-layered and has gained global importance nowadays. A number of organizations at global, regional, national and institutional level are involved in open science. The main ones are few. At the 40<sup>th</sup> session of the UNESCO General Conference, the Member States instructed the organization to develop an international tool for setting open science standards in the form of a recommendation. This process is expected to lead to the adoption of the document in 2021. The Organization for Economic Cooperation and Development (OECD) published a report entitled: "Making open science a reality". It reviews policies in this field. Evidence of the impacts of the promotion of open science and open data is analysed. Legal barriers and solutions for greater access to research data are also explored. It describes the key participants and their roles and evaluates the progress in the OECD and selected not-member countries based on a study of the latest policy trends. The European Union has made the greatest progress in promoting open science as movement, politics and culture. A number of European Commission's initiatives and documents are tracing the way for turning the open science into reality. Amongst the leading documents is the Amsterdam call for action towards open science from 2016. It describes clearly and in detail the steps to be taken, as well as the EC recommendation dated 25 April 2018 on access to scientific information and its storage. For the purposes of the movement, a platform for open science policy has been set up, where latest news, events, publications on the subject are uploaded. Open science is often defined as a summarizing term that includes various actions aimed at removing the barriers for sharing any kind of output, resources, methods and instruments at each stage of the scientific research process. Open access to publications, open research data, open-source software, open cooperation, open review, open research notebook, open educational resources, open monographs, citizen science and research group funding are the main features of open science. This is a continually developing initiative that covers various movements aimed at sharing all types of science resources. In the publication "Open innovation, open science, open to the world - a vision for Europe", the European Commission defines open science as a "a new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools. The idea captures a systemic change to the way science and research have been carried out for the last fifty years: shifting from the standard practices of publishing research results in scientific publications towards sharing and using all available knowledge at an earlier stage in the research process". The EU-funded project FOSTER is aimed at fostering the practical implementation of open science in "Horizon 2020". Its primary aim is to contribute to a real and lasting shift in the behaviour of researchers and to ensure that Open Science becomes the norm, by providing resources for practical guidelines and trainings in the same-name portal to help researchers. The Open Science manual states "Open Science is the practice of science in such a way that others can collaborate and contribute, where research data, laboratory notes and other research processes are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods.

In other words, Open science is transparent and accessible knowledge that is shared and developed through collaborative networks”. Open access is one of the main aspects of Open Science. Among the first major steps in its support is the Budapest open access initiative since February 2002. The definition states “free internet access that allows all users to read, download, copy, distribute, print, search or connect the full texts of these articles examining the indexing content, transfer them as software data or use them for any other legitimate purpose without financial, legal or technical barriers other than those who are an integral part of receiving access to the Internet. The only limit to reproduction and dissemination and the only copyright aspect in this area should be the authors` right to control the integrity of their work and the right to be duly recognized and cited”. Budapest's initiative was followed by Bethesda statement on open access publishing from 20 June 2003, drafted at a meeting held at the headquarters of the Howard Hughes Medical Institute in Chevy Chase, Maryland. The principles are designed to “stimulate discussion within the biomedical research community on how to proceed, as rapidly as possible, to the widely held goal of providing open access to the primary scientific literature”. A little later, in October 2003, the Berlin Declaration on Open Access to Knowledge in the field of Natural sciences and Humanities was issued. The aim is to stimulate the easily accessible distribution of knowledge to educate the society through free online access in a sustainable and interactive network with interoperable software. Open access is defined as a practice for providing online access to scientific information that is free and reusable. In the context of research and development, open access to scientific information relates to two main categories – scientific publications (mostly reviewed research articles published in academic journals) and research data (unpublished data or raw data acquired during scientific research). There are two main recommended ways to provide open access via self-backup, or so-called “Green Road” - the author or his representative deposits the published article or the final reviewed manuscript in an online repository before, simultaneously or after its publication (2021). There are many documents that define relationships and positions in education and science – from laws and normative documents to regulations, standards, ordinary rules and many more. Each such document has a precise and certain place in terms of meaning and content. Within a specific frame, everyone develops pursuant to these systems – teacher, lecturer, scientist ... which is needed, yet an insufficient condition, to be a good teacher, lecturer and scientist. The teacher, the lecturer, the scientist teaches, distribute and share knowledge. And knowledge is a special category. It is not a fruit or vegetable to be sold or exchanged. Knowledge is a “great event” and this is how we should refer to it – as to something great.

## **2. WHAT ARE THE PECULIARITIES OF KNOWLEDGE?**

The Oxford English Dictionary defines knowledge as: facts, information and skills acquired through the experience or education, the theoretical or practical understanding of the subject, or what is known in a given area as a whole or awareness, acquired by experiencing a fact or situation. To know means a lot, and a little. You know a lot, but the knowledge limited to one`s personal space remains only individual possession. It brings relatively little benefit to others and society. The power of knowledge is in its sharing – either verbally expressed, spread, taught or written. The more you distribute the knowledge, the more useful it is for a society and its development, it becomes alive. The shared knowledge is fundamental to human survival and development. Shared knowledge generates new ideas, creates opportunities and prospects, removes limits, creates new products and enables any development. In the business environment, shared knowledge is an invaluable resource and a driving force for the functioning of market relations, from which the end user always wins. It is not accidental that open educational and scientific spaces are created, which even cover political and social initiatives (European Open Science cloud, European Research Area, etc.).

### 3. HOW DO WE SHARE KNOWLEDGE?

In order to share knowledge, you have to master it, you should not only possess someone else's knowledge that you have realized, analysed, rationalized, but you should enrich it with your opinion, comment, or your own knowledge, acquired with your own efforts. Knowledge is shared in many ways, often not defined as such. Teaching and research work are defined as fundamental in knowledge sharing. To teach, distribute and share knowledge with others requires many other things (skills, experience, competencies, mastery of communication channels, various amplifiers, etc.) that cannot be read or found in laws and regulations. Beyond the documents it is required to have certain qualities like specific and quality creative energy, dedication, self-sacrifice, understanding, empathy, sympathy, lust for learning, indomitable spirit, desire for discovery, indefatigability, constant striving for improvement, intransigence and many other purely professional features. In order to be a good teacher, you do not have to read the textbooks or ask the right questions to evaluate your students, to have your lectures in the classroom and laboratory and write a number of publications to follow the path of academic growth. Being a good teacher and scientist is a mission that only few can pursue. That is why I believe that to be a good teacher means to be able to share knowledge so that it reaches many people and in a way that will create new knowledge. Then there is a point in living for and with knowledge. For those who share knowledge this is their essence and meaning, it is their belief. Is everyone capable of this – to fully devote yourself to the point of exhaustion or not being able to do so? And even if you do not have such opportunity, for a number of reasons, this is a matter of your own development. However, knowledge is not only shared through teaching. Knowledge sharing is performed in many ways outside of school and university. And these methods are no less important, because they create an environment and a network for process continuity. This has long been invented and we only apply these methods without thinking about the significance they bring, the effects they create and the influence they make. Conferences, seminars, congresses are the places where knowledge is shared. The same knowledge can and should be shared on many different forums. And there is nothing wrong or unnatural about that. The same knowledge can be described in many scientific, and not only scientific journals, and there is nothing wrong about that either. Thus, it reaches a much larger and more diverse audience, finding its users. This way it stimulates new ideas and creates followers. Does knowledge need followers? One, I hope, rhetorical question that has an unambiguous answer. Yes – in order to be shared, knowledge must have its followers. Otherwise, how certain ideas, thoughts, deliberations or theses will reach a certain community and how will they become a necessity? This is a contribution that not everyone can and does make. It is very fashionable to talk about “influencers” today. There is no greater “influencer” than shared knowledge. As long as we give it a chance and do not limit it – due to a lack of understanding and a desire to put it in frame. And even worse – to put chains on it that will keep it where someone has decided is its place. There have been such times and periods, but today, we hope they are over. Today, in the period of transition from automated to digital systems, the distribution of knowledge takes place in different ways, with the help of different methods and techniques than a century ago. Naturally, the most important of them is learning – formal, non-formal, informal, which takes place in and out of school. Furthermore, the school is supported by many additional methods for distribution of knowledge – organized or unorganized, individual or collective. Many lecturers, scientists, researchers, managers and various specialists analyse this topic and there is always something different and interesting in their opinions regarding the different types of knowledge and the different ways of its distribution. At the same time, many managers not only analyse, but also create rules by which knowledge is distributed and shared, and when everything is put in a certain framework, it fades and brings relatively little added value.

When managers create the framework “you can - you cannot”, “you get - you do not” and this framework is formalized to the degree of favouritism or elimination, to the degree of creating friendly circles, to the degree of creating an academic layer without much contribution to knowledge, but with possibilities for distribution of influence – then knowledge also loses its main purpose, it loses a lot. It loses because the manager “gets” a bonus for everyone who is below him in the hierarchy to become “visible”. It doesn't matter where you rank on the list of authors, only the number is important. True knowledge does not follow this pattern. It tries to come to the surface in different ways – informally, personally, with its own style. It enters new audiences, appears in front of new listeners and fulfils the mission of sharing and distribution. Whether this type of knowledge will receive a title or recognition is a matter of approach. Maybe, but not for sure! Is this type of knowledge useful? Yes, because it creates. Does not participation in various competitions through which we strive to engage young people to pursue teaching or research count as knowledge sharing? Why do we do this? Because today we lack leadership in knowledge. Leaders and not managers attract young people. Leaders do not share knowledge in order to be liked, but to create followers of knowledge. They are innovators and they are different. They are liked if they are attractive, if they know a lot, if they know how to communicate, if they carry the charisma of the knowledge they have. And isn't this a new reading? Knowledge, which is distributed through various means, such as books, magazines (of various kinds), newspapers, electronic platforms and the Internet, means familiarity with certain content, information about facts of various kinds and allows for understanding, associativity, reasoning, perception and discovery. Certain and different processes start from knowledge. Of course, all these considerations do not provoke a violation of the rules, but seek that change that will create new models of knowledge sharing. Knowledge management and artificial intelligence are part of this unexpected but unavoidable process. Every mean of knowledge distribution can be referred to as knowledge sharing. To my mind, it is the sharing of knowledge that makes it alive, active, useful, working, effective, ensuring the development not only of the relevant factual resource, but also generating a new one. Every teaching activity, no matter where – at school, university, training center or scientific structure – is an activity of knowledge distribution and sharing. But not everyone who does it gets to the top of sharing. Knowledge sharing is a network activity, as the network grows to huge sizes, requiring strict systematization and consolidation by topic in order to be able to cover and to continue its development. On the one hand, teachers and scientists teach knowledge accumulated so far, on the other hand, by expressing their own opinion or adding their own research and studies, they enrich and further develop it. With a small amount of knowledge, like it was at the beginning of its accumulation, each newly discovered fact was usually named after the person responsible. This is how many laws in science that bear the names of their discoverers appeared. This is how the “Eureka” exclamation reached many people, but is it possible to achieve similar effect today with a publication that will be read by a limited number of people (and in some cases only by the authors)? With the accumulation of vast knowledge that are even difficult to systematize, this does not always happen, or only happens in special cases of serious discoveries and contributions. Recognition of the contribution of anyone who has added even a little new knowledge is done differently. Thus, the citation of the contribution becomes an important element of the evaluation of this contribution to the development of knowledge. Nowadays, when knowledge and science occupy huge space in economic, social, research life and social development in general, it is becoming increasingly difficult to track contributions. Evaluating contributions to the development of knowledge before you, before your own work, is not so important for documentation as it is important from the point of view of recognition, of ethics in relation to everyone who has contributed their own development to the development of knowledge. Therefore, the evaluation of the contribution is inextricably linked to the sharing of knowledge.

The difference between evaluation and sharing is that you evaluate and distribute the evaluated knowledge as an original, but in sharing you put your own understanding or create “new developed knowledge”. “I believe that each of us possesses useful knowledge that he or she can share with others and even should do it at every opportunity to help those pursuing the same professional path – just as he or she received assistance and guidance from the more experienced colleagues in the beginning. From my own experience the best programmers, designers, businessmen, coaches and others like being asked questions and give advice to people who are just starting their careers, changing professions or need other types of help. However, they are rarely asked because many people think that these experts are “unreachable” and are afraid to just write to them asking a question”, said Silvina Furnadzhieva, the site's founder (2022; Terziev, 2021b; 2021c; 2021d). Shared knowledge becomes part of every creative path, i.e., you can share it with different audiences, in different ways, adequate to those audiences, and that's how you participate in the process. In this sense every way is important and valuable. Sometimes sharing knowledge would not be possible when a research paper is published in our own university edition and only in Bulgarian. An unbiased assessment in this regard would be that the users of such knowledge are limited to the circle of our colleagues and a very small number of people outside. Different means of knowledge sharing like publishing and distributing it in various scientific publications, platforms, presentations at conferences and seminars and last but not least in different languages, help expand it. The limited use of the Bulgarian language is a kind of barrier and even an obstacle to the transfer of knowledge. Examples in this direction include translations of a number of Bulgarian writers and authors (which have been translated into dozens of languages), as well as of scientific publications presented with the same content in a number of scientific journals. The SSRN research platform provides detailed information of this nature, which in practice proves to be an effective amplifier for knowledge transfer. Otherwise, it will remain in a closed system, and it needs to be perceived, affirmed and, last but not least, to be recognized by the community.

#### **4. DO WE REGULATE KNOWLEDGE SHARING?**

We share knowledge verbally and in writing. In verbal knowledge sharing we can omit names, dates, positions, but it is not the same in written works. There, every name and year is important, in order to follow not only the ethical norms of the recognition of achievements, but also to provide that systematization which is important from a factual point of view. There every author's opinion is significant, that is not “taken” from anyone, i.e. - this is the actually created knowledge, which becomes part of the general. This is where we encounter the terms “citation”, “self-citation”, “plagiarism”, “self-plagiarism” – frightening terms that can not only confuse knowledge sharing, but can also destroy one's destiny. The first two terms are, of course, surmountable and in some cases “re-used” - either out of reinsurance or out of a desire to create prestige in terms of analyticity. When it comes to using the methods of publishing, this can also be expressed by sharing your previous experience (research) and in fact each subsequent work is an upgrade of the previous one. Such sharing can and is done more than once and it does not in any way violate the norms for the distribution of knowledge. And this is important because it is not just sharing. This is an upgrade and it becomes part of the general development of knowledge. In today's science, this is called self-citation. The other two concepts can be compared to a scientist's and a teacher's guillotine or to sending them to a not very favourable group, which marks them as harmful or even expels them from the system. “Non-plagiarism” is a skill, but “plagiarism” is an inability to share knowledge. It is true that no one has the right to boast with other people's achievements and other people's knowledge. However, it is a matter of consideration whether someone's knowledge is enriched and further developed, whether it creates value or benefits society.



When it comes to “self-plagiarism” it is difficult for me to give a definition – an author plagiarizes himself ... If plagiarism literally means using someone else’s work, then self-plagiarism is the use of one's own work. Something like an autoimmune disease. Is knowledge suffering from this?

## **5. CHANGES IN THE HIGHER EDUCATION SYSTEM OF BULGARIA**

Attempts to implement changes in our education have often made us face artificial challenges. The failed transition to democracy in Bulgaria has turned education from a value of national importance into one with fading functions and education itself into a field of relentless experiments and controversy engaging a large number of target groups – universities, schools, teachers, students, parents, state authorities, politicians. We realize the risks of the new idea of the Ministry of Education and Science in Bulgaria to restructure higher education, but we will share the statement we stand for anyway. And this is the statement that education is at the heart of regional development, and higher education is the foundation of smart growth, providing we still comply with the priorities of the European Union and the world, which, even though modified in accordance with Covid or green deals, cannot refute this claim. There are several definitions that must be remembered though, not only as titles but as content, and one of them, perhaps the most important, is sustainable development. There can be no sustainable development unless every system is involved and every element becomes part of this process and participates in its realization. Higher education is such system. The second major system is regional development. We will not dwell on other systems, although they are very important and should not be neglected. Why we turn to these two systems and what the connection with the reform in higher education is (Terziev, 2021b; 2021c; 2021d).

- Education, incl. higher education is the foundation for the development of the state and the state consists of regions and their balanced development is absolutely necessary.
- Every strategic view of the development of a country begins with these two systems – where they prepare human resources, i.e. the human capital of the state and where this capital is realized.
- These two systems determine the possibility of a balanced distribution of the population on the territory of the state.
- The use of state resources throughout its territory depends seriously on these two systems and this is not only sustainable development, it is part of national security.
- The artificial relocation of existing elements of an important system on the territory of the state have never been successful and functional for development.
- When talking about higher education and regional development, we should stop believing the mantra that everything outside the capital is a province and of lower quality.
- The good interaction between these two systems gives people a high degree of freedom and the right to choose.
- For two decades we have been talking about the development of a knowledge-based economy, where higher education and regional development are pillars of such an economy.
- Each reform includes an assessment of traditions, current situation and prospects /the bad thing is that the forecasts do not work for us easily/.

We will not follow the whole chronology of changes in higher education in Bulgaria, which went through the establishment and development of higher institution, institutes and universities in many regions of the country to provide a basis for regional development through various transformations of public and private higher education, through the quest for every big city to have a college or university, until the discovery of over fifty such structures. Not all stages of this development are successful, unfortunately, but at the moment they are a fact.

We will not follow the chronology of all strategies for the development of higher education either, where the development of the regions is connected in some way with the development of higher education, culminating in the strategy for smart specialization, which later became the basis for centres of excellence and centres of competence to come up with the idea of such consolidation, which could deprive many regions of independent universities, which today have significant academic potential and are well used in some regions. If so far we have advocated the academic potential of universities to be seriously included in all development policies of individual regions, then starting from today this will no longer be a valid thesis, because the probability of consolidated structures to maintain the potential of structures in each region is not very high. Both from the point of view of the academic staff and from the point of view of students, who have always strived for the central structures, for a hierarchically higher institution, believing that the quality there is higher. We know that on a European and global scale, the innovation potential of a region is linked to the structures of science and higher education. Through an irrational consolidation, this potential will be increasingly centralized, and if we connect this trend with the idea of research universities, where more financial resources would obviously be concentrated, the result of this reform is by no means encouraging for regional development. Reform in higher education is necessary and urgent. It should focus on modernizing teaching methods and content and adapting them to modern social and technological development. Objectively, it is not possible for Industry 4.0 to develop with Education 2.0 without, of course, taking the literal meaning of the words, but in many places the quality of higher (and not only) education can be identified with such identification. However, this does not mean that the created potential should be neglected, but it should be supported and directed to the development of both the regions and the state in accordance with its potential and specific characteristics. To the question whether there are many universities in Bulgaria, the easiest answer is "yes", the easiest measure that could be applied - reduction. This answer would not be accurate enough and correspond to the respective realities and especially to the defined claims for development. We know that the evaluation of universities has been done, but the scientific measurements of the results are hardly correct and objective enough to rely on and that it would give everything for sustainable and intelligent development. There are many other indicators needed (a set of indicators and criteria), some existing but neglected, others not yet used to make such an assessment. But this is also the easiest measure for young people to migrate to the centre, which is already overcrowded and the gradual disappearance of certain regions and areas is a worrying fact and tendency. A far better measure is the creation of university networks the organization of which has already started, but they are with megastructures – they work differently, they increase flexibility, mobility, connectivity and provide a multiplier effect to eliminate emerging deficits and solving specific problems with common efforts and potential. Some time ago we conducted a study on the needs of several regions in Bulgaria for staff with certain knowledge, skills and qualifications and saw the many problems the regions have to face. But they are not related to the large number of universities, yet to the state's inability to organize policies so that the economy and education move in sync and work in synergy. Unfortunately, these studies were not considered important by any institution, and the right decision was to do such studies for all regions in the country and to identify measures that need to be developed and due to which the policies would focus on strong regional development, which: preserves the regional human capital, raises the potential of the region, improves the innovative infrastructure, creates a balance in the economic development of the country. But the study was not conducted by pro-government organizations and therefore was not noticed. It is different to carry out targeted public procurement that decide specific cases for specific interests, which is most often used in the implementation or more precisely in motivating the implementation of national policies.

Probably such a solution is more convenient than endless and often unproductive discussions or oppositions, which is understandable. This is certainly the case in centralized democracies. Because it is known that those whose status is preserved will be happy to remain silent at the risk of changing the nature of the decision, others will be afraid of losing the minimum they have left. Satisfaction is for the big structures, which will develop at the expense of many of the others, but the big problems remain. There are good practices in Europe and the world in which educational institutions related to the arts are managed by the relevant Ministry of Culture. Undoubtedly, the capacity there, both methodologically and practically, is higher than in the Ministry of Education and Science. Moreover, in Bulgaria the secondary schools of arts are managed by the Ministry of Culture and the completion of this process as well as the higher schools in the field of art are structures of the same ministry.

## 6. CONCLUSION

There is no doubt that there is an urgent need of a reform that would replace the dysfunctional and problematic autonomy. Undoubtedly, many of the policies in this area so far have not produced the best solutions, and even worse, the results are not of high quality. But this is exactly what requires the next reform to be designed to truly satisfy the regional development of the country and to do so with clear criteria that promote quality – with a clear and synchronized legal framework, accreditation policy, quality criteria for academic staff, which include along with scientific measurement indicators other important elements leading to the development of institutions and regions and many other steps in this direction. It is not possible to initiate such a reform without the participation of the academic community, local and regional authorities. No one should be afraid of public discussion, no matter how difficult it may be, if there are sufficient and reasonable arguments. Currently, such public discussion is almost non-existent or, if there is one, on a purely departmental basis (Terziev, 2021b; 2021c; 2021d). The questions that need to be asked clearly and loudly remain:

- What basis was used to make this decision?
- Are there other alternatives to the consolidation of universities, which would bring administrative, technical and technological problems at all levels and at all existing structures? Unified structures located 500 km away, although in the digital age, will not be very easy to manage. It would be even harder to control them.
- What was and will be the role of the National Higher Education Card?
- How does this reform fit in with balanced regional development?
- Won't there be a similar result as from the closure of schools in certain regions?
- The management of megastructures, although very tempting, does not cause a concentration of power and resources, which the government in our country does not always do well.
- Which country of the European Union has implemented such centralization of higher education?

A number of other questions can be asked, and the answers will be part of the planned changes in the legislation related to higher education in Bulgaria.

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## CHALLENGES OF INTERCULTURAL COMMUNICATION IN THE CONTEMPORARY BUSINESS ENVIRONMENT

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### ABSTRACT

*Contemporary economy, for which the globalisation of business is one of the basic determinants, is facing the need for quality intercultural communication with the aim of creating the best possible business environment in which each participant will feel equally valuable and not discriminated against. The task of the management is to create that kind of environment, not only for ethical and legal reasons, but, ultimately, for achieving the best possible business results. One of the (infamous) attempts to implement intercultural communication in business procedures are the European Commission guidelines on inclusive communication, which were withdrawn following the negative media articles and a strong reaction of the public. The paper presents a case study of the adoption and withdrawal of the guidelines as an internal document for communication of the European Commission staff as well as the analysis of the content of selected online media in the period after the information about the guidelines was released until the announcement that the guidelines were withdrawn. Inclusive intercultural communication is becoming a necessary way of communication; however, if not well thought-out, it may have a completely opposite effect. Therefore, another dimension is required for a quality management, that is, the intercultural management dimension.*

**Keywords:** *business procedures, globalisation, intercultural communication, intercultural management, media coverage*

### 1. INTRODUCTION

Intercultural management is not a novelty in contemporary business communication. Respect among cultures was necessary even in the first trade exchanges and was a prerequisite for good business. Science began to deal with this problem more significantly in the 1950s, while a special momentum in the development of scientific interpretation of national cultures and their comparisons occurred in the 1980s, led by Dutch scientist Geert Hofstede (1928 – 2020). Even today, his model of national culture and its six basic determinants are very applicable (power

distance index (PDI), individualism versus collectivism (IDV), masculinity versus femininity (MAS), uncertainty avoidance index (UAI), long-term orientation versus short-term normative orientation (LTO), indulgence versus restraint (IVR)). His work is built on by the Hofstede Insights organisation (<https://www.hofstede-insights.com/>) through the following education programmes: Organisational Culture, Intercultural Management and Consumer Culture Intelligence. „Although the main purpose of intercultural management in the moment of its founding was better understanding of other nations in order to improve the volume of business, it also contributed to fulfilling even higher goal and that is the need for understanding that all nations are different and how their differences must be respected not only from the point of business, but also in everyday living”(Zakić and Milutinović, 2013). Awareness of the need for respect among different, but also related cultures, is woven into the basic postulate of the European Union, summed up in the motto „United in diversity”. Sometimes, however, it is very difficult to reconcile differences operationally. In order to conduct a case study of the media reception of the adoption and withdrawal of the guidelines on inclusive communication as an internal document for communication of the European Commission staff as well as the analysis of the content of selected online media, the corpus of the study included the most read texts in leading world media, relevant EU media and religious media. The study included texts in the period after the information about the guidelines was released until the announcement that the guidelines were withdrawn. Preliminary study was conducted at the time of release of the texts (November 2021), and systematic study in January and February 2022. The study was conducted by entering the words „internal guidelines on inclusive communication of the European Commission” in search engines in English or in the languages of individual countries and the most relevant results showing different types of reporting were included in the corpus of the study. After that, the texts were processed by a qualitative method of content analysis, and attention was paid to the scope and content of the published articles as well as to comments, if available. The basic hypotheses were as follows:

- 1) Numerous European and global online media have written about the European Commission internal guidelines on inclusive communication.
- 2) Most articles condemn these guidelines.
- 3) The media mostly criticised the recommendation to avoid mentioning Christmas.

Additional motivation for the study was found in the article *The Role of the Media in the Development of Intercultural Communication* in which Zlatko Miliša states that one of the scientifically insufficiently researched areas is the role of the media in the development of intercultural communication: „The media have the power to form collective consciousness. They influence the forming of public opinion and create it in a positive or negative context regarding consciousness and behaviour, especially of the young population. Hence the scientific challenge in the search for that which can unite or separate us under the influence of the media. Intercultural dialogue is imperative in all aspects of communication”, concludes Miliša (2009).

## **2. EU – UNITED IN CONDEMNING THE DENIAL OF DIVERSITY**

The European Union, as a sort of a large cultural circle of equal (or close) values, reacted to the guidelines on inclusive communication almost in unison. It was an internal document of the European Commission, but after it "leaked" to the public, it provoked sharp criticism by the public and was very quickly withdrawn. Although the authors of the disputed document thought that they were making progress in intercultural management, they made an unforgivable mistake of denying (and thus disregarding) cultural differences, which, on the other hand, are cultural links among Member States. It is important to note that similar documents, manuals and recommendations for communication exist in other organisations and companies (e.g. <https://www.un.org/en/gender-inclusive-language/guidelines.shtml>, <https://www.cdc.gov/heal>

thcommunication/Health\_Equity.html, [https://bridgingthegap-project.eu/wp-content/uploads/BtG\\_Inclusive-and-accessible-Communication-Guidelines.pdf](https://bridgingthegap-project.eu/wp-content/uploads/BtG_Inclusive-and-accessible-Communication-Guidelines.pdf) or <https://qed.qld.gov.au/work/ingwithus/induction/workingforthedepartment/humanresources/Documents/inclusive-communication-guide.pdf>). However, these recommendations, intended for internal use, have provoked strong public condemnation. The „European Commission internal guidelines on inclusive communication” case began on 26 October 2021 when Helena Dalli, the Commissioner for Equality, posted the guidelines on Twitter, along with comments expressing her pride in publishing the document. On 30 November, at the time when most European and world media were writing about the withdrawal of guidelines, Dalli commented that „Concern was raised with regards to some examples provided in the Guidelines on Inclusive Communication, which is customary with such guidelines, is work in progress. We are looking into these concerns with the view of addressing them in an updated version of the guidelines” (<https://twitter.com/helenadalli/status/1465639346103533573>). Her post provoked a reaction of many Twitter users (74 retweets, 389 quote tweets, 137 likes), who put Christmas cards in comments, pictures of the baby Jesus, Mary and Joseph, the Nativity scene, Christmas songs and videos in different languages and from different countries. Some were calling for her resignation and there are only a few tweets of support.

### 2.1. World media reactions

In its international edition of 30 November 2021, the Guardian wrote „EU advice on inclusive language withdrawn after rightwing outcry”. The subtitle read „Guidelines promoted the use of 'holiday season' instead of Christmas and advised against saying 'man-made'”. The text was accompanied by a photograph of Helena Dalli and her apology. They cite the views of right-wing politicians for which the guidelines were withdrawn, mention the intention to "cancel Christmas", but also cite the example of a left-wing member of the European Parliament who supports the guidelines and regrets their withdrawal. The Guardian does not express its own position on the subject, but remains impartial and objective (<https://www.theguardian.com/world/2021/nov/30/eu-advice-on-inclusive-language-withdrawn-after-rightwing-outcry>). On the same day, The Sunday Times wrote: „EU withdraws ‘inclusive language’ guide that lacked Christmas spirit”. The text was also accompanied by a photo of Helena Dalli and expressed the opinion of the author of the text and the editorial board that „Brussels has been forced to withdraw immature guidelines instructing EU officials to update their language by not referring to Christmas and asking what's your pronoun? to ensure that everyone is valued and recognized”. The new „guidelines for inclusive communication” were intended to provide practical advice for those in the European Commission who speak about EU policies in public. However, the guide, running to 32 pages, was scrapped after an internal rebellion by civil servants.“(<https://www.thetimes.co.uk/article/eu-withdraws-inclusive-language-guide-that-lacked-christmas-spirit-bbbnqszcr>). The European Times wrote the following: „COMECE reacts on European Commission ‘inclusive language’ guidelines” emphasising that „Respecting diversity cannot lead to suppressing religion from public discourse” (<https://www.europeantimes.news/2021/11/comece-reacts-on-european-commissioninclusive-languageguidelines-61182/>).

### 2.2. European media reactions

The European, as well as the world media, mostly wrote about the controversial guidelines on 30 November 2021. According to some of them, the media harangue against Helena Dalli and her guidelines started two days earlier, on 28 November, in the Italian newspaper Il Giornale. „In Europe it is forbidden to say "Christmas" and even to call oneself Maria” was the title of the article in Il Giornale that triggered the avalanche. The article sharply criticises the document, and the text does not quote Dalli, but the European Commission President Ursula von der Leyen

implying her responsibility. The whole article is extremely negative towards the guidelines and their authors, and the last paragraph causes a real storm of reactions in the public: „In the name of inclusiveness, the European Commission goes so far as to cancel Christmas by inviting us not to use the phrase "the Christmas period can be stressful" but to say "the holidays can be stressful". A desire to eliminate Christianity that goes further with the recommendation to use generic names instead of "Christian names" therefore, instead of "Maria and Giovanni are an international couple", we must say "Malika and Giulio are an international couple". Up to the contempt of the ridiculous that requires to contrast the negative connotation of words such as colonialism: it is forbidden to say "colonization of Mars" or "human settlement on Mars", better to say "send humans to Mars". When tragedy gives way to farce.” (<https://www.ilgiornale.it/news/cronache/follie-ue-l-inclusivit-vietato-dire-natale-e-chiamarsi-maria-1992290.html>). Readers' reactions, 53 of them, are sharp and critical. Two days later, Il Giornale celebrated victory: „We won: the EU reneges on bans on "Christmas" and "Mary"; Europe and the reverse on "guidelines for inclusive communication". Stop to the umpteenth madness” (<https://www.ilgiornale.it/news/politica/abbiamo-vinto-lue-si-rimangia-i-divieti-su-natale-e-maria-1992846.html>). The reactions of readers were also prompt and strong, leaving as many as 128 comments. Most of them agreed with the author of the text and strongly condemned the Brussels bureaucracy. However, when comparing the original text of the guidelines and Il Giornale's writing, instigation elements can be noticed in the writing of this Italian portal. Although the text of the guidelines did not really tolerate respect for diversity, Il Giornale deliberately distorted some parts of the guidelines to the point of absurdity, such as the alleged ban on the name Mary. This is followed by a media harangue, especially in the right-wing and religious media, which will be discussed in more detail in the next subchapter.

## **IN EUROPA VIETATO DIRE "NATALE" E PERFINO CHIAMARSI MARIA**

*In nome dell'inclusività la Commissione europea invita a censurare la frase «**il periodo natalizio**» sostituendola con «**il periodo delle vacanze**».*

il Giornale



Figure 1: Photograph accompanying the disputed text on the website of Il Giornale



A day later, *Il Giornale*'s quotes appear in various media across Europe. For example, French portal *generationsnouvelles.net/* wrote: „The European Commission recommends banning any non-inclusive expression in its communication – RT in French”, referring to Italian *Il Giornale* and quoting their Twitter and Facebook post (<https://generationsnouvelles.net/the-european-commission-recommends-banning-any-non-inclusive-expression-in-its-communication-rt-in-french/>). On the same day, Italian *l'unionesarda*, with a photo of a large decorated Christmas tree and the heading „THE CONTROVERSY” also wrote about the topic on controversial guidelines, but unlike many, in addition to the views of right-wing politicians, it also wrote about the official opinion of the European Commission: „We do not prohibit or discourage the use of the word Christmas, of course. Celebrating Christmas and using Christian names and symbols are part of the rich European heritage. Commission, we are neutral on religious issues, we have constant dialogue with all religious and non-confessional organizations. It is an internal document prepared at a technical level with the aim of raising awareness of inclusive communication” (<https://www.unionesarda.it/en/world/eu-internal-guidelines-quot-stop-references-to-christmas-europeans-are-not-all-christiansquot-xj0bg3c6>), thus remaining within the framework of professional, objective journalism. *Pledgetimes* wrote without expressing their own opinion, but drawing the most controversial examples (<https://pledgetimes.com/the-eu-commission-and-the-guidelines-for-inclusive-communication-merry-christmas-better-happy-holidays-it-is-controversy/>), which shows another possible model of influencing the audience. *Politico* published several articles about the topic. On 4 December 2021, they wrote: „Culture wars and cock-ups collide: How inclusive language divided the EU; Political schisms and bureaucratic bungling exposed as Brussels was accused of canceling Christmas.” Their text is also no longer accompanied by a photo of Helena Dalli, but the European Commission President Ursula von der Leyen, and the text is no longer focused only on criticism of the disputed document, but also on the work of the European Commission: „The inside story of how previously little-known European Commission guidelines on inclusive language sparked a political firestorm that led to their abrupt withdrawal and public humiliation for the commissioner responsible is a tale of culture wars and bureaucratic blunders.” (<https://www.politico.eu/article/european-commission-ursula-von-der-leyen-document-eu/>). It is interesting that the text published a few days earlier on the *Politico*'s website, on 30 November, when most of the media wrote about the controversial event, was accompanied by a photo of Ursula von der Leyen and the article also criticised the guidelines, but also the incompetence of European institutions. The Greek portal *GreekReporter* also wrote about the guidelines, but with a time lag, a week after most of the media. On 7 December, this portal also criticised the guidelines, emphasising the influence of the Vatican on the act of their withdrawal: „The European Union was forced to retract a controversial document after the Vatican accused Brussels of trying to cancel Christmas by “banning” certain Christian words” (<https://greekreporter.com/2021/12/07/eu-canceling-christmas/>). The text was accompanied by photographs of a decorated Christmas tree on the central Athens square and the European flag. With an even bigger time lag, but with an analysis of the current debate in the Parliament, *The Parliament Magazine* published an article on the topic on 16 December, apostrophising that the case has been withdrawn, but controversy remains (<https://www.theparliamentmagazine.eu/news/article/european-parliament-inclusive-language-debate-mired-in-christmas-row>). This text was also accompanied by a Christmas tree, but in the European Parliament. Since Helena Dalli is a Maltese member of the European Parliament, it was interesting to look at writings of portals in Malta. *The Times Malta* wrote similarly to the most European and world media on that day (30 November). It stated that the guidelines had been withdrawn, explained what was in them and brought a photo of Dalli (<https://timesofmalta.com/articles/view/eu-pulls-internal-guidelines-on-disputed-inclusive-language.918475>).

Maltatoday wrote something different: „It’s not true that you can’t use your name if it’s Maria... a misrepresented Brussels language guide“, emphasising the following in the sub-heading: „Nationalist MP Jason Azzopardi rides on Italy’s far-right rhetoric to misrepresent internal guidelines by the European Commission for more inclusive communication“. This was one of the few texts that gave a completely opposite opinion to that of most European portals, supporting its MEP and accusing the extreme right wing of the wrong position on the guidelines. ([https://www.maltatoday.com.mt/news/europe/113563/its\\_not\\_true\\_that\\_you\\_cant\\_use\\_your\\_name\\_if\\_its\\_maria\\_a\\_misrepresented\\_brussels\\_language\\_guide#.YiUSGejMJPY](https://www.maltatoday.com.mt/news/europe/113563/its_not_true_that_you_cant_use_your_name_if_its_maria_a_misrepresented_brussels_language_guide#.YiUSGejMJPY)).

### 2.3. Religious media reactions

CNA – Catholic News Agency published on 30 November that the Vatican’s Secretary of State criticised a European Commission communications guide discouraging staff from using the word „Christmas“ (<https://www.catholicnewsagency.com/news/249736/vatican-cardinal-criticizes-advice-to-avoid-word-christmas-in-eu-commission-communications-guide>). An interview published by Vatican News on 30 November is quoted in the text, where Cardinal Pietro Parolin suggested that the document was going “against reality” by downplaying Europe’s Christian roots (<https://www.vaticannews.va/it/papa/news/2021-11/parolin-natale-cancellato-persona-discriminazioni-santa-sede.html>). A YouTube video of the interview can be found on this website. A day later, Catholic News Agency communicated a harsh condemnation by the Commission of the Bishops’ Conferences of the European Union (COMECE): „Europe’s Catholic bishops said on Tuesday that a withdrawn document discouraging European Commission staff from using the word “Christmas” was marred by “anti-religious bias.” They also communicated clear views of the COMECE president Cardinal Jean-Claude Hollerich, S.J.: „Neutrality cannot mean relegating religion to the private sphere. Christmas is not only part of European religious traditions but also of European reality. Respecting religious diversity cannot lead to the paradoxical consequence of suppressing the religious element from public discourse.” (<https://www.catholicnewsagency.com/news/249742/eu-catholic-bishops-lament-anti-religious-bias-in-guide-discouraging-word-christmas>). On the same day or the day after the CNA’s releases, another wave of releases appeared on Catholic portals in which the above-mentioned agency news were mostly cited. This wave of releases was not present in "secular" portals, as the majority of texts were published on 30 November. For example, Crux-Taking the Catholic Pulse published content which focused on (and put in the title) Cardinal Parolin: „Parolin calls out EU directive against ‘Christmas language’. The text was accompanied by a decorated Christmas tree in front of the Vatican Church (<https://cruxnow.com/church-in-europe/2021/12/parolin-calls-eu-directive-against-christmas-language>). On 2 December, Ecumenical News published similar writings, and interestingly, they were accompanied by similar photos. There was a Christmas tree in front of a church, only this time, the church was the one in Geneva (<https://www.ecumenicalnews.com/article/european-union-retracts-inclusive-language-guide-that-sought-to-exclude-christmas/60948.htm>). Similar photos were noticed in numerous European releases, for example, in the mentioned GreekReporter, which put a photograph of a church in Athens with a decorated Christmas tree. Christian Post, much like the GreekReporter, wrote about the guidelines with a time lag of also a week after most of the media, on December 6, bringing a chronological sequence of events (<https://www.christianpost.com/news/eu-scraps-controversial-inclusive-language-guidelines.html>). Christian Today reported similarly, only 4 days earlier ([https://www.christiantoday.com/article/eu.withdraws.inclusive.language.guide.that.excluded.christmas/137830.htm?internal\\_source=ct\\_most\\_popular](https://www.christiantoday.com/article/eu.withdraws.inclusive.language.guide.that.excluded.christmas/137830.htm?internal_source=ct_most_popular)).

### 3. CHALLENGES OF INTERCULTURAL COMMUNICATION

After the tumult subsided and the “guidelines” became yesterday's news, in order to improve the quality of intercultural communication in modern society, it is necessary to look at the causes of this fiasco with Helena Dalli's guidelines, that is, the European Commission guidelines. It is clear that responsibility cannot be attributed to one person, although in cases of media pressure, such a solution is often applied. What went wrong here? As in various situations, excessive purism in communication is never good. The guidelines recommended corrections for non-discriminatory situations, and resorted to positive discrimination, which often has a counter-effect. Another problem is that supposedly problematic examples have been made up that are in fact very rare or non-existent, but they had a negative effect on public reception. For example, a recommendation that instead of „Maria and Giovanni are an international couple”, we should say „Malika and Giulio are an international couple”. It is not known that anyone ever said that Maria and John are an international couple, and it was this sentence that was one of the backbones of the attack. The third and the biggest problem is that when writing these guidelines, the rules of the profession and intercultural communication were not taken into account, nor the feelings of all future users, that is, the characteristics, cultural determinants and needs of all communication participants were not taken into account. And that is necessary. However, are these the only causes?

#### 3.1. Media manipulations

It is appalling how many news portals communicated controversial examples without checking them and looking for another source, as well as how few people thought about the actual motivation for writing the guidelines but also the motivation of their critics. Not even the European Commission made excessive efforts to expose media manipulations. Instead, they withdrew the guidelines very quickly. Although there are advices on the website of the European Parliament on how to spot when news is fake, written in all EU languages ([https://www.europarl.europa.eu/RegData/etudes/ATAG/2017/599386/EPRS\\_ATA\(2017\)599386\\_HR.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2017/599386/EPRS_ATA(2017)599386_HR.pdf)), in this case, they did not follow these basic instructions and exposed their opponents. In the weeks following the withdrawal of the guidelines, analyses of this case appeared on some portals, and only a few of them characterised the whole case as fake news. One of them was The Irish Times, which released „The back story of the fake news that the EU tried to ‘cancel Christmas’” (<https://www.irishtimes.com/news/world/europe/the-back-story-of-the-fake-news-that-the-eu-tried-to-cancel-christmas-1.4756439?mode=sample&auth-failed=1&pw-origin=https%3A%2F%2Fwww.irishtimes.com%2Fnews%2Fworld%2Feurope%2Fthe-back-story-of-the-fake-news-that-the-eu-tried-to-cancel-christmas-1.4756439>). There are many indications that can raise suspicion that these are very skilful media manipulations. The suspicion is also raised by the date when the media harangue against the guidelines began. Although Helena Dalli published her post on Twitter on 27 October, her criticism was awaited for a month. The criticism appeared bombastically, on a Sunday, when readership is higher, and exactly on the first day of Advent, when many believers go to Mass. On the days filled with pre-holiday spirit, readers react angrily to the announcement that Europe wants to ban them from Christmas. And here come the fake news. Although numerous headlines highlighted the alleged desire to ban Christmas, the guidelines do not, of course, mention the ban on Christmas. They give a recommendation on how to congratulate (Christmas) holidays. A fake enemy was created and the audience mobilised in defence of their Christian roots. It was led by European bishops and right-wing politicians, although this media war has outgrown divisions to the left and the right. Copy-paste journalists also contribute to the easy victory with their low level of professionalism and forgetting about analytical journalism. Moreover, they forget the fundamentals of their profession and uncritically transmit agency news, even uninventively copying from each other the photographs that accompanied their texts.

These photographs, in today's visual time, additionally amplify the bombastic tone of the text. Thus, the world media put a photo of Dali next to the text, but *Il Giornale*, which started it all, put a photo of von der Leyen, indirectly accusing her and thus creating pressure. Other media followed *Il Giornale*'s example, very often citing the entire content. In addition to portrait photographs of Dali and von der Leyen, another favourite accompaniment to the text was a photograph of a Christmas tree in front of a local church. The topic is repeated, but the location depends on the geolocation of the target audience, thus involving and engaging the audience using another subtle manipulation.

#### 4. CONCLUSION

„Interculturalism is a relatively new way of seeing the similarities and differences between cultures in immigration, education, and business policies of Western countries, first in the United States and then in Europe. It is an attempt to overcome potential hotbeds of conflict at the national and international level” (Katunarić, 1996). In the case study of the media reception of the European Commission guidelines on inclusive communication, we showed that the attempt to overcome potential hotbeds of conflict had a diametrically opposite result – inciting a conflict. This proves that intercultural communication and its incorporation into management is an extremely delicate issue that needs to be approached with special attention. A general understanding of intercultural communication and disregard for the cultural determinants of all communication participants (whether they are “minority” or “majority”) can have the opposite effect than expected. In addition to the internal shortcomings in the guidelines themselves, which partly gave rise to the reaction, the ambitions of the radical right, the reaction of the Church and, above all, the unprofessionalism of the media, played a significant role in the whole case. In their article *Moral Relativism and Media Socialization in the Development of Intercultural Communication*, Zlatko Miliša and Mirela Tolić (2009) state that the cause of the crisis of intercultural communication, among other things, is the negative role of the media reflected in obtaining false information, writing manipulative content instead of informative, and providing non-selective and sensationalist information. All of this was demonstrated through an in-depth analysis of the media, which fully confirmed the initial hypotheses that many European and global online media wrote about internal guidelines on inclusive communication of the European Commission, that most articles condemned these guidelines and that the media criticised the recommendation to avoid mentioning Christmas. What was not expected, and the study has shown, is that the media used manipulation in reporting about the case, which was successful due to other negative phenomena in modern media, such as biased, sensationalist, clickbait and copy-paste journalism.

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## **CSR AWARENESS AND FUTURE LEADERS - THE CASE OF MOROCCAN UNIVERSITY, FSJES SALÉ**

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### **ABSTRACT**

*Our objective in this article is to investigate the Corporate Social Responsibility (CSR) awareness among Master's degree students in Law and Economics, the potential leaders of tomorrow's corporate scene in Morocco. In the current Moroccan business environment, CSR is not considered as an option, it has become intergrated into the execution of a business strategy. The perceptions of these potential leaders should cope with the new public's needs and expectations from corporations. The study shows that these students do not have an appreciable level of CSR awareness. Moroccan universities have the responsibility to train such future leaders who will manage corporations and organizations for long-term sustainable success. Therefore, it is necessary for these universities, more specifically for law and Economics Faculties and Business Schools, to incorporate courses that aim particularly at providing formal exposure corporate social responsibility actions and responsible leadership for the benefit of different majors. It is also important to deepen the foundations of the CSR allowing to pass from the theoretical bases to the practical application of CSR programs in the different types of businesses.*

**Keywords:** *Corporate social responsibility (CSR), responsible leaders, Law & Economics students, Moroccan universities*

### **1. INTRODUCTION**

One of the role of universities is to develop and equip graduates with the skills and knowledge that are needed to meet the requirements of the specific community they are located in. The ultimate aim is to produce graduates who understand that they have a responsibility as future leaders within organizations they will work for and how their actions, ideas, and strategies may not only affect the organization but also the wider environment. Universities have a duty to inspire future responsible leaders who can manage and guide organizations for long-term sustainable success. Due to the different shifts in the Moroccan society, the public's current expectations of organizations are different from what they were 10 years ago. In fact, the Moroccan public no longer believes that the responsibility of the company is to only generate profits but to give back to its community as well. Moroccan executives have realized that nowadays corporate responsibility is considered as increasingly critical in business strategies and operations. To be sustainable, corporations need to be progressive leaders and take ownership of the effect their activities have on key constituencies including customers, employees, shareholders, communities, and the environment.

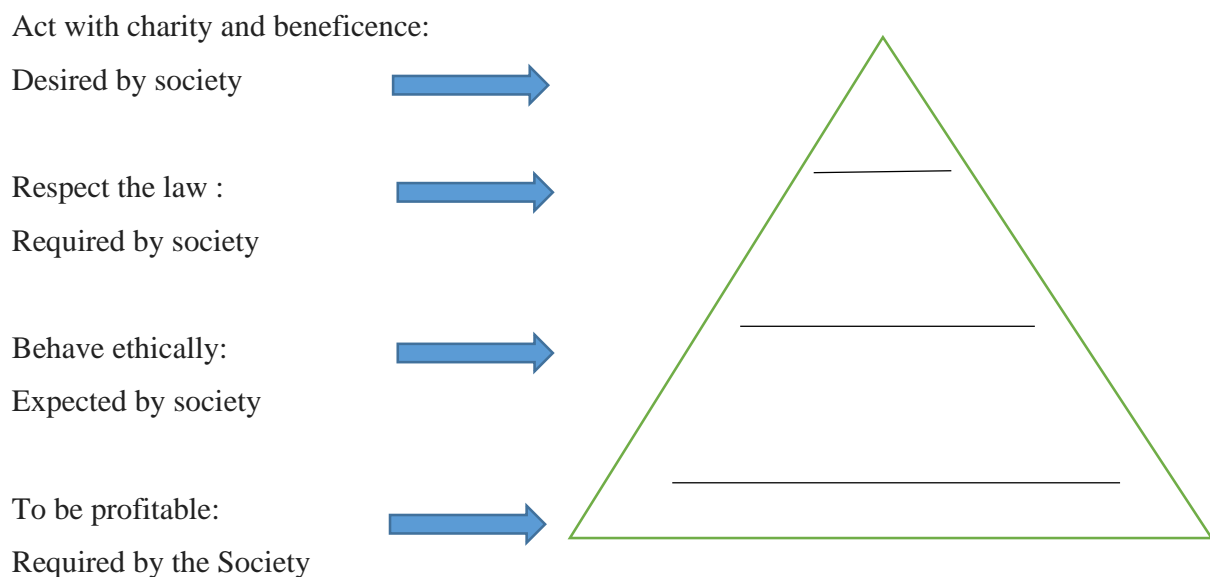
## 2. THEORETICAL MODELS OF CSR

Corporate social responsibility is a broad and unstable concept. Despite the abundant literature, it is difficult, if not impossible, to find a unifying definition of CSR. Currently there are more than 37 definitions of CSR (quoted by Carroll and Shabana, 2010) and this number is steadily increasing because of the evolutionary character of this concept. It is certain that CSR does not mean the same thing, all the time and for everyone. For some, CSR is limited to the legal responsibility; for others, it is perceived as a movement of moralizing business in an ethical sense; for others, it is reduced to charitable actions. One of the most recent definitions of CSR is the one published in 2001 by The European Commission in its Green Paper on the Social Responsibility of Companies. It defines the CSR as "the voluntary integration of social and environmental concerns of businesses to their business activities and their relations with their stakeholders ". This means that CSR could not be reduced only to legal obligations but goes far beyond aspects such as investing in human capital, meeting the expectations of different stakeholders and the protection of the environment. From Friedman's (1970) perspective, as being considered the founding father of the neoclassical theory, asserted that the responsibility of the enterprise is limited to the wealth for shareholders. Indeed, neoclassical theory postulates that leaders need to create some kind of tight boundary between the business and any socially responsible decision-making: "the business is the business of business "(quoted by Allouche and Laroche, 2005); social responsibility is not the responsibility of the company but is essentially state power (Friedman, 1970). Bowen (1953) is often identified as founder of this discipline, as well. He opened the reflection on the concept of CSR in asserting that the company has obligations to society that go beyond legal and economic obligations. Carroll (1979), however, considers social responsibility as a response to society's expectations in economic, legal, ethical and philanthropic or discretionary. The author sees CSR as a set of corporate bonds towards the society. Its conceptual model reduces CSR to four types of obligations: profitable beings (committed to producing goods and services while respecting their set standards of quality, safety and the environment), legal (respecting the laws and regulations in force), ethical (acting with justice and fairness toward stakeholders), philanthropic (contributing to social well-being, acting with charity and goodwill). Wartick and Cochran (1985) broadened Carroll's approach by claiming that CSR flows from interaction of three dimensions: the principles of CSR, the processes implemented in order to developing socially responsible skills, and the policies adopted to facing social problems. More recently, Carroll's four-dimensional model has been refined by Wood (1991), stating that the meaning of social responsibility can only be apprehended through the interaction of three levels of responsibility for the company. The first one is the responsibility of the company as a social institution, the second one is responsibility in terms of consequences, and the third one is the discretionary responsibility of managers who must use their discretionary powers in the service of the social responsibility of the business. Wood's (1991) approach aims to create a certain dynamism between the different responsibilities included in the theoretical model of Carroll (1979). Thus, each of the forms of responsibility proposed by Carroll (economic, legal, ethical and philanthropic) can be broken down according to the three levels defined by Wood (quoted by Attarça and Jacquot, 2005). As we will mobilize, in our research, the Carroll model (1979), which is a reference model, in the literature, on CSR, it will be judicial to have a close look at the four dimensions introduced above.

## 3. THE FOUR PRINCIPLES OF SOCIAL RESPONSIBILITY BY CAROLL

Economic responsibility is the first pillar of the model. The author considers that it is intrinsic to the existence of the enterprise; the society expects companies to sustain themselves by continuously generating profits and encouraging shareholders to invest in order to have the necessary sources to last in the market.

The second responsibility is of a legal nature. Respect for the laws is regarded as a condition for a company to be socially responsible. However, it must be said that this is more of a responsibility than a choice (Pailot, 2005) as the company is obliged to respect the laws required by society. The third responsibility is ethics. It relates to everything that is right, fair and loyal. Indeed, the company is obliged to moralize its business if it wishes to be consistent with the principles and values of society. According to Carroll (1991), ethical responsibility is expected by society. The philanthropic or discretionary responsibility is positioned as the fourth component of the model. It reflects the degree of commitment of the company to the contribution of social welfare. The author considers that this responsibility is less important than the others but it is desired by society, as well. Carroll's (1979) model, as simplistic as it is, proposes a framework of reference and of interesting analysis of the concept of social responsibility. It allows finding a common ground between pure liberals (Friedman, 1962) that the only corporate responsibility is creating wealth for shareholders and proponents of stakeholder theory (Freeman 1984, Donaldson and Preston 1995) who recognize the company's responsibilities towards its stakeholders. In 1991, Carroll refined his basic model by proposing a new categorization corporate social responsibility in a pyramidal form (see Figure 2). In his new work, the author has created a certain hierarchy among the four components of social responsibility. It means a lower level responsibility should normally be supported before the higher level one take on importance. However, the economic responsibility is positioned at the base of the pyramid, followed by legal liability. Then comes the ethical responsibility and at the top we find philanthropic responsibility. In his work, Carroll (1991) states that these categories are not exclusive but cumulative. As a summary, below is the pyramid model of social responsibility (Carroll, 1991):



*Figure 1: Pyramid model of social responsibility (Carroll, 1991)*

#### **4. LEADERS, SOCIAL RESPONSIBILITY AND INNOVATION**

In recent years, a number of factors have contributed to the rise and practice of CSR in the context of Moroccan businesses. First, the Royal message in the conference (date) expressed the will of the state to promote the values of CSR given their incidence on human development and the preservation of the environment, hence on sustainable development. The Moroccan legislation has also introduced new laws which do stress the importance of preserving resources and respecting the regulations related to social relations within businesses (Jorio & Kasmi (2020)).



Another important factor which shows the growing importance of CSR is the CGEM (The General Confederation of Moroccan Enterprises) Label for CSR: « la Responsabilité Sociale de l'Entreprise » (SRE). Through this label, the CGEM commits itself to the defense and promotion of the universal principles of CSR and sustainable development in their business activities. The last factor is related to the behavior of Moroccans towards companies. The changes experienced by the Moroccan society and the attitude of mistrust towards companies show that the socio-economic environment has undergone changes that could determine the success or failure of companies in the Moroccan economic fabric. The 2010-boycott campaign against Central DANONE, one of the leaders in the Moroccan market, was a good example of how the changing attitude of consumers can aggressively affect the company's reputation. Facing more informed and demanding citizens, the Moroccan company must adapt and integrate the wave of change. As already pointed out by the CEO of General Electric, quoted by Morgan Witzel (2008), when a society changes its opinion, it is better to be in front of this change and not behind it (Kasmi 2019). It is clear that these changes experienced in the Moroccan context show that Moroccan consumers have become aware that the role of organizations is not limited to being an economic actor but also to being a social actor, as well. Therefore, Moroccan organizations need to change and innovate in the response of these new trends. Through identifying new business practices, Moroccan organizations may provide a collective resource for innovation. According to Schumpeter (1934), the creation of new knowledge or new combinations of existing knowledge will lead to innovative performance in the enterprise. The European Commission (1995) also shares this concept in the Green Paper on Innovation. It defines innovation as the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply, and distribution; the introduction of changes in management, work organization, and the working conditions of the workforce (p. 688.). It may be deduced from these definitions that innovation is not merely integrating new technology and new products but it is also new ways in managing organizations and doing business. In addition, innovation can be referred to as the growth and the improved performance of an organization, which can lead towards its sustainable success. In the new business world, companies and organizations come together to affirm that effective leadership is considered as one of the core contributors to the overall business performance and development. Smart leaders are those who possess acquired skills and knowledge, gained from experience and education, which will enable them to manage in a very efficient and effective way the everyday tasks. According to many authors (Virtanen, 2000, H), the leadership competences are strongly connected with the successful organizational development. The competent leadership can manage problems, create new ideas, and assist the staff to implement and cope with change and innovation. Moreover, the role of leaders is very important as they are responsible for creating the suitable environment within the organization to adopt the change. Since the organizational culture is paramount for any organization in dealing with innovation and shifts, the leader is the one who provides new strategies to develop and maintain the values and beliefs that are appropriate to this culture. Finally, Georgiades and Macdonell (1998p. 21) summarizes the role of leader in four 'explicit imperatives' which are to scrutinize the external environment, to develop a vision and communicate its strategic implications, to develop the organization's culture so that it can deliver this vision and its strategy, and to specify what management has to do to 'drive the desired culture'.

## 5. METHODOLOGY

The main objective of the present study is to investigate the level of CSR awareness among Master degree students in Law and Economics as they are considered potential leaders for the Moroccan organizations. In order to achieve our objective, the questionnaire was administered to 137 university students, divided evenly on five groups representing different academic fields

of study. The rationale behind this division stems from our attempt to test the hypothesis that the variable of “field of study” has a bearing on the students’ responses to the questionnaire items. The students are supposedly advanced where their knowledge is concerned. The “humanities” group are Semester 6 students and are about to obtain their BA degrees in English, while the rest being Master’s students in Law and Economics. The sample consists of both males and females aged between 19 and 25. Because the “social responsibility” variable is composite with its many facets, it was thought of relevance to divide these responsibilities into four categories, inspired in large part by the work of Carroll. This being so, the questionnaire items were contrived such that they elicit information in regard to economic responsibility (4 items), legal responsibility (4 items), ethical responsibility (4 items) and philanthropic responsibility (4 items). All questionnaire items were scored on a Likert scale with strongly agree (scored 5) and agree (scored 4) at one end and disagree (scored 2) and strongly disagree (scored 1) at the other end. The choice neutral (scored 3) and appears in the middle. Each four items were added up to form a variable using the “compute variable” function in SPSS software. A sample of the full questionnaire appears at the appendix of this article. In order to test the first hypothesis of the present study, whether the students’ area of study affects the level of awareness they demonstrate about the social responsibility of companies, a MANOVA test was run. Before doing so, however, the main assumption of homogeneity, was checked using Levene’s test, which yielded a value of (.67), (.64), (.08) and (.1) for economic responsibility, legal responsibility, ethical responsibility and philanthropic responsibility, respectively. In order to compare “employee” students with their “regular” counterpart, an independent samples t-test was run.

## 6. RESULTS

The results of the MANOVA test run for group comparisons on each of the four social responsibility variables showed a tendency of these groups to be mostly homogeneous, indicating that they do not, overall, differ in their judgments. Thus, the four groups are not shown to differ with regard to economic responsibility with a p-value of (.97) when comparing the Business and Finance group with its Law and Diplomacy counterpart. The rest of the comparisons are presented in as follows:

Economic responsibility:

- Business and Finance vs. Entrepreneurship and Managerial Engineering (.89)
- Business and Finance vs. Management students (.32)
- Business and Finance vs. Humanities (.96)
- Law and Diplomacy vs. Entrepreneurship and Managerial Engineering (.99)
- Law and diplomacy vs. Management students (.73)
- Law and diplomacy vs. Humanities (.1)
- Entrepreneurship and Managerial Engineering vs. Management students (.86)
- Entrepreneurship and Managerial Engineering vs. Humanities (.99)
- Management students vs. Humanities (.73)

However, with respect to legal responsibility, the comparison between Law and Diplomacy and Management students is singled out as significant, with a p-value of (.03). The rest of the group comparisons are not revealing of any difference and are presented as follows:

Legal responsibility:

- Business and Finance vs. Law and diplomacy (.99)
- Business and Finance vs. Entrepreneurship and Managerial Engineering (.91)

- Business and Finance vs. Management students (.09)
- Business and Finance vs. Humanities (.1)
- Law and Diplomacy vs. Business and Finance (.99)
- Law and Diplomacy vs. Entrepreneurship and Managerial Engineering (.71)
- Law and diplomacy vs. Management students (.03)
- Law and diplomacy vs. Humanities (.98)
- Entrepreneurship and Managerial Engineering vs. Management students (.86)
- Entrepreneurship and Managerial Engineering vs. Humanities (.99)
- Management students vs. Humanities (.73)

Neither ethical responsibility nor philanthropic responsibility exhibits any significant difference among the groups compared. A look at these results illustrates this state of affairs:

Ethical responsibility:

- Business and Finance vs. Law and diplomacy (.31)
- Business and Finance vs. Entrepreneurship and Managerial Engineering (.68)
- Business and Finance vs. Management students (.87)
- Business and Finance vs. Humanities (.77)
- Law and Diplomacy vs Business and Finance (.31)
- Law and Diplomacy vs. Entrepreneurship and Managerial Engineering (.97)
- Law and diplomacy vs. Management students (.70)
- Law and diplomacy vs. Humanities (.74)
- Entrepreneurship and Managerial Engineering vs. Management students (.99)
- Entrepreneurship and Managerial Engineering vs. Humanities (.1)
- Management students vs. Humanities (.1)
- Humanities vs. Management students (.73)

Philanthropic Responsibility:

- Business and Finance vs. Law and diplomacy (.91)
- Business and Finance vs. Entrepreneurship and Managerial Engineering (.99)
- Business and Finance vs. Entrepreneurship and Managerial Engineering (.96)
- Business and Finance vs. Humanities (.56)
- Law and Diplomacy vs. Business and Finance (.91)
- Law and Diplomacy vs. Entrepreneurship and Managerial Engineering (.76)
- Law and diplomacy vs. Management students (.1)
- Law and diplomacy vs. Humanities (.97)
- Entrepreneurship and Managerial Engineering vs. Management students (.99)
- Entrepreneurship and Managerial Engineering vs. Humanities (.76)
- Management students vs Humanities (.93)

From the data presented above, one can observe that the Law and Diplomacy and Management groups differ only with regard to the variable of Legal responsibility. The rest is not indicative of any significant difference. The second of our hypotheses relates to whether “employee students” would exhibit the same judgmental behavior as their “regular” (students who are not employees) counterparts. An independent-Samples t-test was run to submit to test this hypothesis. The results obtained reveal significance only in regard to ethical responsibility, with a p-value of (.02). The other variables not revealing of any significance: Economic responsibility (.30), legal responsibility (.48) and philanthropic responsibility (.38).

## 7. IMPLICATIONS AND RECOMMENDATIONS

Based on our hypothesis, students in Economics and Law should be more sensitive to Corporate Social Responsibility matters than those in other fields such as humanities. In fact, Economic and Legal university programs include courses that aim at alarming students on legal, social, economic, and political matters that they will encounter as potential employees and leaders. Moreover, students with Entrepreneurship and Management concentration should be more subtle to the issue CSR for the reason of their mindset building process enabling them to create sustainable businesses, thus running their future businesses is bounded by CSR actions in order to last, generate profits, and serve future generations. As per finance concentration students, managing while integrating CSR programs in their daily practices is seen as means of improving the financial performance, reducing long terms costs, and affecting positively the business bottom line. Therefore, the program content that exists today in Moroccan universities needs to be reviewed in terms of CSR. As we have mentioned above, CSR actions as well as Moroccans' attitudes are changing, so universities should be abreast of these shifts. In order to cope to these changes, some examples could be to adapt courses that aim specifically at corporate social responsibility actions and responsible leadership for different majors, which will enable them to tackle CSR issues of different types of corporations and organizations. As a result, these modules should encourage future leaders, in this Moroccan ever-changing society, to think further than their own ambition and to understand how the actions of an individual impact on the whole. Thus, their role is not merely to micromanage but to lead, guide, and inspire others to a sustainable future.

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## FROM BISMARCK TO BEVERIDGE: CONTRIBUTIONS FOR THE UNDERSTANDING OF DIFFERENT SOCIAL SECURITY MODELS

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### ABSTRACT

*This paper examines the topic of social security and healthcare systems accessibility, based on the principles of the German Bismarck and the English Beveridge models. Both seminal models are contextualized within an environment of social turmoil, emerging as strategies of pacification and political conditioning to emerging socialism trends. The impact of such models is as significant as it can be observed that they were inspirational to most of the models of social security and health protection adopted across Europe. In this paper, such contextualization is bridged while analyzing and translating to the current and corresponding German and Portuguese models. It is concluded here that the Portuguese model is a hybrid one, while observing for references on the English and German models, namely with regards to financing, given the mixed strategy of public and private funds. The Portuguese model suffers from a certain exhaustion and is found to be in a situation of unsustainability. One justification of such poor condition may be due to the fact of being an adaptation of models that were built and supported on other economic and social realities, certainly benefiting from better dynamics than the Portuguese one.*

**Keywords:** *Bismarck, Beveridge, Social Security, Healthcare, Insurance, Portugal, Germany*

### 1. INTRODUCTION

In line with the right to work, the right to social security and health, emerges following the industrial revolution that broke out at the end of the 18th century, beginning of the 19th century, in Great Britain, as a social demand of workers, sponsored by political movements. In practice, the transition from a rural society paradigm to the development of an industrialized urban society model, especially fostered by the introduction of machines, brought radical changes to the organization of work, disabling several artisans, giving rise to unemployment and union movements. As a result of successive protests and demands, in the face of what many understood to be the abuses of the bosses in the face of the new labor reality, social protection would come to be recognized, already in the second half of the 19th century, in some European

countries, namely in Germany and in Great Britain. In this context, the following stand out: i) the model developed in Germany by Bismarck; ii) the Beveridge model in Great Britain. Thus, although there are currently several models of social security, we found that most, if not all, have their origins in the proposals of Bismarck and Beveridge. It should be noted that Otto Von Bismarck was German Chancellor and William Henry Beveridge was 1st Baron Beveridge, an economist by training and British social reformer. It is a brief characterization of the referred models that is presented below, justifying its study, given the still great impact of the Bismarck and Beveridge models in the current social security systems at European level, in line with Bonoli (2003); Myles & Pierson (2001); Hinrichs, (2011); Weaver (2010). The knowledge of these models provides us with a background that allows us to start a comparative analysis of the German and Portuguese systems, presenting their critical analysis.

## **2. THE BISMARCK VERSUS BEVERIDGE MODELS**

In 1883, during the industrial revolution, the first social security system emerged in Germany, called the Bismarck national health system model. A few years later, in 1948, Great Britain introduces the national health service, called the Beveridge model. Both models reflect concerns about the health care of their fellow citizens, whose fundamental principle provided for access to health, regardless of ability to pay, or lack thereof. As already mentioned, these models appear contextualized, not only by the industrial revolution, but also as measures to combat low productivity and absenteeism associated with illness, resulting from poor living conditions and the war, this reality being enhanced by the socialist movements that have included these concerns in their political agendas. The Bismarck model reflects more the market values, therefore involving private agents. It is a prudent model, which bets on cost containment, inspired by the model of insurance companies, being rigorous in the management, for example of hospitals public, strongly inspired by private management. Among the countries that adopt these principles are Germany, Austria, Belgium, France and the Netherlands. In turn, Bismarck presents his proposals in a context of social disturbance and political growth of socialism, with the aim of calming the people and discouraging people from joining the socialist movement. Ultimately, the model proposed by Bismarck aims to guarantee working citizens a standard of living. To this end, Bismarck presents a model based on the following principles:

- Insureds are all paid employees.
- Financing is done through contributions, in series according to the income obtained.
- Contribution's payables are based on wages.

On the other hand, the Beveridge model assumes the State as the central entity of the health system, deriving from this assumption for the establishment of several public-private partnerships. It should be noted that the government is always present in the planning and management of health services. It is a strategic health option for all, financed by taxes. Denmark, Spain, Italy, Ireland, the United Kingdom and Sweden are the most paradigmatic examples of the adoption of this system (Carrondo, 2014). In 1942, Beveridge presented the British Parliament with a comprehensive report on social policy issues. According to Franke (2004), the text contained concrete proposals for the creation of a comprehensive social insurance system, including the integration of social insurance forms, the creation of a general health service, occupational accident insurance. Beveridge presented ideas for family assistance, in the sense of keeping the employment rate high, without neglecting protection proposals in the event of unemployment. Beveridge presented his proposals in a socially tumultuous context, comparable to Bismarck's. However, the social tension in England is essentially due to the War. In an adverse context, Beveridge seeks through his proposals to generate measures that guarantee the subsistence of populations.

Briefly, Beveridge's proposals were based on principles that he considered fundamental, such as:

- Universality, including the entire population.
- Public, managed and financed by the State.
- Fixed and constant contributions, requiring uniform and fixed-amount contributions.

In summary, the most significant differences between the Bismarck and Beveridge models are:

BISMARCK MODEL	BEVERIDGE MODEL
<ol style="list-style-type: none"> <li>1. Coverage depends on the individual's employment status.</li> <li>2. It is characterized by a multiple insurance scheme.</li> <li>3. Financing depends on contributions from the insured, the employer and, sometimes, the State.</li> <li>4. There is a differentiated management of each risk and even of the insured groups.</li> </ol>	<ol style="list-style-type: none"> <li>1. Towards universalization.</li> <li>2. Based on the unification of risks, with protection derived from the generic situation of need.</li> <li>3. Financing largely depends on the state budget.</li> <li>4. Unified and public administrative management.</li> </ol>

*Table 1: Differences between the Bismarck model and the Beveridge model  
(Source: adapted from Manzur, 2016)*

In summary, Bismarck's model denotes a public pension scheme of the type related to earnings with contributions based on real wages and the level of benefits somehow related to past contribution/employment history. Employer-sponsored and individual pensions play a variable but wholly auxiliary role. On the contrary, the Beveridge model means a flat-rate basic pension that is financed by taxes or tax-like contributions. The employer's (professional) supplementary pensions and individual pensions are expected to guarantee adequate salary replacement in old age (Hinrichs, 2021).

### 3. THE INSTITUTIONALIZATION OF SOCIAL SECURITY

As we were able to verify social security and the rights to health and protection, both in illness, at work and in old age, specifically in retirement, are the result of social struggles and, in practice, translated into models that come from the 18th and 19th century. The subject is controversial, reveals itself, between the lines, as a target of political instrumentalization, and is currently undergoing pressure towards a paradigm shift, still dominated by the principles of Bismarck and Beveridge, despite the centuries that separate us and the changes occurred in the world. There is, therefore, no notion of social security that gathers a consensus, both for decision-makers and authors. Social security is made up of rules, the content of which has been subject to the economic situation. Recognized rights are volatile, as if they were listed on the stock exchange, improving when economic conditions allow, suffering drastic cuts when the economic situation deteriorates, not providing anyone with guarantees of security, either in illness or old age. Currently, the guarantee of social security for all is generally assumed. For example, in the United States, the Social Security Act of August 14, 1935, enacted to address the economic crisis that devastated the country; eradicate poverty and prevent social upheavals. The Atlantic Charter of 1941 and the Washington Declaration of 1942, also demonstrate this same concern when presenting that all nations have a duty to collaborate in the socio-economic field, aiming to guarantee their citizens the best working conditions, economic progress and social security. The same expression and ideas were discussed in the resolution of the International Labor Conference in 1941.



From then on, a series of agreements and recommendations based on the concept of "social security" were approved and some of its principles were established. The ILO's 1944 Philadelphia Declaration elevated social security to an international instrument and proclaimed the need to expand its coverage. The Declaration of Philadelphia, concerning the aims and objectives of the International Labor Organization, formally annexed to its Constitution in 1946, affirms that all human beings, without distinction of race, creed or sex, have the right to achieve their well-being, material and their spiritual development in conditions of freedom and dignity, economic security and equal opportunities, so that the central objective of national and international policy is to obtain the necessary conditions to achieve these results. For the ILO, social security is the protection that society offers to its members, through a series of public measures, against the economic and social deprivation that would otherwise result from the disappearance or a sharp reduction in their income, as a consequence of illness, maternity, work accident or occupational disease, performance, disability, old age and death, as well as protection in the form of medical care and assistance for families with children. According to this definition, social security includes social insurance (contributory schemes), social assistance (benefits financed with tax revenues, which are provided exclusively to those with modest incomes) and universal benefits (those that do not require a prior income examination or economic means). Furthermore, the Declaration of Philadelphia and Convention 102, "Minimum Standard" of the ILO, defined the scope of social security: medical care, monetary benefits for sickness, maternity, work-related injuries, old age, disability, survivors, unemployment and family. This agreement was not only an evolution with regard to the rules of the "first generation" (which considered social insurance), including a series of social measures, but also determining the objectives to be achieved. The UN's Universal Declaration of Human Rights of 1948 establishes in article 22 that every person, as a member of society, has the right to social security. On the other hand, Articles 23 and 25 of the Declaration specify the right to medical care in the event of illness, maternity, disability, death and old age. For its part, the International Covenant on Economic, Social and Cultural Rights of 1966 establishes in its article 9 the right of everyone to social security, including social security. On the other hand, the Social Security Law establishes in its second article that social security aims to "guarantee the right to health, medical care, protection of the means of subsistence and social services necessary for individual and collective well-being, as well as the granting of a pension which, in your case and prior fulfillment of the legal requirements, will be guaranteed by the State". The subject is sensitive and motivates broad discussions. Despite the lack of consensus on the scope of social security, it can be concluded that it translates into a set of measures that include aspects of social assistance and social security with preventive, repairing and restorative effects, to guarantee the well-being of populations. The right to social security is constituted by the set of legislative and regulatory devices that protect workers and their family members or economic dependents, against risks that may reduce or eliminate their income, as a result of illness, maternity, work accident or occupational disease, unemployment, disability, old age and, ultimately, death. It should be noted that in countries inspired by the continental legal model, German influence, the process of unification and systematization of social insurance and the influence of the various international instruments enacted on social insurance, favored the emergence of social security. So, historically, the term social security appears as a systematization and rationalization of the existing social security. Eventually, this will explain why Convention 102 of the ILO, the foundation of social security, is, in most cases, based on the rights derived from this agreement, on the condition of being a salaried and subordinate worker. Its universality was based on the condition that all human beings, at one time or another, would be workers. However, it has the gap of not having foreseen the emergence of other types of workers not necessarily subject to a relationship of subordination or a tenuous subordination, as is the case of economically subordinated para-subordinate or independent workers.

For the new categories of workers or the new unemployed, social protection would compensate for their needs. The emergence of social protection, on the other hand, has a multifaceted origin: poverty, the emergence of poor workers, the increase in people without work, the existence of workers without social protection, the existence of vulnerable groups, as well as the need to ensure universal protection for all people by virtue of their human condition. The reformulation of some social security models, such as English, American and New Zealand, are the general lines of social protection, as they included both salaried workers and other cases of self-employed workers. In fact, they can be understood as the first models of “Social Protection” because they realized the failure of the universality of social security. Indeed, analyzing the ILO Framework Convention, number 102, which establishes the right of every person to human social security, this principle is not universal, since practically all insurance rights or encompassing are subject to the condition of worker and not human. Therefore, their social security models or systems are, in fact, the germ of nascent social protection. For the rest, social security never imagined the emergence of poor workers, informal workers, the increase of independent work or the emergence of economically dependent self-employed workers. So, it was from the shortcomings in the field of social security that the construction of the new concept of social protection began, hence the emergence of some confusion or conceptual relationships. Interpretations of what should now constitute the term “social protection” vary. In fact, the difficulty in establishing a clear concept is due to the fact that it gradually stands out from social security, with which, although it may share the same objectives and principles, the truth is that it is not necessarily directed for the same type of population. The notion of contemporary social protection can be seen in the report of the Secretary-General of the United Nations (UN), since 2001. Those documented to understand social protection as a “set of policies and programs governmental and private societies with which they respond to various contingencies, in order to compensate for the lack or substantial reduction of income from work, assistance to families with children and to offer care tips and housing for the population.” Its policies are concerned with both the total deprivation and vulnerabilities of the poorest and the needs, as well as those who are not, at the moment, but need to feel safe in adverse circumstances, in certain stages of the life cycle, as a result of the changes in the nature and forms of work organization (informal workers, for subordinates or economically dependent self-employed workers). In Mexico, for example, the concept of social protection has focused mainly on the issue of health, understood as a mechanism through which the State guarantees effective, timely and quality access, without disbursement at the time of use and without discrimination to services that meet comprehensively to health needs, through a combination of health promotion interventions, prevention, diagnosis, treatment and rehabilitation. At a minimum, it should include outpatient services at the first level of care, as well as outpatient and inpatient care for the basic specialties of internal medicine, general surgery, obstetrics-gynecology, pediatrics, and geriatrics at the second level of care. The above definitions serve to understand how social security and social protection, although intended to cover social contingencies, despite the supposed universality of the former, this has been understood as being linked to workers who have a formal employment relationship. In this sense, its social contingencies are met through social insurance, while the second focused more on addressing the social contingencies of the non-salaried population or those with certain types of social vulnerability.

#### **4. IMPACT OF BISMARCK AND BEVERIDGE MODELS ON EUROPEAN SOCIAL SECURITY SYSTEMS**

Bismarck and Beveridge are considered the precursors of social security in Europe, and the models are adapted to the reality of nations, making it difficult to identify 100 percent of the matrix used, often resulting in hybrid situations (Berié and Fink, 2000).

One way to identify models is through the analysis of social security funding sources. For example, according to 2005 data, the most important source of funding for social protection in the European Union as a whole of 27 countries was social security contributions, which accounted for 59.1% of total revenue. The government's allocation from tax revenues was 37.6%. In addition, other revenues represent 3.4% of total revenues (DICE, 2008). Looking at some countries per se, such as the Czechia, Slovakia, Austria, Belgium, Estonia, France and Slovenia, the rate of effort in social security financing, by social insurance contributions, exceeds 65 percent of the total revenue. In contrast, Cyprus, Denmark, Ireland, Norway and the United Kingdom finance their social protection systems primarily through taxes, whose share of total revenue exceeds 50 percent. As we have seen throughout this study, these differences essentially reflect the strategic options, originating in economic and social history and which were captured by Bismarck and Beveridge, in a framework that is summarized in two blocks. On the one hand, the northern Europe of Beveridge. On the other hand, the center of Bismarck's Europe. However, the integration of Europe promotes, as it were, a fusion of models. Indeed, in recent decades, tax funding has grown in countries where it was previously low, such as France, Italy and Portugal. In the particular case of Portugal, with the social revolution of April 1974, welfare civil society grew, favored, at first, by the context of high political and associative popular mobilization, and, later, by the consolidation of a democratic Welfare State. which combines the Beveridgian, social-democratic and universalist inspiration with the Bismarckian legacy (Branco, 2017). Thus, a natural question arises as to how the integration of two systems with different objectives has been happening? According to Purton (1996), the answer lies in the fact that, despite the differences between the models and the different objectives, both Bismarck's and Beveridge's proposals also had aspects in common, namely: i) identifying and solving the problems of poverty and income inequality, promoting social cohesion and the efficiency of the economy as a whole. ii) improve individual security and alleviate social tensions and unknown risks. This means that society has been evolving significantly since the beginning of systems (Thode 2003). For example, there has been an increase in life expectancy, prolonging periods of unemployment and dependency. In addition, fertility rates dropped drastically, affecting the financing of the social security system in the long term, with a decrease in the participation of young people in active life. All this was exacerbated by changes in the age structure of the population, more specifically the increase in average life expectancy, raising average life expectancy to an age of over 65 years. The Beveridge system is also under demographic pressure. As old age grows longer and the elderly are prone to illness, health care services continue to increase, both quantitatively and qualitatively (more expensive medical services and technology). The problem here is that the financing of the health system competes for taxes with other areas, becoming a political instrument. As a result, Beveridge's model also encounters funding difficulties and is under threat. Changes in the political and social paradigm, as well as successive crises, especially the one in 2008, have revealed the long-term unsustainability of the social protection system.

## 5. THE PORTUGUESE SOCIAL SECURITY MODEL

Institutional fragmentation occurs in Portugal, with many special regimes existing alongside the general regime (Ascoli, 1997). Indeed, Portugal's model is guided by a mixed financing system. On the one hand, it is financed through taxes through the State budget. However, it also finds sources of public-private funding, on which the model of the National Health System (SNS – Serviço Nacional de Saúde) is inspired. In fact, in Portugal there is a particularity of the SNS, allowing the existence of subsystems, such as Assistance in Disease to Civil Servants of the State (ADSE). This fact causes citizens to be differentiated, some having both options and others only one option. However, as a rule the SNS is financed through the monthly contribution of workers and companies, according to expenditure.

In terms of financing, it also allows for a wide range of options, the main source of revenue being indirect taxes, which are basically all taxes on goods and services that we consume or purchase in our daily lives, from food, fuel, between others. It should be noted that this is a feature that sets us apart from most other European countries that choose to finance their social and health protection system with direct taxes. i.e., taxes levied on income, the best known being the IRS (“Imposto sobre o Rendimento das pessoas Singulares”, standing for Personal Income Tax in Portugal). There is a small percentage of Portuguese who use private health insurance, estimated at around 10 percent, and this form of financing is made entirely from private funds and is voluntary. Banks and insurance companies are the ones who usually offer this type of service, allowing access to private clinics, and it is also limited because it does not guarantee all types of treatments in the network of operators. Based on the analysis of this paragraph, it can be concluded that it would be very difficult for Portugal to fully adopt the Bismarck model, given our precarious economic and financial conditions. On the other hand, it is particularly difficult to be a welfarist, with the same economy and to adopt Beveridge's ideas in a sustainable way over time. Thus, the Portuguese model is under strong pressure, given the conditions on which it is based, both in terms of access to health and social protection, as well as funding. Access to public finance is limited by GDP growth, which is very low. The situation is worsened by public spending and the incessant increase in public debt that led Portugal to a situation of default and intervention and assistance from the IMF. It should be noted that this is not the only case in Europe, given the aging of the population, and the breakdown in the principle of solidarity in the younger generations to finance the older ones, given that the reduced births and the increase in average life expectancy. It is also known the scarcity of resources, until very recently, the public sector used, as if they were unlimited. In this sense, despite the excellent basis of the Bismarck and Beveridge models, it is not enough to use them, given that the realities and contexts of use are different. The issue is sensitive and over time the reforms have been successively postponed, pushing the problem forward, worsening from generation to generation. According to Fernandes (2015), from 1974 onwards, popular political and associative mobilization grew, consolidating a democratic welfare state that combines Beveridgian, social-democratic and universalist inspiration with the Bismarckian legacy. The provision of social services by civil society in partnership with the Welfare State is a characteristic of Portugal. Democracy gave rise to social citizenship, aiming to overcome the traditional division that the Estado Novo advocated between welfare (social insurance) and assistance (social action). Non-contributory benefits are also recognized as a social right of citizenship. Democratization dramatically extended the political and economic influence of the majority, popular social groups. In an attempt to break with the authoritarian past, social demands grew substantially, translating into egalitarian and universalist social policy measures, but also into a significant increase in expenditure. In this context, the creation of the minimum wage stands out; disability, orphanage, maternity and early childhood protection; creation of a universal and integrated social security system, 13th month of pension payments; increase in family allowance; social pension, among others (Guibentif, 1985). As is typical in cases of analysis based on emotions, there has been a shift from a situation of limited rights to unlimited rights. In other words, from the 8th to the 80th, rights having been institutionalized in the 1976 Constitution. Thus, like Bismarck and Beveridge, social security and access to health, among other rights, were negotiated on the basis of a resolution and social contestation, having been, it seems, used as a means of negotiation and not thought of as a means of solving a problem of the people and the country itself. Currently, the right to social security is therefore based primarily on the mandate to protect the dignity of the human person – but of the human person understood as a concrete, situated being, far from the fiction of a perfectly free and decontextualized human being (Loureiro, 2010).

## 6. THE GERMAN SOCIAL SECURITY MODEL

In Germany, it is natural that the social insurance model adopted is that of Bismarck, instituted in 1883. It resulted from social demands, and Bismarck considered that a little socialism is necessary, especially to avoid socialists. The former chancellor also considers that the State must ensure the social well-being of all members of society, particularly the weakest and most needy, using the means at its disposal for the benefit of the community. In this regard, on November 17, 1881, he announced in a speech and, later, between 1883 and 1889, he implemented a set of laws on insurance against sickness, accidents at work, disability and old age. Specifically, in 1883, he implemented the health insurance law, bringing together concerns about the disease in a single diploma, which are still preserved and recognized in current German legislation. The terms of the law establish the relationship between the obligation of affiliation to health insurance, according to paid work. The contribution is previously established at 2/3 for workers and 1/3 for entrepreneurs. The benefits depend on the value of the contribution and the insurance company. The aforementioned law provides for medical and pharmaceutical benefits for a period of thirteen weeks and economic benefits for an amount of half of the insured's salary. In 1884 he establishes the law on accidents at work. Under this law, employers would have to contribute to the savings fund to cover permanent incapacity as a result of accidents at work. The law goes further and provides for cases of total disability, that the worker receives a percentage income of 66% of his salary. More specifically, if the worker dies, the widow will be entitled to a percentage of 20%, and if she has children of the couple, she would receive an additional 15% for each child, if they are under fifteen years of age. In Germany, social insurance benefits are contributory and proportional to previous salary (Barbieri, 2007). All of this is financed by contributions paid by the employer. The benefits also provide for the granting of an income according to the incapacity for work. This law provided for periodic inspections of factories, with a view to preventing accidents, motivated by lack of working conditions. In 1889, a first system of mandatory retirement was instituted. The compulsory nature of the insurance was established for workers earning less than 2,000 marks per year. The pension limit was established for the age of 70, its value being proportional to the number of contributions of the insured. This law would be reformed in its scope, expanding its application to self-employed workers. These three laws together formed the basis of Germany's first social protection system. Later, from 1891 onwards, some regulations were added, namely to establish the maximum working time, which became eleven and ten hours for women and children, respectively. This group was also prohibited from working at night and having to rest on Sunday. In summary, the system advocated by Bismarck is considered one of the precursors of social security, insofar as it is based on a bilateral relationship between the employer and the employee, this relationship being imposed by law, but based on the principle of proportionality between the value of the negotiated prices and benefits received. In short, Bismarck's social insurance model is mandatory and makes employers and workers jointly responsible for funding.

## 7. CONCLUSION

From the study of social security in Europe, it can be concluded that it emerged in the 18th and 19th centuries, through Bismarck's German and Beveridge's English models. These models inspired most social security systems in other European countries, divided into North and Centre regions of reference. Analyzing more specifically the German and the Portuguese models, it is suggested that the Portuguese model is hybrid, using the viewpoints of both Bismarck and Beveridge. Nevertheless, such blending may not be necessarily appropriate. Furthermore, some of the supporting foundations were also differently adopted in Portugal. As an illustration, the financing of Portuguese social security results from indirect taxes, while the German model is financed by direct taxes.

Unsurprisingly, it is understandable a certain exhaustion and unsustainable situation in which the Portuguese model finds itself, for the simple reason that it is an adaptation of models designed for other economic and social realities, much more dynamic than the Portuguese one. It can be inferred that it would be very difficult for Portugal to fully adopt the Bismark model, given our fragile economic and financial condition. On the other hand, it is particularly difficult to be a welfarist, due to the same level economy, and to adopt Beveridge's ideas in a sustainable and enduring way. The financing of the social security system in Portugal largely depends on the governmental budget. In Germany, however, it is more dependent on individuals, employees, and their employers. Another illustration of critical differences, the administration of the pension system in Portugal is unified in the State and general for everybody, while in Germany it is defined according to specific cases. In resume, this paper shed light on how the ideas of Beveridge and Bismark influenced political debates in different countries through translation processes that adapted these ideas to the institutional and political context, such as Portugal and German. There are similarities between models, but the differences proved to be much more critical.

**ACKNOWLEDGEMENT:** *This work was financially supported by the research unit on Governance, Competitiveness and Public Policy (UIDB/04058/2020) + (UIDP/04058/2020), funded by national funds through FCT - Fundação para a Ciência e a Tecnologia.*



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# THE INFLUENCE OF FANI POPOVA-MUTAFOVA'S WORKS IN THE SOCIAL DEVELOPMENT OF BULGARIA IN THE EARLY 20TH CENTURY

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## ABSTRACT

*This article aims to present and analyse the life and works of Fani Popova-Mutafova. She was capable of laying out our past in the context of world history with amazing maturity. Her books can be read both as works of art and as rigorous historical testimonies, helping us gain unquestionable knowledge of history. An emblematic writer, she was extremely popular at a young age. Tried by the People's Court, she experienced the doomed road of many other Bulgarian (and not only) intellectuals from "Hosanna!" to "To be crucified!". Her works still fascinate readers not only with their colourfulness and fairy-tale atmosphere but also with their responsible attitude to history.*

**Keywords:** *Influence, Works, Author, Social development*

## 1. INTRODUCTION

The writer was born in Sevlievo at the beginning of the 20th century. Fragile, with fine-drawn features and beauty, she didn't fit the society's standards - neither in her hometown, nor later when she and her husband became part of the capital's beau monde, as they then called the local highlife. Her majestic yet tragic image seems to remain most often associated with that blood-freezing episode when the writer had to burn pages from her own novels to keep warm in the cold days during the socialist era in Bulgaria. Yet she is much more than that. She is also the finesse of a girl who grew up between Sevlievo and Turin, she is a young and intelligent woman, brought up in the values of patriarchal virtues, who had likewise tasted and absorbed the breadth of world and European culture and knowledge, she is also a writer who worships national shrines, but created works that exceed the standards of domestic literature.

## 2. THE INFLUENCE OF FANI POPOVA-MUTAFOVA'S WORKS IN THE SOCIAL DEVELOPMENT

Daughter of a Tsarist Army general, Fani Popova-Mutafova was born on October 16, 1902 in Sevlievo, where her mother came from. In 1907, the girl's father was sent to study at the Military Academy in Turin, where he came with his whole family. The Italian city with its century-old and multi-layered history, where the 5-year-old girl was to spend about four years, would forever strengthen her bond with the Italian language and literature. The years of the Balkan Wars followed, when her family had already come back to Bulgaria. She was predestined to meet her husband - Chavdar Mutafov – when she was a high school student then she married him when she was 19 years old. The year was 1922, when the couple left for Munich. There Fani enrolled to study playing the piano and Chavdar Mutafov - architecture. In her memoirs, she describes this period of their life together as materially poor yet bohemian happy and carefree. And despite her mother's disapproval of her son-in-law (apparently not only Tonka Obretenova and Ekaterina Karavelova dislike their daughters' chosen ones), Fani advocated her marriage and her professional choice - writing.



Despite the acquired diplomas and education, both were lured and devoted to literature. It is no coincidence that in Ivan Sarandev's book *Confessions: 101 x 31* by, where the author has collected the answers of 101 Bulgarian writers to 31 questions, Fani Popova-Mutafova defines her favourite pastime as: "rummaging in libraries with treasure hunter's passion, in chronicles, memoir and records of the most ancient peoples, to bring out from oblivion some very little known name of some very important man. I would not call this an occupation, but rather entertainment. Because if there wasn't an hour when the lights in the reading rooms in the libraries go out, I could wake up without getting tired of reading, searching, sifting tones to find some small precious grain."; while a most pleasant entertainment she considered: "reading an old favourite book, watching theatre, cinema, listening to music" (Sarandev, 1995). Thus this rummaging in libraries, this treasure hunter passion for ancient records and chronicles, as well as her undoubtedly great talent became evident in *The Thessalonian Miracle Worker* (1930) - a novel that marked the beginning of the famous tetralogy, including *Kaloyan's Daughter* (1933), *Yoan Assen* (1938) and *The Last of the Assenovs / The Boyana Master* (1939). Up until 1944, Fani Popova-Mutafova wrote 35 books that reached thousands of Bulgarian readers. Her works were distributed in a circulation of three to six thousand copies, while some of her historical novels reached eight thousand to fifteen thousand copies. This was quite a rare achievement in Bulgarian literature of that time. She was the most widely read Bulgarian author in that period. She published her first short story in 1924 under the name Fani Dobрева; with her historical prose she became the first woman in Bulgarian literature to touch this subject (Kasabova, 2020b). In 1937 she was awarded by the Bulgarian Academy of Sciences as "the first woman to work successfully in the field of historical novels and short stories", and her book *The Boyana Master* was nominated by the Ministry of Education for best Bulgarian novel of 1939 (Tashev, B.). In her article "The Little Marquise" or "The Great Bulgarian Martyr" - Fani-Popova-Mutafova Paulina Nikolova notes that the novels where the writer resurrects the Bulgarian past, although charged with romanticism, are based on deep scientific knowledge and true recreation of the historical truth (Novakova, 2020c). Fani Popova-Mutafova's maturity of considering our past in the context of world history is amazing. She was only 28 years old when *The Thessalonian Miracle Worker* had been published - the first part of the tetralogy about the Second Bulgarian Kingdom. Acclaimed by both readers and critics, she was compared to the patriarch of Bulgarian literature - Ivan Vazov. Some explanation of her exceptional epic talent could be the times she lived in, as well as the socio-political context in our country back then. These are the years after the Balkan War of 1912, the years after the First World War, the years in which Bulgaria was literally torn apart and subjected to severe reparations, or as Pauliana Novakova would put it: "A time when the country was experiencing the bitterness of its national catastrophes and the self-consciousness of the Bulgarians needed to be recharged with the energy of its national ideal" (Novakova, 2020c). The combination of historical authenticity, a result of many years of consistent and in-depth research, and romantic narrative, vivid images of characters, as well as philosophical interpretation of historical facts make her books irresistible to the audience eager for such readings. Perhaps that's why her answer to Ivan Sarandev's question "Which historical figure do you like best?" is: "Kera Tamara, the daughter of Ivan Alexander, who was betrothed to Murad for the sake of the Bulgarian people" (Sarandev, 1995). Fani Popova-Mutafova would not write about the Middle Ages only - she was interested in, researched and published stories, novels and plays about a number of prominent representatives of the Bulgarian Revival Era- Paisii, Sofroniy, Georgi Sava Rakovski, Hristo Botev, Vasil Levski, Angel Kanchev, Todor Kableshev. In 1972 she published a biography novel about Dr. Peter Beron, which is still considered one of the best portraits of this remarkable revivalist in Bulgarian literature. These works can be treated both as literature art and as strict historical testimonies to gain indisputable history knowledge from, and according to one of the most prominent researchers of the author - Katya Zografova: "They

are certainly a projection of universal values as Fani Popova is a profound psychologist.” (Zografova, 2015) The prominent Bulgarian Prof. Enrico Damiani says that Fani Popova as a woman and mother interprets the female soul ingeniously. Her interest in the psychology of the ruler, the great statesman, as revealed in the image of tsar Yoan Assen II, is remarkable. But it seems that the most exciting are her female characters in Kaloyan’s Daughter and her legendary stories Great Shadows. But before all that... Before all that, the omnipresent Destiny granted her the most severe and difficult trials. The year is 1944. A turning point in our entire history. After September 9, Fani Popova and her husband were arrested almost immediately. The so-called People's Court sentenced her to 7 years in prison for “pro-German activities” and “Bulgarian chauvinism” - accusations that stigmatize and condemn to oblivion, and often to death, many Bulgarian intellectuals. Due to the severe asthma, she suffered from, and after her father's repeated intercessions, she was pardoned and released after 11 months. But the veto on her work remained - it will be no sooner than two decades before they see the light of day again. Additionally, both Fani Popova-Mutafova and her husband were included in the protocol for expulsion from the Union of Bulgarian Writers on charges of fascism, which in fact closed their doors to Bulgarian publishing houses. Fani Popova had most often been accused of overestimating the role of kings, monarchs, and underestimating the role of the masses. This is far from the truth. In fact, she is deeply balanced in her work, and today we must admit that in the pantheon of images of great personalities she provides spiritual and historical support for future generations, “since, without these great personalities we could not have national self-confidence. It is guiding the writer in her life and creative work, and she pays a very high price for her so-called Great Bulgarian ideas” (Zografova, 2012). It was because of these “pro-Bulgarian ideas” that ruthless and cruel years followed. We have this precedent when some Western publishers asked for help the Bulgarian Writers' Union to contact the writer as they intended to translate some of her books, but the Central Committee of the Bulgarian Communist Party advised our writers to answer their Italian colleagues unequivocally: “Tell them she's dead” (Tell them, 2020a). Considering this retort, will there be a person “without sin” to accuse her of her later redactions in Kaloyan’s Daughter, The Thessalonian Miracle Worker and Yoan Assen II? Among the most prominent researchers of Fani Popova-Mutafova are Prof. Vera Mutaftchieva, Prof. Ivan Duychev, Prof. Mihail Arnaudov – competent scholars and connoisseurs of Bulgarian history, highlight her ability to be a precise researcher of historical facts and sources. She had been researching all available chronicles, using the languages she spoke: Latin, Old French, German, Italian. On the one hand, she strove to keep the most accurate factual knowledge, on the other hand - she had that really rare quality of a great fiction writer who can tell fascinating and colourful stories. The year is 1962. Fani Popova-Mutafova turns 60 and for the first time, after the relentless isolation, Kaloyan's Daughter is published although with that contradictory preface to the book, which was necessary and demanded by the Communist party conjuncture for “self-criticism”. Based on linguistic and stylistic comparisons, it was even suspected that the writer was not its authentic author. If that was the price of living a more dignified life, she certainly had paid for it. Whatever the truth - if anyone was in a lot of pain, it was definitely her. As of today, we have neither the right nor the grounds to rebuke or judge her. It is time that has judged for her place and role in Bulgarian literature. It remains for us to reflect on the credo words of Fani Popova-Mutafova, shared with Ivan Sarandev in that interview: “Do not be humiliated in difficult times, do not exalt yourself in the days of glory and power” (Sarandev, 1995). This was the end of the isolation of the writer, who survived the pain of denial, but failed to erase the tears from her eyes. She remained true to herself and to the Balkan which evoked her into existence and raised her and whose peaks gather winds and storms. And people who resist them – for better or worse. Always proud, capable, defending themselves and the truth.

### 3. CONCLUSION

Today, more than ever, we are accountable to the memory of our future generations to bring back from oblivion undeservedly forgotten or banned authors, including Fani Popova-Mutafova. An emblematic writer, extremely popular at a young age. Tried by the People's Court. Surviving the path of many Bulgarians, and not only, intellectuals from "Hosanna!" to "To be crucified!" Her works still fascinate readers with the colourfulness and fairy-tale atmosphere as well as responsible attitude to history.

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