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***Recent Advances in Information Technology,  
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## Preface

The purpose of the annual ITEMA conference is to support the power of scientific research and dissemination of the research results with the objective to enhance society by advancing knowledge; policy-making change, lives, and ultimately, the world. Our objective is to continue to be the foremost annual conference on cutting-edge theory and practice of information technology, tourism, economics, management, and agriculture, encouraging advancement via excellence, and interaction.

ITEMA conference aims to bring together the international academic community (experts, scientists, engineers, researchers, students, and others) and enable interactive discussions and other forms of interpersonal exchange of experiences and popularization of science and personal and collective affirmation.

The annual ITEMA conference is committed to the highest standards of publishing integrity and academic honesty as ensuring ethics in all its publications. Conformance to standards of ethical behavior is therefore expected of all parties involved: authors, editors, reviewers, and the publisher. The conference organizer follows the Committee on Publication Ethics (COPE) guidelines on how to deal with potential acts of misconduct.

All received full papers prior peer review process are subject to plagiarism check with iThenticate by Turnitin software. Any identified plagiarism automatically disqualifies a paper. Afterward, all full papers are double-blind peer-reviewed by the reviewers drawn from the editorial committee or external reviewers depending on the topic, title, and the subject matter of the paper. Peer reviewers provide a critical assessment of the paper and may recommend improvements. Although the author may choose not to take this advice, we highly recommend that the author address any issues, explaining why their research process or conclusions are correct.

The conference program of the 5<sup>th</sup> International Scientific Conference on Recent Advances in Information Technology, Tourism, Economics, Management, and Agriculture - ITEMA 2021 held on October 21, 2021, combined presentations of the latest scientific developments in the field of economic growth, sustainable development, different aspects of globalization, COVID-19 pandemic, business, marketing, human resource management, entrepreneurship, business intelligence, digital technologies, tourism, agricultural production, organic cultivation, and others. The selection of papers for presentation on the conference day was based on quality, originality, and relevance.

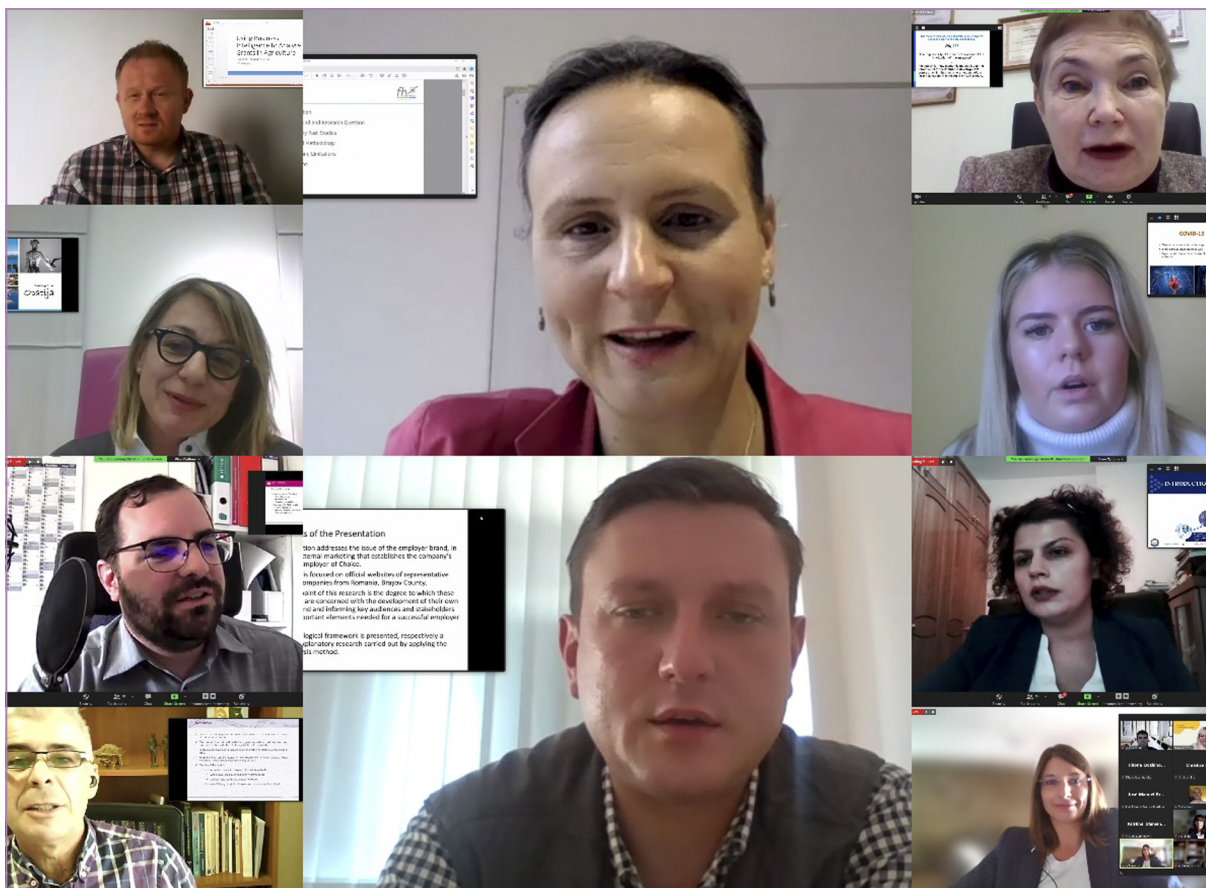
ITEMA 2021 keynote speakers were Professor Alla Z. Bobyleva – DSc (Economics) representing Lomonosov Moscow State University (Moscow, Russian Federation) with the topic “*Designing a sustainable development transformation program for a company*” and associate professor Victor-Alexandru BRICIU from the Transilvania University of Brasov, Faculty of Sociology and Communication, Department of Social Sciences and Communication (Brasov, Romania) with the keynote speech titled “*Employer of choice concept*”.

Within publications from the ITEMA 2021 conference:

- 11 double peer-reviewed papers have been published in the **ITEMA 2021 Selected Papers**,
- 27 double peer-reviewed papers have been published in the **ITEMA 2021 Conference Proceedings**,
- 59 abstracts have been published in the **ITEMA 2021 Book of Abstracts**.

Altogether ITEMA 2021 publications have more than 400 pages. All full papers have DOI numbers and ORCID iD integration.

Participation in the conference took **120 researchers** representing **20 different countries** from different universities, eminent faculties, scientific institutes, colleges, various ministries, local governments, public and private enterprises, multinational companies, associations, etc.







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# Security of Data and Web Applications during COVID-19

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## Keywords:

Cyber-attack;  
Cyber security education;  
Word Two;  
Vulnerability of system;  
Ransomware



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**Abstract:** Numerous companies in Serbia have come under attack, including large companies, state-owned companies and institutions. Various security vulnerabilities have been identified, which clearly indicates insufficient education of employees in the field of information systems security, as well as insufficiently developed awareness of the consequences of misuse of unprotected information and vulnerability of systems and applications. This paper lists some security measures, which may prevent unauthorized access to the system and misuse of personal or sensitive data. The paper also lists some examples of attacks using ransomware, which have led to massive data losses. These attacks were carried out via email, which is one of the most common types of malware attack and brings us to the question of whether it is necessary to introduce additional education on the topic of cyber security through the school system.

## 1. INTRODUCTION

Since the beginning of the COVID-19 virus pandemic, there has been talked of a large number of instances of unauthorized access to applications and servers, the destruction of servers by DDOS attacks, as well as the abuse of data privacy. Cyber Attack Trends Report states that in the first half of 2021. “global cyber attacks increased by 29%, as hackers continue to exploit the COVID-19 pandemic and shift to remote work.” During a pandemic, a large number of jobs are done via the Internet, various online platforms or server services are used and thus become the target of cyber-attacks. The increase in the number of attacks on web applications since the end of 2019 is especially noticeable. Some subjects enter the cyber world unprepared unaware of many security vulnerabilities. According to Brooks (2021), “The year 2020 broke all records when it came to data lost in breaches and sheer numbers of cyber-attacks on companies, government and individuals.” There is a clear need to raise awareness about security risks and the consequences of a possible cyber-attack because as hardware and software protection systems become better and more comprehensive, new and more complex types of attacks are emerging. In Cyber Security Awareness, Knowledge and Behavior: A Comparative Study (2020) authors after analyzing the situation, notice the need for a quick reaction because “as rates of data usage and internet consumption continue to increase, cyber awareness turned to be increasingly urgent”. It is possible to introduce various software and hardware protections, but even the most secure systems become vulnerable due to human errors and oversight. The authors found “the increased anxiety caused by the pandemic heightened the likelihood of cyber-attacks succeeding corresponding with an increase in the number and range of cyber-attacks” in Cyber security in the age of COVID-19: A timeline and analysis of cyber-crime and cyber-attacks during the pandemic (2021). In addition to the increase in the number of attacks, the level of impact on organizations and individuals in the event of a security breach is also increas-

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ing. According to ACSC Annual Cyber Threat Report 2020–21 “an increase in the average severity and impact of reported cyber security incidents, with nearly half categorised as ‘substantial.’”

## 2. EXAMPLES OF INFORMATION SYSTEM VULNERABILITY

### 2.1. Example of data coverage

One instance of exposing important information was discovered and reported to the authorities by a non-governmental organization during its research on data privacy protection during the epidemic. Namely, the researchers from the non-governmental organization for the promotion of human rights and internet freedoms Šer Foundation, noticed that the username and password for access to the COVID-19 information system were publicly available on the website of a certain health institution, which could lead to serious misuse of particularly sensitive personal and health data. The COVID-19 information system includes data on the cured, deceased, tested and persons who have been sentenced to self-isolation. By publicly announcing these logging parameters, anyone had access to the system itself, more precisely, any person who saw the username and password could freely access all parts of the system, which were allowed to health institutions, institutes, laboratories, and the like.

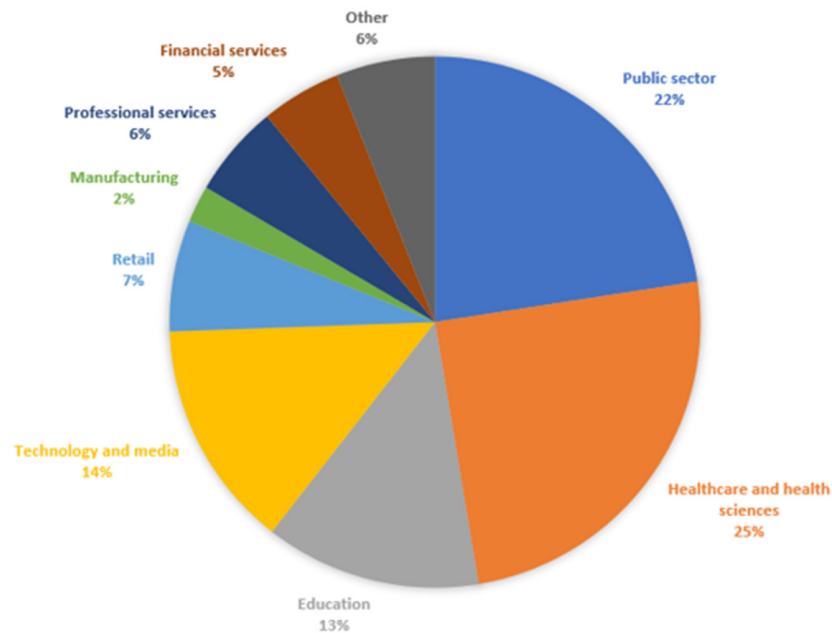
After the omission was discovered, the logging parameters were deleted, but the question still arises as to what would have happened if someone had maliciously accessed the system before, or even better, what if someone did. It was possible to see personal, health data, clinical trials, treatment information... Due to the sensitivity of the data, we can see how bad it was that the health institution made it public, not realizing the possible negative consequences, which could have been catastrophic. Let's just imagine that someone took all the patient's data and later sold it to a pharmaceutical company. All persons who were in any connection with COVID would receive advertisements for drugs on Google for years for their disease. Not to mention personal contact information, which could be misused for various purposes.

Healthcare institutions have an obligation to appoint a person in charge of data protection, but due to the limited number of staff, it may happen that an insufficiently trained and underqualified person is appointed to this position. It is still not known how the omission came about, but we can conclude that the information and security education of our citizens, and above all workers in state institutions, is at a fairly low level.

Later, a system of access was established using a qualified electronic certificate, which was most likely to be used from the very beginning. Some of the ways in which it was also possible to protect access to the system to some extent is access via VPN, which would be accessible only from laboratories and institutes and without which it would not be possible to access the application, let alone the login page, and use other people's login information. Another way to access it would be to provide a list of allowed IP addresses so that all clinics and institutes get access through their IP address and the login data itself. This can be a less secure way of protection and the problem can come if a person who has login information and is not entitled to that information, can access it from the clinic itself.

Irwin L. stated in Data breaches and cyber attacks quarterly review Q3 2021 that the healthcare and health sciences sector accounted for the most security incidents in Q3, which can be seen in Figure 1.

### Which sectors suffered the most security incidents?



**Figure 1.** Security incidents in sectors for Q3 2021.

**Source:** Data breaches and cyber attacks quarterly review: Q3, 2021

## 2.2. An example of weakening security

Another example is when companies, by introducing some restrictions, unknowingly make it easier for attackers. One of the ways applications restrict us is by limiting the length of the password. For years, there has been controversy about the best possible password in case of an attempted brute-force attack. Although a large number of companies have already taken some of the protection measures themselves: the impossibility of constantly trying to log in, waiting for about 10 seconds between logging in, waiting for a few minutes up to several hours after a certain number of unsuccessful logins, there are, however, many companies that have set conditions which make it easier for the attacker to access system in question. For example, companies are requesting a password to be between 8 and 20 characters in length and to consist only of letters and numbers. We come across a character type limit, which reduces the number of possible different password combinations, as well as the limit on the maximum length of the password, which is very undesirable from the internet security point of view. Most likely, after encrypting the password, if encryption occurs at all, the number of characters reaches a maximum predetermined in the database itself. This allows the attacker to guess which system is in question, and perhaps, in the worst case, the data encryption system itself. According to ACSC Annual Cyber Threat Report 2020–21 attackers “rapid exploitation of security vulnerabilities”.

## 2.3. Examples of ransomware attacks

Apart from security flaws, it is known that a malware attack can pose a serious security threat and that in addition to various inconveniences, it can also lead to serious problems and financial losses. Help Net Security stated that “malware increased by 358% overall and ransomware increased by 435% as compared with 2019.” Various institutions in Serbia also had problems with ransomware. On April 6, 2021, the mayor of Kruševac announced that the servers of the City Administration had been attacked. Such an attack locks all data that exists in the municipality,



through statements, accounts, as well as private data. An additional problem is when the backup data is stored on the same servers and devices as the originals so that any attempt to recover the data from the backup is impossible.

There were many ways to prevent it, from courses and training of workers on cyber security, in order not to open virus-infected files on business computers, to blocking the receipt of e-mail addresses outside a certain list of allowed domains. Thus, no person with an address from applications for creating temporary email addresses, which are also available for free on the Internet, could send unwanted content, until all addresses that are not in the same domain are blocked. Of course, the list of allowed domains is very limited, so it is always good to make a compromise between different solutions. Also, one of the good solutions is to install antivirus software that would scan and sign all sent messages, as well as received ones. It should be noted that it is important not to keep backups on the same devices as the originals, but on some external devices without Internet access.

A similar attack happened in Novi Sad when the system of JKP “Informatika” was attacked. As in the example in Kruševac, the work of all services was slowed down or blocked. In both cases, the attack was carried out with the help of mail, which is one of the most common malware attacks, in addition to adding files to the sites that users of the company visit. It is interesting to note that the attack took place while Novi Sad hosted a conference on technological innovation for the smart cities of the future.

In the attack itself, the goal is never to destroy the data but only the encryption so that they can charge for the decryption. All files are encrypted, and each computer says it is locked. One of the possibilities after a ransomware attack is to pay the requested amount, but the payment itself does not guarantee the return of all data. It is estimated that an average of 50:50 of returned and unrecovered data after payment of the requested amount is in a malware attack.

Similar attacks occur all over the world and are even more common than in our country. It is interesting to see that similar attacks and omissions occur in the most developed countries, and to know that they are also working on old, not updated versions of operating systems, programs... Many companies and institutions in the world have been attacked by ransomware. According to ACSC Annual Cyber Threat Report 2020–21 “Ransomware has grown in profile and impact, and poses one of the most significant threats to Australian organisations.” An additional problem is that attackers are developing new and more successful attack techniques, so even more important is quality and continuous education in the field of cyber security. Cyber Attack Trends Report states that in the first half of 2021. “Ransomware attacks surged 93% in the last 6 months, fueled by innovation in an attack technique called Triple Extortion.”

## **2.4. Examples of fraud**

Ordinary citizens are also targeted. Some of the more famous scams are of the type of inherited money abroad, relatives you have not heard of who would send you money, as well as the most famous scam of the Nigerian prince, after whom all scams of this type got their name, in which the person (attacker) presents himself as Nigerian prince asks you for a small sum of money to leave the country with some wealth: money, gold or diamonds, which you would later share. In all emails of this type, it is important to pay attention to the sender’s address, which in most cases can be a serious red flag from the very beginning that something is wrong. In addition, a

large number of messages come from foreign countries, which most often use Google Translator to send you text, which means that there are a large number of spelling mistakes, and some very strange, older, less-used words in the presentation itself. If you decide to contact that person, remember that sharing personal information is your responsibility and that it is usually impossible to find the culprit for a crime against your information, credit card, or passport.

## 2.5. Phishing is often used to attack citizens.

A large number of such messages arrive to most people daily, and usually end up in a spam folder with their providers, but one message has recently attracted a great deal of attention. It is an email, in which the person introduced himself as the Post of Serbia and asked for the amount, because some package arrived from abroad, which can be seen in Figure 2. People who do not use online shopping or do not receive packages from abroad do not know what the system is like if a package arrives that needs to pay customs, so they can immediately fill in their data and thus give the attacker everything he needs. Special attention should be paid to the sender's email, which is *Postars @ \* @ posta.rs*, which can confuse even more experienced users. Also, the URL of the page it sends you to is *tracking-posta-rs.com*, which acts as a legal domain and can be seen in Figure 3. Also, the amount itself is very intelligently done, because it is not a rounded number, but 36.24 RSD. On these occasions, it is best to contact the representative office of the institution that is thought to have sent the email. In these cases, state institutions usually leave a picture of a copy of the payment slip, so if that part is missing, it can indicate that it may be an attempt at fraud.

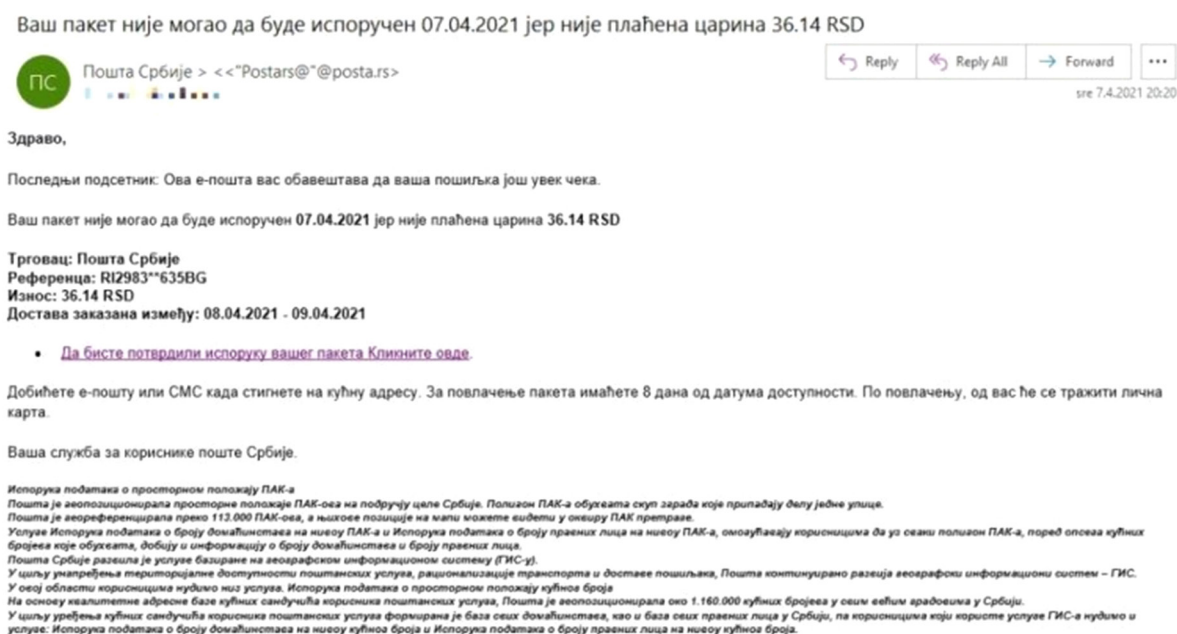


Figure 2. An example of mail fraud

At the time of the pandemic, another phishing mail also attracted attention. From the address *invitations@mup.gov.rs*, emails arrived about the alleged procedure that the Ministry of the Interior is conducting against the recipient. In fact, it is a Trojan that is attached to the message as an .iso file.

**ПОШТА** **VISA** **MasterCard**

Број картице: \_\_\_\_\_ име на картици: \_\_\_\_\_

Рок трајања: \_\_\_\_\_ CVV2/CVC2: \_\_\_\_\_

Месец дана ▼ године ▼

Трговци: Пошта Србије  
Износ: 36.14 RSD

Референца: R12983\*\*635BG  
Опис поруџбине: Трошкови превоза

**Интернет плаћање**

**VISA** **VISA** **VISA** **MasterCard** **Maestro** **Verified by VISA** **MasterCard SecureCode**

**Figure 3.** An example of a fake payment order

Protection against a large number of attacks is in prevention. In order for citizens to understand the potential dangers of cyber attacks and be able to protect themselves, it is necessary to encourage citizens to constantly self-education. For this purpose, educational materials should be designed that is understandable and interesting, which is a serious and difficult task. Authors of Riskio: A Serious Game for Cyber Security Awareness and Education (2020) stated “Serious games have emerged as a new approach that can complement instruction-led or computer-based security training by providing a fun environment where players learn and practice cyber security concepts through the game”.

### 3. FUTURE RESEARCH DIRECTIONS

Knowing that the system connected to the network is not completely secure, it is necessary to pay attention to methods that make it difficult for attackers to access so that the attack is unprofitable for them. In order for the attackers to be maximally prevented, it is necessary to work on continuous cyber security education for all citizens. The authors intend to analyze current cyber-attacks and point out the need to include knowledge about security risks and ways of protection in basic knowledge during schooling.

### 4. CONCLUSION

Cyber-attack and security endangering examples listed above clearly show it is necessary to work on generally raising cyber awareness. For the majority of the reported cases, human oversights or errors were determined to be a cause of dangerous weak spots, which leads to the conclusion further education is especially needed for those working in companies whose system is susceptible to cyber-attacks and can often be a target of such attacks, which is, in fact, every company using a public network. Suggested steps for overcoming these issues would be creating mass education platforms, easily accessible and with clearly explained key points and topics that should be focused on. Furthermore, online courses and educations for employees are highly recommended. It should be prioritized that those in charge of IT system security are duly qualified and make sure everything is being done in accordance with company security policies.



Finally, as not only companies but also every person with internet access is exposed to various kinds of attacks, there is a need for a higher level of education regarding cyber security topics to be included in elementary and middle school programs as well.

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# Evaluation of Digital Transformation of Slovakia

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## Keywords:

Digitalisation;  
DESI;  
GDP per capita



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**Abstract:** *This paper aims to evaluate the level of digital transformation of Slovakia by the use of the index of digital transformation provided by the European Commission, as well as to examine the relationship between digital transformation and economic development. Since digitalisation is crucial to businesses, Integration of digital technology, as one of DESI 2020 dimensions, was analysed in more detail. Comparison, time series and correlation analyses are used for assessing the issue. The author found out that Slovakia lags far behind in terms of digitalisation. Slovakia is ranked 22nd of 28 evaluated countries, slightly below the EU – 28 average. All relevant indicators, including Integration of digital technology, have not improved enough to keep pace with the EU average. Moreover, the author confirmed the dependence of digital transformation and economic country performance. The implications of this relationship are of significant importance to policymakers regarding how much support should be given to encourage digital transformation.*

## 1. INTRODUCTION

The transition to the new millennium was accompanied by significant social, economic, technical and natural phenomena related to the process of scientific and technical development. The digital transformation of society is an integral part of this process. Today, we can see that Industry 4.0 and Artificial intelligence have an undoubted impact on the lives of inhabitants in both developing and developed countries.

It is natural, that economists and policymakers have started to survey the impact of digital transformation on the way the economy functions. It is supposed to affect, among others, the economic development of the country. Although it can be taken as an engine for speeding up the growth of the economy, at the same time it can hinder this growth if the appropriate background for this incorporation does not exist. The impacts are still uncertain and shall depend on many different factors.

In any case, in the context of the current coronavirus pandemic, it turns out as very important to focus on improving the digital infrastructure and elektronization of the business environment. Countries with a high level of digitalisation are more resilient to economic shocks caused by the coronavirus crisis. They were able to accelerate the digitalisation of various administrative processes - whether it was the rapid acquisition of financial assistance from state support schemes through online tools, or even high-quality digital management of the health part of the pandemic.

Since measuring digital adoption and assessing the extent to which digitalisation may be transforming and affecting different economies is challenging, more institutions are involved in measuring the stance of digital transformation across different countries.

This paper aims to evaluate the level of digital transformation of Slovakia by the use of DESI, an index of digital transformation provided by the European Commission (EC), and to examine the relationship between digital transformation on one side, and economic development on the other side.

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Digitalisation is crucial to businesses. Businesses need digitalisation to support economic recovery, become more resilient, take advantage of innovation and support long-term business growth. The willingness to accept digitization forms the basis for further opportunities and potential for the future. Integration of digital technology, as one of 5 DESI 2020 dimensions, measures the digitalisation of businesses and e-commerce. The author analyzes this dimension in more detail to evaluate the integration of digital technology in businesses in Slovakia.

The author found out that Slovakia lags far behind in terms of digitalisation. Slovakia is ranked 22<sup>nd</sup> of 28 evaluated countries, slightly below the EU – 28 average. All relevant indicators, including Integration of digital technology, have not improved enough to keep pace with the EU average. The value of the coefficient of determination confirms a close link between the level of digital transformation and economic country performance. The implications of this relationship are of significant importance to policymakers regarding how much support should be given to encourage digital transformation.

## 2. LITERATURE REVIEW

The success of a country in a global environment increasingly depends on the extent to which it is disposed to create the conditions for the development and implementation of smart digital networks.

Digital transformation, as a new and modern term in business and technological literature, can be described as a set of measures for the introduction of applications of digital technologies and innovations into individual areas of the national economy. As the first step for a comprehensive application, it is necessary to analyze the current situation, then to determine the assumptions and in the last step correctly determine the strategy for the transformation into individual sectors of the national economy.

The term Industry 4.0 was first mentioned at the initiative of the German government, which analyzed the impact of new technologies on the country's economy. It can be considered as the most significant result of the digitalisation of the economy. Artificial intelligence is a very critical tool to accelerate digital transformation.

Concerning the growing era of digital transformation including artificial intelligence, and its growing popularity, an increasing number of authors have shown interest in surveying the relationship between digital transformation and macroeconomic variables. Variables of interest included, among others, output growth, labor productivity, employment, real wages, delivery of services and innovation. Most studies have been implemented on developed and emerging countries, while only few have been directed to developing and lower-income countries. The studies showed mixed results; the majority of them support the positive impact of digital transformation.

The relationship between digital transformation and economic growth has received special attention. The majority of studies confirm that digital convergence positively affects growth and development.

Sabbagh *et al.* (2013) concluded that an increase of ten percent in a country's digitalisation score promotes a 0.75% growth in its GDP per capita. However, the implications of digital transfor-

mation are not the same across different countries. Across developed economies, digitalisation improves productivity and has a measurable effect on growth. By contrast, emerging markets are more oriented towards exports and are driven by tradable sectors. They tend to gain more from digitalisation's effect on employment than from its influence on growth.

These positive consequences on growth do not necessarily take place immediately, actually, Park and Choi (2019) showed that technological innovation advances take time to show impact upon the growth of the different economies, and for its effects to spread all over the economy.

Moreover, the impact of digital transformation does not only take place at the macro level. Digitalisation offers crucial opportunities for businesses of all sizes and in all sectors to set up expand and innovate. Gal et al. (2019) examine cross-country firm-level productivity data and find strong and robust evidence that digital adoption is associated with significant productivity returns at the firm level. In this regard, as the share of micro-firms in Slovakia is the largest among OECD countries, digitalisation is a promising route to scaling.

### 3. DIGITAL TRANSFORMATION INDICES

Several institutions evaluate managing the digital transformation process, e.g. World Economic Forum, European Commission, Harvard Business Review, etc. Although in different ways, research on the digital agenda seeks to cover the widest possible range of issues that reflect current civilizational changes.

The paper makes use of DESI – the Digital Economy and Society Index<sup>2</sup> for the evaluation of the level of digital transformation in Slovakia. It is a composite index developed by Cámara and is being published every year by the EC since 2014. It focuses on EU countries in particular to measure the steps and procedures undertaken by those countries towards promoting the digital economy and society.

DESI overall index is calculated as the weighted average of the five main DESI dimensions (Table 1):

- Connectivity (25%), which measures the deployment of broadband infrastructure and its quality.
- Human Capital (25%), which measures the skills needed to take advantage of the digital society.
- Use of Internet Services (15%), as a measure of the variety of online activities performed by citizens.
- Integration of Digital Technology (20%), which measures the digitalisation of businesses.
- Digital Public Services (15%), which measures the digitalisation of public services.

<sup>2</sup> The International Digital Economy and Society Index (I-DESI) measures the digital economy performance of EU27 Member States and the EU as a whole in comparison with 18 other countries around the world (Australia, Brazil, Canada, Chile, China, Iceland, Israel, Japan, Mexico, New Zealand, Norway, Russia, Serbia, South Korea, Switzerland, Turkey, United Kingdom, and the United States). The I-DESI aims to mirror and extend the results of the European Commission's Digital Economy and Society Index (DESI) by utilising 24 datasets to enable trend analysis and comparison of the digital performance of 45 countries. Analysis showed that EU27 Member States compare well with 18 non-EU countries and the very best EU27 countries have digital performances at the same or higher levels than the best global countries. Indeed, Finland was the leading country in the I-DESI index. Five of the top ten I-DESI countries are EU27 Member States.

**Table 1.** DESI 2020 dimensions

|                                     |  |
|-------------------------------------|--|
| 1 Connectivity                      | Fixed broadband take-up, fixed broadband coverage, mobile broadband and broadband prices |
| 2 Human capital                     | Internet user skills and advanced skills   |
| 3 Use of Internet                   | Citizens' use of internet services and online transactions                               |
| 4 Integration of digital technology | Business digitalisation and e-commerce   |
| 5 Digital public services           | E - government   |

**Source:** EC (2021)

The DESI 2020 reports are based on 2019 data and assess the status of the digital economy and society before the pandemic. The current crisis is having an important impact on key societal indicators, relating to the use of internet services by citizens. This does not show in the latest 2019 official statistics as reported in DESI. DESI 2020 includes the 27 Member States of the EU and also the UK, since the latest data used in the report refer mainly to 2019 when the UK was still a member of the EU. EU averages include also the UK.

According to the ranking of Member States on the Digital Economy and Society Index in 2020 based on 2019 data, Finland, Sweden, Denmark and the Netherlands have the most advanced digital economies in the EU followed by Malta, Ireland and Estonia. Bulgaria, Greece, Romania and Italy have the lowest scores on the index. It is important to underline that the largest EU economies in terms of GDP are not among the digital frontrunners and this impacts the overall performance of the single market.

The average DESI 2020 of the EU28 member states reached the value of 0.526 (52.6 on a scale from 0 to 100). Compared to the previous year (DESI 2019 for EU28 = 0.494) it increased by 0.032.

A comparison of the DESI value of Slovakia with the EU average for the last 6 years is in Table 2:

**Table 2.** DESI values for Slovakia compared to EU average, 2015 - 2020

|                  | Slovakia |       | EU    |
|------------------|----------|-------|-------|
|                  | ranking  | score | score |
| <b>DESI 2020</b> | 22.      | 45,2  | 52,6  |
| <b>DESI 2019</b> | 21.      | 42,9  | 49,4  |
| <b>DESI 2018</b> | 20.      | 41,9  | 46,5  |
| <b>DESI 2017</b> | 21.      | 38,6  | 43,4  |
| <b>DESI 2016</b> | 21.      | 34,9  | 41,4  |
| <b>DESI 2015</b> | 20.      | 33,1  | 38,9  |

**Source:** Own elaboration

The total DESI 2020 for Slovakia has a score of 0.452, Slovakia ranked 22nd out of 28 evaluated countries. It is still slightly below the EU-28 average (0.526). Compared to DESI 2019 (score 0.429), it shows an increase of 0.023 points. However, the overall ranking of Slovakia in the ranking of EU countries against DESI 2019 decreased by 1 place (from 21st to 22nd).

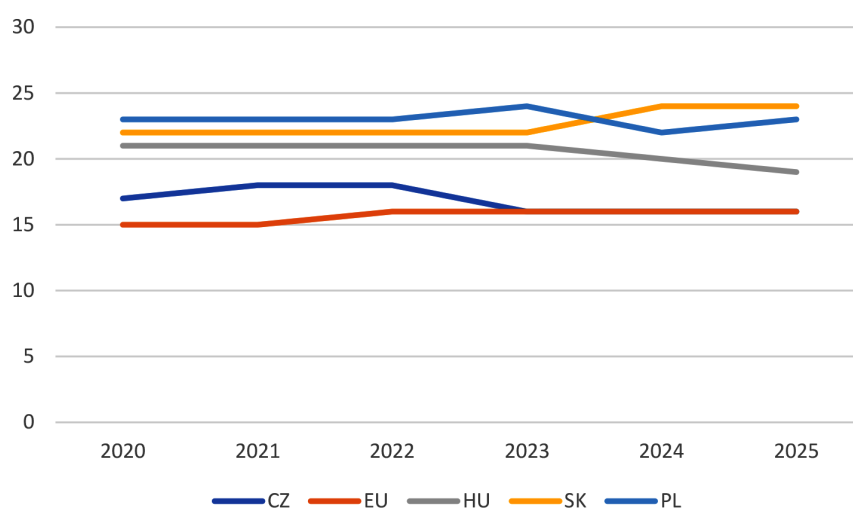
Based on pre-pandemic data (DESI 2020), Slovakia's score increased slightly due to improvements in Connectivity, Use of Internet and Digital public services. However, key indicators have not improved enough to keep pace with the EU average. As a result, Slovakia fell to 20th place in terms of Human capital and Use of Internet services, and 26th in terms of Digital public services (Table 3).

**Table 3.** DESI 2020 and DESI 2019 for EU average and Slovakia

|                                      | DESI 2020 |              | DESI 2019 |              |
|--------------------------------------|-----------|--------------|-----------|--------------|
|                                      | EU 28     | SK (ranking) | EU 28     | SK (ranking) |
| 1. Connectivity                      | 50,1      | 47,5 (21.)   | 44,7      | 39,6 (24.)   |
| 2. Human capital                     | 49,3      | 41,8 (20.)   | 47,9      | 44,2 (18.)   |
| 3. Use of Internet                   | 58        | 53,4 (20.)   | 55        | 51,3 (17.)   |
| 4. Integration of digital technology | 41,4      | 32,6 (21.)   | 39,8      | 33,1 (21.)   |
| 5. Digital public services           | 72        | 55,6 (26.)   | 67        | 50,7 (25.)   |

Source: Own elaboration

Assuming that countries make as much effort to digitize as they have since 2015, their ranking in the DESI index in relation to past trends is shown in Figure1.

**Figure 1.** Forecast of ranking of Slovakia in DESI

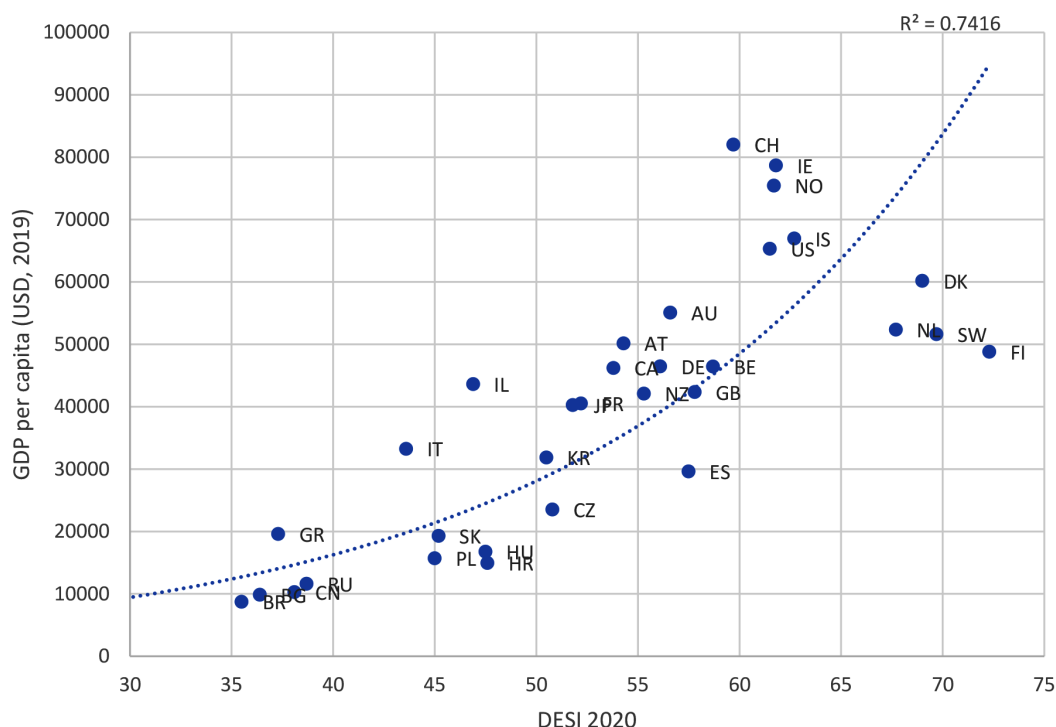
Source: Own elaboration according to DESI data 2015 - 2020

The figure shows a persistent weakening of Slovakia's overall position in DESI. According to the forecast, we estimate the decline of the Slovak Republic by 2 places by 2025, which will put the Slovak Republic in the 24th position. According to the current development trend, the author expects the largest decline of Slovakia in the dimension of Integration of Digital Services, from the 21st to the 25th position. On the contrary, the author expects the largest increase in the third dimension, Use of Internet, from the 20th to the 14th position. According to the forecast, the author expects an increase in the V4 countries, especially Hungary and the Czech Republic. The author estimates the most significant step forward in the field of digitalisation for Spain, from 11th to 8th position and Italy, from 25th to 22nd place. Finland remains the leader, followed by Sweden and Ireland.

Further, the author proves that the development of digital processes is important, as there is a close link between the level of digitalisation and economic country performance.

In our case, the author figured out this dependence between the level of digital transformation of the country measured by DESI and the economic level measured by GDP per capita using correlation analysis. The result is graphically expressed in Figure 2. A coefficient of determination indicates that 74,16% of the variation in GDP per capita can be explained by DESI position, ie if the country improves its level of digital transformation, it will have a positive effect on its GDP per capita.





**Figure 2.** The relationship between economic and digital level

**Source:** Own elaboration according to EC (2020), IMF (2019)<sup>3</sup>

**Note:** Turkey TU, Brazil BR, China CN, Russia RU, Izrael IL, Korea KR, Japan JP, Canada CA, New Zealand NZ, Australia AU, Great Britain GB, USA US, Norway NO, Iceland IS, Switzerland CH, Austria AT, Belgium BE, Bulgaria BG, Czech rep. CZ, Germany DE, Denmark DK, Spain ES, Finland FI, France FR, Greece GR, Croatia HR, Hungary HU, Ireland IE, Italy IT, Netherlands NL, Poland PL, Sweden SW, Slovakia SK

Digitally developed countries are generally leaders in the creation, management and use of digital technologies, and they use these technologies very effectively. They are capable of constantly creating new digital impulses and creating new demand for digital technologies. Maintaining a high level of digital progress supports the growth of their economic performance, which in turn allows them to support the development of digital innovation and technology, thereby a positive growth circle is formed. A low level of digitalisation usually makes the country less attractive to investors.

Many problems and dilemmas, which are brought by the application of digital technologies represent the flip side of the unprecedented opportunities and benefits of digital infrastructure, applications and metadata. New asymmetries arise, the so-called «Digital divide» connected with unequal conditions in access to ICT and resulting in very different impacts on the performance and competitiveness of companies, regions, countries. The uneven uptake and diffusion of digital technologies represent a major source of the productivity slowdown many high-income countries have faced in recent years, as well as the increasing productivity gap between “frontier firms” and firms that lag behind (OECD, 2019 and Andrews, Criscuolo and Gal, 2016).

A growing body of research points out that, unless (digital) technology diffusion among businesses improves, income inequalities may worsen, business dynamism suffer and competition declines. Empirical research confirms that policymakers can make a large difference in this respect (Sorbe et al., 2019).

<sup>3</sup> The DESI 2020 reports are based on 2019 data, we used i – DESI for the data of non – EU countries.



There is a very large dispersion in SME digitalisation performance within Europe. The European Commission groups countries into three different categories based on how much an average SME spends on ICT and digitalisation. SMEs in the “high enabling region” consisting mainly of countries in Northern Europe, spend 2.5 times as much as SMEs in the “modest enabling region,” consisting mainly of countries in Eastern and South-Eastern Europe, including the Slovak Republic (with countries in the “modest enabling region” taking an intermediate position). In addition, the gap is not expected to narrow according to estimates of the European Commission. It expects that in 2022 overall spending in the top region will be 12 times as large as spending in the lagging region (Innovation Finance Advisory and European Investment Bank, 2019).

OECD data confirm this picture. In 2017, companies in the Slovak Republic spent an equivalent of 0.84% of GDP on IT investment, below all other OECD countries (OECD, 2020). Consequently, Slovak businesses are not yet fully benefiting from the digital transformation. The use of digital technologies is stagnating.

If we take into account DESI 2020, Integration of digital technology, Slovakia ranks 21st in the EU. Its score decreased to 32.6, compared to 33.1 in 2019. The proportion of companies that share electronic information remained stable at 31% (EU average: 34%). Slovakia falls short of the EU average in the use of big data analysis by companies (9% vs 12%) and the use of the cloud (14% vs 18%). The country’s e-commerce scores have not improved. Only 11% of SMEs sell online (compared to 13% in the previous year), the share of SME turnover from e-commerce remains stagnant at 11%, and the proportion of SMEs that sell online across borders has decreased to 7% (compared to 8% in 2017) (Table 4).

**Table 4.** DESI, Integration of digital technology

|   | Slovakia           |                    |                    | EU                 |
|---|--------------------|--------------------|--------------------|--------------------|
|   | DESI 2018<br>value | DESI 2019<br>value | DESI 2020<br>value | DESI 2020<br>value |
| <b>4a1 electronic information sharing<br/>% enterprises</b> | 31%<br>2017        | 31%<br>2017        | 31%<br>2019        | 34%<br>2019        |
| <b>4a2 Social media<br/>% enterprises</b>                   | 17%<br>2017        | 17%<br>2017        | 18%<br>2019        | 25%<br>2019        |
| <b>4a3 big data<br/>% enterprises</b>                       | 11%<br>2016        | 9%<br>2018         | 9%<br>2018         | 12%<br>2018        |
| <b>4a4 cloud<br/>% enterprises</b>                          | 15%<br>2017        | 14%<br>2018        | 14%<br>2018        | 18%<br>2018        |
| <b>4b1 SMEs selling online<br/>%SMEs</b>                    | 15%<br>2017        | 13%<br>2018        | 11%<br>2019        | 18%<br>2019        |
| <b>4b2 e – commerce turnover<br/>% SME turnover</b>         | 12%<br>2017        | 11%<br>2018        | 11%<br>2019        | 11%<br>2019        |
| <b>4b3 Selling online cross – border<br/>% SMEs</b>         | 8%<br>2017         | 8%<br>2017         | 7%<br>2019         | 8%<br>2019         |

**Source:** Own elaboration

In general, businesses still lack digitalisation support from public institutions, as the regulatory framework is not yet fully adapted to this process. When adopting new digital solutions, companies often rely on help from the private sector. Slovak businesses struggle to find qualified, talented workers to carry forward the digital transformation. Companies do not generally offer quality in-house training to properly upskill their employees. Slovakia does not yet have a digital innovation hub.

On the other hand, Slovakia takes part in all relevant EU initiatives that aim to strengthen the digital single market and foster cooperation in strategic fields such as high performance computing, AI and cybersecurity. At the end of 2019, Slovakia joined other EU countries that work together to develop a quantum communication infrastructure in the EU(20). Slovakia is one of the 20 biggest car producers in the world, making it also an EU leader in robotic intensity. This is mainly thanks to the robotisation of the car industry, but rapid growth in robotic automation has also been observed in the logistics and the service robots sector. Digitalisation is a key economic opportunity for Slovakia.

In 2019, the Slovak government adopted a new Strategy for the Digital Transformation of Slovakia 2030. This document contains a long-term vision and its goal is to manage the economy, society and public administration during this technological change. It also aims to stimulate smart regional development and help researchers and innovators keep up with global trends. The objectives of this strategy are to be achieved through related action plans. The first action plan for 2019-2022 sets out four main objectives: digital transformation of schools, conditions for the data economy, innovation in public administration and support for the development of artificial intelligence.

#### 4. CONCLUSION

Digitalisation has affected not only the industry but also the public sector, which, in response to change, must respond and adapt to processes linked to the economy as a whole. Only a prepared state has the opportunity to benefit from the digitalisation of the economy.

Countries wishing to improve digitalisation should focus on proactively creating regulatory measures in the digital space, educating, improving interconnection availability and digital infrastructure.

According to the Digital Economy and Society Index, which maps progress in the digital transformation of EU countries, Slovakia fell by one place to 22nd place, which indicates that despite our gradual improvement in the level of digitalisation, we are slower than the Member States and our gap with the EU average is widening. In DESI 2020, Slovakia performed best in internet connectivity, where it improved by 3 places in the ranking of countries compared to DESI 2019, and at the same time the difference compared to the EU average is the lowest. All the main aspects of DESI 2020 are below the EU average and Slovakia's position in the third ten of this ranking is not flattering. What's more, 2020 was our historically weakest year in DESI.

Although a growing number of industrial companies are taking steps towards digital transformation, mostly in order to increase their performance and make internal processes more efficient, Slovakia ranks 21st in the EU in dimension Integration of digital technology which measures business digitalisation and e-commerce. A rapid introduction of the measures set out in the national digitisation strategy could help to improve this trend. As a first step, businesses will need more support, advice and enough talented people on the job market.

Because there is a close link between the level of digitalisation and economic country performance as the author confirmed by correlation analysis, position in the DESI ranking has an impact on GDP creation and coronavirus crisis management.

The current global pandemic of COVID-19 pointed to the need for digital solutions as basic support to enable the functioning of the economy and society even in conditions of physical isola-

tion. These lessons only reinforced global trends in the digitalisation of society. For this reason, fundamental changes can also be expected in the position of states in the DESI evaluation.

Old like to say that the world is changing beyond recognition. And that it's all wrong. For some it is true, for many, on the contrary, the world is better. In any case, it is necessary to watch carefully how the world begins to change. Otherwise, there is a threat we will miss the fast train.

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## Authentication and Validation – Workflow Processes

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**Abstract:** All companies are dependent on Information Systems and Communication Technologies for business support to enhance/expand their processes. This article relates to a problem occurring in the field of documentation authentication, highlighting the concerns underlying the use of generic rather than nominal users; the non-establishment of workflow rules that are subject to process improvement, leading to an outdated process and subsequently compromising security rules caused by blocked processes or sharing access to an alternative process in the absence of key stakeholders. The adopted research methodology is Design Science Research, given its characteristics and suitability to the field of research. The main results are the review of the literature in the field of theme as well as incorporating the main causes for the breakdown of security policies caused by the need to follow up a workflow process in each Integrated Management system.

## 1. INTRODUCTION

Information and Communication Technologies (ICT) support Information Systems (IS) in organizations, have implicit ability to process data and support storage but also have the potential of communication infrastructures that enable data transmission more quickly and fully integrated. In this sense, ICT by its exponential capacity of operation is assumed as a key pivot to modernize management processes, enhance the dematerialization of processes, and decentralize operational activities.

The dependence on ICT and IS, in some cases, is insufficiently measured, enhancing the organization's exposure to a set of threats and vulnerabilities (Reis & Silveira, 2020). The need to use ICT-supported IS (Russo & Reis, 2020) creates conditions capable of boosting business processes to allow the implementation of recovery procedures in which the added value of information should be perceived as business support. Is also a priority to “establish which IS should be developed and implemented faster, depending on the urgency of the needs, dependencies between themselves and the availability of resources (human, financial and material) necessary for this development and implementation” of the IS (Rodrigues, 2002).

In this domain of knowledge, the importance of introducing sustainability concerns is also emphasized, since sustainable development is considered to be multidimensional, as it leads to the economic, social, environmental, technical, and individual dimensions (Reis et al, 2021) that affect the environment and the stakeholders.

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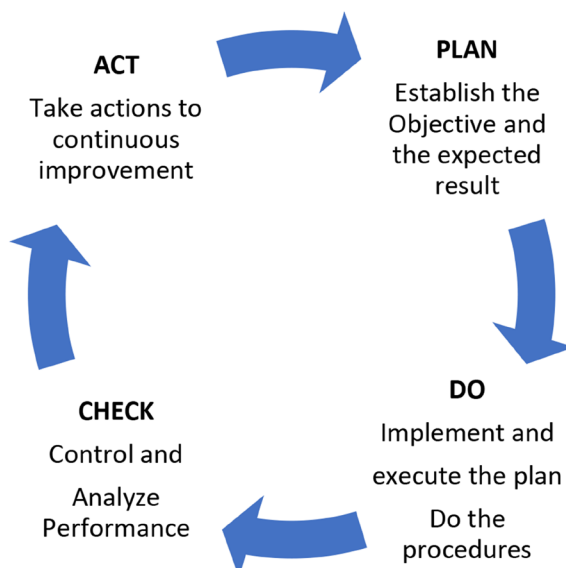
It should be noted that in this area of knowledge the various legal and regulatory provisions for the protection of personal data are of particular interest to defend the rights, freedoms, and guarantees of natural and corporate persons (Reis & Rocha, 2021a) but, is also a relevant that “the value of information does not measure by volume but by the quality that it has” arguing that “the only way to acquire knowledge is to hire the people who have it” and use that knowledge for the benefit of the organization (Devlin, 2000).

The main goal is to review the documentation related to the subject, identify the most common risks related to the violation of security policies and implement a process that will continuously review the procedures to assure segregation of duties and the improvement and purpose of the workflow in the IMS.

## 2. BACKGROUND

Organizational processes must be coated with integrity metrics even if digitally elaborated in the IS itself. Thus, the automation of workflow processes should also remain integrated since it is considered that secure methods of transmitting data through secure channels using the Virtual Private Network (VPN) and data encryption can contribute to the optimization of IS/ICT security strategies. In this sense, it is advocated that organizations should have secure authentication methods and techniques with the establishment of physical and logical security measures, but also the inclusion of password policies and document approval workflow in IMS.

It is relevant that those processes are analyzed and updated recurrently to check their relevance and adequation to the current reality taking into consideration future needs. It is important to establish an iterative process to maintain and control performances and goal achievements across all processes like a corrective method for processes management. Figure 1 presents the PDCA cycle following ISO9001 Standard (ISO/IEC 9001:2015) that establishes a way in which the processes must be designed/planned before executed and checked after. After that, the process must be analyzed to identify the need for changes.



**Figure 1.** PDCA Cycle in ISO9001 Standard Practices  
(adapted from APCER, 2015)

The workflow procedure also needs to be improved and maintained, otherwise, over time, that specific workflow designed at some point was correct and current, but may now be outdated and needs to be redesigned. The Business Process Management Life Cycle is a “better way to understand the procedure and identify issues” (Dumas, 2013) and the output is the optimization of the current process adapting the workflow to the current needs.

### **3. INTRODUCTION TO AUTHENTICATION AND VALIDATION**

Authentication and Validation are very important in all processes of any company independently of the sector in which it operates. That is the unique way to assure information quality. To get knowledge from the information is very important to keep a solid base of information as a resource to get knowledge (Devlin, 2000).

To optimize the processes to be more efficient, some companies invest in workflow solutions to optimize digital document approval. The process specifies different factors and paths of approval through the approval workflow. Those paths and stages are usually defined by users by following a sequential approach and defining accountability according to each business unit. Some of these procedures may be outdated and subject to certain risks that need to be mitigated.

#### **3.1. Authentication**

The workflow process should have a level of security underlying the specific needs of the business. It is considered that secure methods of transmitting data through Virtual Private Network (VPN) and data encryption can contribute to the optimization of IS/ICT security strategies. As more secure the procedure is, the less the system is exposed to risks and vulnerabilities that could comprise lead to possible fraud or affect the information quality. In a recent approach, security could be improved with the implementation of two-factor authentication solutions to reduce the risk (Dimitri, 2011).

The authentication process is as important as a key to the office. Maintaining the security of the office is important such as the networks and the systems within the company. The physical and the digital access to information of a system must not be seen as two different worlds, they should be seen from a global perspective.

#### **3.2. Computer System Validation**

Computer system validation is a process that enables the verification and validation of documents. These processes will be implemented and validated by the IS, in the same way, that the user did it manually. It will check the consistency and accuracy of the information in the document, but also log all actions performed during the workflow. In a deeper analysis of the problem, the risk of failure of the approval processes is reduced and possible fraud/security of information in the processes is mitigated.

This is the only way to ensure that workflows were correctly designed and compliant with the organization’s needs at the moment of design and that all sub-processes are fully tracked and registered and part of an audit process (Todorov, 2007).

Workflows always reflect the current procedures within an organization and the possible evolution of the workflow processes throughout the exploration of the systems must be considered,



encompassing the new needs and subsequent realities that evolve. Any procedure must always be checked. Today's reality may be obsolete tomorrow so, the workflow must also be checked in a continuous cycle of improvement.

### 3.3. Workflow Audit

Best practices must be applied to mitigate risks. One of the most relevant is the Segregation of Duties (SoD). Sarbanes-Oxley (SOX) explains some of the best practices that will help segregation of duties within an organization. Those best practices define rules to enforce the internal control procedures and the definition of responsibilities of different roles at a company, division, or department. Detecting and preventing corporative fraud must be one of the major objectives of the audit practice as risk mitigation during all the procedures (Chiu, 2017).

If a workflow procedure is designed with different sub-processes, each one with its owner must be completed without risk. So, those owners must be aware of the risk and check if the information through the process is correct in the system and assure that it is working in the company's best interest. The usage of emerging technology with some artificial intelligence to automate document approval procedures may also be used to audit procedures and maximize efficiency and effectiveness (Zhang, 2019).

This is the only way to guarantee that all flows are efficiently maintained and all processes are up to date. Impact on organizational activities through the implementation of the work process aims to reduce risk and establish control measures.

From another perspective, the workflow process must be available to audit procedures and assure all the information is added to the process and able to be used by any person in the process. That's the unique way process uses the information to build organizational knowledge about past and future improvements. With that, information will be used to PDCA Cycle on each process and subprocess.

## 4. FUTURE RESEARCH DIRECTIONS

It's also an issue when the process is not maintained during the time. A process could reach a bottleneck and the approval path is not completed. That could happen because the path does not correspond to the actual needs and the process updates were not being conducted to check for inconsistencies.

The organizations should have secure authentication methods and techniques with the establishment of physical and logical security measures, but also the inclusion of password policies and document approval workflows in IMS.

The design of a reference framework that fits the specific strategies of each organization and every dimension of sustainability is under development, focused on optimizing the level of digitization of the organization's processes and consequently the issues of Authentication and Validation of Workflows, (Reis, Rocha, 2021b). As well as knowing the good practices of various organizational contexts incorporating implicit constraints to the current pandemic context where some of those workflows may not be prepared for this new reality.



This is how we can mitigate the risks of outdated workflow procedures that were not properly maintained through time, assuring all workflow have a normal sequence, alternative flows and, all the procedure is also secure and protected.

## 5. CONCLUSION

The materialization of processes slows down organizations as IMS incorporates workflow functionalities to manage documents, information, and tasks among the various employees. In this sense, organizations define the rules of the various workflow processes and establish the hierarchy of processes, and actions and control the flow of action in the various phases of the process. To do this, it is necessary to ensure authentication that identifies unequivocally the user in the process and efficiently manages the process.

Users start to check the information in the document in the system and proceed with the respective approval following a previously defined workflow process. The definition of each of the workflows should reflect the reality of the organization and each of the approval flows defined for each of the processes described previously. This is a time-consuming process where it is necessary to validate and approve each of the defined flows and establish the precedence of this process for each step in the approval chain.

Each organization has different rules, the IS must reflect reality and must allow the definition of the process aligned internally for that organization in its current reality, as well as being open to the future needs where it can be necessary to change this process in a context of continuous improvement. If, for example, it is established that a supplier payment process can only be approved by two different persons for a list of department managers, a document in the payment stage must be used in the payment approval workflow process and must not be paid without these rules being fulfilled. A document must never be approved without following the compliance rules.

In a common objective of developing organizational activities, workflow processes aim at the dematerialization of processes with the establishment of authentication methods for accessing the system and definition of approval flows for the normal paths (recurring processes) but also for alternative processes (replacing the normal paths). Establishing an alternative process is defining another approach to the problem and mitigating the risk of non-compliance with the process due to the absence of an adequate one.

The segregation of duties aligned with well and detailed workflow procedures will mitigate the risk of fraud in processes and assure the procedure is recurrently analyzed and checked for improvements. It's also important to check the risk matrix and invest resources in a PDCA cycle to make sure all the procedures are updated and match the current reality and future requirements of the company.

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# Characteristics of the Development of Nautical Tourism on the Eastern Coast of the Adriatic Sea

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**Abstract:** *Nautical tourism is nowadays one of the most propulsive forms of tourism. Montenegro, being one of the countries with access to the Adriatic sea, is largely economically behind the others in this group, despite the many natural advantages such as the Bay of Kotor. The proximity and size similarity with Split-Dalmatia County create the possibility of comparing the Montenegrin coast with the latter. For this purpose, the coast of Montenegro is presented in more detail, that is six municipalities together with their existing nautical infrastructure in order to get acquainted with its current state of development. Croatia is one of the most attractive locations in the world, and the most developed charter destination (40%). Among the most attractive and most developed parts of the Croatian Adriatic waters is the Split-Dalmatia County which is similar in area and length to the coast of Montenegro. A review of nautical tourism in Split-Dalmatia County and its better-distributed offer shows a difference in relation to the contradictory uneven development of nautical tourism in Montenegro. Statistical comparison of all relevant data such as financial effects and charter offers in the available part shows the possibilities of development and unused resources of the Montenegrin coast. Finally, this points to the need for quality organization of the nautical system of Montenegro to properly use the rich natural potential to create conditions for setting standards in the industry that has the most successful future.*

## 1. INTRODUCTION

The wealth of natural resources of Montenegro emphasizes its comparative advantage, but there is a need to mobilize potentials that affect the growth and development of the overall nautical industry. The existing technological and transport infrastructure is not developed enough to start the full development of the tourism industry. Therefore, it is especially important to identify key nautical capacities in Montenegro in order to adequately and comprehensively contribute to the strategic planning of the development of this economic activity. The state and achievements of nautical tourism in Montenegro will be compared with the state of nautical tourism in the area, with Split-Dalmatia County (Republic of Croatia). This will contribute to determining the comparative advantages of the coastal area of Montenegro and contribute to a better understanding of nautical tourism and defining its further development.

## 2. COASTAL AREA OF MONTENEGRO

Montenegro is located in Southeast Europe, on the Balkan Peninsula and lies on the Adriatic coast. Montenegro borders Croatia in the west, Bosnia and Herzegovina in the north, Serbia in the east, Albania in the south, and is separated from Italy by the Adriatic Sea. The length of the coast is 293.5 km, which stretches from Cape Oštro to the mouth of the river Bojana and includes the Bay of Kotor and the Montenegrin coast.

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According to the 2011 Monstats census, Montenegro had a population of 620,029. Administratively, Montenegro is divided into 24 municipalities, of which 6 directly access the Adriatic Sea. Looking from north to south there is Herceg-Novi, Kotor, Tivat, Budva, Bar and Ulcinj, while the rest geographically belong to mountainous or continental Montenegro.

The Bay of Kotor is the most indented part of the Montenegrin coast. The length of the coastline of the entire bay is 105.7 km, while the maximum depth is 60 meters. The Montenegrin coast stretches from Boka to Ulcinj. Above it rise the mountains of Rumia and Sutorman. The former island of Sveti Stefan is connected to the coast by a sandy beach, and has been turned into a peninsula and a tourist town-hotel. Velika Plaža near Ulcinj is the longest beach in Montenegro, about 13 km long. Field Barsko is the most important railway, port and industrial center.

### **3. EXISTING CAPACITIES OF NAUTICAL INFRASTRUCTURE ON THE COAST OF MONTENEGRO**

The capacity of marinas in Montenegro is about 2,500 berths. Also, slightly less than 1,000 berths are available in several smaller marinas such as Zelenika and Herceg Novi in Herceg Novi, Marina Bonici-Navar and Kalimanj in Tivat and Prčanj (privately owned) in Kotor. In addition to the existing marinas, Montenegro has many docks and moorings.

The area of the municipality of Herceg Novi has very good maritime and ecological conditions for the development of nautical tourism because it is located right at the entrance to the Bay of Kotor. This allows potential sailors to sail in three attractive directions: towards the interior of the Bay of Kotor, towards Dubrovnik and the southern part of the Montenegrin coast. The only serious ecological limitation is the possibility of endangering the healing Igalski blato. In the municipality of Herceg Novi, there are 5 ports, three of which are used as nautical tourism ports.

The municipality of Kotor, despite its relatively long coastline, does not have as many potential sites for the construction of marinas as the municipality of Herceg Novi, although it should be. The main obstacles to greater construction are environmental constraints, i.e. the closure of the Bay of Kotor and Risan and its UNESCO World Heritage status. The more intensive movement of sailors in this bay and the long stay of a large number of yachts could endanger not only the ecological balance but also the tourist image of Kotor as an “eco” destination. Also, there is a somewhat unfavorable traffic position of the Kotor municipality. However, there are many advantages that the Kotor municipality has for the development of nautical tourism, including the proximity of the airport, and the fact that Kotor, as a historical and maritime city, unpolluted by mass tourism, has great potential to become an elite destination.

Tivat municipality is the smallest of the six coastal municipalities in Montenegro, with a very short coast. Nevertheless, it has extremely good conditions for the development of nautical tourism. The municipality of Tivat has its potential, from the so-called “ugly duckling” which was once without tourist value, to one of the most interesting tourist destinations for richer guests in the Mediterranean. Tivat has two marinas in the top 50 marinas in the world, and is the most developed nautical area per capita.

The waters of the municipality of Budva, the most touristy locality in Montenegro, is currently less developed in the field of nautical tourism. The limited capacities of the existing marina with the quality of service do not meet the requirements of modern nautical demand, especially mega

yachts. The waters in the city center are used to accommodate mega yachts and more luxurious vessels in transit, while the rest of the waters to the north are disorganized with mixed boats of locals, boats and yachts of nautical tourism or without a clear boundary of the communal and nautical part.

The municipality of Bar should in the next period, given its position and significant port infrastructure in the city, and the proximity of the airport become a flagship for the development of nautical tourism on the outer part of the Montenegrin coast.

Ulcinj, as the southernmost Montenegrin municipality, is the only one on the Montenegrin coast that has almost no capacity that had similar marinas. It is a particularly environmentally sensitive area, so future development should be based on professional and scientific research, and set limits.

#### 4. COMPARISON OF NAUTICAL TOURISM OF MONTENEGRO WITH SPLIT-DALMATIA COUNTY (CROATIA)

Split-Dalmatia County is an Adriatic county which, according to its area and number of inhabitants as well as its distinct orientation towards the sea, is a comparable region whose development experiences of nautical tourism can provide one of the development directions of Montenegrin nautical tourism.

It is important to emphasize that there is a lack of systematic qualitative and quantitative statistical monitoring of nautical traffic in Montenegro, which is crucial for identifying trends and planning future development. Revenue data are also not kept. Nevertheless, it is possible to determine the potential of Montenegrin nautical tourism according to the experience of Split-Dalmatia County.



**Picture 1.** Geographical presentation of marinas of Montenegro and Split-Dalmatia County

**Source:** Author's work

The Split-Dalmatia County has a long maritime tradition and therefore it is not surprising that maritime transport and the port economy represent the maritime and economic development of the entire county and the Republic of Croatia. Due to the changed geopolitical situation, the war of the transition process, there was a significant recession of this important economic branch. However, the revival of economic activities in the mentioned branch has resulted in a continuous increase in the turnover of ships, passengers and cargo.

Split-Dalmatia County is an administrative-territorial unit in central Dalmatia with its headquarters in Split. Spatially, it is the largest Croatian county, divided into 16 cities and 39 municipalities. In the area of Split-Dalmatia County, there are 16 nautical ports (marinas), which have



a capacity of 3249 berths in the sea. The most important nautical tourism port, as expected, is located in Split (ACI mlarina Split) with a capacity of 450 berths in the sea. Of those 16 marinas in its area, 8 are charter bases. In the nautical charter, Croatia is a world superpower and covers as much as 40% of the world's charter fleet.

According to the available data, an increase in the revenue of each connection of 33% was determined in 4 years in the area of Split-Dalmatia County. The economic effects of nautical tourism in Montenegro are also significant. The total contribution of tourism to GDP in 2019 was 32.1%. Also, the average daily consumption per boater in Croatia was significantly higher (EUR 126) than the estimated range for Montenegro.

The total area of nautical ports in Montenegro was about 1,600.000 m<sup>2</sup>, while in Split-Dalmatia County the total area of nautical ports was 600.000 m<sup>2</sup>, which is only 40% of the total area of nautical ports in Montenegro. According to the above, the spatial potential of Montenegrin nautical ports for revenue growth is exceptional. Taking into account the data on the realization of other revenues of nautical ports in Split-Dalmatia County, which in 2019 recorded a growth of 29% compared to 2015. and the spatial potential of nautical ports in Montenegro, it is indicative that revenues, as well as the capacity of Montenegrin nautical ports, will increase with adequate infrastructure and other projects that include the offer of related, primarily tourist content.

**Table 1.** Comparison of data from Montenegro and Split-Dalmatia County

|  | <b>SDC – coastal region</b> | <b>Montenegro- coastal region</b> |
|--|-----------------------------|-----------------------------------|
| <b>Area (km<sup>2</sup>)</b>                         | 1.749,44                    | 1.591                             |
| <b>Population</b>                                    | 301.702                     | 151.282                           |
| <b>Number of municipalities on the coast/islands</b> | 30                          | 6                                 |
| <b>Maximum distance from the airport (km)</b>        | 160                         | 72,3                              |
| <b>The length of the coast without islands (km)</b>  | 131                         | 293,5                             |
| <b>Number of islands</b>                             | 10                          | 11                                |
| <b>Number of marinas</b>                             | 16                          | 9                                 |
| <b>Marine areas (m<sup>2</sup>)</b>                  | 624. 809                    | 1.642.012                         |

Source: Author's work

## 5. CONCLUSION

A comparison of nautical tourism in Split-Dalmatia County shows that in terms of the quality of nautical infrastructure, the Montenegrin area has an advantage because there are several marinas of top world quality. However, in Split-Dalmatia County, the layout of marinas together with nautical moorings within ports open to public transport enables more even development and opens up opportunities for all parts of the water area to feel the benefits of nautical tourism.

It is necessary to point out the already existing significant areas of the Montenegrin waters in the function of nautical tourism, significantly larger than the Split-Dalmatia County. However, existing data on inflows indicate insufficient utilization of existing capacities. In order to achieve good financial results of nautical tourism and all additional and complementary activities, it is necessary to organize the Montenegrin nautical system.

The scientific-professional approach to the future development of the Strategy for the Development of Nautical Tourism of Montenegro and the Montenegrin Nautical Standard can create the

conditions for Montenegro to be ranked among the leading nautical destinations in the Mediterranean, which by its natural basis is larger. A systematic approach to management will create the preconditions for financial valorization and prosperity of the Montenegrin coast through nautical consumption.

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# The Role of Tourism Enterprises in Kosovo

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Income



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**Abstract:** *The purpose of this paper is to assess the importance of the tourism enterprises in Kosovo in the level of satisfaction of tourists visiting Kosovo and in identifying the role played by the restaurant sector in promoting the traditional cuisine of the area, based on local production. The data to carry out this work were provided from extensive and contemporary literature as well as from primary sources, using quantitative research through questionnaires and qualitative research through in-depth interviews with chefs of restaurants operating in the tourist areas of Kosovo.*

## 1. INTRODUCTION

Kosovo has a tradition in tourism, which should be recognized since it dates back to the 80s and due to twenty years of political unrest in Kosovo and beyond it has stalled and could not follow the world steps in the tourism industry. It turns out that the existence of Kosovo tourism products can not be ignored, but it is necessary to review the registered and categorized resources and with the help of marketing and its instruments to prepare a plan and strategy for the better sectoral performance of the offer is available in the domestic and international tourism market. So far, many tourism development initiatives have been implemented at both central and local levels, mainly through donor assistance (GIZ, SIDA, Care International, USAID KPEP), as well as the public and private sectors of Kosovo. While these individual initiatives appear to have succeeded on a small scale, their potential impact on sustainable development appears to have been hampered largely by their narrow focus on economic development and environmental protection. They have not increased the total number of tourists and, in particular, have targeted certain local destinations, as there was a lack of a collective approach to these initiatives to promote themselves as a common product. This is necessary if these actors want to make Kosovo competitive in the global tourism market. In general, the projects of international organizations and civil society organizations to some extent have filled the gaps left by the government to manage this sector responsibly. However, most of the projects relied on imported models and lacked proper contextualization according to local conditions and capacities.

Some development projects have been implemented in Kosovo by various organizations and institutions, which have mainly received international funding. The most common donor agencies for tourism development projects were the European Union, the German Agency for International Development GIZ, United Nations Program for Development, the United States Agency for International Development, and several other national agencies.

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The European Union Office in Kosovo has given high priority to support for Regional Economic Development in Kosovo by European best practices, where tourism entrepreneurs enjoyed a central focus on regional development strategies. Work towards regional economic development began in 2008 with launching preparations for the first technical assistance project for the establishment of an RDA network to cover the territory of Kosovo. Currently, the five Regional Development Agencies implement a dynamic development agenda and in the last three years have launched many tourism enterprise development projects.

As one of the good practices, the European Commission funded the Tourism Development Project “See you in Dukagjini”, implemented by the organization Cultural Heritage without Borders. Promoting community-based tourism development in Strpce with a focus on strengthening tourism enterprises throughout the year and regional integration, and Promotion of spa tourism in the Klokot region. UNDP Kosovo supports the development of tourism in Kosovo through the project Sustainable Land Use Management and Biodiversity Conservation in the municipality of Dragash (Rexhepi, 2012).

## **2. TOURISTS AND TOURISM ENTERPRISES IN KOSOVO**

According to the Statistics Agency, in 2019, 192,761 foreign tourists came to Kosovo. Tourism in Kosovo is becoming one of the sectors that are giving impetus to economic and social development. The rapid growth of tourism in Kosovo follows the global trends in this sector, especially in the last ten years. There is a constant introduction of new tourism products, improved supply to destinations, and in general, services are modernized and diversified. Tourism, therefore, is becoming one of the sectors that are giving impetus to economic and social development.

According to the World Tourism Organization, in 2018 more than 700 million tourists arrived in European destinations and it is estimated that during their stay, each spent an average of 800 US dollars. In the same year, according to the Kosovo Agency of Statistics, 192,761 foreign tourists came to Kosovo. These visitors are mainly from German-speaking countries, from Turkey as well as from the diaspora. It is an interesting fact that many Asians come to Kosovo as part of Balkan tours. In addition to foreign tourists, local visitors, i.e. residents of Kosovo who choose to spend weekends or holidays in various destinations within Kosovo, are an important group of users of tourist services. This group is also growing from year to year. According to the Kosovo Agency of Statistics, in 2019 the number of domestic visitors who visited various destinations within Kosovo was 108,043.

## **3. THE IMPACT OF GASTRONOMIC ENTERPRISES ON THE DEVELOPMENT OF TOURISM IN KOSOVO**

Chefs can be motivators for changing not only tastes and eating habits but also in support of local farmers. By incorporating fresh ingredients into their recipes, chefs create stronger links between farmers and restaurants, as well as between farmers and consumers. In 2019, world-famous chefs Fejsal Demiraj and Entiana Osmenzeza organized the event “Taste of Kosovo” where they served dishes prepared entirely from ingredients grown or collected throughout Kosovo. The event was part of the Albanian gastronomy expedition, a project of the RRNO Foundation, which aims to document and rediscover Albanian cuisine. The expedition pays special attention to local farmers and producers. There are so many delicious and healthy things to eat in nature, we just have to look for them and find them! Outdoor activities, but also in urban centers are a necessity of a pleasant tourist offer, which have a positive impact on the decision of tourists to extend their stay at the destination. Kosovo’s tourist offer is interesting and diverse for every type of tourist and it is getting richer.

#### 4. NEW PRODUCTS AND THEIR IMPACT ON TOURISM

Only in 2019, new tourist products were launched in Kosovo such as a Via Ferrata in Prizren; another Via Ferrata in Peja in addition to two existing ones; in Peja, tourists can already experience the thrill of the Tibetame Bridge; parachuting, kayaking, mountain biking, hiking combined with yoga, winter sports are some of the most popular outdoor activities. More modern products such as “escape room”, museum of illusions, and cultural events have already become part of Pristina’s offer. Meanwhile, a long list of emerging products is being added to Kosovo’s existing offer. Near Pristina, Bear Forest will soon launch a natural trail with six attractions for families, near the river Lumbardh in Peja, a camping area is being built with six products and intertwined activities, in Prizren, work is underway to open a museum of filigree. These are some of the newest investments.

Tourists and visitors now find it even easier to experience Kosovo’s tourist offer, thanks to a new service being developed in the market - local guides. These professionals have information about the history, myths, and beauty of destinations and know how to send tourists to the right places. *“Apart from the financial aspect, the effects of the increase in the number of foreign tourists and domestic visitors to the destination Kosovo are also felt in other related sectors, which directly or indirectly are resulting in an increase in jobs, in local production, in increasing the number and quality of services, but also improving Kosovo’s image in the world,”* says Blerina Batusha Xërxa from Swiss contact which since 2014 cooperates with Kosovo’s institutions for the development of tourism sector thanks to financial support from the Swiss Agency for Development and Cooperation.

Destination marketers and tourism-related business owners have seen tourism as any other convenience, resulting in marketing strategies and promotional campaigns focusing solely on the purchase transaction and increasing the number of visits to the selected destination. There are some facts and figures:

- 22% of large hotels have restaurants.
- There are over 11,680 rooms in Kosovo.
- In large hotels, about 50.6% of guests are international tourists, about 22.7% are from the diaspora and 11.8% are local visitors.
- The economic impact of tourism on accommodation units and restaurants is estimated as follows € 153 million in 2017 and about € 202 million in 2019. The ‘utilization rate’ in hotels is estimated at 49%, while in smaller accommodation units (like Airbnb) at around 60%.

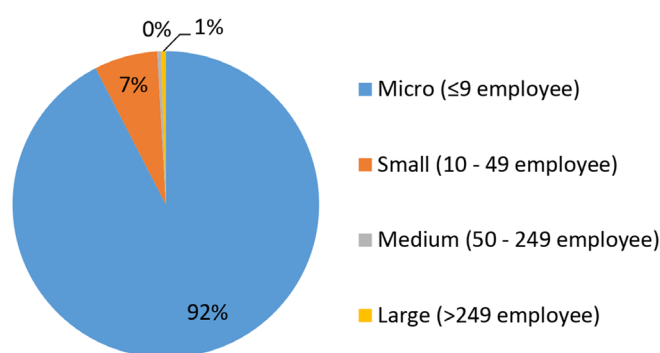
To contribute to the increase of things to be done in Prishtina - for visitors, tourists, and residents of the city come to the “escape room” RAZ, an investment by a group of young people coming from the world of tourism. The idea for opening this space of rescue games was to meet the demand of visitors to Pristina to have more things to do while visiting the city. Space will improve the local offer and will have an impact on increasing the number of visitors, length of stay, and the number of expenses.

The rise of the gastronomic tourism segment presents a new need for marketers and business owners, requires a new way of thinking about tourist travel, from a more sensitive perspective, and a focus of marketing efforts on consumer experiences. Culinary businesses are sharing their ‘secrets’ with tourists and in return these tourists tend to evaluate the tourist experience more positively. Presenting a strong identity and a positive image has become one of the most important requirements of marketing strategies in creating a strong competitive advantage.

Today's tourists are part of the fourth generation of tourism markets where these consumers are looking for new experiences that best suit their individual needs. It is for this reason that the tourism industry is moving towards the creation of travel packages, in search of meeting the requirements, paying attention to emotions and hedonistic consumption, in creating holistic impressions with a direct impact on the formation of the image of a destination. The changing demand of tourists comes as a result of demographic changes, with a significant increase in the average age of the population, who are more interested in experiencing experiences than just "things". In this regard, tourist destinations tend to create innovative products which stand in the early stages of the product life cycle.

## 5. RESULTS

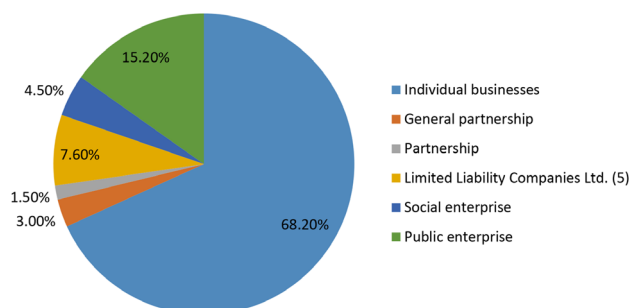
The number of businesses registered in the industry in 2012 was 2,089 1,938 micros, 141 small, 9 medium, and 1 large company (Figure 1).



**Figure 1.** Distribution of businesses by size

Source: UNDP Survey, 2013

The following activities are considered part of the hotels and motels industry, hotels and motels without restaurants, youth hostels and mountain resorts, camping sites including caravan sites, short-stay facilities, restaurants, bars, canteens and kitchens, and travel agencies. The largest number of businesses in the tourism industry are based in the region of Pristina (36.6%), followed by Prizren (17.2%) and Peja (10.1%).

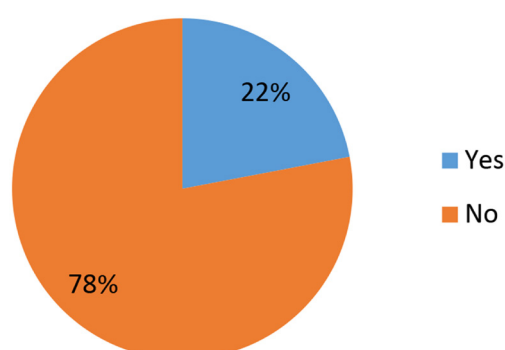


**Figure 2.** Distribution of businesses by ownership structure

Source: UNDP Survey, 2013

Of the 66 businesses that participated in the survey, 45 of them (68%) are individual businesses, 10 (15%) public enterprises, followed by other categories (Figure 2). About 97% of the business owners who participated in the survey are Kosovo Albanians. Of the owners who took part in the survey, 43.8% are aged 22 to 41, and 56.3% are aged 42 to 65. Surveys stated that only 9.1% of women are part of the ownership structure of their business.

Most employees in the tourism sector have completed secondary education, while 27% of businesses reported employing 5 or more men with a university degree and 26% employing 5 or more women with a university degree. Of the businesses surveyed, 22% provide on-the-job training for their employees (Figure 3).



**Figure 3.** Employee education in tourism enterprises

**Source:** UNDP Survey, 2013

Regarding the difficulties related to human resources in the tourism sector, businesses have highlighted the following issues: lack of skilled workers (over 50% think this is a problem), high cost of skilled workers (almost 50% think this is a problem), lack of vocational high school graduates suitable for the sector (53%), high cost of sector-appropriate vocational high school graduates (50%), lack of sector-appropriate university graduates (55%) and high cost of sector-appropriate university graduates (almost 50%).

The average monthly costs of supplies for the surveyed businesses were € 21,214 (minimum cost) and € 32,732 (maximum cost) in 2012. In terms of utility costs per year, 85% of businesses stated that they paid up to € 1,000 per year for electricity, 94% paid € 500 and € 800 for water and about 80% of them paid up to € 1,000 for fuel. In terms of their total value of products, most of the businesses surveyed reported that this amount does not exceed € 100,000 per year (85% for 2011 and 83.37% for 2012). Only 3% of businesses reported products worth more than € 5 million.

The survey results show that most businesses have declared their average annual revenues for 2011 and 2012 in two main categories, € 10,001- € 50,000 and € 50,001- € 250,000, while 2.63% and 2.56% have declared annual revenues of over € 1 million for 2011 and 2012, respectively. The accommodation and food service sector generated an annual turnover of € 34 million in 2007, accounting for 2.28% of GDP. However, official data from the Kosovo Agency of Statistics (KAS) show that the contribution of hotels and restaurants in GDP varied from 0.7 - 1.4% during the years 2006 - 2011. This is evidence of the lack of reliable data on tourism and its participation in the economy of Kosovo.

Most of the revenues from tourism are estimated to be from the private sector (90 - 95%), while the rest are from the public sector (5 - 10%). In 2012, the number of visitors increased by 18.86% compared to 2011, while the number of overnight stays during the same period increased by 16.20%. An increase was also realized in the number of foreign visitors (60.76%), as well as in their sleeping postures (38.7%).

According to KAS statistics on hospitality, foreign visitors who have stayed the longest in Kosovo come from the following countries: Albania, Croatia, Germany, Great Britain, Italy, Slovenia, Turkey and the USA. According to the data of the Association of Alternative Tourism in



Kosovo (SHATK), Kosovo has realized a 20% increase in the number of foreign tourists in the first six months of 2013, compared to the same period in 2012. Kosovo, amid substantial changes at a developmental stage where tourism is being considered as an essential asset.

The total number of men employed in the surveyed businesses was 929 from 2011 (average 15 per business), while the number of employed women was 302 (average 7 per business). These numbers declined low in 2012, with businesses reporting a total of 912 men and 274 women employed. Almost 24% of businesses employed non-Albanian staff in 2012. About 22% of surveyed companies reported average monthly expenditures for salaries from € 80 - € 800; 35% between € 1,500- € 3,000, 31% between € 3,200- € 9,400 and 12% between € 12,000 and € 43,000.

## 6. CONCLUSION

The first challenge for the development of tourism enterprises is the lack of official data and statistics. Therefore, data are extracted from a range of sources to gain an overview of this industry. This is due, in part, to a lack of a common understanding of how different government agencies related to tourism are. MTI has presented a list of enterprises considered as tourism entities, but given the economic impact of cultural activities (festivals and similar events), a redefinition should be made to raise and expand this list of entities considered to be related to tourism.

Kosovo lacks tourism managers and mid-level professionals in hotels and restaurants. Managers running tourism enterprises lack proper formal education, while mid-level staff usually consists of unqualified young people who do not have training opportunities. The low number of female business owners adds to the problem of educated managers, given that the current percentage (9.1%) is a large discrepancy with the percentage of the female population. Some high schools in Kosovo have courses in tourism and management/hotel services, while three higher education institutions in Kosovo (two private colleges and a public university) offer tourism studies. The curriculum of university departments needs to be further improved to be more competitive and in step with modern international developments in this sector.

In general, Kosovo and most of its cities lack the necessary materials to promote tourism. Failure to approve the tourism development strategy has slowed down institutional coordination and impacted tourism promotion initiatives, while many cities lack adequate points for tourist information.

Putting tourism at the top of the list of priorities in Kosovo's development strategy and public policies will inevitably have a positive impact on overcoming the many challenges identified in this report. Kosovo officials should consider tourism as a real potential for development and invite all relevant actors (municipalities, businesses, civil society, tour operators, etc.) for an inclusive policy dialogue that could produce an approach strategic for tourism development. The role of the newly formed Tourism Council in Kosovo is essential in coordinating the policy dialogue process.

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# The State in the Neoliberal Economy and Problems of Modern Society

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Pandemic



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**Abstract:** *Neoliberalism rejects a society based on tradition, encourages the weakening of state institutions and especially undermines the system of social protection through poorly implemented privatization and thus creates ideal conditions for international corporations to acquire huge capital. This leads to the fact that the state and state bodies can no longer perform their role of regulators on the national market, but practically serve the interests of large international corporations.*

*In recent years, modern society has witnessed the expansion of global crises manifested through climate changes, the imbalance of the global economy and other inequalities, which ultimately through economic poverty leads to an explosion in nature that manifests itself in global pandemics such as this one today. All this requires a special approach and the development of long-term strategies in order to avoid such crises in the future or at least reduce them to the level of tolerability.*

## 1. INTRODUCTION

At the end of the 20th and the beginning of the 21st century, mankind (in addition to the usual, primarily military) is facing new means of destroying national states. High technologies in the field of media, which were previously used only as a supplement, today have become the main manipulative mechanism in the fight against the traditional understanding of the world. Actually, with the permanent influence on people's consciousness, tradition is desecrated and the consumer mentality is aroused to infinity. This new consumer society is redirected only to the economic-commercial dimension, and at the same time neglects the existing state aspect. In the conditions of free trade, when only those whose production accumulates the most profit survive, the power of the state begins to decline due to the impossibility of fulfilling its obligations, primarily in the military sector and then in the scientific and educational field. This leads to the gradual disillusionment of the family as the nucleus of every society, the decline of morals and other various, for the state and society, destructive aberrations such as alcoholism, prostitution and drug addiction.

## 2. CONSUMER SOCIETY AND PANDEMIC

Having in mind the market economy that exists on the postulate of a constant increase in consumption, neoliberal democracy imposes its standards to the whole world with its propaganda. It erases the boundaries between established conventional terms, accepted worldwide, such as citizen and consumer. Thus, the hegemonic ideology of neoliberalism, which puts the individual in the forefront, wants to summarize the individuality of the economy based on neoliberal principles with a collective sign (Barrett, 2016).

On the other hand, the inequality that is immanent to neoliberalism is understood as a great gain through which the created wealth is distributed in the way that it is done at the free mar-

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ket, which corresponds to the personal contribution of each member of the social community. However, market competition destroys all human and social institutions. Family, friendship, social inclusion, etc. are rapidly collapsing with the arrival of a new «value system». Also, the weakening of the power of the state is achieved primarily due to the rejection of ethics, and then through the weakening in the educational, energy and production spheres. The interventionist role of the state in the economy is diminishing and with it the concern for citizens and their well-being (Harvey, 2007). Therefore, if the program of the neoliberal concept is implemented to the end, there will be a great fragmentation of states and eventually the disappearance of borders between national states, and the collapse of the family as the basic cell of every society.

Creating such an absolute consumer society is possible only under the condition that the economy is constantly growing, which implies permanent development of the economy and, of course, what everything is based on - continuous growth of consumption. Regardless of that, although human needs are fully met, consumption in such an economic model must constantly grow. Otherwise, the overproduction of industrial products would remain unrealized, which would result in the collapse of such an economic model and eventually the neoliberal state would in fact disappear. That is exactly the reason why huge funds are being invested in the production of new products today, which are, basically, absolutely unnecessary for a person. Because, even a very small drop in total consumption worries democratic governments around the world, and they are forced to use artificial measures to stimulate it as much as possible. Through various advertising campaigns and the use of various modern technological means, a large world population is literally forced to buy. People are simply surrounded by messages and images in which a comfortable and easy life is presented, where the amount of consumption is exactly proportional to the level of happiness and well-being (Goodman, Douglas, & Cohen). It does not matter to such a system what customers will do with these «unnecessary» products, it is only important that they are purchased. Of course, this process seems pointless, but a consumption-based economy cannot survive in any other way. In this regard, the entire state structure would also collapse if there were no equilibrium between consumption and production.

Achieving such a level of relations is realizable only if the mass media are under the control of the governing structures of the state nomenclature. Considering that elected democratic governments depend on the market and its conjuncture, it follows that the mass media are dependent on market influences. And it is known that in that case, there can be no question of real and impartial information. In that sense, the myth of the market economy necessity has been presented and well-nurtured over a long period, as a path leading to secure prosperity and abundance for the whole world and forever. However, reality has denied Hollywood movies and glittering magazines, not only within Western society, but throughout humanity as a whole. Practically such a system is unsustainable. Consumer civilization is a destructive factor of the modern world. It cannot have any perspective in the future. It is sufficient to say that all the Anglo-Saxon countries were developed and built powerful economic empires just the opposite of neoliberal theory, but through bare protectionism. Such a result could be achieved only in such socio-political conditions, where the bearers of economic policy were not limited by a short period but were enabled to set goals for several decades in advance.

Considering political freedom as the main lever of the idea of freedom, neoliberals promote economic freedoms as a new foundation of democracy (Biebricher, 2015). How far one goes in the direction of political consumerism is also shown by the generally accepted motto that customers are rare and not the products (Kotler, Dipak, & Maesincee). Thus, by placing profit at the top

of the pyramid of human values, all humanity is transformed into consumer machinery. In that sense, the economy becomes the state foundation whose role would be to encourage people to spend as much as possible. Neoliberal Democrats explain such a way of life by the guaranteed (constitutional) freedoms and absolute rights of any citizen of the world. Huge capital is created, a kind of material asset, which is determined for expanded reproduction and self-accumulation. In such conditions, mechanisms whose only goal is profit are created without addressing the interests of society as a whole. The forms of these structures are transnational corporations, which network the whole world. Unlike start-up corporations, today's corporations and their managers see nothing but their interest in transforming the global economy into global corporate totalitarianism (Sorokin, 2009). This creates a symbiosis between the economy and management structures, and the security of the state is entrusted to people who ultimately make decisions and work for the benefit of those same giant corporations. This is not surprising, considering that the open market, if it pulls someone into its profit network, it completely wears them out, leaving no trace of hope for the preservation of its resources.

No country in the world has such a democratic system as it is presented to every person on the planet. Actually, all European, primarily Western powers have failed to nurture this system even after more than a hundred years, realizing its shortcomings. «Democracy is under attack at the global level, including leading industrialized countries, at least democracy in the meaningful sense of the term, which includes the ability of people to manage their collective and personal affairs» (Homskij, 2002). Neoliberal doctrine, which advocates a reduction in state intervention, leads to market fundamentalism. The assumption that the market can only regulate supply and demand relations by itself, without state interference in liberal and legal relations, in fact thus creates space for the influence of politicians and their agitation in favor of transnational corporations. This way of acting logically abolishes democratic principles. That is why a quasi-democratic order is being established, from which political parties emerge, which in essence represent legal and business entities that base their functioning at the expense of their own state. In their essence, they were established as a system of financing that engages such a profile of people whose understanding of social engagement does not go beyond their own (material) interest and career achievement. Such an approach of selecting staff for management positions means that all key positions in a country will go to people with a speculator's mindset. That is why citizens are very circumspect of politicians who have such motives (Hay, 2007). Knowing that their power is limited, they act purposefully on that temporality and try to «capture» as much as they can, with the least possible engagement. That is why such nomenclatures perceive power only as a mere means of accumulating material benefits, and not as an obligation and task for serving the people and the state.

According to that, the neoliberal promotion of the market's natural neutrality has led to such a state that the interests of consumers are subordinated to the interests of increasing the profits of large corporations. At the same time, the diminishing influence of trade union organization has totally disenfranchised the working class around the world and left it without any protection against the rush of low-paid jobs. This came to light in particular during the COVID-19 virus pandemic. Actually, neoliberal capitalism has finally, after several decades, shown its inhumanity through the prism of a pandemic and discovered that without the role of the state, its economic policy and, most importantly, solidarity, there is no health security. It is the national states that, in the conditions of a pandemic, must provide jobs and conditions in order for the population to have a secure minimum income necessary for basic living needs. To achieve this, national banking systems must be monitored by the state in order to prevent speculative actions and create conditions for the smooth circulation of credit. Also, central banks must provide the economy

with sufficient liquidity to sustain the entire system, and improve the health sector, thus accelerating the fight to stop the pandemic and speed up the economic recovery (Mankiw, 2020).

However, the current situation is such that neoliberalism has managed to fragment and privatize health systems in many countries, and on the other hand, the once vibrant working class has experienced a narcissus through inadequate working conditions, low wages, poor or no health care, inadequate housing, poor nutrition and as a consequence we have an unhealthy lifestyle (Soltý, 2020). It is this social stratum of society that is most submissive to a pandemic, especially when hospital capacities are overloaded and then doctors are forced to hospitalize patients according to the principle of priority. However, human rights must be protected when it comes to the means and measures taken in the public health service. This implies maximum access to existing challenges in order to preserve the legal rights and personal dignity of people during a pandemic (Policy Brief, 2020). Market logic of neoliberalism has contributed to this, by highlighting profit maximization in almost all areas of society, including health care, which did not have enough necessary equipment for all people who got sick. Thus, the pandemic brought to the surface the basic shortcomings of the neoliberal model related to insufficient investment in the public sector, declining productivity and declining economic growth dating back to the 2008-2012 economic crisis years (Lapavistas, 2020). Today, it is obvious that the pandemic of the coronavirus has shown that this is a deep political-economic and legal-ideological crisis, and not just a crisis that includes exclusively the medical sector. Its roots go back a long way to the time when governments of neoliberal foundations had been pushing the importance of public health into the background for decades, while also protecting global institutions that allowed them to do so. Also, this crisis is closely connected with the great stratification of society, where a small number of individuals becomes enormously rich, and on the other hand, a growing army of dissatisfied, disenfranchised and extremely poor people is growing. When this is followed by the neoliberal impact, through capital, on the environment, an extremely favorable ground is obtained for the spread of the virus and the creation of enormous problems for all of humanity. This means that climate changes must be placed at the top of the agenda of all national states in order to preserve the ecosystem necessary for human life on earth. In support of the disruption of human lifestyles in the last few decades, is the fact that we have a large number of dangerous viruses that are transmitted from animals to humans, with about seventy-five percent of the relationship (Woolhouse, 2001). Also, the disappearance of large forest areas in one place leads to the exodus of animals to other parts, wherein these new habitats, their infectious diseases find their way to domicile animals and humans. However, it is worth mentioning the huge concentration of pets around the world, where some can carry pathogens, such as influenza, some of which are dangerous to human health, because as many as sixty percent of infectious diseases in humans originate from animals (Woolhouse & Gowtage-Sequeria, 2005). In that sense, it is impossible to separate health from environmental policy, because human health is closely connected with other organisms that live in our environment, as well as with global climate changes. This implies a permanent fight against climate changes and the conduct of such a global policy in order to preserve the diversity of flora and fauna on earth, which is disappearing rapidly.

### 3. CONCLUSION

The pandemic has affected all countries of the world, regardless of their difference in material wealth. Therefore, it seems that now is the right time to reconsider the neoliberal model of development that subordinates overall social interests to the market. According to that, the individual approach that underlies the neoliberal model could not, and cannot provide a solution to

overcome the existing catastrophe that has engulfed the entire world. Instead of systematically neglecting the collective model and the obvious inefficiency of neoliberalism, it is necessary to strengthen public services that have a much greater capacity to act in emergency circumstances. The national state, which has been suppressed for the past four decades, has shown tremendous incentive power when Western governments during the pandemic ‘violated’ neoliberal principles and intervened in the free market through monetary gifts to US citizens, credit guarantees and additional funding in Great Britain, benefits for self-employment in Germany, as well as the nationalization of companies in France and Italy (International Monetary Fund, 2020).

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# The Coronavirus Pandemic and Its Impact upon Companies from Bihor County

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**Abstract:** As the pandemic force started to affect the whole world in the first part of 2020, Romania's economy and society made no exception; as the paper shortly presents the effects and perspectives brought by this pandemic upon humankind, the main focus of the paper is a region in Romania, Bihor county, respectively. It presents how COVID-19 influenced normal economic-social activity, and the way the Romanian government reacted to this global problem, through different instruments, such as subsidies. The main purpose of this article is to present the way COVID-19 affected a region in an Eastern European country and the way the Romanian government searched for a solution in order to reduce the negative influences of this plague. The main method of analysis is based on statistical data collected by and from a regional employment agency from Bihor county (AJOFM-Bihor).

## 1. INTRODUCTION

Initial reaction to COVID-19 can be described as one which is specific to humans facing the unknown and unexpected: confusion and denial. As the reality imposed itself upon the collective psyche, the economic contraction started to manifest itself, triggering diverse effects which are hard to be evaluated for the moment; of course, there are statistics and forecasts created by IMF or ILO specialists, which describe the world economic contraction in comparison with pre-pandemic prognosis, but the long term economic, and especially social implications are hard to be quantified.

What can for sure be said now, based on figures already collected, is that this COVID-19 pandemic – whose evolution is hard to be predicted in the summer of 2021 anyway – has triggered the *deepest recession* since the end of World War II. The global economy contracted by 3,5 % in 2020 related to 2019 (Yeyati, E.L., & Filippini, F., 2021, p.1). Over 90% of the global economy experienced a reduction in the gross domestic product (GDP) per capita, the largest number of countries registering simultaneously such a trend since 1930 (World Bank Outlook, 2020).

To counter the negative impact of a pandemic due to lockdown, mobility's restrictions and contraction for both supply and demand, the great shift with long term consequences have been a general rising of states' indebtedness, which has risen: in 2010 the government indebtedness, expressed as a percentage of GDP, was on average around 75% (at global level). In 2020 it hangs on around 100%, and it is important to mention that the highest figures are registered in developed economies, with an average of indebtedness higher than 120%, related to their GDP (IMF Fiscal Monitor, 2020). According to Benmelech & Nitzan (2020), it can be noted that there is a direct connection between fiscal measures at hand, public spending rising and credit rating of a specific country. This can partially explain why developed countries could adopt such measures.

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Beyond simple fiscal aspects, the socio-economic aspects of COVID-19 can be summarized if we take a look at working-hour losses. Concerning the situation in the last part of the year 2019, in 2020 the percentage of working hours lost due to pandemic is 8,8% globally, while for the equivalent number of full-time jobs lost (48 hours/week), the number is 255 million. For Eastern Europe, the figures are: 7,4%, and 8 million, respectively (ILO Monitor, 2021). In this context, it is important to underscore that there is a difference between sectors strongly hit by pandemic (accommodation, restaurants, arts, culture, retail) and those which requested skilled personal (communication and information technology, and financial sector), which handled better in this new economic environment; this difference will only determine rising inequality within different countries.

The most affected parts of society were young laborers, women, self-employed, and of course low-skilled employees (ILO Monitor, 2021). Furthermore, the global labor income is estimated to have declined with around US 3700 billion, or 4,4% of global gross domestic product. In this context, the post-pandemic recovery can bring an even more stratified society, leading to greater inequality within the world's states, which could trigger simultaneous political turmoil in different societies, with consequences that can hard be forecasted (Giegerich et. al. 2021).

Furthermore, as prior COVID-19 pandemic there was manifesting a relative economic stagnation, the most important point for manufacturing sector being the efficiency – it looked for production's location in the most cost-effective areas – the pandemic shock upon global trade networks has changed priorities: resilience and security of supply network have gained more importance, especially when speaking about medical and food-supply industries (Giegerich et. al. 2021). At the same time, lower consumer confidence followed the steep decrease in economic activity, bringing with it a pessimistic approach regarding the future and what it could bring.

## **2. MATERIALS AND METHODS**

As can be noticed, this introduction has the aim of indicating the general aspects of the COVID-19 pandemic, globally, while the details connected to Bihor County are based on data obtained from this county's employment agency (AJOFM-Bihor); Bihor is a county located in the north-western part of Romania, bordering Hungary.

To protect the health of their citizens, many governments decided to take a huge risk in implementing lockdowns all over the world, without fully understanding the impact of this radical measure upon the economy and society. But choosing the most direct measure to cope with "evil" in order to save their populations should not be used to blame governments. No medical system in the world was capable of dealing with such a great number of infected people with COVID-19 or any other disease at the same time, and neither was any of the medical systems in the world capable of taking care of their patients with other medical records; so for lives to be saved, in this case, the economy had to face the hardest hit.

Starting in March 2020, most European countries imposed lockdowns, and this measure basically hit the export-oriented sectors of Bihor County. The table of March total lockdowns of non-essential economic activities in the West is as follows: 11.03.2020 Italy, 14.03.2020 Spain, 15.03.2020 Romania, 16.03.2020 Austria, 17.03.2020 Ireland, 18.03.2020 Belgium and Denmark, 22.03.2020 Germany, 24.03.2020 Britain and Portugal.

Since main Romania's economic partners are EU member countries, their decision to "close" economic activity, doubled by the similar measure taken in Romania, have brought hard times for several export-oriented sectors that were feeling the first early signs of consumption contraction in the West.

Correlating the links between mass shutdowns affecting the world economy with the effects registered by the industry and unemployment rate in Romania and making a few economic predictions based on the information gathered, the paper moves forward to observe the evolution of the same macroeconomic indicators at a smaller scale, meaning in Bihor County.

Based on data provided by AJOFM, for the period March 2020 – May 2021, several factors are analyzed in order to determine the impact of this pandemic; these factors are:

- number of companies that benefited from government subsidies, for suspended working contracts,
- total number of suspended working contracts,
- total value of government subsidies (RON).

**Table 1.** Number of companies, total number of suspended working contracts, total value of government subsidies (in RON) allocated from March 2020 to May 2021

| Month | Number of companies | Total number of suspended working contracts | Total value in RON of government subsidies |
|-------|---------------------|---|--|
| Mar   | 1601                | 16.432                                      | 8.672.823                                  |
| Apr   | 4639                | 37.625                                      | 61.866.592                                 |
| May   | 4323                | 32.173                                      | 44.213.216                                 |
| Jun   | 504                 | 4.874                                       | 5.578.218                                  |
| Jul   | 171                 | 832   | 1.271.660                                  |
| Aug   | 143                 | 647   | 1.025.250                                  |
| Sep   | 38                  | 112   | 170.026                                    |
| Oct   | 101                 | 833   | 568.500                                    |
| Nov   | 344                 | 2.593                                       | 3.620.867                                  |
| Dec   | 507                 | 5.707                                       | 7.190.112                                  |
| Ian   | 443                 | 5.503                                       | 6.220.004                                  |
| Feb   | 412                 | 5.286                                       | 6.264.237                                  |
| Mar   | 451                 | 5.936                                       | 6.387.693                                  |
| Apr   | 291                 | 2.017                                       | 3.324.159                                  |
| May   | 199                 | 926   | 1.488.928                                  |

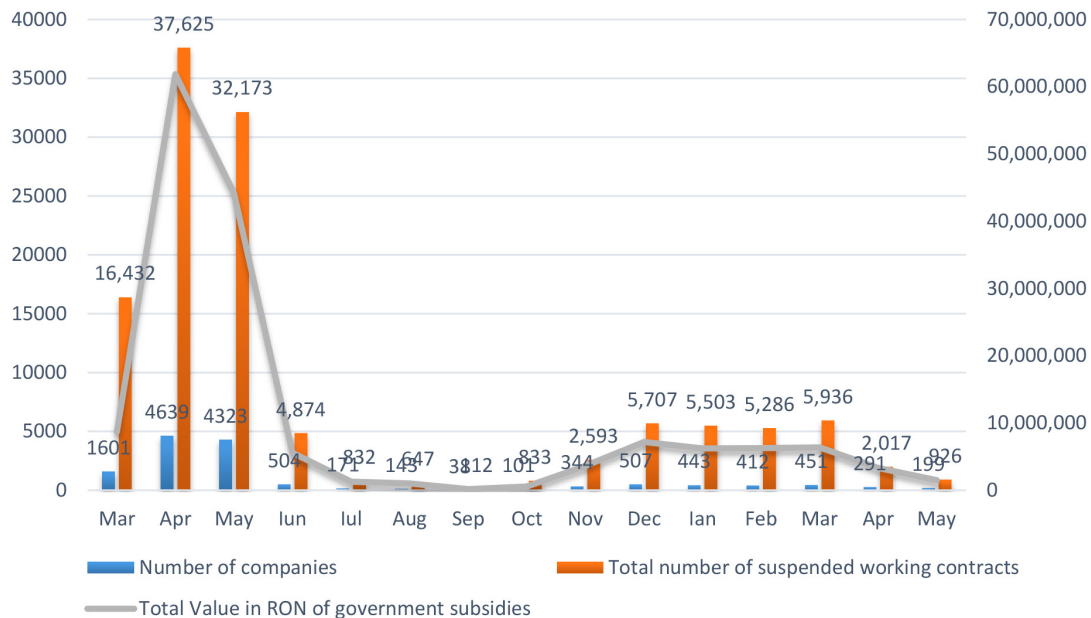
**Source:** Data provided by AJOFM; It requested not to disclose companies names and the amount of government help they received

The measures taken by local and governmental officials through AJOFM came as support and they tried to relieve the financial burden felt by affected companies and sectors; table 1 provides facts regarding what was done. If in March only 16.432 people got their contracts suspended, AJOFM paying them the amount 8.672.823 RON, in April and May the picture got gloomier. The number of suspended contracts rose to 37.625 and the economic relief to 61.866.592 RON, a more than 700% increase. In May things looked better, but still severe, with 32.173 suspended contracts and a cost of 44.213.216 RON supported by the Romanian government.

In Romania, the lockdown entered into force in the middle of March, and if we look just at what happened in this month, the results are quite optimistic, because only 1601 companies out of a total of 18175 – less than 9% – asked for governmental help in order to support their costs with suspended employees' contracts.

But this was only the period when dark clouds were gathering above Bihor because the storm to come was already provoking and testing the whole world economy, and Bihon county's economy couldn't make an exception in such a scenario.

For an easier understanding of the events, we can look to Graph 1.



**Graph 1.** Number of companies, total number of suspended working contracts, total value of government subsidies (RON) allocated from March 2020 to May 2021

**Source:** Data provided by AJOFM; It requested not to disclose companies names and the amount of government help they received

Graph 1, which comprises the available economic data for all the activity from March 2020 until May 2021, shows the real extent the lockdowns have created. It is a fiasco for local and national officials that see the staggering number of companies that have suspended contracts and asked for governmental relief. The crisis can be depicted in the shape of “M letter”. A huge spike arose in the first months of the pandemic due to the lockdowns that took place all over the democratic world.

The full blow was dealt with in April, and May 2020, when numerous economies are in lockdown, while the situation appears to ease when the measures are being lifted. The number of companies that benefited from government subsidies for suspended working contracts starts to decline from above 4.000 in April and May to 500 in June, and even less afterward.

The situation almost seemed to ease and pass in July, August, September, the number of companies that benefited from government subsidies for suspended working contracts decreased from 171 to 38; the number of suspended working contracts followed suit from 832 to 112 and the total value of government subsidies took a similar trend, falling from 1.271.660 to 170.026 RON.

The “M letter” shape start to emerge because the economic events, just when all things started to look better, have emerged in an already negatively affected economic landscape. The situation has gotten worsening due to an increase in numbers that started to occur after October 2020. If things seemed right for the last of the 2<sup>nd</sup> quarter and the beginning of the 3<sup>rd</sup> quarter of 2020, beginning with that period, all things went sideways.

The economic output shows that the crisis has lingering effects that start to push again. The number of companies that benefited from government subsidies for suspended working contracts starts speeding upwards from October 2020 until April 2021, from 101 to 304, reaching the highest number, 507 respectively, in December, and afterward topping 400 for each of the 1<sup>st</sup> quarter months of 2021.

The total number of suspended working contracts climb from 833 in October to 2.593 in November, reaching at the end of the year 2020, 5.707. The next three months showed no sign of relief, because all the figures point to a stalemate and figures above 5.000 suspended working contracts, with a peak of 5.936 in March 2021.

The given government subsidies during this period passed from the minimum 170.026 RON paid in September to 568.500 RON paid in October. The roller coaster of the total value of government subsidies seemed to get out of control again, reaching a staggering 7.190.112 RON paid in December. Even though the figures become moodier, a plateau being reached in the 1<sup>st</sup> quarter of 2021, the amount of subsidies paid by the Romanian government through AJOFM stabilizes at around 6 million RON/month.

In order to cope with the side-effects of this pandemic, there were taken further steps, topping up measures Romania government had already taken and which were shortly mentioned above; while they were related to a suspended activity, the 2-nd group of actions started to be implemented beginning with autumn 2020, and it has to do with supporting part-time jobs.

### 3. KURZARBEIT AND GOVERNMENT SUBSIDIES

Simultaneously with these measures, beginning with the autumn of 2020, another program has stepped in, helping the stressed Bihor county's economy; it was a fully-copied program, invented by the Germans regarding *Kurzarbeit* or part time-jobs, paid in order not to have a staggering soaring unemployment rate in a short period. This measure comes as a support for measures already in place, and they have strongly intensified after September 2020, when only 13 companies requested 235.078 RON for the 286 employees that were registered for part-time jobs.

**Table 2.** Number of companies, number of employees and Kurzarbeit government subsidies (RON) from September 2020 to March 2021

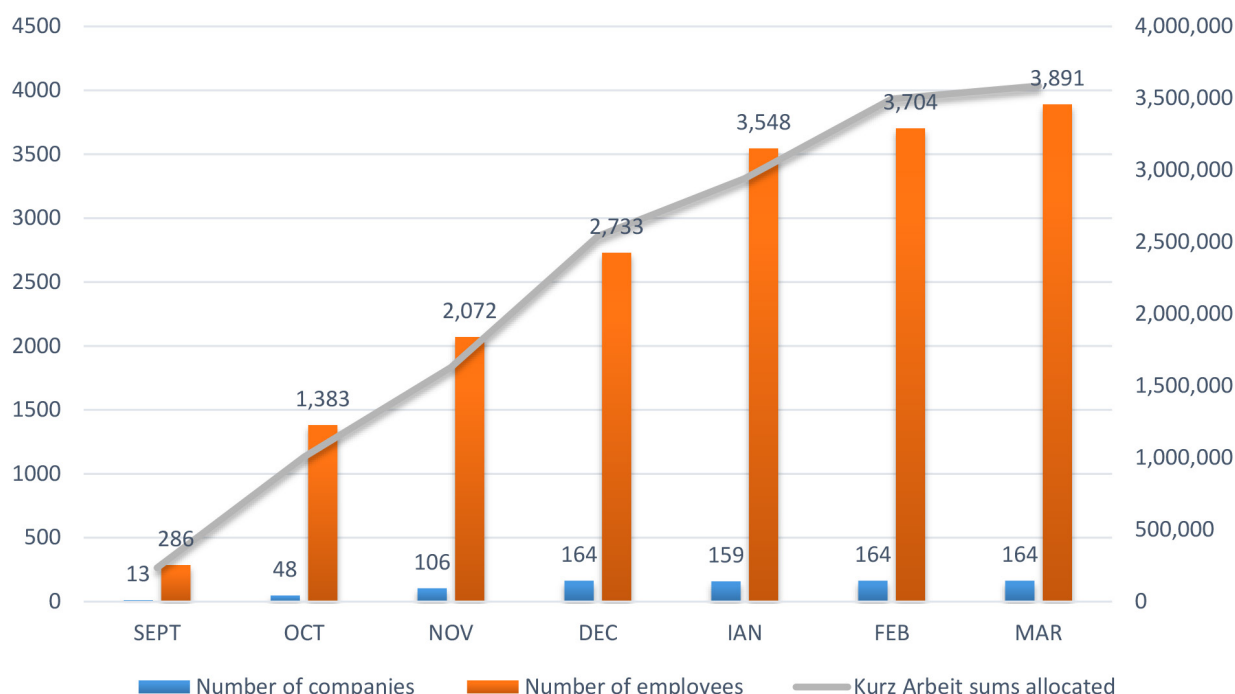
| Month | Number of companies | Number of employees | Kurzarbeit government subsidies |
|-------|---------------------|---------------------|---------------------------------|
| Sep   | 13                  | 286                 | 235.078                         |
| Oct   | 48                  | 1.383               | 1.005.457                       |
| Nov   | 106                 | 2.072               | 1.628.509                       |
| Dec   | 164                 | 2.733               | 2.541.905                       |
| Ian   | 159                 | 3.548               | 2.942.318                       |
| Feb   | 164                 | 3.704               | 3.495.621                       |
| Mar   | 164                 | 3.891               | 3.586.369                       |

**Source:** Data provided by AJOFM; It requested not to disclose companies names and the amount of government help they received

From then on, the situation dims and from November onwards the number of companies asking for government subsidies passes 100. The Figure stabilizes and reaches a plateau of 164 in the 1<sup>st</sup> quarter of 2021.

The main uphill push is seen better in Graph 2 where since the start of the Kurzarbeit governmental program has begun, more companies have enrolled employees every month.

The situation regarding Kurzarbeit government subsidies is the most relevant because from 235.078 RON paid in September to 1.005.457 RON paid in October is an increase of almost 400%. The figures haven't stopped here, they continue to rise to 2.942.318 RON paid in January and over 3 million RON paid in both next 2 months of the 1<sup>st</sup> quarter of 2021.



**Graph 2.** Number of companies, number of employees and Kurz Arbeit sums allocated from September 2020 – March 2021

**Source:** Data provided by AJOFM; It requested not to disclose companies names and the amount of government help they received

#### 4. MIX FACTS REGARDING REACTIONS TO THIS PANDEMIC

From the beginning of the pandemic, the Romanian Government, through the support given by its local agencies – AJOFM being one of them – established swift mechanisms to help mitigate the rising danger which unemployment could bring and its consequences.

Since the start of the pandemic, the Romanian Government followed the rest of the EU and developed economies, imposing proactive measures like government subsidies in order to help businesses overpass this harsh period. The overindebtedness that followed was the only asset at hand to keep the economy going.

An “M-shaped letter” effect was registered because the future measures taken by the government prohibited businesses from fully operating at the pre-pandemic level. Economic sectors like hotels, restaurants, coffee shops could stay open only if they had a terrace at hand; if they do not, they had to close down, because indoor activities were prohibited. This is one of the main reasons why a spike in government solicitations took place starting with the 4<sup>th</sup> quarter of 2020 and the 1<sup>st</sup> quarter of 2021.



The plateau that signaled an end to the pandemic started to appear afterward. Vaccination programs, good weather, deescalating measures that were taken started to ease business life, and hotels, restaurants, coffee shops owners started to rehire again. But as the paper gets closer to its ending (October 2021), a new stressful period looms over the regional economy...

## 5. FUTURE RESEARCH DIRECTIONS

A thorough analysis has to be made in order to see the full impact of the COVID-19 pandemic on the entire county economy, because not all economic activities or economic sectors have suffered after the government restrictions have been imposed, and some like *IT*, goods related to *medical* activity, large *distribution* centers, *meat packaging*, *constructions* and some others simply carried out their business as usual, *or they have done even better*.

But this can be accurately done only after fully understanding of complex connections and effects generated by this pandemic, it must comprise all sectors which reduce, or increase their activity. This can be done only after some time *after* the pandemic is fully over.

For the moment perhaps an “M letter” shape is a characteristic for the county’s economy based on the analysis of the number of companies that benefited from government subsidies for suspended working contracts, the total number of suspended working contracts and the total value of government subsidies.

In Bihor county, there is an aspect that has become visible in the spring of 2021: activities connected to real-estate investments, and the construction sector have followed an upward trend, even if other sectors connected to social activity (restaurants, hotels, tourism) were not doing so well in this harsh historical period; some economic activities and sectors have suffered the brunt force of the COVID-19 pandemic dubbed by government restrictions, while other economic activities and sectors managed to thrive in this problematic period.

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# Foreign Direct Investments in North Macedonia and the Balkan Region for the Period 2000–2021

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**Abstract:** *Having in mind that North Macedonia's goal is to integrate as much as possible into the global economy, it is particularly important to examine the extent and impact of FDI in North Macedonia. The topic underlines the importance that fulfills the purpose of this research, which is why foreign direct investment is important for a country, the factors that influence its growth and implementation in society. FDI is the driver of productivity, investment and economic growth. In addition, FDI increases the competitive pressure on the domestic market and stimulates technology transfer, innovation and digitalization. Through comparative analysis, we will try to show the movement of foreign direct investment in our country compared to countries in the region.*

## 1. INTRODUCTION

Foreign direct investment (FDI) is one of the most important instruments for intermediation in one national economy that stimulates production, importing of know-how, increasing of employment, etc. The benefits realized by the inflow of FDI, have caused fierce competition in the global free capital markets, all intending to attract as large and diverse FDI as possible. The general trend in the global FDI market is to blur the geographical boundaries between developing and developed countries: developing countries in recent years, in addition to being a growing FDI market, also tend to attract capital-intensive investments, as well as investments in research and development.

The intensified globalization and liberalization for the last few decades have increased the need for more productive activities, or the need to produce goods and services that will be able to withstand competition and survive in the market. For most countries, foreign direct investments are very important elements for activating their potentials and access to state-of-the-art technology. Also, the main carriers of foreign direct investment are multinational corporations.

Foreign direct investment (FDI) is a kind of investment that represents the objective of obtaining a lasting business interest by an investor in one economy, or in an enterprise from other economies. This lasting business interest implies that a long-term relationship exists between the investor and the enterprise and that the investor has a significant influence on the way the enterprise is managed. Such business interest is formally deemed to exist when a direct investor owns at least 10% or more of the voting power on the board of directors (for an incorporated enterprise) or the equivalent (for an unincorporated enterprise).

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FDI may be seen as an alternative economic strategy, adopted by those enterprises that invest to establish a new plant/office or purchase existing assets of a foreign enterprise. These enterprises seek to complement or substitute international trade, by producing (and often selling) goods and services in other countries.

There are two kinds of FDI:

- the creation of productive assets by foreigners, and
- the purchase of existing assets by foreigners (for example, through acquisitions, mergers, takeovers).

## **2. FOREIGN DIRECT INVESTMENT, NET OUTFLOWS – NORTH MACEDONIA**

The inflow of foreign capital in the form of foreign direct investment (FDI), has considerably increased in developing countries during the last few decades. FDI inflow fulfills the rising investment requirements to boost economic growth at a higher pace and helps macroeconomic stability in the economy. This non-debt foreign inflow makes the pressure on the balance of payment distortion to be easier. Technological transfer from developed countries to developing countries through FDI paves the way for economic development in developing countries. FDI affects the economic development of the recipient country at macro- and micro-level. At the macro-level it is beneficial for real sectors of the economy, for example, investments, exports, economic growth, and so forth, whereas, at micro-level, it creates technological spillover, training of manpower or it enhances management skills, etc.

Interaction between foreign and domestic investments could be of paramount importance. Actually, they both can cause each other. The increase in private investment signals a high return on investment in the domestic economy whereas public investment shows the improvement in infrastructure and thereby reduction in the cost of doing business. These roles of domestic investment motivate foreign investors to reap the benefits of high returns. However, the foreign capital inflow may also be beneficial for the investors of the host country. The impact of FDI on domestic investment is ambiguous; that is, FDI may have a crowding out or crowding in impact on domestic investment. Crowding out the impact of FDI means it is meaningless for the FDI recipient country, but crowding in the impact of FDI on domestic investment is beneficial for the host country.

Foreign direct investment refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship.

The internationally accepted definition of FDI (from the sixth edition of the IMF's Balance of Payments Manual [2009]), embraces the following components: equity investment, including investment associated with equity that gives rise to control or influence; investment in indirectly influenced or controlled enterprises; investment in fellow enterprises; debt (except selected debt); and reverse investment.

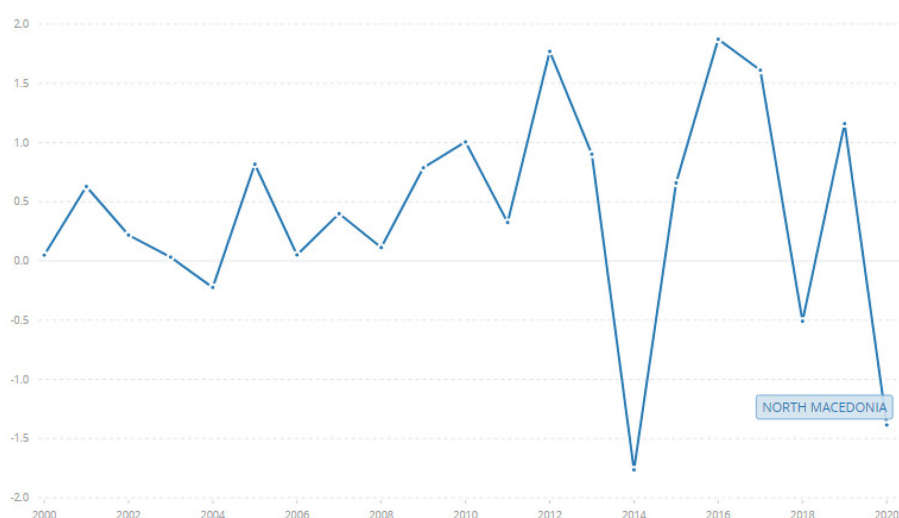
What distinguishes foreign direct investment from other types of investment is that it provides a permanent inflow of international capital in the form of plant and equipment, cash and invest-

ment in human capital. The characteristic of this type of investment is that upon entering the country they take control of the company. IMF suggests that investments should account for at least 10 percent of voting stock to be counted as FDI. In practice, many countries set a higher threshold. Also, a significant number of countries fail to report reinvested earnings.

Private financial flows - equity and debt - account for the bulk of development finance. Equity flows comprise foreign direct investment (FDI) and portfolio equity. Debt flows are finances raised through bond issuance, bank lending, and supplier credits.

**Table 1.** Foreign direct investment, net outflows (% of GDP), North Macedonia

| Year   | 2000  | 2011  | 2012  | 2013  | 2014   | 2015  | 2016  | 2017  | 2018   | 2019  | 2020   |
|--|-------|-------|-------|-------|--------|-------|-------|-------|--------|-------|--------|
| Foreign direct investment, net outflows (% of GDP) | 0.049 | 0.324 | 1.770 | 0.901 | -1.765 | 0.658 | 1.873 | 1.611 | -0.509 | 1.160 | -1.386 |



**Chart 1.** Foreign direct investment, net outflows (% of GDP), North Macedonia 2000-2020

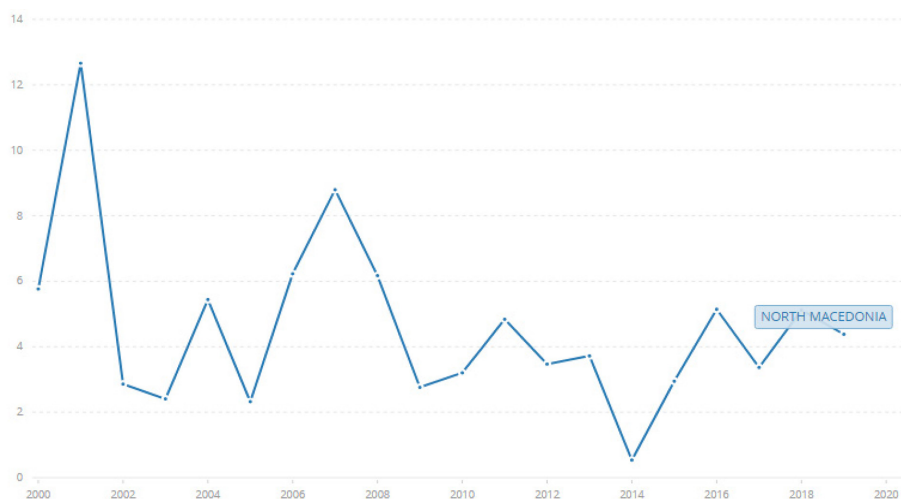
### 3. FOREIGN DIRECT INVESTMENT, NET INFLOWS (% OF GDP) – NORTH MACEDONIA

Foreign direct investments are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors. It is divided by GDP.

Data on equity flows are based on the balance of payments data reported by the International Monetary Fund (IMF). Foreign direct investment (FDI) data are supplemented by the World Bank staff estimated by using data from the United Nations Conference on Trade and Development (UNCTAD) and official national sources. BoP refers to the Balance of Payments.

**Table 2.** Foreign direct investment, net inflows (% of GDP), North Macedonia

| Year  | 2000  | 2011  | 2012  | 2013  | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| Foreign direct investment, net inflows (% of GDP) | 5.764 | 4.840 | 3.468 | 3.721 | 0.536 | 2.945 | 5.144 | 3.366 | 5.116 | 4.380 | -    |

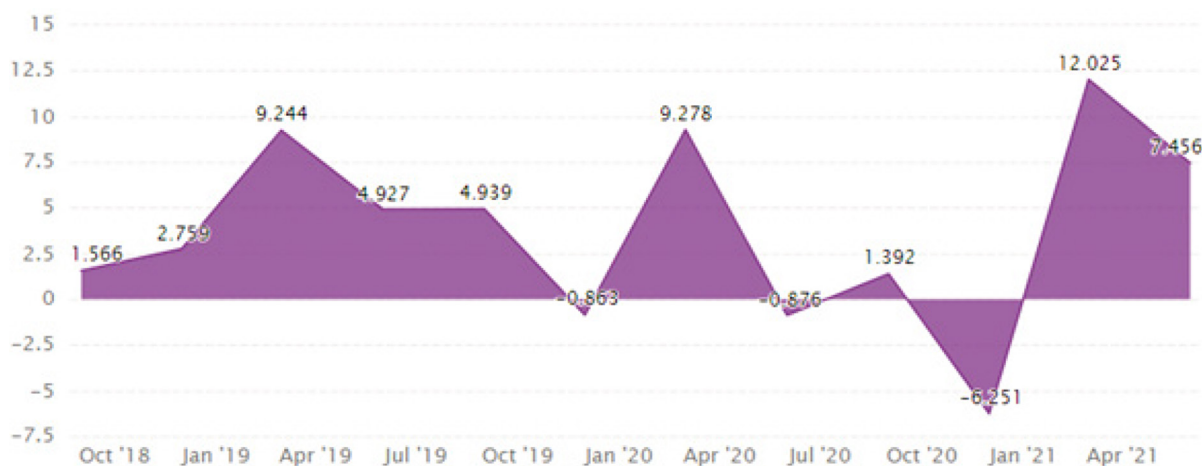


**Chart 2.** Foreign direct investment, net inflows (% of GDP), North Macedonia 2000-2020

#### 4. NORTH MACEDONIA FOREIGN DIRECT INVESTMENT: PERCENTAGE OF GDP 2000 – 2021

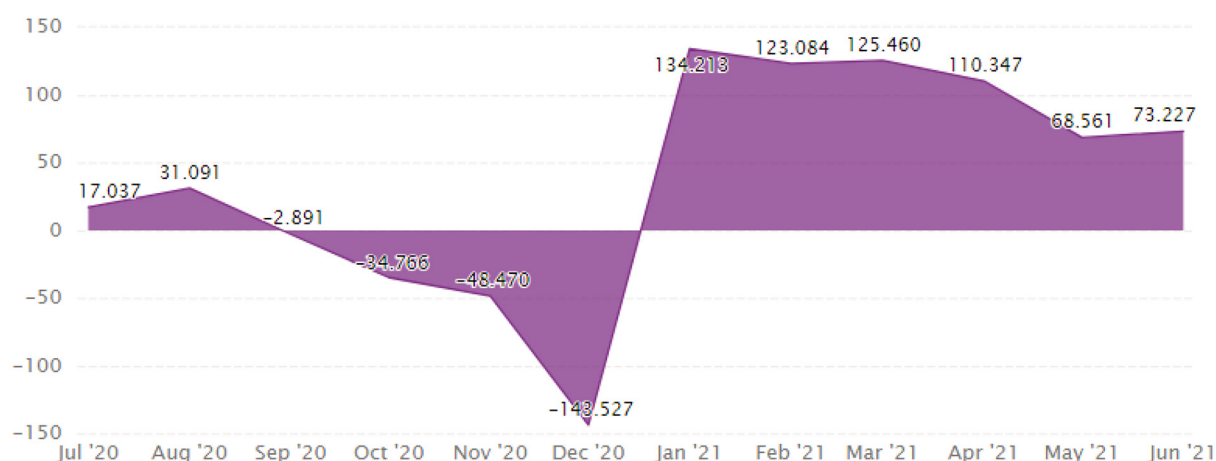
Foreign Direct Investment (FDI) of Northern Macedonia increased by 7.5 percent of the country's nominal GDP in June 2021, compared to a growth of 12.0 percent in the previous quarter. Historical data reached a maximum of 41.3% in March 2001 and a record low -6.3% in December 2020.

Foreign direct investment is calculated as % of nominal GDP of quarterly foreign direct investment and quarterly nominal GDP. According to the National Bank of the Republic of Northern Macedonia, foreign direct investments are calculated in USD. The State Statistical Office of the Republic of Northern Macedonia calculates nominal GDP in local currency. The average market exchange rate of the National Bank of the Republic of Northern Macedonia is used for currency conversion.



**Chart 3.** North Macedonia's Foreign Direct Investment: percentage of GDP

The current account in North Macedonia recorded a surplus of 1.5 USD million in June 2021. Foreign Direct Investment (FDI) increased by 73.2 USD million in June 2021. North Macedonia direct investment abroad fell by 20.6 USD million in June 2021.



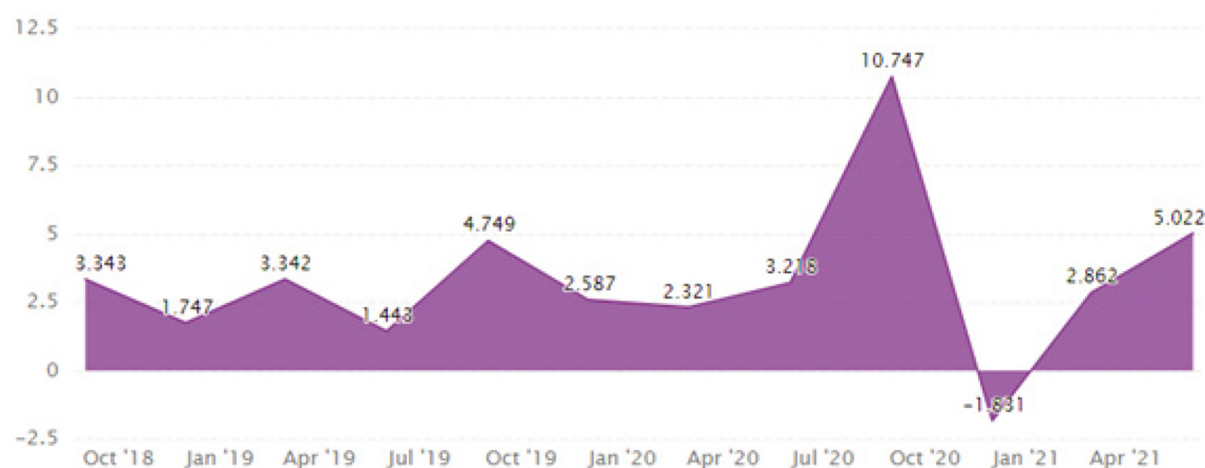
**Chart 4.** Foreign Direct Investment, USD million, North Macedonia

## 5. BULGARIA'S FOREIGN DIRECT INVESTMENT: PERCENTAGE OF GDP 2007 – 2021

Foreign direct investment (FDI) in Bulgaria grew by 3.6% of the country's nominal GDP in June 2021, compared to 3.4% growth in the previous quarter. Foreign direct investment is quantified by calculating the percentage of nominal GDP that is updated quarterly, available from March 2007 to June 2021. From the analyzed period it can be noticed that historical results were achieved at the highest level of 31.0% in June 2007 and a record low level of -2.5% in September 2010.

The investments are calculated as a percentage of nominal GDP of monthly foreign direct investment and quarterly nominal GDP. The data that are analyzed and processed are expressed in currency - euros.

Foreign direct investment increased by \$ 524.5 million in June 2021. Bulgarian foreign direct investment expanded by \$ 59.0m in June 2021.



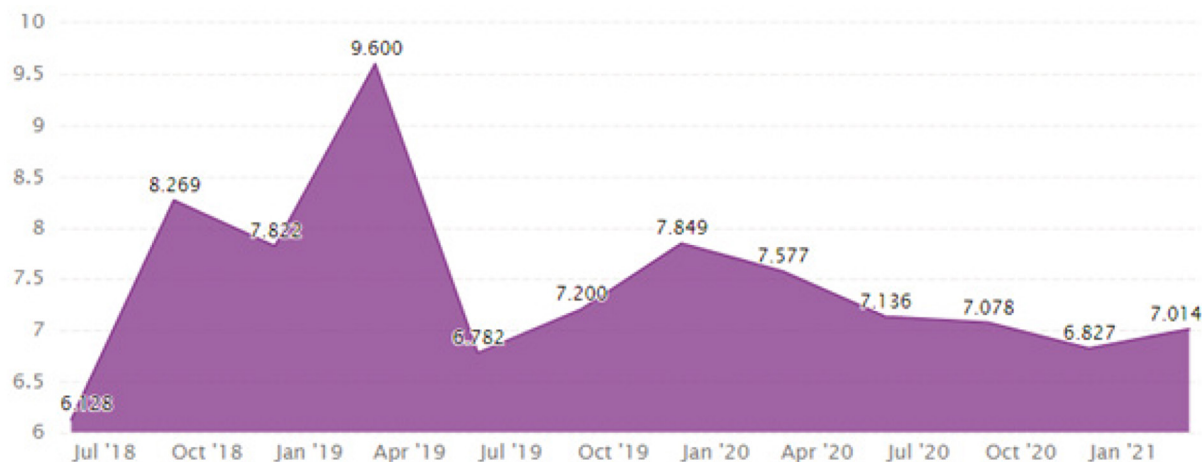
**Chart 5.** Bulgaria's Foreign Direct Investment: % of GDP



## 6. ALBANIA'S FOREIGN DIRECT INVESTMENT: PERCENTAGE OF GDP 2008 - 2021

Foreign direct investment in Albania grew by 7.0 per cent of the country's nominal GDP in March 2021, compared to 6.8 per cent growth in the previous quarter. They are expressed as a percentage of nominal GDP and are updated quarterly. Historical results were achieved with a maximum of 14.3% in June 2009 and a record low level of 5.5% in June 2014. Amounts of data are expressed in euros, converting currencies at the market rate.

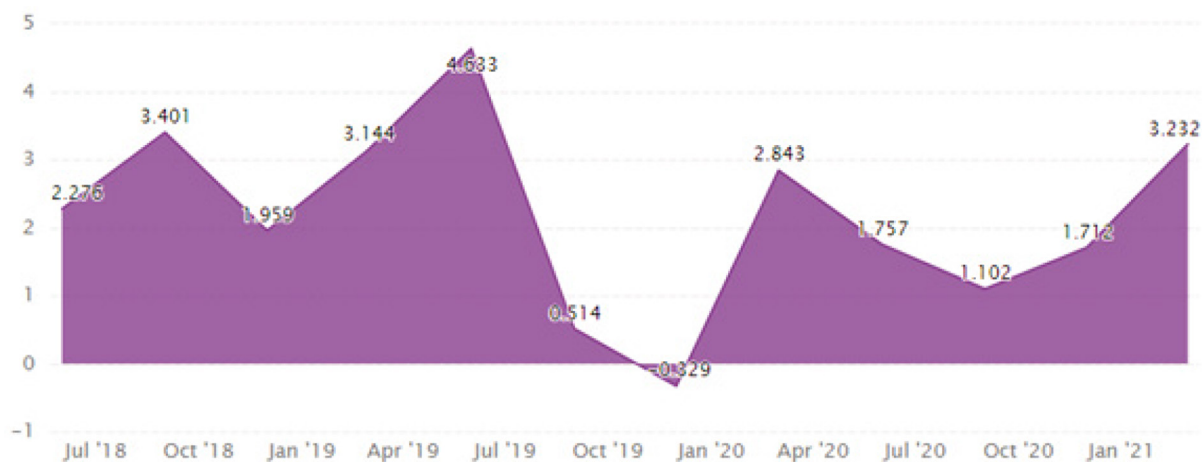
In Albania's latest reports, the current account recorded a deficit of \$ 372.6m in March 2021. Foreign direct investment (FDI) increased by \$ 275.8 million in March 2021.



**Chart 6.** Albania's Foreign Direct Investment: percentage of GDP

## 7. BOSNIA AND HERZEGOVINA'S FOREIGN DIRECT INVESTMENT: PERCENTAGE OF GDP 2008 - 2021

Another country that is the subject of research in this paper in the Balkan region is Bosnia and Herzegovina, which recorded growth equal to 3.2 percent of the country's nominal GDP in March 2021, compared to growth equal to 1.7 percent in the previous quarter. The data on Foreign Direct Investment in Bosnia and Herzegovina are expressed in a percentage calculated from the nominal GDP which are updated quarterly. The Central Bank of Bosnia and Herzegovina provides foreign direct investment in local currency, not in euros as in other countries in the region.

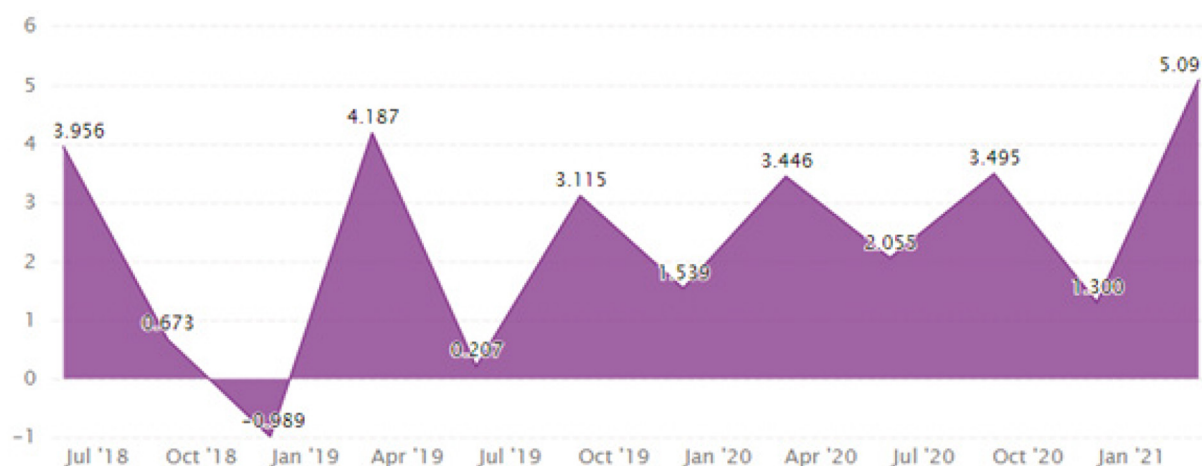


**Chart 7.** Bosnia and Herzegovina's Foreign Direct Investment: percentage of GDP



## 8. CROATIA'S FOREIGN DIRECT INVESTMENT: PERCENTAGE OF GDP 1995 - 2021

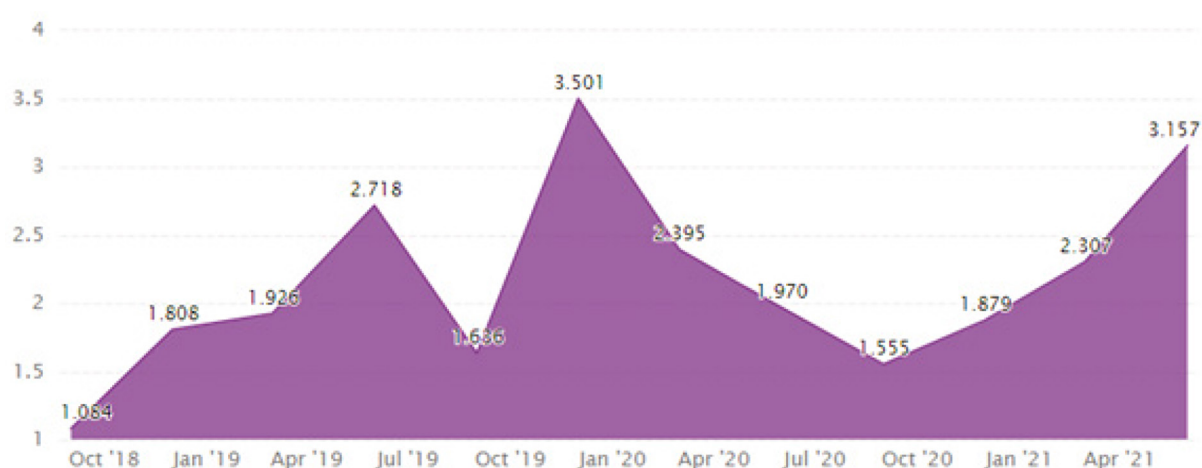
In each country, foreign direct investment has its ups and downs depending on the influence of external and internal factors. Croatia saw its growth in foreign investment in March 2021, amounting to 5.1 per cent of the country's nominal GDP, compared to a growth of 1.3 per cent in the previous quarter. Foreign direct investment data in Croatia is updated quarterly and is expressed in local currency based on BPM6.



**Chart 8.** Croatia's Foreign Direct Investment: percentage of GDP

## 9. GREECE FOREIGN DIRECT INVESTMENT: PERCENTAGE OF GDP 1999 – 2021

Greek foreign direct investment (FDI) grew by 3.2 percent of the country's nominal GDP in June 2021, compared with a growth of 2.3 percent in the previous quarter. The analyzed data are expressed in percentages of nominal GDP which are updated quarterly, available from March 1999 to June 2021. Historical results were recorded in 2008 in June when they reached a maximum of 4.2% and a record low of -1.4% in March 2012. The data updated by the Greek Bank are expressed in euros based on BPM6. The Greek Statistical Office provides nominal GDP in EUR.

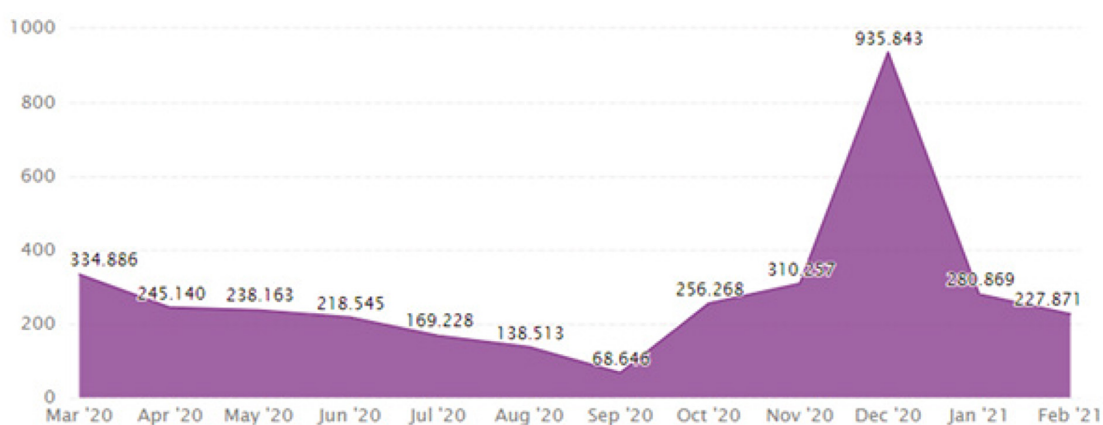


**Chart 9.** Greece Foreign Direct Investment: percentage of GDP

## 10. SERBIA'S FOREIGN DIRECT INVESTMENT

We end the part of the individual analysis and graphs with Serbia in which Foreign Direct Investment (FDI) increased by 227.9 million US dollars in February 2021, compared to the increase of 280.9 million US dollars in the previous month. Serbia's net foreign direct investment data (in millions of US dollars) is updated monthly, available from January 2013 to February 2021. Foreign direct investment achieves its peak of \$ 1.1 billion in December 2018 and a record low of \$ 41.9 million in February 2013.

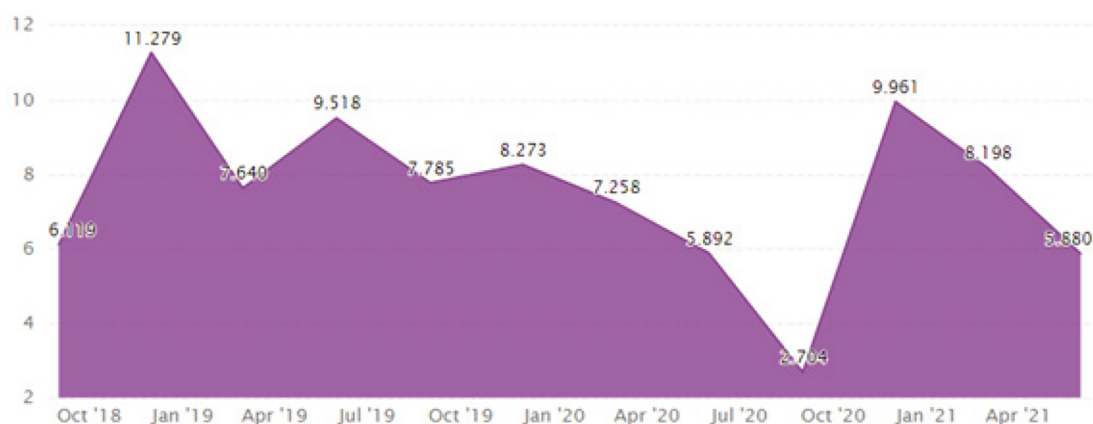
In recent reports, Serbia's current account recorded a deficit of \$ 58.7m in February 2021. Serbia's foreign direct investment fell by \$ 6.8m in July 2021. as they were \$ 15.1 billion in December 2020.



**Chart 10.** Serbia's Foreign Direct Investment

The next graphic representation (Chart 11) covers the data from October 2018 to April 2021, where the oscillations that occur in that period can be evident. Serbian Foreign Direct Investment (FDI) grew by 6.1% of the country's nominal GDP in June 2021, compared to growth of 8.2% in the previous quarter.

The data reached a historic high of 11.3% in December 2018 and a record low of 2.7% in September 2020. In the latest reports, Serbia's current account recorded a deficit of \$ 58.7m in February 2021. Foreign direct investment (FDI) increased by \$ 227.9 million in February 2021. Serbia's foreign direct investment fell by \$ 6.8m in July 2021. Foreign portfolio investments that are treated differently from direct investments decreased by US \$ 104 dollars.



**Chart 11.** Serbia's Foreign Direct Investment: percentage of GDP

## 11. COMPARATIVE ANALYSIS FOR THE BALKAN REGION

The Balkan countries have been less successful in attracting foreign direct investment compared to the Central European countries. The influence and dynamics of foreign capital inflow depend on several factors that have had a direct or indirect impact on the investment policy of the Balkan countries. Political instability, low intra-regional trade and the small size of national markets are some of the reasons for this gap in FDI. One of the more successful Balkan FDI recipients is Bulgaria, while Greece is the main source of FDI for the transition economies of the Balkan region.

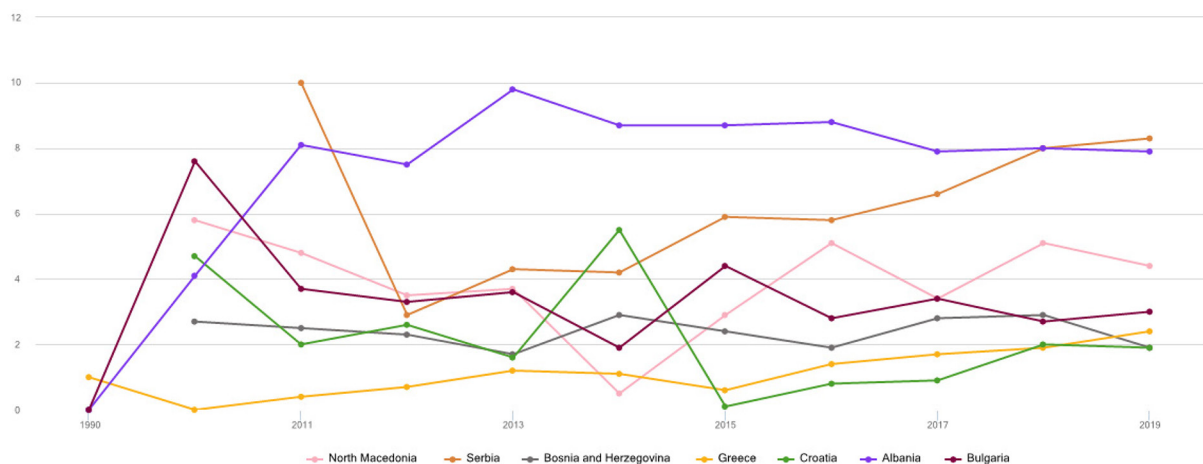
A stable political climate, cheap labor force, and stable legal system and legislation could be some of the basic premises that are desperate to attract foreign direct investment. Greek investments have been driven in part by the availability of a cheap labor force in nearby economies in transition. Also, this advantage was used by North Macedonia, which achieved the largest increase in a foreign capital with the availability of a cheap labor force as one of the preconditions for the investments.

Next tables and graphs will show the movement and figures for foreign direct investment, their net inflow and net outflow in the Western Balkans as the basis for a comparative analysis in the period 2000-2020.

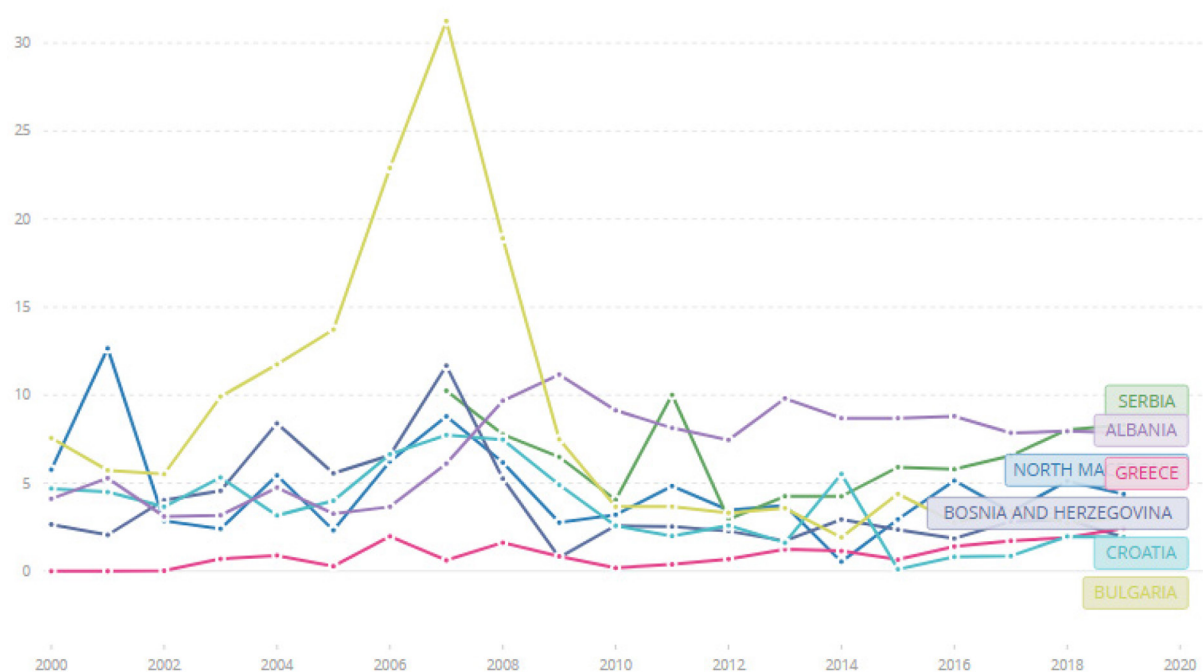
From the tabular and graphical presentation of the net inflows, it can be concluded that the largest oscillations and changes in foreign direct investment as a % of GDP are recorded in Bulgaria, where in 2007 it has a value of 31.247 to a value of 1.922 in 2014. The greatest consistency and the smallest differences for the period under consideration can be observed in Greece where the values range from -0.006 to 2.435. In North Macedonia, the greatest value can be seen in 2001, when happened the biggest investment boom, and the lowest value 0.536 was recorded in 2014.

**Table 3.** Foreign direct investment - North Macedonia, Serbia, Bosnia and Herzegovina, Greece, Croatia, Albania, Bulgaria, net inflows (% of GDP)

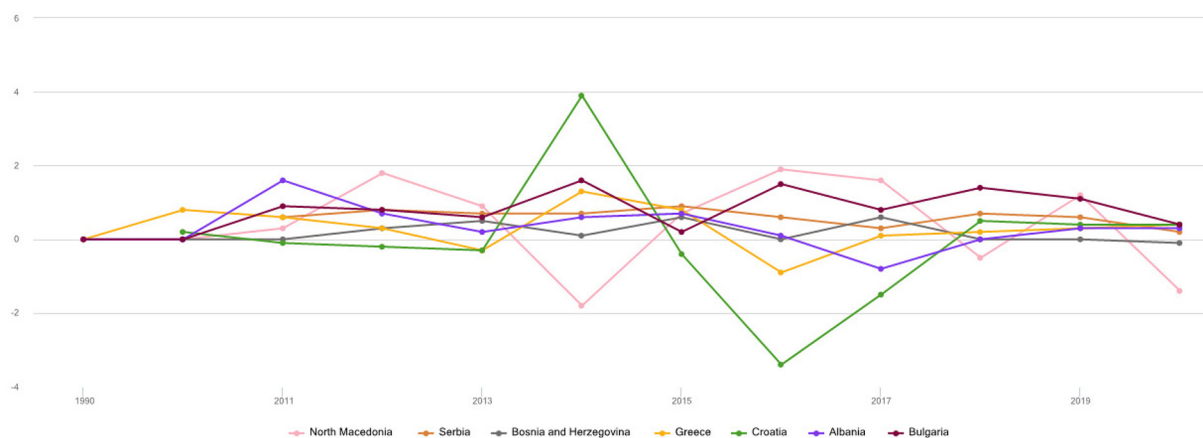
| Year | Albania | Bulgaria | Bosnia and Herzegovina | Greece | Croatia | North Macedonia | Serbia |
|------|---------|----------|------------------------|--------|---------|-----------------|--------|
| 2000 | 4.109   | 7.561    | 2.653                  | -0.006 | 4.692   | 5.764           |        |
| 2001 | 5.285   | 5.732    | 2.061                  | 0.001  | 4.497   | 12.659          |        |
| 2002 | 3.105   | 5.515    | 4.026                  | 0.022  | 3.658   | 2.859           |        |
| 2003 | 3.173   | 9.916    | 4.561                  | 0.697  | 5.324   | 2.406           |        |
| 2004 | 4.750   | 11.746   | 8.395                  | 0.893  | 3.160   | 5.440           |        |
| 2005 | 3.260   | 13.720   | 5.558                  | 0.278  | 3.999   | 2.322           |        |
| 2006 | 3.655   | 22.904   | 6.576                  | 1.980  | 6.637   | 6.228           |        |
| 2007 | 6.109   | 31.247   | 11.674                 | 0.614  | 7.734   | 8.796           | 10.246 |
| 2008 | 9.682   | 18.914   | 5.258                  | 1.618  | 7.474   | 6.172           | 7.771  |
| 2009 | 11.171  | 7.490    | 0.786                  | 0.838  | 4.904   | 2.759           | 6.486  |
| 2010 | 9.138   | 3.658    | 2.584                  | 0.180  | 2.579   | 3.203           | 4.049  |
| 2011 | 8.135   | 3.666    | 2.529                  | 0.386  | 1.997   | 4.840           | 10.010 |
| 2012 | 7.451   | 3.309    | 2.275                  | 0.687  | 2.589   | 3.468           | 2.945  |
| 2013 | 9.816   | 3.576    | 1.723                  | 1.235  | 1.611   | 3.721           | 4.255  |
| 2014 | 8.693   | 1.922    | 2.936                  | 1.146  | 5.524   | 0.536           | 4.249  |
| 2015 | 8.691   | 4.386    | 2.363                  | 0.650  | 0.106   | 2.945           | 5.909  |
| 2016 | 8.805   | 2.766    | 1.852                  | 1.400  | 0.811   | 5.144           | 5.788  |
| 2017 | 7.855   | 3.404    | 2.818                  | 1.723  | 0.859   | 3.366           | 6.552  |
| 2018 | 7.951   | 2.733    | 2.947                  | 1.897  | 1.976   | 5.116           | 8.041  |
| 2019 | 7.857   | 3.028    | 1.931                  | 2.435  | 1.926   | 4.380           | 8.293  |



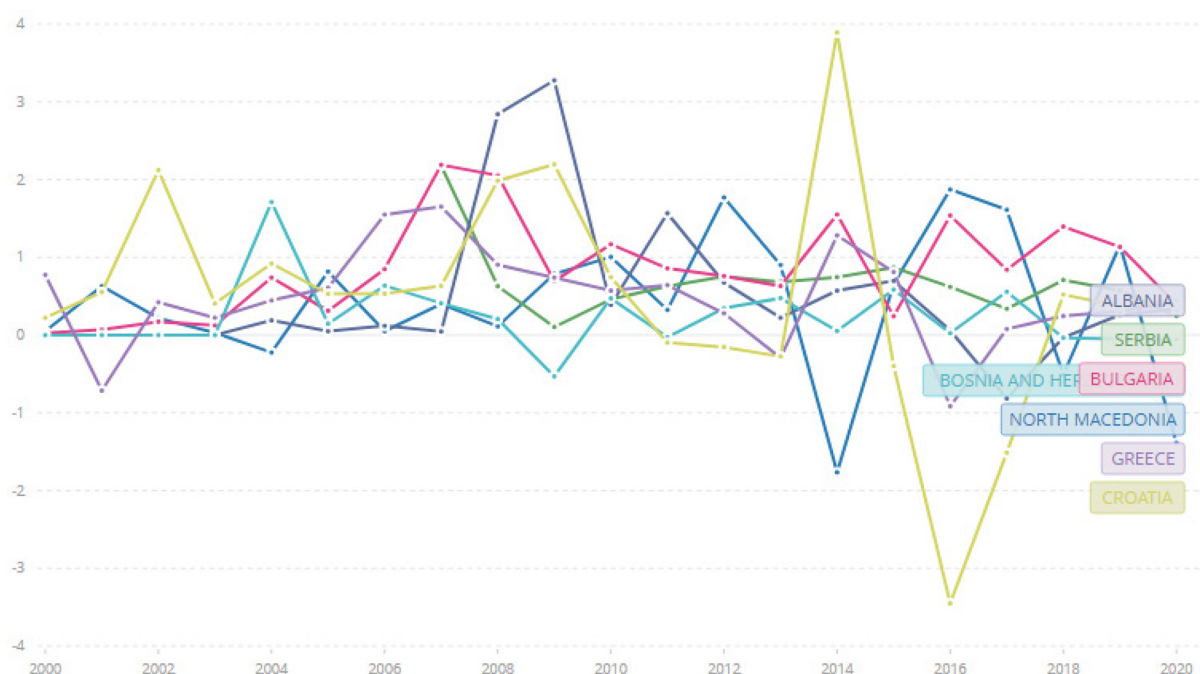
**Chart 12.** Foreign Direct Investment, net inflows, Balkan Region



**Chart 13.** Foreign Direct Investment, net inflows, Balkan Region 2000-2020



**Chart 14.** Foreign Direct Investment, net outflows, Balkan Region



**Chart 15.** Foreign Direct Investment, net outflows, Balkan Region 2000-2020

**Table 4.** Foreign direct investment - North Macedonia, Serbia, Bosnia and Herzegovina, Greece, Croatia, Albania, Bulgaria, net outflows (% of GDP)

| Year | Albania | Bulgaria | Bosna and Herzegovina | Greece | Croatia | North Macedonia | Serbia |
|------|---------|----------|-----------------------|--------|---------|-----------------|--------|
| 2000 | 0.000   | 0.025    | 0.000                 | 0.775  | 0.222   | 0.049           |        |
| 2001 | 0.000   | 0.068    | 0.000                 | -0.714 | 0.554   | 0.628           |        |
| 2002 | 0.000   | 0.173    | 0.000                 | 0.422  | 2.122   | 0.218           |        |
| 2003 | 0.000   | 0.125    | 0.000                 | 0.224  | 0.408   | 0.032           |        |
| 2004 | 0.189   | 0.739    | 1.711                 | 0.445  | 0.921   | -0.224          |        |
| 2005 | 0.050   | 0.312    | 0.146                 | 0.608  | 0.531   | 0.817           |        |
| 2006 | 0.118   | 0.849    | 0.636                 | 1.549  | 0.533   | 0.051           |        |
| 2007 | 0.046   | 2.189    | 0.409                 | 1.652  | 0.632   | 0.400           | 2.179  |
| 2008 | 2.841   | 2.053    | 0.206                 | 0.905  | 1.986   | 0.113           | 0.629  |
| 2009 | 3.277   | 0.694    | -0.531                | 0.740  | 2.196   | 0.787           | 0.104  |
| 2010 | 0.389   | 1.170    | 0.473                 | 0.572  | 0.745   | 1.005           | 0.461  |
| 2011 | 1.568   | 0.858    | -0.026                | 0.643  | -0.097  | 0.324           | 0.629  |
| 2012 | 0.675   | 0.759    | 0.346                 | 0.280  | -0.154  | 1.770           | 0.756  |
| 2013 | 0.223   | 0.632    | 0.475                 | -0.292 | -0.274  | 0.901           | 0.686  |
| 2014 | 0.572   | 1.551    | 0.054                 | 1.282  | 3.891   | -1.765          | 0.745  |
| 2015 | 0.697   | 0.243    | 0.584                 | 0.810  | -0.398  | 0.658           | 0.868  |
| 2016 | 0.059   | 1.537    | 0.023                 | -0.915 | -3.450  | 1.873           | 0.620  |
| 2017 | -0.816  | 0.841    | 0.557                 | 0.078  | -1.512  | 1.611           | 0.338  |
| 2018 | -0.030  | 1.396    | -0.035                | 0.245  | 0.521   | -0.509          | 0.707  |
| 2019 | 0.262   | 1.134    | -0.048                | 0.305  | 0.373   | 1.160           | 0.575  |
| 2020 | 0.336   | 0.395    | -0.057                | 0.424  | 0.447   | -1.386          | 0.245  |

From the tabular and graphical presentation of the net outflows, it can be concluded that the largest oscillations and changes in foreign direct investment as % of GDP are recorded in Croatia where in 2014 it has a value of 3.891 to a negative value of -3.450 in 2016. Also, it can be seen a positive impact on the net outflow only in Serbia and Bulgaria where in this research period it can be noticed that the numbers have a positive value.



From the tabular and graphic representations, it seems that there are large movements and oscillations of the net inflows and net outflows of direct foreign investments in the Western Balkan countries. The programs and commitments that are undertaken in North Macedonia have noticeable results and it is important to mention that on the business climate in the country, they have a great impact. The COVID-19 crisis is affecting the entire economy, which has forced companies and investors to adapt to a new way of functioning, and that is digitalization in all segments of the economy.

## 12. CONCLUSION

A foreign direct investment (FDI) is a purchase of an interest in a company by a company or an investor located outside the country's borders.

FDI is a challenge for developing countries that requires a lot of hard work. Namely, FDI is seen by the developing countries as a source for economic development and modernization, which means income growth and higher employment.

Consequently, almost every developing country has been liberalized FDI regimes and pursued other investment policies. They addressed the question of how to conduct domestic policies to maximize the benefits of a foreign presence in the domestic economy. By focusing on the overall effect of FDI, the macroeconomic growth in the host country can be influenced. Given the host country's appropriate policies and a basic level of development, FDI is causing technology overflows, helping to build human capital, contributing to international trade integration, helping to create a more competitive business environment, and enhancing enterprise development as well. All this contributes to higher economic growth, which is the most powerful tool for poverty alleviation in developing countries. In addition to the purely economic benefits, FDI can help the improvement of the environmental and social conditions in the host country, for example, by transferring "cleaner" technologies and leading to more socially responsible corporate policies.

From the tabular and graphic representations in the paper, it can be seen that there are large movements and oscillations of the net inflows and net outflows of direct foreign investments in the Western Balkan countries. Unfortunately, for the last two years, the COVID-19 crisis has had a major impact on foreign direct investment, with a severe impact on the economies of the Western Balkans.

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# Small and Medium Enterprises and the Microeconomic Role

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**Abstract:** *Even if a lot of the businesses depend on authorities (infrastructure, national promotion, etc.) solving the problems is still a microeconomic task. Small and Medium Enterprises (SMEs) have always been recognized as the driver of a critical sector of the economy and the SMEs will continue to remain as the backbone of several countries' economic development throughout the world. Due to the economic and social importance of the small and medium-sized enterprises (SMEs) for the economy, compared to large businesses, they are supposed to be more vulnerable, riskier, and so it is more difficult to obtain external sources of finance for them.*

*The article aims to evaluate SMEs finance from the perspective of selected domestic and foreign initiatives, as well as to propose the measures for the improvement of SME finance.*

## 1. INTRODUCTION

Small and Medium Enterprises (SMEs) have always been recognized as the driver of a critical sector of the economy. The SME sector plays a significant role in the contemporary economy, demonstrating to be an attractive and innovative domain. Is a truth universally recognized the important contribution of the SME in economic development. Showing their economically and socially convenient effects led to the thinking of the SMEs sector as a field of strategic importance for the economy. It is necessary to improve the business environment for their growth, especially to grow their access to external financial sources.

Their business capabilities are more difficult to assess for creditors because their financial statements are less informative and their credit histories are typically shorter. Banks have usually been taking a more selective method to supply loans in order to preserve the quality of the assets side of their balance sheets. SMEs are often strongly integrated into the supply chain, together with large corporations, and can hence benefit from advantaged access to suppliers and purchaser funding. SMEs play an important role in the economy in terms of employment and value-added shares. SMEs represent a source of entrepreneurship abilities, innovation and the creation of new jobs. Their capacity to apply, adapt and disseminate new technology is unique. Passing from a traditional family company to a medium company, it is fundamental to carry out extensive research into the industry of company interest, including aspects of microeconomic theory.

In microeconomic theory, businesses operate at the maximum level of efficiency, which means that production decisions are based on how much output can be maximized without incurring added costs. For instance, businesses willing to offer additional products or services will be able to do so as long as it doesn't impact the existing supply. On their whole, the small and medium-sized enterprises are established in a very various, heterogeneous, flexible, dynamical and malleable reality. The vigor of an economy depends on the number and dynamic of SMEs as much as their success in the market.

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## **2. THE ECONOMIC AND SOCIAL IMPORTANCE OF THE SMES**

SMEs are autonomous companies that employ less than a certain number of employees, a number that varies from country to country. The most common upper limit for designating an SME is 250 employees, as in the European Union. On the other hand, some countries set the limit at 200 employees, while the United States considers that SMEs include companies with less than 500 employees. Small businesses are usually those with less than 50 employees, while micro-enterprises have a maximum of 10 employees or, in some cases, 5 employees.

The business success of SMEs, especially depends on the contribution of their leaders and their human resources capacities. They are established, usually, on the strength of the courage and talent of their founders. The leaders of these enterprises are genuine entrepreneurs.

On the market, SMEs generate the largest number of new jobs with a much lower cost capital, being an important alternative in hostile unemployment. SMEs represent over 99% of the total number of enterprises in the greatest economies.

The role and importance of SMEs derive from certain attributes such as:

- SMEs provide a climate conducive to employee development. Employees realize experience in new jobs, necessary to transfer to large companies, where the motivation is higher.
- By favoring innovation and flexibility many new products and technological processes are made in SMEs because the big enterprises tend to focus their efforts on improving ancient products, despite having strong research departments. Large enterprises don't have the same flexibility as SMEs, they want to produce in large quantities, obtaining big advantages in the economy. SMEs focus their efforts on creating new products and services, thus being capable to adapt their products faster to the changing market requirements.
- Competition stimulation. SMEs have an active role in creating a more competitive and efficient economy. These encourage competition as for the prices and products design. Without SMEs, large enterprises would hold a monopoly on most areas of activity.
- Producing goods and services efficiently. SMEs help large enterprises in certain activities which need specific conditions. Large enterprises are forced to do more activities that are not efficient for them, for example supplying with rare materials, respectively distributing the products. These activities could be more efficiently developed by SMEs.
- SMEs continue to survive in a competitive economic environment. If this economic entity were not efficient and did not make an advantageous contribution to the economy, then it would not be accepted by its strong competitors.

## **3. IMPROVE THE BUSINESS ENVIRONMENT BY ACCESS TO EXTERNAL FINANCIAL SOURCES**

The main resources of financing in research-development investment and innovations from SMEs come from their resources (88.72%), loans and bank credits (12.43%), the European Union's funds (1.53%), central public authorities funds (0.32%) and from local authorities funds (0.13%). Financial assets are also used to define SMEs regarding financial aid. In the European Union, a new recommendation stipulates the maximum amount for financial aid of medium-sized enterprises (50-249 employees) should not exceed EUR 50 million; that of small enterprises (10-49 employees) should not exceed EUR 10 million while that of micro firms (less than 10 employees) should not exceed EUR 2 million.

The limited size of many SMEs makes it difficult for them to access financial aid and to employ talented people with the latest knowledge of technology, finance and managerial practices. (Artola & Genre, 2011).

Many SMEs are young enterprises, which, when combined with their small size, makes them a feeblar partner for many market players, not only in terms of funding access but also for customers who might perceive small partners as too risky (Brown et al., 2011).

Seeking an innovative environment, access to financing and business support entrepreneurs have chosen hubs or start-up campuses to launch their enterprises.

Many governments have prioritized turning one or more areas into a start-ups hub. While the governments attempt to enable or develop start-ups hubs, the entrepreneurs can focus on some of the strongest challenges typically face: accomplishing the administrative requirements to start and run a company, accessing the capabilities needed to run a business, to have enough money to launch of a start-up. (Verdolini et al., 2018).

Many governments have launched scale-up programs that help medium-sized businesses unlock their potential and grow faster. Some programs provide comprehensive support, facilitating SMEs' access to finance, networking, consulting, and mentorship. Others follow a more targeted approach, focusing on specific sectors or predefined support services (Cole et al., 2019).

Companies with mature business processes and capabilities, high brand value, and a certain level of exports are accepted into the different financial programs and become eligible for support. Primary areas of support include international brand-building activities, foreign store openings, talent acquisition, and large-scale projects.

Financially, constraints reside in the insufficiency of resources and in the difficulties that firms have to deal with concerning the banks. Banking loans are the main source of external finance for firms to cover investment and honest export costs. Compared to large firms, SMEs are more probable to be credit-limited when applying for banking loans, either obtaining a smaller amount of credit or being without a loan completely (Canales & Nanda, 2012).

Banks, as creditors, are justifiably more disposed to support large firms that have considerable guarantees and sufficient cash flows. For SMEs, banks usually demand higher rates and turn down their applications more frequently. Moreover, large firms receive preferential treatment because they are more economically important to the local economy and have influential political connections with the local governments.

The central government must initiate the new policy to help SMEs, including increasing government transfers as special funds, reducing value-added and sales taxes, and creating a corresponding business environment. Because fiscal transfers and tax reduction tend to have a short-run impact on simplifying the difficulty faced by SMEs, the central government has exchanged to relying more on creating a just business environment for SMEs, working to reduce the frictions imposed on them.

A key component of a just business environment is equal access to bank financing. Though the central government has taken measures to encourage them to supply credit to SMEs, more

changes along this route are needed to encourage SMEs' growth (Ryan et al., 2014). However, young and small firms are still more likely to have their credit applications rejected. A decrease in government support such as guarantees increases the probability of rejection, as does a reduction in firms' capital and a deterioration of credit history. Among the bank-specific factors, an increase in banks' just capitalization reduces the rejection probability, while an increase in the cost of borrowed funds and a decrease in the competition levels increase the rejection probability.

#### 4. THE STRENGTHS AND WEAKNESSES OF SMES IN ECONOMY

SMEs have beneficial effects on the economic system through the roles they accomplish. Among these, there are:

- The SMEs are important jobs creators, contributing to the social stability of the area in which they are active.
- The SMEs sector is the main source of forming the middle class with an important role in maintaining the social-political stability in a country. This is possible because the distribution of economical power by the sector of SMEs leads to social-political stability in society.
- The SMEs are sources of competitiveness, increasing the competitive state of the market, achieving a better satisfaction of consumer needs.
- The SMEs contribute to forming goods and services. It combines factors of production like local resources or secondary products of large companies. Thus, they help in increasing the national wealth and exports.
- SMEs, by collaborating with large companies through partnership agreements - financial, technological - ensure the development potential of future large companies, through the collaboration processes in which they participate.
- SMEs are managed directly by their owners, which makes the decision-making system simpler depending on their talent and managerial skills. As a result, SMEs show greater flexibility during periods of secession, due to their ability to adapt to the changing market.
- The SMEs can easily integrate into a regional economical network that contributes to reducing unemployment.
- The SMEs ensure a superior quality of occupation, by the point of performance and satisfaction in work. The relations in these companies are less formalized and there is a closer relation between individual efforts and company objectives.
- Focusing on innovative processes - both in technology and in management - is a significant feature of SMEs.
- Their low size contributes to the diminution of bureaucratic practices and prevention of depersonalization of human relations.

Weak points of SMEs in the economy are:

- The SMEs have low capital, so they will be vulnerable to an economic shock.
- The SMEs have a high rate of dependence on a group of clients (for example the subcontractors).
- The SMEs do not have functional distribution networks and access to accessible marketing services.
- The SMEs consider that they have insufficient management and economic knowledge.



## 5. MICROECONOMICS AND ECONOMIC NECESSARY KNOWLEDGE FOR THE SMALL AND MEDIUM ENTERPRISES

Microeconomics includes the study of the actions of individuals and individuals in groups as are the Small and Medium Enterprises.

Microeconomics helps to study the allocation and efficient distribution of resources for the production of goods and services. It also studies the relations of the interdependence of prices with demand and supply concerning individual consumers.

Microeconomics is considered as a benefit to the business executive. Every business executive wants to increase the level of output as maximum as possible. For this purpose, he estimates the total quantity of goods and services and the total costs involved for their manufacture.

Microeconomics emphasizes the need for the efficient employment of the occasional but valuable resources. Microeconomics is useful to achieve the target of growth with stability. Microeconomics is defined as the study of the decision-making performance of individuals, companies and households regarding the allocation of their resources.

Microeconomics studies the factors that contribute to people's decisions and what impact these decisions have on the market, in terms of price, demand and supply of goods and services.

Microeconomics tries to define decisions and resource allocation at an individual level, as well as explain what happens when certain conditions change.

For example, microeconomics could use information from a company's financial reports in order to determine how an organization could maximize its production capacity, in order to lower prices and become more competitive.

In conclusion, microeconomics serves to understand the following issues:

- How people and households can spend their budgets;
- What combination of products and services is appropriate for their needs and desires, in the context of the available budget;
- If people choose to work, how do they decide to work full-time or part-time;
- How people decide to save for the future, how much they choose to save, or whether they are encouraged to go into debt;
- How a business owner decides to produce and sell the products requested in the market, how he will produce them, how much he will sell from each product and for how much;
- On what basis should the business owner decide how many workers to engage;
- How the company is financed;
- When a business owner decides to expand, shrink or even close their business.

## 6. HOW DOES MICROECONOMICS AFFECT BUSINESS OF THE SMES

This field of economics explains how at an individual level, individuals and consumers respond to the law of demand and supply which control the business. An increase in demand will be followed by an increase in supply. However, economics is a complex field and it is essential to apply microeconomic principles to secure success in business and to generate a profit.

Knowing which is customer demand the companies can provide and develop the services that would match the needs of the target market. Spending and investing in research as well as in promotional material can help achieve a competitive advantage to attract customers.

Similarly, if production is going to be increased there might be a need for added labor. As wage costs increase, pricing might need to adjust accordingly. In microeconomics, labor costs are usually the highest expenditure incurred by a business.

This means that the price will impact the number of people willing to buy the good or service. For instance, if the price is above the equilibrium, it doesn't necessarily mean higher profits since the companies will be attracted by a more selective market. The price needs to match the budget of the target market.

The way that consumers respond to prices set by businesses depends on the opportunity cost.

The variance in quantity demanded when prices fluctuate is referred to as elasticity. The higher the elasticity of the product, the more important is the knowledge of how microeconomics affects the business decisions of SMEs.

## 7. CONCLUSION

SMEs play an important role in the national economy in terms of employment and value-added. Their economic importance is even greater in the countries feeling more acute financial tensions. At present, in many countries, SMEs are experiencing greater difficulty in obtaining bank loans than large firms and have to pay higher financing costs.

In most countries, the most common form of the obstacle was the rejection of a loan application, followed by receipt of a limited portion of the funds requested, while only a limited number of SMEs turned down a loan owing to high borrowing costs.

The SMEs are often unable to switch from bank credit to other sources of external finance, for the growth of the business. Difficulties in borrowing, which affect not only SMEs' day-to-day activities but also their ability to grow, could transform liquidity constraints into solvency risk.

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# Modelling of Non-Maturing Liabilities in Survival Period for Liquidity Risk Management Purposes

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## Keywords:

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Bootstrap simulation;  
Non-maturing liabilities



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**Abstract:** *Correct assessment of banking risks is essential for a healthy banking system and the development of economy. This paper focuses on liquidity risk management, more specifically on modelling of non-maturing liabilities. Liquidity risk emerges as a consequence of uncertainty in terms of future cash inflows and outflows. Due to the fact, that result of a liquidity crisis is not only loss, but directly bankruptcy of financial institutions, liquidity risk belongs among major banking risks. This paper aims to project future cash outflows emerging from corporate deposit accounts without contractual maturity with a focus on stress outflows, in case of crisis. Bootstrap simulation techniques are introduced and performed on anonymized historical time series of cumulative corporate balances of Slovak commercial banks. Stress scenario based on analysis is proposed as entry to the calculation of broader liquidity Survival period indicator.*

## 1. INTRODUCTION

Bank institutions are exposed to a huge amount of different risk factors. Given their significant impact on the financial sector and economic development of the country, banks must be under the control of regulative authorities of which usually the most important is the central bank of the country. The main goal of banking regulation is to ensure, that banks have a sufficient amount of capital at their disposal, to cover risks that are undertaken to avoid bankruptcy of financial institutions (Hull, 2018). The purpose of regulation is not to eliminate all sources of risks, for in that case making business in banking would not be possible but sustaining that probability of bankruptcy is very low. Therefore, the purpose of the regulation is not the entire elimination of risk factors but to safeguard that level of risks is moderate (Skoglund & Chen, 2015). The most important international authority creating bank regulation is the *Basel Committee for Banking Supervision (BCBS)*<sup>2</sup> which developed a substantial number of regulative frameworks which were later implemented into the legal system of participating countries.

While in the past emphasis for given mainly on credit and market risk, currently also another type of bank risk come into focus, and liquidity risk is among them. Given the prominent role, that liquidity risk played in the financial crisis 2008-09 (such as bankruptcy of Northern Rock and Bear Stearns investment bank) it was evident that more prudent regulation is necessary. The most important papers published by BCBS regarding liquidity risk are *Principles for Sound Liquidity Risk Management and Supervision* (2008), *Basel III: International framework for liquidity risk measurement, standards and monitoring* (2010), *Monitoring tools for intraday liquidity management* (2013a) and *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools* (2013b).

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<sup>2</sup> Basel Committee for Banking Supervision is main creator of international standards for banking regulation and currently consists of 45 members, of which most are central banks and another regulative institutions in 28 different jurisdictions.

Liquidity risk has its specifics that need to be treated accordingly. Among these specifics, the most prominent one is the necessity to know the maturity of financial instruments and bank products. Essentially banks have on their balance sheet a huge amount of liabilities without maturity, such as sight deposits<sup>3</sup>. For liquidity risk management purposes, it is essential to develop a projection of these cash outflows in the future to be able to correctly assess liquidity risk. The aim of this paper is to present the usage of bootstrap techniques for estimation of deposit outflows in one-year time horizon on a given confidence level for a stress scenario that would simulate crisis and significant withdrawal of deposits by corporate clients of the bank. The goal of the analysis is to use these estimated outflows in the calculation of liquidity survival period under stress conditions.

## 2. LIQUIDITY RISK

The need for liquidity in banks emerges from the uncertainty of their cash flows. Banks have to be certain that they will be able to manage increased cash outflows and also decreased cash inflows, which can be both expected and unexpected (Smolík, 1995). In literature, both terms liquidity and liquidity risk are frequent. Some authors consider these terms equal and use them interchangeably. However, for example, Farahvash (2020) states that liquidity can be defined as the ability of a bank to repay its liabilities in time of maturity and the ability to convert arbitrary assets on cash by the market price. By this definition measuring liquidity depicts a projection of expected development (expected value), while measuring liquidity risk stands for estimation of negative deviation from expected development with a given probability.

Also, it is necessary to distinguish between liquidity risk and insolvency. The theoretical concept of both risks is similar, but not the same. Liquidity stands for a bank's ability to manage its cash outflows promptly and economically, while solvency is an ability of a bank to repay its obligations on a long time horizon and is related mostly to the amount of its funds. (Scannella, 2016). Scannella also divides liquidity risk into two types: funding risk and trading risk. Of these two risks we focus on funding risk, which identifies the fact, that bank is not able to effectively manage its expected and unexpected cash outflows.

## 3. SURVIVAL PERIOD

In terms of internal liquidity risk management, banks use complex indicators with the aim to analyse liquidity position as precisely as possible by the usage of best assumptions. One of the most common approaches is *GAP analysis*, which is based on a comparison of expected cash inflows and outflows in the future after mapping particular balance sheet items into subsistent maturity buckets based on their maturities or another behavioural assumption (in case maturity is not available for a given item or it is not the best measure for liquidity purposes). An indicator that can be calculated from the maturity ladder is called the *Survival period*. To compute the Survival period, it is necessary to calculate cumulated net cash flows divided into time buckets and deduct them from the *Liquidity buffer* called survival GAP:

$$Survival\ GAP(t) = Liquidity\ buffer(t) - \sum_{i=1}^t (CF_{out_i} - CF_{in_i}) \quad (1)$$

<sup>3</sup> Deposits which can be withdrawn from a bank either without notice, or after a very short notice period.



Where:

*Liquidity buffer (t)* stands for amount of high liquid assets in time bucket  $t$ ,

$CF_{out_i}$  is cash outflow up to time  $t$ ,

$CF_{in_i}$  is cash inflow up to time  $t$ .

Based on (1) we calculate survival GAPs for all-time buckets. Liquidity buffer depicts “stock” of liquidity that can be used by a bank as immediate payment of its obligations. It consists mostly of cash, sight deposits in the central bank (mandatory cash reserves) and high liquid assets such as government bonds and covered bonds issued by financial institutions with sufficient credit ratings. While liquidity buffer and cash inflows exceed cash outflows banks possess a sufficient amount of liquidity to timely cover their obligations. Survival period stands for the period since the beginning of the projection until survival GAP falls below 0:

$$\text{Survival period} = \text{first time } t, \text{ when Survival GAP}(t + 1) \text{ become negative} \quad (2)$$

If we tried to calculate Survival GAP based only on contractual maturities, for most the banks it would reach a value of 0. The main reason for this is liabilities without maturity, such as sight deposits. Clients can withdraw any amount from their accounts at any time, meaning clients possess options based on which they can decide about the time structure of their cash flows (Castagna & Scaravaggi, 2017). Survival GAP based on contractual maturities tells us that banks would not be able to handle liquidity needs in case all of their clients would withdraw all of their deposits on the first day of projection. However, this situation is not very likely and in practice never occurs. For this reason, banks are developing statistical models which account for this option and based on historical data they model expected cash outflows on current accounts. These expected outflows are then distributed among time buckets based on statistical models and the survival period is calculated anew with these behavioural assumptions instead of contractual ones. Usually, more scenarios of the Survival period are created. One scenario is base and is trying to forecast expected cash flows the most precise on past development. Other scenarios are stress scenarios and they are the most important for liquidity risk management, for they depict the situation of market-wide or firm-specific stress and are trying to quantify negative deviation from expected development. In this paper, estimation of sight deposits outflows based on the bootstrap process will be introduced.

#### 4. METHODOLOGY

Bootstrap is a computing-intensive method that can be used for the estimation of a huge amount of different statistic metrics. Unlike in classic approaches of statistical inference, where inference about population is made based on the sample, the bootstrap estimate is based on repetitive random sampling with replacement. Bootstrapping falls under the class of resampling methods and allows us to estimate distribution functions of almost any statistic. The term “bootstrap” was first used by Bradley Efron in his paper about jackknife samples (Efron, 1979). Importance of bootstrapping increased with the development of computers, given their very high calculation demands. For the calculation of bootstrap estimates, the usage of statistical software is necessary. The calculation presented in this paper were made in the statistical programming language R.

Concept-based on repetitive random resampling can be applied in liquidity risk management for projection of expected development of deposit accounts. In this case, we do not want to estimate one parameter as is, but we want to make a projection for a longer time horizon. Usage of

simulating methods in modelling of non-maturing liabilities (such as deposit products) was the subject of research of Kalkenbrener and Willing (2005) and Castanga and Fede (2013). In this paper we use the following advance:

1. Determine time horizon  $T$  and period  $[0, T]$  divide into  $M$  parts,
2. Simulate  $N$  trajectories of deposits development, where each trajectory can be considered one bootstrap sample.
3. Calculate expected level of deposits  $V(0, T_i)$  for each step of projection  $i \in \{0, 1, \dots, M\}$  by averaging of  $N$  scenarios.
4. Calculation of stressed levels of deposit volumes on confidence level  $p$ ,  $V^p(0, T_i)$  for each projection step. For liquidity risk purposes it is relevant to analyse minimal amounts of deposits in given time horizon.

Given the fact, that projections can be also increasing (which is undesirable for stress scenarios), we introduced the minima process for deposit amounts. Stochastic process  $V(u)$  defines the amount of deposits  $M(t)$  as a minimum from projected trajectories up to the given time horizon:

$$M(t) := \min_{0 \leq u \leq t} V(u) \quad (3)$$

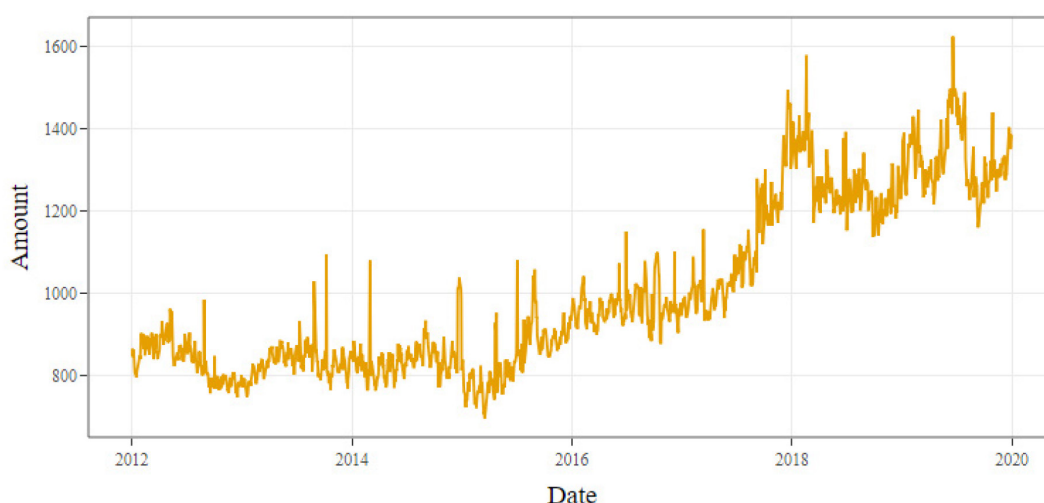
Due to our interest in the amount of deposits that we will possess after a given time horizon with a chosen confidence level, Value-at-risk (VaR) method is applied. VaR is often used in the calculation of financial risk and portfolio development. Iglarčíková and Pinda (2016) define VaR for a single financial asset as follows:

$$P(\Delta p_t \leq VaR_{1-q}) = 1 - q \quad (4)$$

This concept is often used for financial assets and can be used in the same way for deposit modelling, only asset price ( $p_t$ ) is changed for deposit amount ( $M(t)$ ).

## 5. DATASET

For the analysis, anonymized data from Slovak commercial banks were used. These data consist of daily cumulative balances of corporate deposit accounts from 1.1.2013 to 31.12.2020 (in mln. €).



**Figure 1.** Dataset of corporate sight deposit volumes used for bootstrap simulation (mln. €)

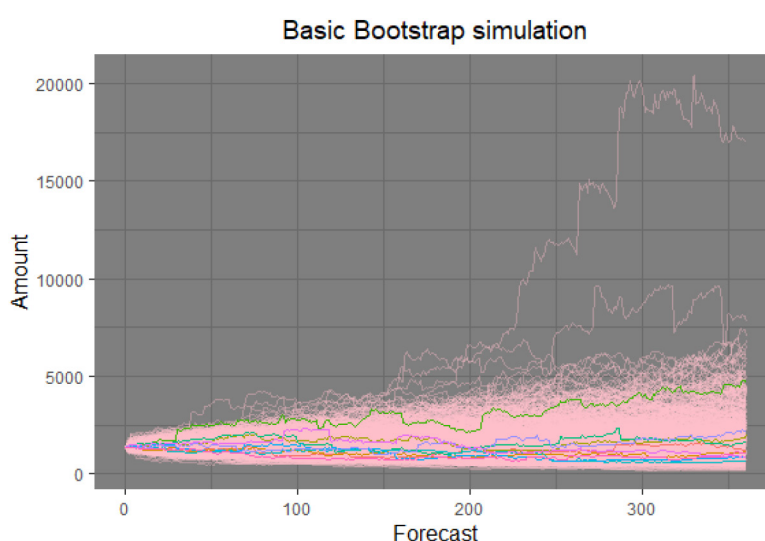
**Source:** own creation

From these data, log differences were calculated as follows, where  $d_t$  stands for the daily amount of deposits in time  $t$  and  $\Delta \ln d_t$  are log differences:

Log differences were randomly chosen into bootstrap samples at any time of bootstrap simulation and were able to repeat any number of times. Future development is created from the last known value (1 385,73 mln. €) as of 31.12.2020 and randomly chosen differences are added to the calculation to cover 1 year projected period horizon.

## 6. RESULTS

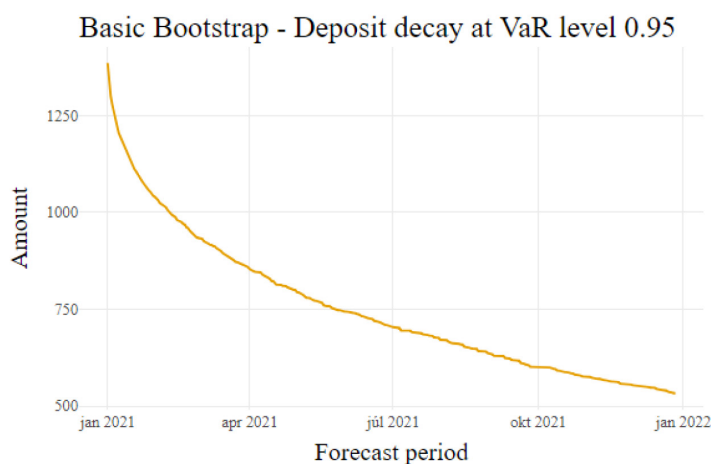
For calculation of future development of corporate deposit accounts, 10 000 bootstrap simulations were performed. Figure 2 shows the independent path of simulations (10 randomly chosen paths are highlighted). From these paths, quantiles were calculated in each projected period.



**Figure 2.** Bootstrap sample path, 10 000 simulations

**Source:** own creation

These quantiles serve us as Value-at-Risk estimators. Given this terminology,  $\text{VaR}(0,5)$  stand for median development, as far as half simulations show higher amounts, while another half is lower. This could be used for a base scenario, however, in this dataset  $\text{VaR}(0,5)$  is increasing what contradicts (3). This confirms the general trend, that deposit volumes are increasing in standard market conditions (this is also supported by expansive monetary policy in the past years). Therefore, for a base scenario in the survival period, we suggest taking the following outflows - . This means, that in the base scenario there are no outflows (what is confirmed by the generally increasing trend of underlying data) and more important is the stress scenario. Stress scenario is supposed to imitate crisis, when clients tend to withdraw their deposits at a much faster rate, than in standard operating conditions. This can be caused by a market-wide crisis or directly by some reputational problem of concrete financial institutions. In our terms, the crisis will be represented by  $\text{VaR}(0,95)$  over a one-year time horizon, which shows the amount of deposits that would bank still hold at the end of the year with 95% confidence. Results are shown in Figure 3 and depict strong stress – 95% of simulations are better each day for a 360-day time horizon. From these results, we calculate the percentual change of deposit amount (current amount to starting amount) and these percentages determine cash outflow in given time buckets.



**Figure 2.** VaR(0,95) of corporate deposit development in one year time horizon

**Source:** own creation

## 7. FUTURE RESEARCH DIRECTIONS

Simulation methods are becoming increasingly popular in different fields of risk management. In this paper, the usage of the simple bootstrap technique to randomly draw past differences to project future stressed cash inflows that emerged from corporate deposits is shown. The only basic technique was used, where all differences have the same probability of being picked to bootstrap samples. This might not always be the desired behaviour. For example, more recent differences might be a better benchmark for current development. We suggest the introduction of exponentially weighted bootstrap simulation (EWMA bootstrap), where current differences might possess higher weight and therefore be picked during simulation more often. This might be beneficial, especially in the case of recent stress period recording in historical data. In this case maxima of basic and EWMA bootstrap outflow might be used for survival period calculation. EWMA is to be implemented in the further research of this topic.

## 8. CONCLUSION

In this paper, the focus was on liquidity risk management. From the theoretical point of view, banking regulation with a focus on liquidity risk is introduced. The main part of the paper was aimed at the calculation of liquidity survival period indicator and especially how to cope with the biggest problem that emerges in calculation and that are non-maturing liabilities. From these liabilities of highest importance are deposit products without contractual maturity.

Possibilities of usage of simulation methods based on bootstrap techniques with an attempt to assess future outflows of the institution have been shown. Bootstrap techniques introduce an alternative approach to standard means of statistical inference and their biggest advantage is relative straightforwardness and easy reproducibility. This is the key aspect because it is not necessary to create a new model every time a recalculation is done on new data as far as no parameters were estimated during calculation, just the whole calculation process has to be rerun again.

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# COVID-19 Research Streams Emerging in International Financial Reporting Standards Related Studies

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**Abstract:** Interpretation for the adoption of the International Financial Reporting Standards (IFRS) became to be challenging for organizations. Over time, these standards are changed to accommodate the improvements identified in accounting rules. COVID-19 pandemic impacted accounting reporting considering that contingencies and risks arising from this health crisis should be reported to stakeholders. In order to provide empirical evidence of the most important COVID-19 related practical and academic issues and challenges addressed by academics when reporting under IFRS, this study applies an automated computer-aided analysis for clustering the bibliometric data published concerning IFRS and COVID-19. The results support academic studies and practitioners by identifying the COVID-19 research streams that received the most attention in 2020. This study also suggests guidelines for future research that derive from past academic contributions.

## 1. INTRODUCTION

The adoption of International Financial Reporting Standards (IFRS) made a revolution in the way organizations applying those rules were compared. The fact that stakeholders could look to the accounts knowing that accounting principles were homogeneously created a sense that reports were being written in “*the same financial language*” (Brown, 2011).

Over time, the adoption of IFRS has been studied by scholars. Although the benefits of applying IFRS is huge – cost-benefit, interpretation and responsibility influenced application advantage (Bozkurt et al., 2013), studies also prove that IFRS contributed to the financial crisis, highlighting the need for agencies to improve the transparency of information provided to the capital markets (Barth & Landsman, 2010).

COVID-19 pandemic is a different crisis that crosses health, social and economic domains. In this situation, it is important to understand how IFRS can contribute to overcoming this crisis, namely understanding how IFRS is being addressed to support organizations providing accountability and transparency to stakeholders.

By exploring the literature addressing financial reporting standards-related issues, the present study contributes to unveiling the clusters of themes included in the content of the academic publications in 2020 that address COVID-19 related issues in this field. Important contributions to practitioners and researchers are presented and discussed.

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## 2. LITERATURE REVIEW

The literature addressing IFRS is vast. According to George et al. (2016), this literature mainly points out benefits in regards to the IFRS adoption process. These authors summarize the following benefits: improved transparency, lower costs of capital, improved cross-country investments, better comparability of financial reports, and increased following by foreign analysts.

Other scholars highlight that there is a cost-benefit decision when deciding on adopting IFRS in developed and emerging countries (Uzma, 2016). This decision process implies considering the corporate governance model, fair value accounting and other environmental concerns.

Indeed, Fox et al. (2013) applied a case-study approach that shows different experiences in adopting IFRS, namely cases when costs exceed the benefits of reporting under the new standards, and difficulty in responding to the large set of stakeholder views.

In the COVID-19 pandemic context, there are also decisions to take, namely regarding the need of adapting IFRS to the challenges organizations face as a consequence of alterations in the supply chain (from onsite to online) or the challenges accountants face when conducting their work remotely.

## 3. METHODOLOGY

The present study is focused on scientific literature, which implies considering the publications indexed in scholar databases. Scopus is the large academic database of peer-reviewed scientific literature.

In this sense, the sample of publications was selected using the Scopus resources for collecting bibliometric data. First, a query was designed to include IFRS and COVID-19 related studies. The group of terms referring to the COVID-19 pandemic was identified in previous studies addressing the COVID-19 pandemic from a literature review point of view (Yu et al., 2020). To include IFRS-related studies both IFRS and “International Financial Reporting Standards” terms were included. As a result, the following query was applied, restricting the studies to the years 2020 and 2021:

(TITLE-ABS-KEY ( “2019-nCoV” OR “COVID-19” OR “Coronavirus Disease 2019” OR “Novel Coronavirus Pneumonia” OR “NCP” OR “2019 novel coronavirus” OR “SARS-CoV-2” OR “2019 Novel Coronavirus Diseases” OR “novel coronavirus” OR “pneumonia”) AND TITLE-ABS-KEY ( “IFRS” OR “International Financial Reporting Standards” OR “financial reporting”) ).

This methodology follows previous literature review studies using Scopus and the Web of Science database (Santos et al., 2020).

The search returned 53 documents indexed in the referred database, which includes the type of documents listed in Table 1.

The scientific articles are the most common type of document on the sample. After collecting bibliometric data, the full corpus of the documents was exported and a total of 20 files were downloaded from the Scopus database. This means that about 33 were not possible to access due to publisher protocols.

**Table 1.** Absolute frequency of data by document type

| Document type     | Absolute frequency |
|-------------------|--------------------|
| Article           | 41                 |
| Book              | 1                  |
| Book Chapter      | 1                  |
| Conference Paper  | 3                  |
| Conference Review | 2                  |
| Letter            | 1                  |
| Review            | 4                  |

**Source:** Own research

The content of the full documents was analysed using the text mining technique, allowing to provide information on the terms most applied in this literature and apply topic modelling algorithm for grouping documents in topic trends (Santos et al., 2020). The data was prepared based on the identification of stopwords and equivalents/synonyms in order to the terms with the same meaning appear as a single term.

#### 4. RESULTS

The publications addressing IFRS-related issues were cited 362 times, meaning that on average each study was used as a reference in 12 studies, a significant number in a few months.

In the dataset, 23 publications received null citations, which is a significant percentage (43%).

The text mining analysis through Orange3 revealed that the most frequent terms applied in research addressing IFRS issues are Report, Information, and Rate, as shown in Table 2.

**Table 2.** Most cited terms in publications

| Order | Term        | Number of times | Order | Term        | Number of times | Order | Term        | Number of times |
|-------|-------------|-----------------|-------|-------------|-----------------|-------|-------------|-----------------|
| 1     | report      | 176             | 11    | world       | 52              | 21    | assess      | 32              |
| 2     | information | 154             | 12    | health      | 51              | 22    | affected    | 30              |
| 3     | rate        | 126             | 13    | risk        | 38              | 23    | effect      | 29              |
| 4     | infection   | 113             | 14    | future      | 37              | 24    | university  | 28              |
| 5     | estimates   | 112             | 15    | spread      | 36              | 25    | across      | 28              |
| 6     | country     | 99              | 16    | conditions  | 36              | 26    | work        | 27              |
| 7     | available   | 84              | 17    | level       | 36              | 27    | context     | 21              |
| 8     | online      | 78              | 18    | long        | 36              | 28    | associated  | 21              |
| 9     | change      | 71              | 19    | high        | 34              | 29    | access      | 18              |
| 10    | account     | 56              | 20    | development | 32              | 30    | appropriate | 16              |

**Source:** Own research

The absolute frequency of the terms is visually shown in Figure 1 through a word cloud format.

In this word cloud, the 30 most cited terms are displayed, which reveals a focus on reporting information and estimates in respect to rates, online channels, and risk related issues.

The topic modelling algorithm revealed two topics with about 0,5 marginal probability each (Table 3), meaning that both topics are similarly represented in literature.



**Figure 1.** Word cloud of the absolute frequency of terms included in the corpus

**Source:** Own research

**Table 3.** Topics in literature

| Topics  | Marginal Topic Probability |
|---------|----------------------------|
| Topic 1 | 0,567101585                |
| Topic 2 | 0,431354917                |

**Source:** Own research

In regards to Topic 1, the terms defining the topic include Report, Information, Online, Available, Future, and Account (see Table 4). The publications most related to Topic 1 address the role of regulation included in IFRS 9 Financial Instruments for disclosing expected credit losses in financial assets as a result of the COVID-19 pandemic (Efimova & Rozhnova, 2021).

**Table 4.** Characterization of topics and correlation coefficient

| Topic 1     | Correlation coefficient | Topic 2     | Correlation coefficient |
|-------------|-------------------------|-------------|-------------------------|
| Report      | 0,165741                | Information | 0,203042                |
| Information | 0,143347                | Rate        | 0,0995                  |
| Online      | 0,071885                | Report      | 0,089692                |
| Available   | 0,063097                | Long        | 0,082731                |
| Future      | 0,051224                | Available   | 0,072255                |
| Account     | 0,050402                | Change      | 0,051134                |

**Source:** Own research

Based on the analysis of financial reports of enterprises, these authors concluded that enterprises are not disclosing issues of pandemic impact on their activity and results. A similar conclusion was obtained by (Silva et al., 2021), which study's results reveal that the companies took utmost care in disclosing information and the impact of COVID-19 in the financial statements. This includes information regarding going concerned, sustainability, revenue, and estimations.

In regards to Topic 2, the authors focus on the adequacy of the value of the information contained in IFRS 1. From this perspective, the authors examine the impact of the reported impairment of assets on the market reaction of investors, in the context of the COVID-19 pandemic (Lisicki, 2021). In this study, authors conclude for a lack of reaction of the investors to the disclosure of information on impairment of assets. Articles on this topic also discuss the role

that non-financial reports play in supporting companies to provide accountability on growing expectations to assess, address, and remedy the negative impacts of their activities on human rights (Morgan, 2013).

## 5. FUTURE RESEARCH DIRECTIONS

Considering that the COVID-19 pandemic will last for years, the discussion on the literature regarding how companies disclose COVID-19 related issues impacting business may be comprehensively explored. Considering that no specific IFRS is guiding the disclosure of COVID-19 impact, future studies could contribute to providing best practices and guidelines for professionals and agencies.

## 6. CONCLUSION

This study applies text mining techniques for reviewing literature addressing IFRS in the context of the COVID-19 pandemic. The content of 53 peer-reviewed documents was analysed and topics identified.

Two topics emerge when using topic modelling through Orange3 software. Topic 1 includes the following terms: Report, Information, Online, Available, Future, and Account. Topic 2 is composed of publications in which the following terms are significantly applied: Information, Rate, Report, Long, Available, and Change.

The results contribute to the academic community to highlight that the studies addressing IFRS's role in this pandemic crisis are not vast. By unveiling the topics on which scholars are focused, this study contributes to designing future research agendas in the topic gap that are not already explored by researchers.

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# International Accounting Standards Board: An Examination of the Main Financial and Accounting Topics Addressed in the Literature Related to the COVID-19 Pandemic

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**Abstract:** *The International Accounting Standards Board (IASB) conducts very demanding and complex work to setting accounting standards. The outputs produced by this board and their acts have been scrutinized over the years, by practitioners and academics. This study aims to contribute to the knowledge on the role of IASB by unveiling the research trends addressing this group of accounting experts and its publications. Through the analysis of the bibliometric data related to COVID-19 issues, this study identifies the main topics addressed in the literature during this pandemic. The results contribute to assessing the research conducted in this field and for creating the future research agenda on addressing the role and impact of the IASB during health, social and economic crises.*

## 1. INTRODUCTION

The International Accounting Standards Board (IASB) plays an important role in designing, publishing and providing interpretative notes for International Financial Reporting Standards (IFRS). Since the beginning of this century, IASB and Financial Accounting Standards Board (FASB) started working together to reduce the divergence of accounting (Lozada, 2014).

In the process of developing standards, IASB is influenced by the content of the constituents' comment letters, in which the agreement or disagreement in regards to an accounting standard is stated (Mohsen & Fatemeh, 2021; Shields et al., 2019).

During the crisis, the role of regulatory institutions is magnified considering their role in providing regulation and guidelines for supporting organizations in overcoming the obstacles. The COVID-19 pandemic, like other crises, created the need for IASB to discuss some standards to adapt to the new context of accounting reports to make the financial statements of enterprises correctly reflect their financial position in light of the COVID-19 pandemic.

This study aims to contribute to the knowledge on the role of IASB by unveiling the research trends addressing this group of accounting experts and discussing the board concerning this crisis. Through the analysis of the bibliometric data related to COVID-19 issues, this study identifies the main topics addressed in the literature during this pandemic. The results contribute

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to assessing the research conducted in this field and for creating the future research agenda on addressing the role and impact of the IASB during health, social and economic crises.

## 2. LITERATURE REVIEW

IASB has been issuing public pronouncements on different accounting issues, namely fair value, but not always its conceptual framework project for financial reporting standards received support from professionals and scholars (Whittington, 2008).

IASB's role has also been addressed by scholars to understand the impact of FASB's experience in making accounting rules and the risks of the IASB being deadlocked or captured by hostile interests to business (Dye & Sunder, 2001).

Dick and Walton (2007) suggested an IASB agenda for a decade in several areas: business combinations and consolidations, financial statements presentation, revenue cognition, pension obligations, leasing, or liabilities and equity.

The COVID-19 pandemic created several accounting report problems, namely the ones related to the lease contracts. In response to this problem, IASB issued amendments to the IFRS16 (Mohamed Amine & Mohamed, 2021), but other challenges must be part of the research agenda and IASB agenda.

## 3. METHODOLOGY

The scientific publications in the sample were obtained using the Scopus database, in which bibliometric data was collected based on the results of the query applied, following similar studies' methodology (Santos et al., 2020). The search query applied was:

(TITLE-ABS-KEY ( "2019-nCoV" OR "COVID-19" OR "Coronavirus Disease 2019" OR "Novel Coronavirus Pneumonia" OR "NCP" OR "2019 novel coronavirus" OR "SARS-CoV-2" OR "2019 Novel Coronavirus Diseases" OR "novel coronavirus" OR "pneumonia") AND TITLE-ABS-KEY ( "IASB" OR "International Accounting Standards Board"))).

The search returned 3 papers peer-reviewed, as detailed in Table 1.

**Table 1.** Identification of the scientific papers in the sample

| Authors  | Title   | Year |
|--|---|------|
| Moscariello N., Pizzo M.                                 | Practical expedients and theoretical flaws: the IASB's legitimacy strategy during the COVID-19 pandemic | 2021 |
| Teixeira A.  | Accounting for leases – lessons from COVID-19   | 2021 |
| Pham Q.T., Ho X.T., Nguyen T.P.L., Pham T.H.Q., Bui A.T. | Financial reporting quality in pandemic era: case analysis of Vietnamese enterprises                    | 2021 |

**Source:** Own research

Considering the sample size, a systematic review of the literature was conducted, in which manual content analysis is applied, applying the methodology used in previous studies (Santos & Laureano, 2021). A qualitative and quantitative analysis of the bibliometric data is also presented.

## 4. RESULTS

The number of publications addressing the role of IASB in the context of the COVID-19 pandemic is very low. During the first year of the pandemic, no study was published. The three publications are dated from 2021. Studies conducted by collective teams prevail. The articles are published in the Journals of Emerald Group and Taylor and Francis.

Moscariello and Pizzo (2021) analyze the IASB's response to the COVID-19 pandemic. By applying qualitative and deductive approaches, these authors prove that there is a growing reliance on practical expedients in IFRS to maintain the IASB's output legitimacy. Based on their results, practical expedients were found as a best practice to increase the standards' flexibility and strengthen the IASB's ability to respond to the European political bodies' concerns. In this sense, the authors suggest that practical expedients might reduce new IFRS transition costs and assist IASB in dealing with the broader economic impact of unexpected systemic crises.

**Table 2.** Details about the scientific papers in the sample

| Authors                     | Research goals   | Methods   | Scientific contribute  |
|-----------------------------|--|---|--|
| (Moscariello & Pizzo, 2021) | Analyse the IASB's response to the COVID-19 crisis                                     | Qualitative process-tracing approach, inductive historical narratives and deductive reasoning | The role of practical expedients strengthens the acceptance of IFRS. Some new strategies are pointed out for being adopted by the IASB to preserve its legitimacy in the EU.                                     |
| (Teixeira, 2021)            | Analyse the process of leasing standards changes developed by IASB and FASB            | Content analysis of the IASB and FASB discussions and staff papers                            | Weaknesses in how the IASB and FASB developed their leases standards are highlighted, contributing to improving practices in the process of changing accounting standards.                                       |
| (Pham et al., 2021)         | To measure the financial reporting quality in the enterprises during COVID-19 pandemic | A case study and a survey to the Vietnam enterprises  | Three factors (pandemic, big4, and internal control effectiveness) significantly affect the financial reporting quality of the enterprises, which may support predictive models of the value of the enterprises. |

**Source:** Own research

Teixeira (2021) explores weaknesses in how the IASB and FASB developed their leases standards in response to the COVID-19 pandemic. The new standards suspended some features of the leasing requirements. This author argues that the relief from the requirements to lessees is not robust enough to cope with a shock to the economic system as a consequence of the crisis, highlighting weaknesses in leases standards. This author's findings reflect future IASB and FASB discussions on the adaptation of accounting standards in response to the crisis.

Finally, Pham et al. (2021) address the financial reporting quality (FRQ) scale identified by IASB in 2010. These authors do not specifically explore the role of IASB, but instead the importance of the referred scale. By evaluating the FRQ of enterprises in the pandemic era, these authors identify three factors that significantly affect that scale: the pandemic, the big4 or non-big4 status, and internal control effectiveness.

The scientific research already published shows areas of improvement for IASB in regards to the accounting standards alterations. The timid research on the role of IASB during this pandemic reveals that researchers must take attention to this theme in future research.

## 5. FUTURE RESEARCH DIRECTIONS

Scholars focus on analysing accounting standards alterations promoted by IASB but no studies explore accounting areas in which IASB should have acted during the pandemic. Additionally, more quantitative research could be important to collect massive data on the perception of the enterprises on the benefits of the IASB decision.

## 6. CONCLUSION

In this study, a systematic literature review is conducted to know the academic contributions addressing the IASB role in the context of the COVID-19 pandemic. The results show that the peer-reviewed articles published in 2020 and 2021 are very timid. Only three publications were found in the Scopus database.

Scholars analyse the IASB's response to the COVID-19 crisis, the leasing standards changes (IFRS16), and explore financial reporting quality during the COVID-19 pandemic. Recommendations on other critical areas are not provided, namely the ones arising from “*financial market volatility and erosion, deteriorating credit, liquidity concerns, increasing unemployment, broad declines in consumer discretionary spending, increasing inventory levels, reductions in production because of decreased demand, layoffs and furloughs, and other restructuring activities*” as pointed out by IASplus (2021).

IASB's ability to respond to the challenges companies face in this crisis would be magnified in case academics look at this field and address other themes than those unveiled in this study.

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# Changing Perspectives: An Employer's Branding as a Communication Tool during the COVID-19 Pandemic

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**Abstract:** Many companies and organizations in the labor market are facing "War for talents". In order to acquire new, and retain existing employees, and, at the same time, to be considered the best employer on the market, more and more organizations are building and managing their own brand of employer. The employer's branding is most often associated with the activities of Marketing and Human Resources management experts; but, in practice, it often turns out that in the process, an indispensable partner in building the employer's branding is ignored, i.e. communication experts. Therefore, in this article, we defend the position that employer branding is also a communication skill, which, however, needs to be adapted to the current situation in these turbulent times associated with the COVID-19 pandemic. This includes digitizing and adapting employer branding communication to both the needs of target groups and the requirements of digital processes. Therefore, the paper examined the societal change in work norms caused by the COVID-19 pandemic, to contribute to a more successful and efficient branding of the modern employer as a form of strategic communication in both the virtual and hybrid work environments.

## 1. INTRODUCTION

In order to attract new and retain existing employees, more and more organizations are building and managing their employer brand, which needs to differentiate themselves from the rest of the employers and employees (Knox and Freeman, 2006). Employer branding has emerged as an important tool to differentiate an organization from its competition. According to Backhaus and Tikoo (2004), in order for an organization to remain at the top of the most desirable employers in the minds of talented young staff, it must be different from others. An employer brand refers to those characteristics of an organization that distinguishes it from the competition, and that make it different and attractive for employment. Therefore, it is important for employers to try to identify the wishes of potential and existing employees, identify the appropriate communication channels, and find out how to convince them that they are the best suitable employer (Bali and Dixit, 2016).

Employer branding is recognized as one of the most effective tools to meet these challenges, as it has a positive impact on employee motivation and engagement, helping them to internalize the organization's values, and the organization's perception of potential employers and employees (Love and Singh 2011; Backhaus and Tikoo, 2004). Organizations use employer branding to recruit new staff and ensure that existing ones are involved in the company culture and strategy (Backhaus and Tikoo, 2004; Gabršček and Novak, 2017). Employer branding initiatives are directed towards both internal and external audiences, as retaining talent and recruiting talent

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have become crucial for remaining competitive in the marketplace (Saini, 2019, 653). The Universitas study in 2018 found that 84% of organizations identified as the most attractive employer in the world are among the top priorities of organizations dealing with the employer brand (Tumasjan et al., 2020). According to Nath (2020), in this era, where there is a strong need for competitive strategy, every organization puts enormous effort into fulfilling employee expectations to make themselves the best employer on the market. In an organization, while people are seen as the company's most essential resource, the brand is seen as the greatest asset.

The purpose of the paper is to determine the importance of communication professionals for successful and effective branding of employers as a form of strategic communication and to examine the social changes in work norms caused by the COVID-19 pandemic. The labor market is changing dramatically due to the COVID-19 pandemic.

## **2. EMPLOYER BRANDING AND BRANDING ALIGNMENT**

The term employer branding was first coined by Ambler and Barrow (1996, p. 187) and defined as a package of functional, economic and psychological benefits of employment that we associate with the employer. Employer branding tells us how existing and potential employees perceive an organization (Edwards, 2005). This growing realization about the importance of attracting the right employees at the outset has prompted scholars to suggest that these objectives can be attained through the development of an employer's brand. Such an approach can help to differentiate the firm to prospective candidates, and nurture the perception that it is a desirable environment to work in. Through employer branding activities, organizations can attract the caliber of employees needed to improve performance (Foster et al., 2010, p. 408). It reflects a view of its differentness from its competitors, and tells what makes it attractive as an employer (Backhaus and Tikoo, 2004).

Employer branding is the process of creating an identity and managing the image of an employer or business organization. It communicates what career expectations are in terms of promotion, diversity of work and relationships between workers (Backhaus and Tikoo, 2004). It contributes to better communication with potential employees; retaining existing employees, thereby reducing employee departure costs, and improving employee engagement and company culture (Backhaus and Tikoo, 2004; Barrow and Mosley, 2005). It encompasses the functional, economic and psychological benefits provided by a company to its workforce (Foster, et al., 2010, p. 408). Employer branding is a method for a company to attract high potential talent in the labor market (Kurniawan et al., 2020). Furthermore, employer branding is a conceptual framework that combines two different domains, which are - Human Resources (HR) and Marketing. It creates a differentiating factor for an organization in a competitive market (Nath 2020). The process of creating an employer's brand involves building and recognizing the unique identity of the employer, and managing it involves designing and using a variety of tools to influence brand perception among potential employers and employees. According to Nelke (2021), building and fostering an attractive employer brand helps organizations inspire and attract the right employees, and ensures that employees identify strongly with their employer.

An employer branding strategy is focused on maintaining employee loyalty through engagement and commitment based on employee support and connection (Sánchez, 2015). By engaging employees in the strategy, they create deeper emotional attachment among the employees, while being more motivated, productive (their key to the strategy is up to 43 percent more

productivity) and have more will to achieve the goals (Pompe, 2017). Applying this concept to employer branding, we define employer branding orientation as an approach in which the Human Resource Management processes revolve around the creation, development and protection of employer brand equity in an ongoing interaction with potential and incumbent employees, to achieve sustainable competitive advantages in the labor market (Tumasjan et al., 2019, p. 85).

The goal of identification with brand, values and organizational culture is to transform the organization into a “second home”, where employees feel good and fulfilled (Sánchez, 2015). Employer branding orientation affects both recruitment efficiency and positive affective climate directly (Tumasjan et al., 2019). The employer brand, therefore, puts employees at the forefront as the essential capital of the organization. Ensuring employee satisfaction is essential for the organization (Yalim and Mizrak, 2017); after all, our “representatives” of the organization are the employees, and they play an important role in attracting staff. Therefore, we first build the employer brand from the inside out. First, values must be internalized by leaders and “lived” with (Love and Singh, 2011). Organizational values are a core element of employer branding that help organizations to communicate to potential and existing employees who they are and what they stand for, because they reflect what is important to an organization, and serve as an indicator of a general standard of conduct. They demonstrate what an organization stands for and what employees can expect from it (Weske et al., 2018). Employee behavior following organizational values is related to the management of their personal goals by employees (Edwards, 2005), so organizations need to align business goals with personal goals (Smolla and Sutton, 2002). It is, therefore, crucial to align employee values and align them with organizational values, which are the basic building blocks of organizational culture, and represent competitive advantage and a tool for deepening employee loyalty, and, above all, promote a positive image of the organization.

Employers who often find themselves in the Most Wanted list create a unique work environment for employees that promote key organizational values such as honesty, integrity, respect, collaboration and trust and ensures open two-way communication with all employees (Love and Singh, 2011). Communication is thus one of the most important components of employer brand management, which is difficult to establish. According to Nurmi and Varis (2021), employees typically work in an organization for money, and the basis for long-term employer-employee relationships is difficult to build.

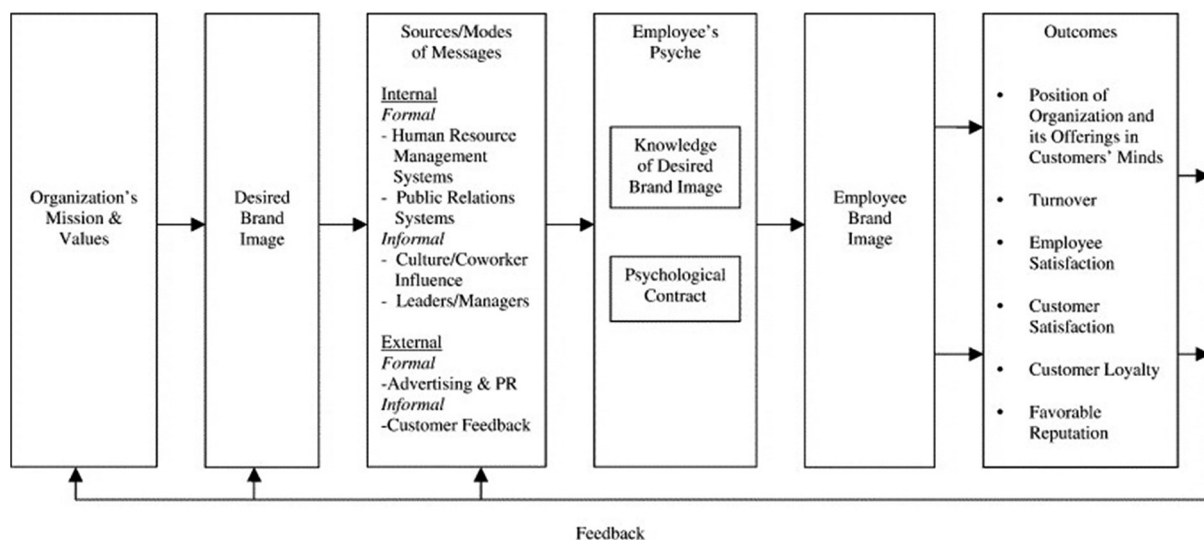
However, we must not forget about branding alignment. Foster et al. (2010) maintained that consistency between corporate branding, internal branding and employer branding is essential. The use of these terms is often confused; nevertheless, both the employer and the internal brand work together to form and maintain the new employer's perceptions of the employer's promises. In both cases, message consistency is crucial. This enables a ‘psychological contract’ to be created, and, together with the components of internal branding, can reduce the number of employees and increase brand loyalty and brand identification, thus creating a foundation that supports the co-creation of brand value (Saleem and Iglesias, 2016). Therefore, it must be considered that the employer brand and the corporate brand are highly interconnected (Hoppe, 2018). According to Foster et al. (2010), different researchers also suggest that alignment fosters closer working relations between the HR and marketing functions, and note the positive impact on organization performance and brand strength. On the other hand, the inconsistencies that occur when the corporate brand and employer brand are misaligned inevitably trigger doubts among the general public that can impact negatively upon employee satisfaction, brand credibility and competitiveness.

### 3. EMPLOYER BRANDING AS A TOOL OF COMMUNICATORS

Communication is one of the most important activities in an organization, since its operation is based on effective relationships, and is crucial in the processes of socialization, decision-making, problem solving and change management (Berger, 2014). Effective communication is also associated with increased employee satisfaction, productivity and efficiency (Gray and Laidlaw, 2004). Satisfaction also affects the remaining employees in the company, but because the company needs new employees, the job characteristics that are crucial for employee satisfaction must be communicated properly to the external public.

According to Berger (2014), inefficient communication is characteristic of organizations with low levels of employee trust, engagement and performance. Such problems may be due in part to the unwillingness or inability of managers and communicators to engage in research and best practices in the areas of leadership, organizational culture and communication needs of employees. Strategic communication enhances the performance of individuals and the organization by meeting the needs of employees, which is only possible with a solid foundation that rests on capable and communicative leaders and rich communication culture.

According to Miles (2005), employees are the most critical stakeholders in organizations. As brand ambassadors, they can support organizational values through interaction with customers and other public, and, consequently, have a positive impact on business results. As the model (Figure 1) shows, organizational goals and values are the foundations of the employer branding process, as they provide a reason for the company to exist and provide insight into the way it operates. The mission and values of the organization are the foundation upon which the desired brand image is defined. The messages conveyed within the organization must reflect the mission, values and desired image of the organization clearly. They should also communicate the behaviors and attitudes that the organization views as important and that they expect from employees. It is crucial that messages are designed proactively and transmitted regularly through all messaging channels so that the employee branding process is also effective.



**Figure 1.** Employer brand management

Source: Miles and Mangol (2004)

The individual steps of implementation and management of the employer brand (in the model mentioned above) show that the area of management of the employer brand is distinctly interdisciplinary. Employer branding can also be considered from the point of view of strategic communication, or purposeful use of communication of an organization in order to fulfil its goal, political affiliation and social campaigns, according to Hallahan et al. And according to Petrucci (2018), corporate communication is a strategic function that solves organizational problems when a company faces poor quality job applicants, multiple employee departures, and poor response. At that time, the collaboration of experts in HR communication and management was crucial. The employer brand must be strategic and flexible enough to evolve; it is an ongoing process of creating a brand through a coordinated plan, implemented jointly by corporate communications and HR. Through an employer branding strategy, important objectives can be set for an organization as an employer, which all affect the image of the employer in the eyes of current and potential employees (Nurmi and Varis, 2021).

Neill (2014) ranked Public Relations among the key elements of the employer brand development process. Public Relations professionals can be a key element in designing and managing an employer's brand and company reputation, but this potential often remains untapped. Public Relations professionals are especially helpful in formulating strategic communication plans and in disseminating key messages. Their job is to prepare communication campaigns in accordance with defined communication channels, and to prepare appropriate messages to inform the stakeholders about the mission, values and desired image of the brand, thus enabling employees to learn and understand the vision of the organization. Public Relations professionals know how to communicate effectively by integrating the receivers into communication. However, this does not mean that Public Relations should only be involved in the branding process when the brand is communicated. It should already be involved in the planning phase, when the values of the organization are just being determined, as well as in the evaluation phase of communication, by conducting surveys and qualitative research (Neill, 2016). It would also be necessary to involve communicators in the very process of selecting, recruiting and directing staff, that is, at the stages when employees are only familiar with the core values of the company and organization and its ethical policies (Neill, 2016; Martin et al., 2005).

The intricacy of communication professionals and the employer brand is also evident in the use of social media, especially during the COVID-19 pandemic. Organizations leverage the power of social media, and create engaging video content and audience segmentation to be effective in promoting their employer brand (Bali and Dixit, 2016). Not surprisingly, social media are at the top of the list of channels where more and more money is being invested to reach talent. Social media are a great EB communication tool, as they offer a variety of direct communication options, such as posts, video content, private messages. Engaging employees on social media all contribute significantly to a successful internal brand (Jiang, 2014). An employer brand can be communicated in many ways, but, most often, it is still the website that represents the first contact of a potential employee. The intranet can enhance employee engagement greatly when using tools such as a forum. Martin et al. (2005) and Tumasjan et al. (2020) also highlighted the importance of career websites, social networks, blogs and other online digital platforms. Due to their strong communication skills, Public Relations professionals can make an important contribution to the development of promotional materials and videos to promote ethics and values (Neill, 2016).

Brand communication is focused on the internal and external goals of the public.



Although a company's brand focuses primarily on external stakeholders, communication with the internal public is crucial in ensuring brand value (Mokina, 2014). The consistency of these messages is important, as it influences perceptions among employees, potential employees, and consumers positively, and, more importantly, ensures that employees are aligned with the brand and its presentation (Knox and Freeman, 2006; Miles, 2004). Moroko and Uncles (2008), assessed the accuracy and coherence of internal communication as a key aspect of the brand process. According to Sánchez (2015), communicators can take advantage of internal communication channels to inform about a comfortable work environment in the company, and career and career opportunities based on effort and talent. Through internal communication channels, they can spread personal stories or testimonies, and create personal values that are worth mentioning, thus fostering a sense of belonging and pride among employees.

Internal communication is one of the fastest growing specializations in Public Relations, and is gaining attention again due to a number of factors, including the growth of the employer brand (Moroko and Uncles, 2008), job insecurity caused by the recession (Gallup, 2013), and expected and growing labor shortages (Moroko and Uncles, 2008). Effective internal communication can lead to greater employee commitment and loyalty (Sharma and Kamalanabhan, 2012). An appropriate internal communication policy, which includes the benefits of work and its conditions, can have a positive impact on employee performance and development; the goal is employees who will not only feel satisfied with their salaries or performance of their duties, but also with the climate, culture, messages, identity, and purpose of the organization (Sánchez, 2015).

In the context of employee brand communication, Public Relations efforts should focus on both employees and external stakeholders. The purpose of an employer's external brand communication is to differentiate between competing organizations. Formal external sources of communication include advertising and Public Relations and provide information about the organization and an image of the brand to a wide range of external stakeholders (Miles, 2004).

#### **4. THE BRAND AS A COMMUNICATION TOOL DURING THE COVID-19 PANDEMIC**

The COVID-19 pandemic has changed the labor market dramatically. According to me (Ernstsson, 2021), the labor market has shifted to increasingly digitalized and remote forms.

While, before the pandemic, most employees worked in the office, many employees are now experiencing hybrid jobs and accelerated digitization in the workplace. These changes require new management concepts and individual support for each employee, and, of course, a new way of communicating. Similarly, changes in the employer's company brands need to be changed and adapted to the new situation. However, many companies must first adapt to the current situation. This includes the resolute digitization of employer brand processes, and, last but not least, the adaptation of employer brand communication to both the needs of target groups and the requirements of digital processes (Nelke, 2021).

The COVID-19 pandemic was a turning point for society, both in social life and internally in an organizational environment that fostered technological development and digitalization, as well as a structural change. (Ernstsson, 2021) And, last but not least, communication. As suggested by Nelke (2021), managers need to pay more attention to some key points, so that employees will monitor changes so that they are not overburdened and remain engaged in the organization. One of them is also clear and consistent communication, as transparency is needed.

A survey was conducted among various experts in companies on the impact of the COVID-19 pandemic on the employer's brand. According to Nelke (2021), many experts cited budget cuts in their area as acute issues, due to the economic changes brought about by the COVID-19 crisis and the rather limited number of staff. In most cases, recruitment procedures have been restored, which poses the problem that the growing workload needs to be managed with a now smaller budget. Overall, almost all, respondents stated that getting new employees and retaining existing talent was becoming increasingly difficult. In some industries, competitors are very active, especially through the use of social media, so employers' brand experts fear that their company would be at a disadvantage in the "war for talent". Respondents perceived the employer's brand as a team effort involving Human Resources, Corporate Communication, Marketing and, if any, the Employment Department. Because working from home, teleworking, and online events are the new standard, this teamwork sometimes proves to be more difficult than before. Acquiring content and images from the workplace for employer brand activities is also time-consuming, and requires more preparatory work and coordination. The lack of direct communication with investors has been described as one of the main challenges of COVID-19 measures. Events and Fairs for target groups of apprentices, students and young professionals were particularly lacking. This is surprising, as it is precisely these target groups that typically visit various social media sites and can be targeted there as well. Respondents broadly agreed on the vital importance of an employer-targeted brand strategy during COVID-19: Appropriate channels and a carefully tailored approach are key to the success of employers' brand activities, especially in times of growing online communication. It seems that most companies still need professional campaigns.

According to Nelke (2021), there were many challenges for the employer brand during the COVID-19 pandemic: The brand of the employer of your company in the future. This results in less recognition of the employer's brand and poorer return on applications - both in terms of quantity and quality. Therefore, experts believe that it is especially important that the processes of fundamental change take place in companies. The employer brand needs to be approached more decisively and more strategically, and with a much greater emphasis on the digital corner. This requires time, transparency and resources. In the future, more personal, virtual forms of recruitment and communication with employees will be available. Agile work and the stronger involvement of existing employees in the processes will lead to greater job satisfaction, which will then have a positive impact on the employer's brand. The messages they send to applicants should be more awareness-oriented, and companies should map and streamline the path of candidates more clearly. Targeted cooperation with universities can also help to make a company visible as a potentially attractive employer at an early stage. The professional and successful brand of online employers includes various forms of online events, live chats, chat rooms in the selection process, and ongoing, integrated activities on social media channels. These pathways and tools should be documented in a strategic plan, and complemented by a thematic plan. In this process, the employer's brand is entirely under the auspices of the company's brand, and does not violate any new "communication ground". This is the only way to ensure consistent communication of the overall image of the company, and to create a unified image between the target groups. In practice, it is essential to convince supervisors that, without an employer's professional brand, future requirements for the company cannot be met. To prevent this development, all employer brand processes need to be tested and digital tools used.



## 5. CONCLUSION

As we have shown in the paper, the employer's brand is undoubtedly a communication skill. Nevertheless, market, personnel and management aspects are most often mentioned in the scientific literature, and communication is mentioned only indirectly. Public Relations professionals are a key element in the design and management of an employer's brand. They are especially useful in creating strategic communication plans, and implementing them through defined and carefully selected communication channels by disseminating messages that communicate the mission, values and desired image of the brand. They play the most important role in the planning phase, when the values of the organization are still being established, and in the involvement in the process of personnel selection, recruitment and guidance, i.e. in the phases when employees are just learning values and ethical standards. The importance of involving communication experts is also evident in their use of different digital platforms, which was especially evident during the pandemic, when we were witnessing increasing digitalization. Namely, a great digital platform also plays an effective role in the branding of employers. Competition in attracting qualified professionals is growing, as the attractiveness of the company to (potential) employees is becoming more important than the attractiveness of consumers. Organizations are focused increasingly on building a strong employer brand that reflects their values and goals, and is hiring professionals increasingly in this area as well. At the same time, there is a growing mindset about the employer brand as a connecting task involving HR, Marketing and Corporate Communication functions.

The COVID-19 pandemic has also caused many changes in the labor market. However, companies can take advantage of this situation as an opportunity to raise awareness of the brand image as an employer (Kurniawan et al., 2020), with the aim of contributing to a more successful and efficient employer brand as a form of strategic communication in both the virtual and hybrid work environments.

Due to the pandemic, it is obvious that virtual meetings and the acceleration of digitalization will continue to change the way many businesses operate. This development highlights the urgent need for companies to professionalize the brand of their external and internal employer through online channels and adapt it to teleworking. Therefore, it is crucial for companies to revise their existing employer brand strategy, or create a brand plan for the employer that includes tools online and offline (Nelke, 2021).

According to Ernstsson (2021), a fruitful definition of the brand of a successful employer is one that encompasses and internalizes a deep understanding of modern society through a late modern view of work as a crumbling social institution and an employer's brand that adapts accordingly. Based on this assumption, it manages to build strong relationships between the employer and the employee.

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# Marketing Manipulation in the 21<sup>st</sup> Century

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False arguments;  
Emotional persuasion;  
Conscious consumer;  
Conscious advertising



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**Abstract:** *The research assessed aspects of manipulative advertising, their execution, and expected impacts on consumer behavior in general regarding any purchase of a product or service worldwide. The research aims to guide quantitative consumer perception research through carefully designed and efficiently conducted research. The analysis of the collected primary data revealed that manipulation in marketing is very common and that it appears at every step and thus began to be one of the main players when creating marketing ads. Furthermore, respondents expressed concern about manipulative advertising of food brands and preferred that this advertising was often practiced on services as well. Research has proven that there is a largely hidden manipulation that at first glance is not immediately noticeable and is hidden in consumers primarily evokes the emotions of the need for the product, the desire to do the same, and ultimately the purchase.*

## 1. INTRODUCTION

Manipulation in marketing has become a problem for consumers that we encounter almost regularly. This practice moves away from a marketing mission that meets customer needs and expands the asymmetries of power between company and consumer. Many manipulative ads are difficult to prove because of their controversial nature and content. The article talks about how companies use stimuli, advertising mechanisms to manipulate consumers.

Each advertisement of a product or service is based on verbal but also nonverbal communication, independently transmitted through television media or only written advertisements such as posters. Tempting sentences immediately distract us and intrigue us to continue reading or watching a commercial or marketing view. This is just one of the types of power to manipulate the human psychological system of thinking and manipulative wordplay to lead human reflection to further interest in the read and the outcome of the event. The field of marketing has always been an unexplored terrain of the economic field and from year to year, new techniques and development of marketing itself are revealed in step with the new technology. With the growth of marketing itself, the area of manipulation that today records a handful of items and under items is growing, and in a social order that values free markets and consumer sovereignty, it is extremely difficult to regulate manipulation as such. Those who sell products are often involved in at least contentious forms of manipulation. Manipulation analysis refers to new issues of freedom of speech raised by forced disclosure, especially in the context of marketing backgrounds and international business.

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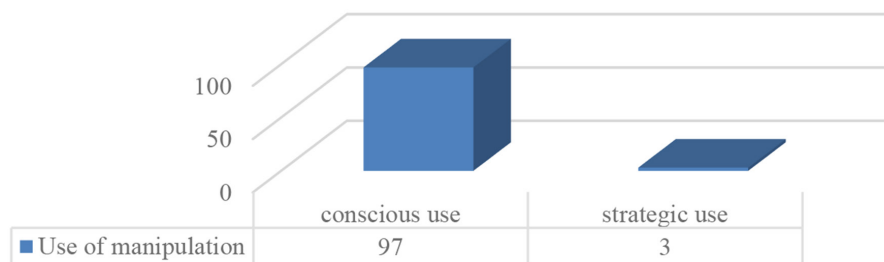
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*Manipulation communication* in marketing deals with tactics and strategies used by traders and affects human cognitive, social, and memory bias and weaknesses that ultimately affect consumer behavior in their favor. (Kamins, 2017) focuses on examples from academic and scientific research where consumers were found to be vulnerable to bias and therefore made fewer optimal purchasing decisions by proving that it is possible to manipulate the perceptions and preferences of individual consumers. The very problem that we find in manipulation communication is because of the very way in which individual words and the composition of sentences affect our mental and psychological system, looking at all aspects of the very concept of manipulation that is reflected in profitable business benefit.

The field of manipulation is also closely related to the psychological system of human thinking, so in this way, we can associate manipulation with the field of psychology, logistics, and biology and see how marketing tricks affect our psychological attitude of decision-making. And by the watchdog, we wanted to find out in what forms manipulation communication is included in certain marketing parts of communication with users.

## 2. MANIPULATION IN MARKETING ADVERTISING

Nowadays, marketing is increasingly using manipulation into its marketing, promotional, and business activities to facilitate the sale of its services or products. With a graphic collected from secondary data by Lin (2016), we see a percentage of the conscious and strategic use of manipulation in business.



**Figure 1.** Conscious and unconscious use of marketing in advertising

**Source:** Self-Creation using Secondary Data (Lin, 2016)

From figure 1 representing the amount of manipulation used in the business and private forms of life, it is evident that manipulation is quite common. 97% of people consciously use it to get more or less aware of what they need or want, regardless of whether they are businesses or a private lifestyle (figure 1). There's nothing to worry about. We can say that manipulation is like lying and beautifying the current state in which we find ourselves. Realistically, *"Who's never lied?"*. On the other hand, for the remaining 3%, manipulation is a systematic strategy, a thoughtful act that gives the manipulator a sense of power, control, that convinces his failed narcissism. So, we can qualitatively say that marketing activities know exactly how to manipulate people's feelings and emotions. Consumers themselves are not aware of manipulation, it is naturally incorporated into our subconscious through emotions and psychological games and thus manipulates our decisions...

### 2.1. Manipulative advertising

Manipulation through advertising has become a problem that consumers face almost regularly. This practice distances the marketing mission in meeting the needs of customers and expands asymmetric powers between business and consumers. Many manipulative ads are hard to prove



because of their controversial nature and content. The effectiveness of marketing activities through the use of manipulation will depend on compliance with some of the company principles they advertise in areas where they and consumers can find each other's goals and interests.

Fast food ads can be manipulative in several ways, from seductive language that isn't necessarily true ("mouth-watering") to sales that create a sense of urgency (e.g., offering an item for only a limited time). But if this picture shows us nothing else, it is obvious that the sincerest promise made to us by the fast-food industry is the food itself. The images show what their products look like in the ad, relative to what you're receiving. What a great disappointment. In 2016, Duracell (Procter and Gamble) is being sued for misleading consumers into the life of their ultra batteries. The battery market has a longer duration and longer usage times, as they have not proven to be either stronger or more durable than the average Duracell battery. Customers are attracted to the package by the words "ultra" and "advanced" and believe that they are buying a higher quality product, when in fact they are simply seduced.

### 3. RESEARCH RESULTS

#### 3.1. Methodology and sample of research

The methodology and cause of the research are a major part of analytical and empirical work. In other words, the approach is based on a positivist view, where reality exists independently and is driven by natural laws and mechanisms. Reality is objective and to get a complete picture of the world, the person observing reality must analyze all parts separately (Kuada, 2012). The analytical approach sees the world as stable, very predictable where the only way to create knowledge is to understand every fact. To acquire this knowledge, one should have a neutral position and only observe the process, since it is necessary to have a distance to the subjects so that the current knowledge and values of the observer will not affect the acquired knowledge. The statistical programs we used to process the data were Microsoft Excel.

Thus, a step-by-step research strategy is a plan of action that guides our thoughts and efforts, allowing us to systematically and timely research to achieve quality results and detailed reporting. The research methods will be based on the quantitative method and compare it with the secondary results of scientific research so far to note the difference and increase in manipulation in marketing. The methodology and cause of the research are part of the research work and the method itself was based on 20 interviews with scientific experts where we could get deep interviews to our desired questions related to the use of manipulation in marketing. The tools we used in our research work are based on a quantitative interview question. With quantitative research, relying on probability theory and statistics, the results obtained on the sample of subjects apply to the entire population. The research will aim to describe the situation and analyze the obtained responses of scientific experts to the conscious use of manipulation in marketing activities.

#### 3.2. Research results

The research conducted for quantitative research was based on 20 participants, which will include scientific experts from 2 groups of in-depth interviews where experts from:

- Marketing department (5 public relations experts, 5 experts in the field of marketing market analysts)
- Scientific experts (5 experts in the psychological field and 5 experts in the field of ethics and morality).

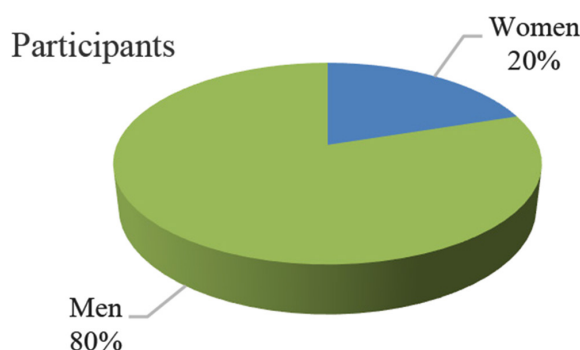


Also, before the research started, we should have ranked our experts by gender and age and of course, a very important item is how long they have been doing business on their part. Through quantitative separate interviews with questions and questions as a research instrument, we have shaped an informed questionnaire and due to the current COVID-19 pandemic, all respondents were interviewed using the Zoom Meeting.

The interview and the questions asked were used as a method of verification, using it to collect the data necessary to verify the hypothesis set. To conduct a survey, it was necessary to know the issues under investigation, the relevant characteristics as well as the survey itself. The interview was conducted using Google Docs to manage documents and use Zoom Meeting. The results of the interview were presented and clarified using figures, tables that were made in an Excel program.

Respondents are in positions: brand manager, creative director, marketing manager, agency owner, marketing assistant, and marketing manager, psychologist, head of ethical morals, psychological adviser.

The dating questions are well known to everyone, and we also asked our scientific and marketing experts: “*Gender?*”



**Figure 2.** The ratio of experts in interviews

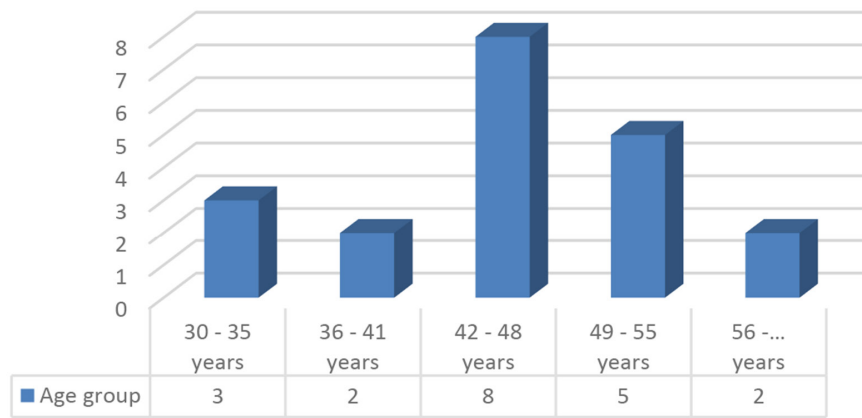
**Source:** author's work (2021)

We can see that 16 marketing and scientific experts are male and only 4 women (Figure 2) were present in the entire study. Therefore, we have caught up with the question of how we believe that marketing and manipulation in marketing activities are more present among the male population.

All scientific and marketing experts are of course highly educated people and therefore all of them have highly educated titles and many years of experience in marketing and the direction of the psychology behind them.

General personal questions about the age of the subjects are presented in figure 3. Ultimately, we can see that a higher percentage of scientific professionals are aged 42 years to 48 years of age. This proves that experts have years of experience in the marketing departments or the psychological field itself.

When the in-depth interviews began, another main question was asked so that they could round up questions about the general information about our participants in the survey: “*The area in which you operate?*”

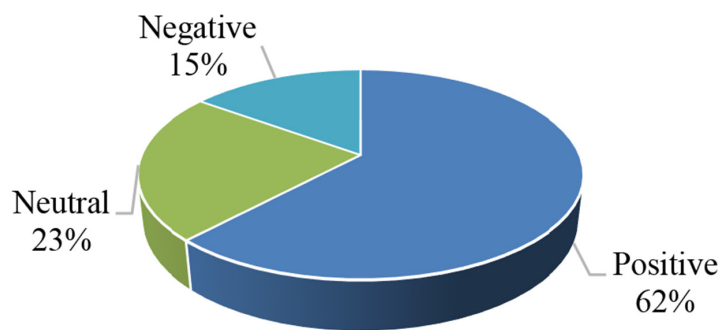


**Figure 3.** The age group of experts in in-depth interviews

Source: author's work (2021)

68 % of the companies surveyed run within the borders of the Republic of Germany, while 15 % of them operate exclusively in the Republic of Croatia, the other 17 % of professional respondents do their business within marketing in other countries.

In interviews, marketers have declared that they do not consider the manipulation of communication of this use in the business negative (figure 4), while most scientific experts remain neutral or consider manipulation positive, therefore that it has a very big effect on the psychological thinking of customers, consumers and people individually.

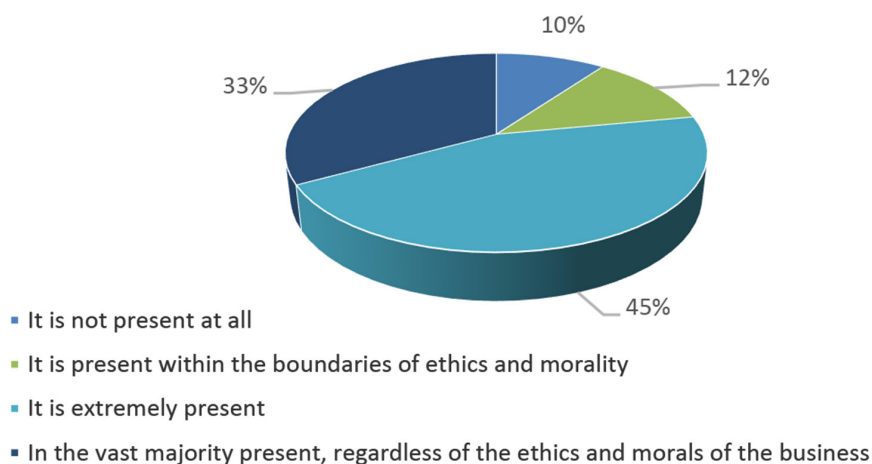


**Figure 4.** Expert attitude on manipulation

Source: author's work (2021)

One of the answers of a scientific expert in the field of psychology and ethical morality after the question was asked was: *"I don't think most people have an awareness of how thoughtfully marketing affects/manipulates the market/customers. But I also think that because of the internet and the greater volume of information, people are becoming more and more knowledgeable about the facts of manipulation over them."* Furthermore, the largest number of responses claim that people are not, or are little aware of, the manipulation of advertisements."

Manipulation in the communication itself between business and consumers is great, most manipulation in communication is not immediately seen. The question we later asked everyone separately was: "Is there manipulation in your business in the communication itself between the enterprise and customers through marketing activities?"



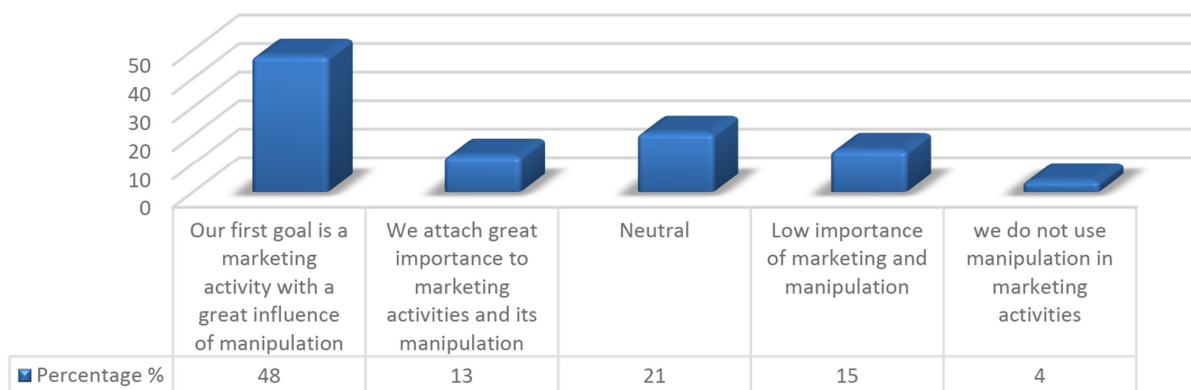
**Figure 5.** Expert position on manipulation in communication

**Source:** author's work (2021)

That manipulation in communication is extremely present is considered by 45% of scientific and marketing experts, while 33% believe that manipulation in communication is present in the vast majority regardless of the attitudes of ethics and morality of business and the very use of manipulation in business (figure 5).

The marketing expert also explained to us the impact of manipulation in communication: *“Every company in any way finds some items to boost its business, so in this direction, it means manipulation itself. If through manipulation with marketing activities such as advertising, we can improve the sales of a particular product, i.e. that we “throw a bug in people’s ear” during the summer than during the same time the body must be dark but that it is a need and protection from the sun and that it is a kind of stereotype in society, of course, with all our strength and manipulation we will insert it into one advertisement to buy a sunscreen product in the middle of summer, I just don’t think that manipulation in business and marketing is a bad thing, we just “push” customers more towards our product!”*

Depending on what business function they perform, we asked the following question: *“Do you attach great importance in your business to digital marketing and the use of marketing manipulation towards the performance of the company’s business and the increase in profits thereof?”*

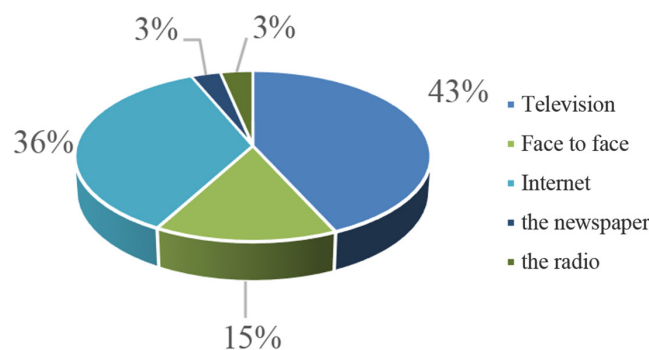


**Figure 6.** Attaching importance to digital marketing

**Source:** author's work (2021)

As many as 48% of those surveyed responded that they attached great importance to digital marketing and the use of marketing manipulation throughout the business, 13% of experts told us that they attach great importance to marketing activities and their manipulation in the overall business, while only 4% of respondents who included ethics and morality experts explained how they try to reduce or not use manipulation in marketing activities in business (figure 6).

Speaking to a strategic expert in the field of public relations and a psychological scientist, we asked them where the most present form of manipulation was and we received a very interesting answer, Department expert with the public: *“Of course, a large part of the marketing activities and the promotion of products or services itself nowadays takes place through the Internet and television. In these cases, we can see that most of the marketing takes place right there. Of course, every product or service is structured according to certain customers and consumers, therefore, for example, children’s products and manipulation over their purchase will be put into television advertisements in the morning before parents go to work and save children for kindergarten. Regardless, whether it’s an advertisement for baby diapers or porridges or maybe even children’s clothes or toys. We all know that parents have a soft spot for children’s wishes and therefore, for example, showing commercials at 7:00 a.m. on television when we know that children are awake with toys. Therefore, we can say that we manipulate children first, so they automatically manipulate their parents.”*



**Figure 7.** Expert position on the presence of media communication manipulation

**Source:** author’s work (2021)

All experts believe that manipulation is present in the media. Forty-three percent of respondents believe that manipulation is most present on television, 35% think that manipulation is most present on the Internet, while 15% think that manipulation is most obvious in face-to-face form. live (figure 7).

Although social networks are mostly about communicating with consumers, the results show that face-to-face communication has positioned itself just behind social networks. It is still best to talk directly (face to face) with a potential buyer because this is how the immediate process takes place. Also, marketing experts can get information by communicating face to face that a potential customer might keep from them when chatting online. This means the following: in face-to-face communication, more or less, we are forced to include the full range of linguistic and paralinguistic activities (even what we do not want to communicate in communication often “leaks” due to lapses or facial expressions). That is why one analyst concluded that for the Internet, due to all these reduced elements, a typical “target is communication minimalism”.

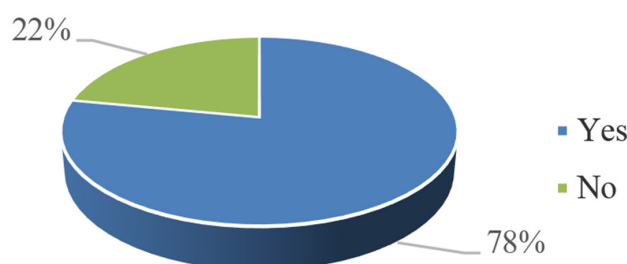
The psychological expert also explained to us in an in-depth interview how: *“Social networks dominate the most in the representation of platforms in digital marketing. It should be noted that the advantage of social networks is that with them companies can get feedback on their*

*services and products in a very short time. In addition, advertising also includes specific target groups – for example, young people, employees, sports enthusiasts, pensioners and the like.”*

Speaking to marketing and scientific experts, one of the psychological experts told us that: *“There is always some purpose and goal of communicating. In interpersonal communication, the goal is always the other person, that is, the recipient of the message. This means that any communication between two people is an interpersonal type of communication.*

*Our purpose is to influence the behavior of whoever is the recipient of the message, but it is a multidimensional process of exchanging, sending, receiving, and interpreting information. We can also call it an even better form of manipulation in business. In this type of information exchange, symbols are sent that have a certain meaning, and they can be verbal and nonverbal. In other words, interpersonal communication means verbal or nonverbal behavior that we do with another person.”*

Therefore, we started to raise further questions during an in-depth interview with experts from their point of view and business. With the claim that interpersonal communication uses more cunning means, a total of 41% of respondents agree, while 59% of experts disagree with this statement and consider it a normal cognitive phenomenon in the business of the company.



**Figure 8.** Manipulations in interpersonal communication are not daily

**Source:** author's work (2021)

That manipulation in interpersonal communication is a daily occurrence is the opinion of 78% of experts who disagree with the above statement, and 22% of experts agree that manipulations in interpersonal communication are not a daily occurrence (figure 8).

The age of the audience does not affect the effectiveness of media or interpersonal manipulation. A total of 32.2% of experts agree that the age of the audience does not affect the effectiveness of media or interpersonal manipulation, and 67.8% of scientific and marketing experts disagree with this statement, i.e. they think that age affects the effectiveness of media or interpersonal manipulation.

That manipulators choose the goals of manipulating the mind narrowly 55.9% of respondents, while 44.1% disagree that manipulators choose their goals.

The view of most respondents is that modern media manipulate their audience, that is, the largest number of respondents, a total of 98.38 cannot agree with the statement that modern and popular media in most cases do not manipulate their audience. Only 1 respondent fully agrees with this statement. Modern and popular media in most cases do not manipulate their audience.

### 3.3. Proposals to combat marketing manipulation

Ethics is an important part of marketing and marketing laws, but since perspectives vary depending on the society, situation, and culture, it is necessary to understand what ethics are and how it is used in society. This knowledge should be used in the debate of what ethical considerations are behind the development of marketing policies when the objective is consumer welfare and competitiveness.

Proposals to just curb manipulation in marketing are turning to advertisers who should realize that more consumers, especially those aware, recognize that all things are connected. Therefore, they must be in the process of raising awareness of the impact of advertising and seeking mutual benefits from it. Advertisers should be aware that advertising must be authentic. This is all that communication with consumers should be one hundred percent honest and transparent. More than ever, an increasing proportion of consumers value transparency, accountability, and authenticity.

Marketers and the companies themselves and their owners should align their messages with consumer values in all aspects and all advertising components. Companies that align their values with their actions will gain continued loyalty among consumers. If companies follow these principles, they could easily translate them into fair, non-manipulative advertising practices and thus become more reliable.

## 4. CONCLUSION

Given the growing beliefs in marketing tricks among consumers (Peck et al, 2013, 752), companies need to use them very carefully. With the rise of neuromarketing, some consumers are concerned that marketers know how to control and influence their choice. Since neuroscientific explanations of psychological phenomena undermine faith in free will (Greene et al, 2004), the development of neuromarketing can create an even greater fear of marketing manipulation (Hanson & Kysar, 2009, 412). In reality, most of these fears are exaggerated because they state that neuromarketing is more powerful than it practically is (Donnelly, 2001; Perdue & Summers, 1986).

“Marketing outcomes, trade, and civil unrest are just things that can be controlled.” (Hallinan & Brubaker, 2021, 1084). These feelings, however, do not necessarily lead to a particular withdrawal of behavior - indeed, people’s concerns about privacy and their behavior are often contradicted (Martin & Jeffreys, 2018; Sunstein, 2016; Kamins, 2017; Norberg, 2006). One of the general tips for weakening beliefs about manipulation based on our framework is to increase consumers’ propensity to cope with persuasion regarding the prominence of marketing intentions to manipulate and convince them. This can be achieved by creating a perception where consumers think about themselves and denying the persuasion of companies to choose a product or service, and therefore psychologically will make them think more specifically about persuasion - this will make them aware of their persuasion strategies. Our research also points to marketing segmentation strategies separately for each demographic group. Marketers should be particularly cautious about any tactics that consumer segments might consider manipulative. This difference in the need to make sense could explain why some consumers discover the secretive intent of marketers and politicians where there is none.

In our research and deep interviews with marketing and scientific experts, we have seen how marketing actions themselves use manipulation to facilitate the sale of products or services of



the company in which they are employed. Therefore, marketers and scientists have confirmed to us our thesis that manipulation is:

Predicted by gender and age of consumers where women and younger consumers have greater motivations to understand their environment, leading them to greater beliefs about manipulation as a whole,

Largely present in marketing campaigns to improve the financial condition of the company's business and the success of advertisements and marketing ads,

Hidden manipulations used, by marketers, largely present and consciously used for positive business purposes,

The impact of manipulation in ads itself is constant and scientific experts use them in the everyday business world to manipulate old and potentially new consumers.

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# Positioning a Brand on the Market

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**Abstract:** Brand positioning is a process of creating an impression of a brand in the consumer's awareness using different strategies, including prices, promotion, distribution, packing and competitiveness. Positioning is an act of modeling the offer and reputation of a company so that it can specially position itself in the consumer's awareness on a target market. In order to create a positioning strategy, a brand's unique characteristics need to be identified and what differentiates it from the competition needs to be determined. Positioning calls for the identification of a target market, the identification and analysis of the competition and a brand's optimal points of parity and points of difference. Competition can be researched from the point of view of the industry (branch) and from the point of view of the market itself. Brand mantras are used to position a brand, indicating what the brand offers and for what reason it is superior in relation to other competitive brands. While standard brand positioning models are based upon detailed consumer, company and competition analyses, there are also newly appearing creative approaches to brand positioning, such as storytelling or a journalistic brand chronicle.

## 1. INTRODUCTION

Brand positioning is a process of creating an impression of a brand in the consumer's awareness so that the consumer can connect a brand with something specific and desirable, which differs it from the rest of the market. Positioning is "an organized system of finding out a window in the mind using different strategies, including prices, promotion, distribution, packing and competitiveness" (Ries and Trout, 2001). In one word, brand positioning relates to the "target consumer's" reasons for which he or she opts for that particular brand, not another one. In order to create a positioning strategy, unique brand characteristics need to be identified and what differs it from the competition needs to be determined. The possible steps which may be used to clarify a company's position on the market are as follows:

1. to determine the current position of a brand,
2. to identify direct competitors,
3. to understand how competitors have positioned their brands,
4. to compare the company's own position with the competition with the aim of determining the company's own unique characteristics – points of difference,
5. to develop a value-based positioning idea,
6. to devise a positioning statement which communicates the values of the brand to consumers in relation to the main competitors, and
7. to test the efficiency of the positioning statement.

The positioning statement defines who it is intended to (target consumers), the market, it states the promise the brand makes and the reasons for consumer, i.e. user trust. So, at the time when it was

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only engaged in selling books, the Amazon.com company used the following positioning statement: “For users throughout the world who enjoy books, Amazon.com is a book retailer enabling them current access to over 1.1 million books. Differently from traditional book retailers, Amazon.com offers a combination of exceptional conveniences, low prices and an enormous choice.”

Positioning requires the identification of the target market, the identification and analysis of the competition and optimal points of brand parity and points of brand difference. Positioning is an act of modeling the offer and reputation of a company so that it can specially position itself in the consumer’s awareness on the target market. In other words, the goal is to “embed” a brand in buyers’ minds in order to make the maximum increase in benefits for the company.

## **2. IDENTIFYING COMPETITORS**

The competition identification implies the determination of the competitors with whom companies are competing on the market. So, Pepsi Cola is the biggest competitor to Coca-Cola, the Bank of America is the biggest competitor to Citigroup, Apple is the biggest competitor to Microsoft, and so forth. The competition accelerately responds even to the companies which are the first to launch a new, but profitable, product by often introducing a cheaper or innovated product. For that reason, it is necessary that competitors’ activities should constantly be monitored and analyzed.

Research in the competition can be done from the point of view of the industry (branch) and from the point of view of the market itself (Shocker, 2002). A branch comprises a set of the companies offering a product or class of products which are closely interrelated. From the point of view of the market, competitors are companies satisfying the same consumer needs.

## **3. ANALYZING THE COMPETITION**

Apart from identifying competitors and their strategies, it is also necessary to determine what every competitor seeks on the market and what initiates their respective behaviors. For that purpose, the past of such competitors, goals, the management, and the current financial situation are analyzed. The competition can be analyzed by means of a SWOT (strengths, weaknesses, opportunities and threats) analysis or some other similar analyses. A company should identify competitors also using industrial (branch) and market analyses. In the competition analysis, it is important that the points of difference and the common points in relation to competitors should be determined.

## **4. THE IDENTIFICATION OF OPTIMAL POINTS OF PARITY AND POINTS OF DIFFERENCE**

The competition’s reference framework defines the associations consumers use in order to estimate points of parity, i.e. points of equality, and points of difference. Points of difference (PODs) are the characteristics or benefits of a product or service which establish a connection between the buyer and the brand, with respect to which they believe they will not find any such with competitors, i.e. which are estimated as unique for the brand by buyers. Points of difference are determined by the three criteria: desirability, deliverability and difference. Buyers or users consider a brand to be desirable if they may benefit from it in this or that way. Deliverability implies a company’s ability to maintain the association with the brand in buyers’ thoughts, which is a

special challenge for fashion industry companies, such as Fendi or Prada. Being different from the competition implies the ability to achieve associations in buyers with the fact that the brand is different from and superior to competitors. Having these three characteristics creates a point of difference creating in buyers' minds a feeling that Louis Vuitton bags are the most elegant or that Energizer batteries last longest. Differently from points of difference, points of parity (POPs) are associations with the characteristics or benefits that can also be found with other brands within the same category, as is the case with beer producers. Some consumers opine that light beer can never have such a good taste as full-taste dark beer can, but there will have to be a sufficiently good taste to constantly be bought by buyers.

The final result of positioning reflects in the successful creation of a value proposal, i.e. the reason for which the target market should buy a particular product. Table 1 shows the ways in which three companies, namely Perdue, Volvo and Domino's, have defined their respective value proposals in relation to their target buyers, benefits and prices (Kotler and Keller, 2012).

**Table 1.** The examples of the value proposals

| Companies and products | Target buyers                                      | Benefits                            | Price       | Value proposal   |
|------------------------|--|-------------------------------------|-------------|--|
| Perdue (chicken meat)  | Chicken meat buyers to whom quality is important   | Softness                            | 10% premium | Softer yellow chicken meat at a medium-high price                            |
| Volvo (caravan)        | Well-off families to whom safety is more important | Durability and safety               | 20% premium | The safest and the most durable caravan in which you can drive your family   |
| Domino's (pizza)       | Pizza lovers wanting conveniences                  | A quick delivery and a good quality | 15% premium | A good hot pizza delivered at the door within 30 minutes at a moderate price |

**Source:** Kotler and Keller (2012)

Points of parity are the common values between a brand and its competitors, and those values are the common denominator defining the whole category.

However, errors are sometimes made in positioning. Some of them are as follows:

1. under positioning, which occurs when the consumer has a vague and unclear idea of a brand,
2. over positioning, which occurs when the consumer's brand awareness is too limited,
3. confused positioning, which is a scenario when the consumer has a confused opinion of a brand, and
4. double positioning, the situation when the consumer does not accept the brand postulates.

Issues pertaining to the creation of a strong, competitive brand and its positioning can also appear due to the fact that the many characteristics or benefits that make points of parity and points of difference are negatively intercorrelated. Contradictions can be as follows:

1. "cheap" versus "of the highest quality",
2. "powerful" versus "safe",
3. "a good taste" versus "low caloric value",
4. "strong" versus "refined",
5. "present everywhere" versus "exclusive", and
6. "diverse" versus "simple".

Unfortunately, consumers most frequently want to use up both negatively intercorrelated characteristics to the maximum, such as *cheap* and *of a quality*. For the reason of that fact, companies are often forced to balance in-between those extremes.

## 5. BRAND MANTRAS

Brand mantras are means for brand positioning which indicate what a brand offers and for what reason it is superior in relation to other competitive brands. Brand mantras are most frequently phrases consisting of three to five words indicating the brand essence and providing employees, associates and users with pieces of information about a product or service. Because of that, a brand mantra is said to be an expression of the heart and soul of a brand. They are the most efficient when they include a brand's points of difference and when they indicate what makes a brand unique.

According to (Kotler and Keller, 2014), a good brand mantra should:

1. constantly maintain a good communication with product and service users,
2. be short, fresh, figurative and unforgettable, and
3. inspire.

Consumers most easily perceive differences related to product or service types, as is the case with modern watches of different colors manufactured by the Swatch company. Companies' brands on the market can differ from one another according to the quality of their employees, since the employees who are better trained render a more superior service. For example, the Singapore Airlines company enjoys exceptional reputation for the most part due to their stewards and stewardesses. Companies can build strong, persuasive brands which are to the advantage of consumers' social and psychological needs.

## 6. THE EMOTIONAL CREATION OF A BRAND

The rational quality of a brand comprises the three dimensions: the quality of a product, the quality of a service, and the quality of the distribution, whereas the advertising style, the brand image, the manufacturer's state brand and the seller's personality are the emotional dimensions of a brand. Both rational and emotional dimensions of a brand exert a positive influence on buyer satisfaction and brand loyalty (Elsäßer and Wirtz, 2017).

Both the head and the heart have their own respective roles in product or service positioning. Consumers make rational decisions, having the need which they want to satisfy estimating the quality or price of a product or service, on the one hand, whereas on the other, they make decisions led by their emotions. For the reason of that fact, companies frequently also aspire to improve their advantages on the market by exerting an emotional impact on consumers. The emotional creation of a brand is becoming an ever more important way of connecting with buyers and differing from the competition. Research found that women were not only buying the Mederma scar treatment product for physical treatment, but also to raise their self-confidence. An emotional reaction to a brand depends on brand authenticity. Brands considered to be authentic and original, such as Johnson & Johnson, can provoke trust, attachment and strong loyalty. Brands which successfully emotionally differ from each other can also be very lucrative, financially speaking. There are those who consider that the three factors (strong corporate culture focused on people, a different philosophy and communication style, and a persuasive emotional fishhook) are important for the emotional side of a brand (Gobé, 2001).



## 7. ALTERNATIVE APPROACHES TO BRAND POSITIONING

Standard brand positioning models are based upon detailed consumer, company and competition analyses. In recent years, however, new creative approaches to brand positioning have appeared.

Brand positioning through storytelling is one of the alternative ways to position a brand. Creating a brand through storytelling is based on the metaphors which are connected with people's remembrances and associations, stories about a brand using words and metaphors simultaneously being especially important, establishing a connection between the consumer and a brand, the common points with a brand, the visual brand language or expression, the way how a story is empirically expressed, i.e. how a brand has aroused feelings and the role a brand plays in consumers' lives (Ringer and Thibodeau, 2018). The concept of "the primeval creation of a brand" perceives a brand as the complex elements of conviction. Different brands, such as Google, MINI Cooper, Starbucks or Apple, have "the primeval code" or the DNA echoing in their consumers' minds and arousing their passion and zeal. The seven elements making up the conviction system or the primeval code are the story about the creation, faith, the icon, the ritual, the holy words, a behavior towards nonbelievers, and a good leader (Hanlon, 2006).

The approach to brand positioning referred to as the "journalistic brand chronicle" is based on the attitude that marketing experts should constantly be sending different messages to different market segments (children, teenagers, youth, grown-up persons, parents, elderly persons), differently during breakfast, lunch, dinner, during the working hours, weekends or on business trips, just as the same is done every day by journalists in journals, magazines and other media. In that manner, potential buyers as per target groups would constantly be informed about everything that is going on about a brand (when and where it can be bought, at what prices, which discounts are available, when sales are organized, which novelties/innovations are being introduced, and so on).

## 8. CONCLUSION

Positioning requires the identification of a target market, the identification and analysis of the competition and optimal brand points of parity and points of difference. The identification of the competition implies the determination of the competitors with whom companies are competing on the market. For that reason, it is necessary that competitors' activities should constantly be monitored and analyzed. In analyzing the competition, it is important that points of difference and common points in relation to competitors should be determined. Points of difference are the characteristics or benefits of a product or service which connect buyers with a brand, for which they trust that the same will not be found with competitors, i.e. those which buyers consider to be unique for a brand. Points of difference are determined by the three criteria: desirability, deliverability and difference. Differently from points of difference, points of parity are the associations with the characteristics or benefits that can be found in other brands, too, i.e. they represent the common values between a brand and its competitors. Brand mantras are a means to position a brand indicating what it is a brand offers and for which reason a brand is superior in relation to other competitive brands. Standard brand positioning models are based upon detailed consumer, company and competition analyses. In recent years, however, new creative approaches to brand positioning, such as storytelling and the journalistic brand chronicle, have emerged.



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# Influence of the Space Management on the Competitiveness at the Point of Sale

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**Abstract:** *The influence of space management on competitiveness at the point of sale is characterized as a significant factor that should not be neglected. Space management is an important concept through the application of which sales are increased and customer requirements and wishes are satisfied. Information technologies have a great impact on reducing the time of good organization of space, and with the help of the aforementioned, it is possible to monitor the achievement of business plans and goals for certain product categories.*

*The purpose of this paper is to point out the importance of a well-organized and well-arranged point of sale on the competitiveness of the store itself in relation to other actors within the same industry. In the paper will be presented an example of companies. Data were collected through observation and experimentation, and with the applied analysis, synthesis and abstraction methods, it has been concluded on the quality of space management, which has implications for the competitiveness at the point of sale.*

## 1. INTRODUCTION

When considering any type of retail form, it can be concluded that points of sale are influenced by the competitive activities that are closely monitored and analysed, in order to maintain competitiveness and sustainability on the market for as long as possible.

Today, retail consumers are looking for complete service and satisfaction with the product they purchased. It is quite certain that retail meets more and more demanding consumers for whom the experiences, as well as the ambience of space in which they are situated, have become more and more important. The goal of the point of sale should be a profitable and long-term business that can be achieved with quality and good sales space management. Good space management creates an ever-increasing base of satisfied, and above all, loyal consumers, which is an important element for the achievement of greater competitiveness.

Consumer research and their attitudes represent a part of marketing research where it tries to find out why consumers make certain decisions when buying products, and attempts to seek out or understand what is happening in the “heads” of the consumers. By better understanding of it and defining the elements that influence the purchase decision, better and more efficiently the space management is accomplished.

What the consumer feels should not be ignored. Emotions that are manifested by the consumers affect the purchase, and in this sense, the very appearance and arrangement of the point of sale do affect the decision to buy and in general, affect the customers arrival, i.e., it indirectly affects the attraction of consumers to the specific point of sale.

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Consumer's behaviour is a process that combines several variables such as culture, society, family, motive, perception, attitudes and life values, and each of them has a role in shaping the desires and needs when buying (Kesić, 2009).

With the help of good space management, it is possible to increase consumers' satisfaction when shopping.

Retailing is a sector where consumers do interact and it can be influenced in various ways (Elg & Welinder, 2021), and sustainability has become an increasingly important concern for retailers (Ruiz-Real, Uribe-Toril, Gazquez-Abad, & Valenciano, 2018).

## 2. SPACE MANAGEMENT

Space management represents a significant element in the marketing mix that influences the general impression that the consumer acquires when entering and staying at the point of sale.

The rapid development of large new stores from the 1970s onwards drew attention to the need for considering the store selling environment as a whole, to ensure that the shopping experience is convenient and attractive (McGoldrick, 2002).

The appearance of a point of sale can make the purchase experience pleasant or uncomfortable, and can sometimes be frustrating, for example, for a consumer who "wanders" inside a point of sale looking for a product that he cannot find because it is not placed in a sufficiently visible place.

It can be noticed that the stores that are keeping general consumption goods commonly have a predictable appearance, with the usual advertising of promotional products. A pleasant atmosphere when shopping can increase sales and create loyal consumers who are happy to return to the same store. Stores often copy each other, which essentially represents the wrong approach for the creating of greater market competitiveness. It is necessary to create a competitive advantage when considering "space management" because there are different ways to arrange retail space creatively and innovatively. Each point of sale should be specific by itself and to stand out on the market with its well-designed spatial planning and accordingly to attract the attention of potential consumers.

According to McGoldrick (2002) many elements can be used to create an innovative and creative point of sale such as design, atmosphere, layout of the point of sale, allocation of space, impulse purchasing and others.

When discussing space management, there are many decisions pertained to the well-organized space in terms of the main departments (if it is a larger point of sale), secondary departments, also when looking at the assortment, decisions on implementing of different product categories, and consequently decisions between the products regarded as each separate product unit (Stock-Keeping Units or the SKU).

Accordingly speaking, it does matter how we arrange the products - both in space and on the shelf, and also to meet all the criteria necessary to create the pleasant suitability of purchase and visual identity.

When dealing with such decisions, information technology helps us a lot, which gives the possibility of a visual overview of the appearance of the store before actual physical arrangement has taken place.

According to Merrilees & Miller (2001), store layout design is one of the more important determinants of store loyalty.

### 3. DESIGN AND THE WORKING ENVIRONMENT ATMOSPHERE

During the last 20 years, large financial resources have been invested for the improvement of the appearance, design at the point of sale and the organization of the working space. Many retailers have fundamentally changed or rearranged their spaces to keep pace with the new trends in interior space arrangements. In this way, we've tried to meet the expectations of increasingly demanding consumers.

McGoldrick (2002) cited, "accordingly, a major industry has developed, as design companies have focused their attention on the design of retail selling environments", which implies an extremely important marketing element with the help of which competitiveness is creating.

Store image is an important factor that affects the consumer's behaviour (Erdem & Tunculp, 1999), and the design of the point of sale plays a key role when creating an atmosphere in the sales area. In Table 1 has been shown a summary of the "total visual merchandising process" as defined by Management Horizons (UK)<sup>2</sup>. By observing and analysing each element listed in the table, it helps management to shape the "appropriate" atmosphere and for the consumers to feel good when shopping.

**Table 1.** Total visual merchandising process.

| Store environmental design   | Merchandise presentations  | In-store customer communications   | Consumer senses appeal  |
|--|--|--|---|
| <ul style="list-style-type: none"> <li>• Store facade</li> <li>• Decor</li> <li>• Walls</li> <li>• Floors</li> <li>• Ceilings</li> <li>• Lighting</li> <li>• Atmosphere</li> <li>• Design integrity</li> <li>• Fixtures</li> <li>• Communications</li> <li>• Heating and ventilation</li> <li>• Services</li> <li>• Interior</li> <li>• Partitioning</li> <li>• Modular systems</li> </ul> | <ul style="list-style-type: none"> <li>• Major trends</li> <li>• Store layout</li> <li>• Presentation methods</li> <li>• Assortment</li> <li>• Category co-ordination</li> <li>• Sample displays</li> <li>• Feature</li> <li>• Lighting</li> <li>• Colours</li> <li>• Window displays</li> </ul> | <ul style="list-style-type: none"> <li>• Signs</li> <li>• Tickets</li> <li>• Product's information</li> <li>• Graphics</li> <li>• Sound</li> <li>• Textures</li> <li>• Entertainment</li> <li>• Education</li> <li>• Active</li> <li>• Promotions</li> <li>• Personal</li> <li>• Services</li> <li>• Cash point</li> <li>• Interactive kiosks</li> </ul> | <ul style="list-style-type: none"> <li>• Sight</li> <li>• Hearing</li> <li>• Smell</li> <li>• Taste</li> <li>• Touch</li> <li>• Concept               <ul style="list-style-type: none"> <li>- ideas</li> <li>- images</li> </ul> </li> </ul> |

Effective management of retail space has resulted in sales as the primary goal, and more broadly, the sale should not be "the end of the relationship with the consumer," but it is desirable to achieve after-sales customer satisfaction which, if positive, will create a base of loyal customers that will again return to the store.

<sup>2</sup> Management Horizons is the consisting division of the Price Waterhouse Retail Industry Practice.

In order to properly implement each of the above elements listed in Table 1, and also to decide on arranging the sale space, interior space designers hold a great role; they are extremely important when arranging, and they should be regarded as an indispensable link in the chain when it comes to arranging space.

In a large number of retails, it can be noticed that some elements of spatial planning are elaborated to the smallest detail, but on the other hand, some of them have not been fully developed and have not been implemented in the space at all.

A space design project made by a designer can significantly differ from the vision that managers have within retail. Such differences need to be overcome by mutual discussions and, therefore finding the best solution together. Sometimes an innovative solution is not technically the best result, and what is here needed is a combination of possibilities and desires.

The environmental atmosphere is also an important factor that builds the competitiveness of the point of sale.

The environmental atmosphere as a term was introduced by Kotler (1973), who mentions working environmental atmosphere as one of the marketing tools. With the atmosphere we can influence consumers who are willing to buy, that is, to increase the overall probability of buying. The environmental atmosphere is closely related to the senses: sight, sound, smell, touch and taste.

Stores have distinct environments, and marketers understand that the environment of a store is an important part of the shopping experience (Sharma & Stafford).

When viewing the impact of store environmental atmosphere on behavioural intentions, it is further noted that a favourable environment can motivate behavioural approaches, such as the desire to stay, look around and discover the environment, and also to communicate with others in the environment, while an unfavourable environment might lead to the adverse effects of behaviour such as the existing act of avoidance (Nur Aina Abdul, Fikrya, & Zainuddina, 2016).

#### **4. INVESTIGATION OF THE INFLUENCE OF SPACE MANAGEMENT ON COMPETITIVENESS AND RESEARCH RESULTS**

The aim of research presented in this paper is to determine whether space management affects competitiveness at the point of sale. Data were collected directly at the point of sale by asking consumers about the importance of the following elements: *store environment design, merchandise presentations and in-store customer communications and consumer senses appeal*. These elements raise the level of convenience of buying at the particular point of sale, as well as the return of the consumers, which implies greater competitiveness at the point of sale concerning the other market players.

The study involved 90 respondents, of whom 65% were female and 25% of the male gender. According to education, most respondents, 38 % of them hold a professional or university degree. When observing the status of employees, it's indicated that the highest number of them were employed, 58% and the lowest number, 12 % of them were unemployed (Table 2).

**Table 2.** Demographic data of respondents

|                |                                      | % of respondents |
|----------------|--------------------------------------|------------------|
| Gender         | Men                                  | 25               |
|                | Women                                | 65               |
|                | Less than 18                         | 2                |
|                | 18-30                                | 34               |
| Age            | 31-45                                | 29               |
|                | 46-60                                | 18               |
|                | More than 60                         | 7                |
|                | Without school                       | 0                |
|                | Elementary school                    | 20               |
| Qualifications | High school                          | 31               |
|                | Vocational school, university degree | 38               |
|                | Mr.Sc. /Phd                          | 1                |
| Working status | Employed                             | 58               |
|                | Unemployed                           | 12               |
|                | The rest                             | 20               |

**Source:** author's work, 2021.

For the elements of the importance when arranging the environment at the point of sale (see Table 3), 75% of respondents believe, i.e., agree and fully agree that the environment at the point of sale is important, while 10% of them stated that they do not agree at all.

**Table 3.** The importance of arranged environment at the point of sale.

|   |                   | % of respondents |
|---|-------------------|------------------|
| <b>Nicely arranged design of the environment at the point of sale</b> | I disagree at all | 10               |
|   | Sometimes I agree | 15               |
|   | I agree           | 25               |
|   | I fully agree     | 40               |

**Source:** author's work, 2021.

When it comes to the importance of how the goods (assortment) are exposed (Table 4), as many as 61% of respondents agree or completely agree, while 14% of respondents do not consider this element as extremely important.

**Table 4.** The importance of exposure of goods.

|                                  |                   | % of respondents |
|----------------------------------|-------------------|------------------|
| <b>Merchandise presentations</b> | I disagree at all | 14               |
|                                  | Sometimes I agree | 15               |
|                                  | I agree           | 26               |
|                                  | I fully agree     | 35               |

**Source:** author's work, 2021.

Given the importance of communication with the consumers, all respondents, i.e., 90% of them (see Table 5), believe that this is an extremely important element when building good relationships with the consumers.

**Table 5.** The importance of communication with the consumer within the point of sale.

|   |                   | % of respondents |
|---|-------------------|------------------|
| <b>In-store customer communications</b> | I disagree at all | 0                |
|   | Sometimes I agree | 0                |
|   | I agree           | 15               |
|   | I fully agree     | 75               |

**Source:** author's work, 2021.



In total, 45% of respondents fully agree that the importance of appeal on the consumer's senses is extremely important for the convenience of buying, where also consequently 30% of them agree, 10% of them sometimes agree, while only 5% of respondents believe that this element is not important (Table 6).

**Table 6.** Importance of appeal on the consumer's senses.

| Appeal on the consumer's senses | I disagree at all<br>Sometimes I agree<br>I agree<br>I fully agree | % of respondents |
|---------------------------------|--|------------------|
|                                 |  | 5                |
|                                 |  | 10               |
|                                 |  | 30               |
|                                 |  | 45               |

Source: author's work, 2021.

## 5. CONCLUSION

It is entirely certain that on the market exist an ever-increasing competition so that it is necessary to assign differentiations. The arrangement of retail similarities will not make significant differences amongst each other, which will lead to the greater importance of appearance, retail design, design of the retail environment, the presence of the environmental atmosphere when buying, communication with the sales staff, etc.

The goal of well-designed and attractive space management is to influence the consumers to make a purchase decision, which will result in greater competitiveness at the point of sale, because it offers something different and better.

From the conducted research it has been shown that space management is of key importance for attracting consumers in every sense of the word and that it's extremely important for them how the point of sale is being managed. Research has shown that a good way of arrangement and communicative staff attracts consumers.

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# Evaluating the Applicability of the TTM in the Marketing Practice of Krishna Consciousness in France

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**Abstract:** *Analyzing the promotional activities of Krishna Conscious communities of Europe a new model was discovered, in which they promote their religion by creating a tourist product in the form of rural community. The former analysis of the behaviors of the visitors of Krishna-conscious communities in numerous European countries has shown that the Transtheoretical Model of Behavior Change (Prochaska & DiClemente, 1983) may be applied to study engagement to a religious community. In this paper, this model was tested via qualitative methods of observation and in-depth interviews on the example of New Mayapur in France, evaluating whether the model is applicable similarly to the other European countries analyzed previously. The aim was to find out whether the TTM is applicable in the case of New Mayapur. The researches have shown that TTM may be applied to the case of France, just like the other European countries examined before.*

## 1. INTRODUCTION

Analyzing the promotional activities of Krishna Conscious communities of Europe, a new model was discovered, in which the national communities initiate their activities of promoting the religion by creating a tourist product in the form of a farming or rural community. The other three types of institutions operated by the Krishna-conscious organizations – temples and centers, restaurants and educational institutions – focus their promotional activities on people, who are already acquainted and possibly engaged with the religion, while the promotion of farming and rural communities focus on the newcomer audiences mainly (Bence, 2014; Bence-Kiss, 2019; Bence-Kiss & Szigeti, 2020).

Since religions are highly bound by religious economies – meaning that the activities they carry out are highly determined by the principles of the religion – creating the tourist product is a good mean of overcoming the limitations and achieving more freedom in the marketing mix (El-Bassiouny, 2014, 2016; Hashim & Hamzah, 2014; Sandikci, 2011; Sandikci & Jafari, 2013; Wilson, 2012). When applying the marketing mix of services marketing, six out of the 7Ps are mainly determined by religion, leaving the marketers freedom only in terms of promotion. On the other hand, by creating the tourist product, religion will only influence, but not so strongly restrict the marketing mix elements. Communities devoted to Krishna Consciousness utilize this opportunity to attract and involve potential followers of the religion via rural communities operating as tourist centers all over Europe (Ann & Devlin, 2000; Bence, 2014; Hashim & Hamzah, 2014; Iyer et al., 2014; Juravle et al., 2016; Kuran, 1994; McDaniel 1986; Mulyanegara et al., 2010; McGraw et al., 2011, Shaw & Thomson, 2013).

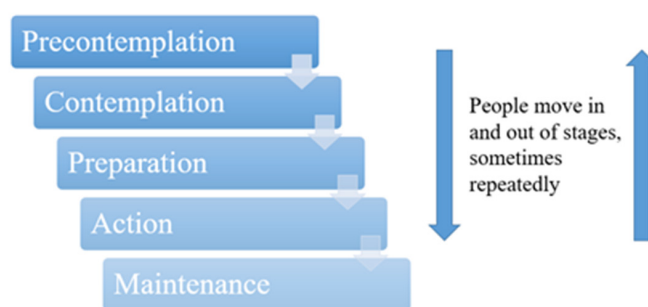
The analysis of the behaviors of the visitors of Krishna-conscious communities in Hungary, Belgium, the United Kingdom, Sweden, Germany, the Czech Republic, Italy and Ireland re-

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garding the religion has shown that the Transtheoretical Model of Behavior Change (Prochaska & DiClemente, 1983) may be applied not only to measure the changes in individuals' change of behavior concerning addictions and health behaviors but also concerning engagement to a religious community. In this paper this model is going to be tested on the example of the Krishna-conscious community of France, evaluating whether the model is applicable similarly to the other European countries analyzed previously. The aim is to find out whether the TTM is applicable in the case of New Mayapur as well and to compare the activities of the community to those of other European countries (Bence-Kiss, 2021).

## 2. TRANSTHEORETICAL MODEL OF BEHAVIOR CHANGE (TTM)

The Transtheoretical Model of Behavior Change (TTM) is a model developed by Prochaska and DiClemente (1983) to conceptualize the intentional changes in human behavior. The model aimed to interpret what processes people fighting addictions or seeking for a healthier life are going through. It was tested and validated on twelve different health behaviors and showed consistency in the stages and processes of change. The model identified five stages of behavior change: precontemplation, contemplation, preparation, action and maintenance, as Figure 1 shows (Newcomb, 2017; Prochaska & DiClemente, 1983; Szabó, 2016; Szakály, 2006; University of Maryland, 2020; Velicer et al., 1998).



**Figure 1.** The stages of change in the Transtheoretical Model of Behavior Change

**Source:** author's own processing based on Newcomb, 2017

In the first, *Precontemplation* stage people are not about to make any changes to their behaviors and are sometimes not even aware of the changes that could be made. In the next, *Contemplation* stage awareness already arises and a motivation to change the behavior in the near future of approximately half a year appears. This stage is characterized by weighing the costs and benefits of making the changes and active information seeking, and the beginning of the rational decision making process. In the *Preparation* phase, the information seeking continues, but the decision has already been made to change the behavior within a short period of approximately a month. In this stage, individuals are usually not entirely committed to their decision to make changes. In the *Action* phase, individuals start to change their behavior actively; and this is the stage where relapse to the earlier stages is most likely in case of difficulties or the lack of reassurance. The fifth – and last – stage is *Maintenance*, when people have already been able to maintain the changed behavior patterns for at least half a year. In this stage there is still a chance of relapse, but over time it decreases compared to the action phase. The movement along these stages is often not linear and may take different time spans depending on numerous internal and external factors influencing the individual (Newcomb, 2017; Prochaska & DiClemente, 1983; Prochaska & Velicer, 1997; Szabó, 2016; Szakály, 2006; University of Maryland, 2020; Velicer et al., 1998).

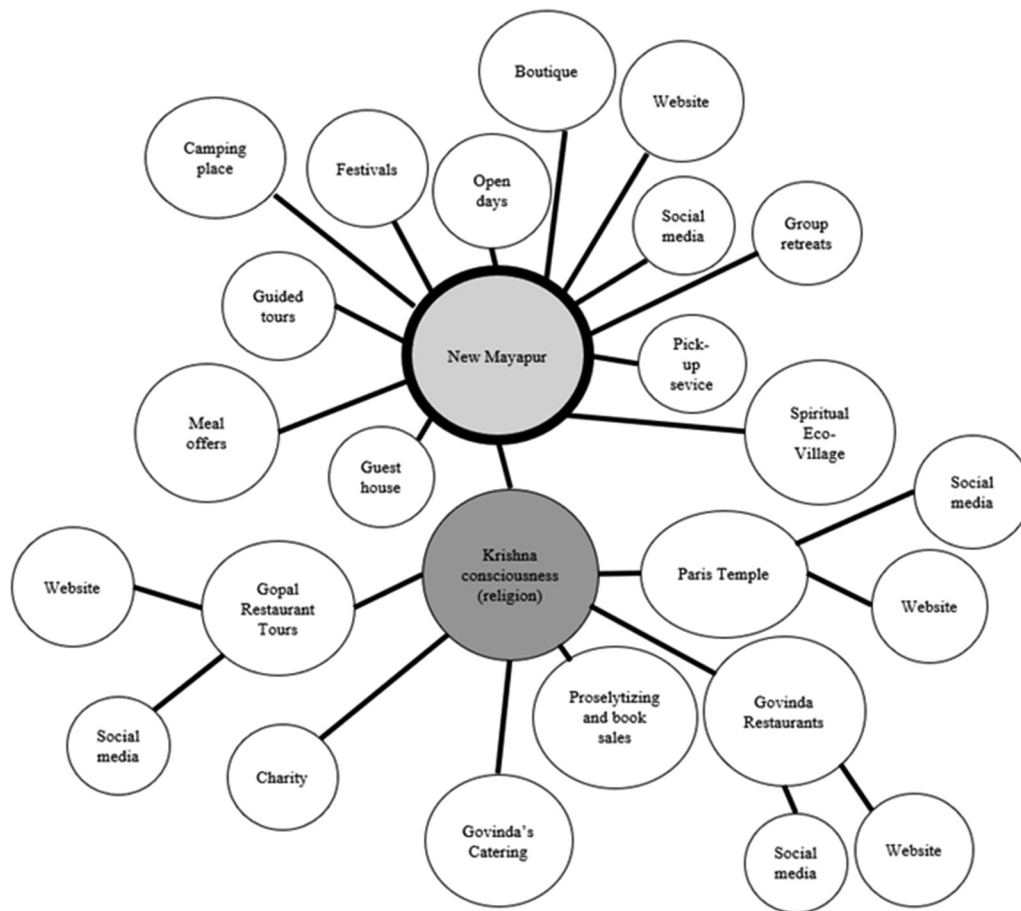
### 3. RESEACH METHODS

Qualitative research methods were applied to be able to compare the situation of the Krishna-conscious community in France to those of other communities previously examined. The first method applied was observation, which was carried out in form of a personal visit in New Mayapur, the rural community of France. The observations were unstructured and took place in July 2021. During the field research the main goal was to observe and identify the most important characteristics, which make the countries with farming communities stand out in Europe and to find similarities or differences in the case of New Mayapur in France. The community was analyzed along the marketing mix of services marketing (7P), aiming to identify the common characteristics in marketing services and religions, while also highlighting the most important shortcomings of the model in the case of religious communities. Following the field research observations, the molecular model – created by Shostack (1977) and applied by Srinivasan (2012) – was used to evaluate and summarize the most important characteristics of the community. Shostack and Srinivasan created the molecular model to analyze the offers created by service providers in details by visualizing the good and service elements of certain offers, which may own both tangible and intangible characteristics. This research applies an altered molecular model (based on the original work of Shostack) in order to distinguish and visualize the different elements of appearances of Krishna Consciousness in certain countries, regardless of tangibility. The modified molecular model aimed to identify those institutions and activities, which contribute to spreading the knowledge about the religion in a certain country. In order to confirm and clarify the results of the observations and to receive more detailed information on the operation of the community, an in-depth interview was also carried out with a member of the community, who has been part of its development since the very beginning. During the interview - which lasted approximately one and a half hours – topics on the life of the community in general, self-sufficiency, external relations, marketing activities, tourism and future plans of the local leaders were covered.

### 4. KRISHNA CONSCIOUSNESS AND TTM IN FRANCE

As the in-depth interview has revealed, New Mayapur, the rural community of France was founded in 1974 and flourished between the 1970's and the 1990's, when it served as the European headquarters of the religious movement, giving a home to more than 200 devotees. However, when at the beginning of the '90s the spiritual leader of the community left, it meant the downfall of New Mayapur: most of the inhabitants moved away, leaving only ten devotees to maintain the facilities, out of which only the temple is still there currently; the prosperous school of the community closed and the village was striving for survival. This meant that France has lost the main driver of promoting Krishna Consciousness for a while.

Recent times have brought a change in the life of New Mayapur; the number of permanent inhabitants tripled and as Figure 2 shows, the number of institutions and activities directed towards the external audiences has increased as well. The molecular model drawn on Krishna Consciousness in France highly resembles those of other European countries: religion as a product is mostly promoted via traditional means, such as proselytizing on the streets and selling books and charitable activities. The temples and the restaurants own websites and social media pages, but they focus on the people already involved in the life of the Krishna-conscious community, at least via nutrition. On the other hand, New Mayapur communicates not only with the current, but also with the potential devotees by offering them different ways of getting acquainted with the religion.



**Figure 2.** The molecular model of Krishna Consciousness in France

**Source:** author's own processing

As the observations have shown, currently the tourist product is still limited after the depression of New Mayapur: the opportunity to visit is given, complemented by guided tours, pick-up service, meal offers and a possibility to stay overnight at the campsite or in the guest house; but there is only one festival to attract larger audiences in a year. The *prices* are not yet well-set either: most of the services related to tourism are free, such as meals, only things such as overnight stays are charged. Usually, the prices of tourism services in communities devoted to Krishna Consciousness are utilized to diminish the perceived costs associated with the religion: people just invest small amount of money into tourism activities instead of feeling that they need to let go of their certain habits and join the community immediately, if they visit. In France, these positive effects could not take place yet, due to the tourist product being less developed and lacking a price structure. This also means that the ideal and engagement-free *place* of getting acquainted with Krishna Consciousness – the way rural communities usually serve – is not complete yet, therefore also not promoted so much. According to the in-depth interview, there are no intentions for more *promotion* yet – apart from the website and the social media pages already existing – since New Mayapur would not be able to serve the increasing tourists' needs at the moment. *People*, who live in the community are true representatives of Krishna Consciousness, following the guidance of the religion, but they are not yet able to take on further duties related to tourism besides maintaining and developing the community, and also the *processes* of the tourism hospitality are not clearly developed yet. The setup of New Mayapur resembles that of other European rural communities, where local architecture embraces the *physical evidence* of the Indian roots of the religion, merging the two cultures to provide a com-



fortable blend for both inhabitants and visitors. The additional facilities serving tourists' needs are currently being built: a restaurant and a yoga hall is under construction and the guest house is also being developed, which show good opportunities for further growth.

These features mean that currently, New Mayapur has only a limited ability to serve the purpose of promoting the religion along the lines of TTM: the limited marketing activities make it hard to reach people in the *Precontemplation* phase; and it is also hard to attract those in the *Contemplation* phase with such a limited tourist product and so few changes in the perceived price. The only way to attract these individuals besides tourism is the opportunity for volunteer work, which, according to the interview has been applied for many years; however, legal problems built obstacles for going further on this path. In the *Preparation* phase, New Mayapur can already be a little bit more successful thanks to the catering services provided by the community, which is only partially self-sufficient, but yet is able to offer meal services not only in the community building, but also externally. This helps a lot to those on the level of *Preparation*, since at this stage nutrition is the most important segment of the lifestyle changes made. There is also limited support in the *Action* phase, since the opportunities to move into the community are not so elaborate yet, which increases the perceived price at this stage too, due to the efforts that have to be taken to make ends meet as an inhabitant of New Mayapur, which also suggests that there are not too many options for supporting *Maintenance* either, in which stage the focus should be on religious life free from daily life struggles and educational opportunities provided to support further spiritual development.

There are clear plans in the community, however, to develop in all stages of the TTM: the yoga hall and the restaurant being built, together with the development of the guest house contribute to the creation of a more complex tourist product, which then enables New Mayapur to be more visible to people outside the Krishna-conscious community and attract more people in *Precontemplation* and *Contemplation* phases. The boost in tourism in return provides more opportunities for the devotees of New Mayapur, which makes it easier to support those in the *Preparation*, *Action* and even in the *Maintenance* phases thanks to better and richer job opportunities and higher incomes. Currently there is also a project in New Mayapur for building more houses, which improves the housing opportunities as well, and there are intentions to rejuvenate the school of the community too, which shows a direction towards the example set by the most prosperous communities of Europe, such as Krisna Völgy in Hungary, Bhaktivedanta Manor in the United Kingdom or Radhadesh in Belgium.

This implies that even though New Mayapur is only at the beginning of the second development path, TTM is applicable in their case too. On one hand this is proved by the first twenty years of the existence of the community, when the presence of the tools supporting the people in the different stages of the TTM resulted in a flourishing community. On the other hand, some features matching the general idea of the model may be observed nowadays as well, and as the interview has clarified, the intentions show towards the same direction as the largest European communities, where the actions based on TTM already take their positive effects.

## 5. FUTURE RESEARCH DIRECTIONS

Being a relatively new area of study, there are plenty of opportunities to extend the scope of the work. Since the research so far were carried out with the help of eleven farming communities of nine countries, whereas there are a total number of eighteen rural communities in fourteen countries just in Europe, therefore the first further step after the current research should be to



establish a relationship with the Krishna-conscious communities of all the countries with farming communities to increase the volume of the research. After the completion of the research on the European continent, the same research structure may be extended to countries outside Europe, where Krishna-consciousness is registered as a new religious movement, which includes North and South America, Australia and Africa as well, but also parts of the Asian continent. The research was already expanded further on to evaluate not only the marketing activities but also their effects on the image and the reputation of the religious community, which could be a further direction regarding all the communities within and outside Europe. The complex analysis may further be extended to other religions, not only new religious movements but also other religions of the world.

## 6. CONCLUSION

In this research, the applicability of the Transtheoretical Model of Behavior Change (TTM) was evaluated in the case of Krishna Consciousness in France and the rural community of New Mayapur. Previously this model has proved to be applicable to analyze the behavior changes implied by the activities of Krishna-conscious communities in Europe in the cases of Hungary, Belgium, the United Kingdom, Sweden, Germany, the Czech Republic, Italy and Ireland. In all of the countries, rural farming communities serve as touristic destinations to bring the religion closer to the people and create a space where they can get more involved in Krishna Consciousness without the burden of stronger engagement or obligations. These tourism destinations free the promoters of Krishna Consciousness from the boundaries of religious economics, which would restrict most of the elements of the 7P due to the fundamentals of the religion. The touristic destinations however may be promoted more free from these boundaries, which provides wider space for the religious community in terms of publicity and visibility. These destinations are a mean of attracting people in the *Precontemplation* and *Contemplation* phase of TTM to get more involved in the life of the religious community, while it may also contribute to the development of those in the *Preparation* phase thanks to providing support in nutrition, which is a crucial element of this phase. In *Action* and *Maintenance* stages of the TTM these communities may contribute by confirming the lifestyle changes via educational programs and workshops and providing job opportunities and even a place of living for those, who take the path of becoming a devotee.

New Mayapur in France is a community, which was prosperous and served the purpose of supporting people in different stages of behavior change between the '70s and the '90s, but had a downfall afterwards. However, currently there are efforts to recreate the prosperous community again, and the plans of the members of New Mayapur are directed towards creating the touristic destination and targeting people along the lines of TTM again, which supports the applicability of the framework in the case of France besides the other countries examined before.

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# Social Well-Being of Trading Leaders – Dimension Assessment

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tion and distribution of the work without  
further permission.

**Abstract:** *Currently in the field of management and psychology, when the economic growth changes rapidly, work in trade is becoming more and more challenging and places demands on trading leaders to synergistically combine the theoretical and practical knowledge and experience in the aforementioned field. The feeling of personal well-being comprises life satisfaction, positive emotions and happiness. It is closely associated with the fact that an individual feels healthy, educated, with high self-esteem and work ethic. Therefore, the paper aims to assess the necessity of social well-being in the work of trading leaders. The main research objective is to determine the existence of statistically significant differences in the assessment of the dimensions of social well-being between customers and trading leaders. The focus is on the following dimensions of social well-being by Keyes and Lopez (2002): Social integration, Social acceptance, Social contribution, Social actualization, and Social coherence. Based on statistical analyses in the statistical software SPSS22, statistically significant differences in assessing the dimensions of social well-being in trade between customers and trading leaders were identified. It can be concluded that trading leaders perceive social well-being more intensely and are more aware of its necessity than customers, which may represent a possible suggestion for deeper research into this current topic.*

## 1. INTRODUCTION

Well-being represents a holistic assessment of the quality of life of the individual as a whole; it means a long-term emotional state in which the emphasis is placed on the individual's satisfaction with his life (Šolcová & Kebza, 2004). It is understood and measured through several components, namely the cognitive (life satisfaction, moral principles, morality), emotional (positive and negative emotions), social and cultural one (social relationships, independence, spirituality).

Personal well-being has a long-term nature and is determined by current experiences and moods along with personal settings. It is therefore stable over time and manifests itself in consistency in different situations. It is characterized by a high level of positive emotions and a low level of negative emotions (Kebza & Šolcová, 2003). Křivohlavý (2004) views personal well-being through the psychological dimension, which is reflected in self-acceptance, personal growth, the meaning of life of autonomy and relationships with other people, as well as through the social dimension, which represents satisfaction in social interactions such as social acceptance, participation in social life, social cohesion and interactions.

Slezáčková (2012) states that the core of life satisfaction is not only the feeling of happiness but above all satisfaction with life in the broadest sense of the word, which we understand as

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personal (subjective) well-being, satisfaction, happiness and psychological wealth. According to Ryan and Deci (2001), we recognize two main theoretical approaches in personal well-being research – the hedonic and the eudaimonian one, which are based on different views of human society and human nature.

According to Diener (1984), the first two components of personal well-being are the number of positive and negative emotions. The cognitive component of personal well-being is life satisfaction, which focuses on the evaluation of the life of the individual as a whole (Eid & Larsen, 2008). The theory of personal well-being in accordance with Diener (1984) also has a fourth component, and that is satisfaction with important areas of life such as health, leisure, etc.

$$\textbf{Personal well-being} = \text{positive emotions} - \text{negative emotions} + \text{life satisfaction} \\ + \text{satisfaction with important areas of life}$$

Ryff (1989; 2014) defined a six-component model of mental well-being that focuses on happiness as an appropriate way of life. She labeled these components or facets as follows: Self-acceptance, Positive relations with others, Autonomy, Environmental mastery, Purpose in life, and Personal growth. One perceives their personal well-being as long as scoring high in all six dimensions. Keyes (2002) defined three factors that speak of the presence of mental health, namely emotional well-being, which is characterized by the predominance of positive emotions in a person's life, psychological well-being, and social well-being, which is composed of five factors (Keyes & Lopez, 2002) – Social coherence, Social acceptance, Social actualization, Social contribution, and Social integration. These factors will be examined in the following contribution in the context of perception of social well-being in trade, particularly among customers (as defined in Koval'ová et al., 2019) and leaders of trade who continually experience pressure and need to find a way to cope with demanding business situations.

## 2. RESEARCH PROBLEM

The objective of the presented research is to determine the existence of statistically significant differences in the assessment of the dimensions of social well-being between customers and trading leaders as defined by Keyes and Lopez (2002), i.e. Social coherence, Social acceptance, Social actualization, Social contribution, and Social integration. Based on the stated research objective we formulated the following hypothesis: "There are statistically significant differences in the assessment of the selected dimensions of social well-being between customers and trading leaders."

## 3. LITERATURE REVIEW OF WELL-BEING IN TRADE

Achieving personal well-being depends not only on emotional and mental well-being but also on broader social and interpersonal relationships, which is important in business. It should be noted that broader groups are also a source of personal well-being, as a sense of belonging to other people will determine and promote personal well-being, as this is a basic human need (Ryan & Deci, 2001). When relationships in business are unsatisfactory and broken, they tend to bring personal discomfort (Dolan, Peasgood & White, 2008). Well-being in business is also determined by socially positive functioning (ref. five dimensions of social well-being by Keyes & Lopez, 2002):



- ***Social integration in trade:*** It represents a feeling of belonging and integration into the community, which becomes a source of support and satisfaction for a person. It is an evaluation of relations with society and the community or the social environment (Gintis & Helbing, 2015). Marketers have a basic need to identify with others and live and act as part of a group (Harari et al., 2014). To achieve personal well-being, they must feel that they belong to the society and community in which they live.
- ***Social acceptance in trade:*** It is based on trust and faith in positive attitudes towards others, in the ability to believe that other people are kind and friendly. Trading leaders who achieve a high score in social acceptance have a positive view of human nature and feel comfortable in the company of others.
- ***Social contribution in trade:*** It is a very important part of social well-being in business, as it is based on the awareness that the trading leader is beneficial and important to society and their contribution is positively perceived and evaluated by society.
- ***Social actualization in trade:*** It is based on the premise that the world is an even better place for a trader's life, and that society has a positive direction. Socially healthy trading leaders are able to recognize and find potential in the society and their outlook on conditions and the future is optimistic.
- ***Social coherence in trade:*** It is based on a logical, understandable and predictable perception of the social world and is accompanied by the trading leader's interest in society and the community. This theory has been researched through two studies, both of which supported a five-dimensional structure of social well-being.

Personal well-being in trade is largely determined by interpersonal factors, which are very important for the existence of the trading leaders and thus contribute to the completion of their personal well-being. To their personal satisfaction, they need to be satisfied not only with themselves but also with the world around them.

#### 4. RESEARCH METHODS

For the purpose of data collection, we distributed a questionnaire aimed at assessing the dimensions of social well-being as defined by Keyes and Lopez (2002): Social integration, Social acceptance, Social contribution, Social actualization, and Social coherence. We measured social well-being using a questionnaire compiled from the items used by Keyes (1998) in his study to validate the theory of social well-being. The questionnaire consists of 15 items, with which the respondents express the degree of their agreement or disagreement on a 7-point scale (1 – strongly disagree, 7 – strongly agree).

The information obtained from the respondents was processed and analyzed at the level of descriptive statistics (frequency of occurrence, arithmetic mean, standard deviation) and inductive statistics (difference analysis: t-test for two independent samples) in the statistical software IBM SPSS Statistics 22.00.

The research sample consisted of a total number of 177 respondents, of which 125 (70.6%) were women and 52 (29.4%) were men aged from 18 to 70 years ( $M = 41.08$  years,  $SD = 7.913$  years). Of the total number of respondents, 97 (54.8%) were trading leaders and 80 (45.2%) were customers. The length of the respondents' internship ranged from 1 to 40 years ( $M = 17.25$  years,  $SD = 8.679$  years).



## 5. DATA ANALYSIS AND RESULTS

In order to verify the established hypothesis, we performed statistical analyses in the statistical software SPSS22, focusing on the identification of the statistically significant differences in assessing the dimensions of social well-being in trade. The results of the analysis aimed at verification of the hypothesis (“There are statistically significant differences in the assessment of the selected dimensions of social well-being between customers and trading leaders.”) are presented in Table 1.

**Table 1.** Analysis of differences in the selected dimensions of social well-being in trade

| Well-being           | Position              | M            | t     | p           |
|----------------------|-----------------------|--------------|-------|-------------|
| Social integration   | trading leader        | 5.365        | .805  | .422        |
|                      | customer              | 4.913        |       |             |
| Social acceptance    | trading leader        | 4.864        | 1.367 | .173        |
|                      | customer              | 4.350        |       |             |
| Social contribution  | <i>trading leader</i> | <i>5.643</i> | 3.020 | <i>.003</i> |
|                      | customer              | 5.021        |       |             |
| Social actualization | trading leader        | 4.832        | 1.605 | .110        |
|                      | customer              | 4.267        |       |             |
| Social coherence     | <i>trading leader</i> | <i>4.932</i> | 2.166 | <i>.012</i> |
|                      | customer              | 4.242        |       |             |

Source: own processing

Based on the results shown in Table 1, it can be concluded that the traders scored higher in all the selected dimensions of social well-being than customers. We recorded statistically significant differences in the assessment of the selected dimensions of social well-being in trade only in the dimension of Social contribution and in the dimension of Social coherence.

It means that the trading leaders identify themselves more with the idea that they can provide the world with something valuable, and that their daily activities are important not only for themselves but also for the community in which they live and operate. Due to the fact that the trading leaders also scored higher in the Social Coherence dimension than the customers, it can be claimed that they find it easier to predict what will happen next in the trade, they can better understand what will happen in the world and they are more convinced that the world around them is not difficult for them. Based on these findings, it is clear that the trading leaders perceive social well-being more intensely and are more aware of its necessity.

Based on the analyses of the existence of statistically significant differences presented above, we can conclude that the *hypothesis* “There are statistically significant differences in the assessment of the selected dimensions of social well-being between customers and trading leaders.” was *supported*.

## 6. CONCLUSION

Integration of the individual into society, by which we mean the closest relationships, the community, as well as the broad societal or global integration, is a very important part of every individual's life. Social well-being is also related to the awareness that society is moving in a positive direction, it can be well-oriented, people are friendly and cooperative, as well as awareness of their own participation in social events is an integral part of well-lived life, satisfaction and well-being (Birknerová & Vávrová et al., 2013).

As part of the detection of statistically significant differences in the examined aspects, we recorded several statistically significant differences, with the trading leaders achieving higher scores than the customers. In accordance with the results of their research, Freidl (2004) states that trading leaders understand the concept of well-being primarily as an aspect of well-being, fitness and happiness. Rothmann and Rothmann (2006) add that a healthy lifestyle is also a condition for well-being, when combined with a positive working environment, productivity and commitment to business and its goals.

In their research, Botha and Brand (2009) found out that the lifestyle, work environment in which traders work, their daily schedule, time management, as well as the amount of work significantly affect their well-being. We see similar results in Rantanen, Lehtinen and Savolainen (2004), who state that well-being in trade is not necessarily associated only with the work environment and performance of the trading leader, but also with their free time, private relationships, and general ability to be active and relaxed.

Similar research was conducted by several authors who examined the level of well-being of employees. The impact of supervisors' support on employee satisfaction is reported by Smith (2008), who concludes in his research that supervisors, whose leadership style includes considerate, open behavior that provides social support, inspiring motivation, and intellectual stimulation, have a positive impact on employee well-being. These findings inspire us to expand the research intention with the researched sample operating in various fields of work.

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# Consumer Attitude in the Context of Private Education Services

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**Abstract:** *The paper presents an analysis of consumer attitudes regarding private pre-university education services and provides a view of consumer behavior with the use of the three components of attitude: affective component, cognitive component and conative component. The objective of this analysis was to study and identify visible and less visible attitudes regarding the use of private education services. Attitude is one of the essential variables of behavior that can influence the buyer's decision when they want to purchase a product or a service. The qualitative research that has been conducted in order to investigate the subject regarding attitude has revealed that attitude is closely linked to financial elements, distribution, placement, advertising or social pressure. Children's education is a very important subject for both parents and future parents and thus a series of particularities can be extracted from the relations that form between attitude and perception, attitude and learning, attitude and motivation and attitude and effective behavior. Attitude represents a state of mental promptitude, organized through experience, that exercises a dynamic influence on the response of the individual. Attitude can have a positive direction or a negative direction; it can have low or high intensity and can be of many types.*

## 1. INTRODUCTION

Political, economical, cultural and sanitary changes in the digital era have transformed the consumer into a more social being that constantly desires self-improvement and to remain in contact with their ingroup. Individuals transform the economy and become more and more aware of their impact on the environment, choosing in many cases to curb their consumption and purchasing items that are of a higher quality and that are more durable. In the case of education services, consumers have become more and more informed when it comes to new trends, so they can form a clear view before taking any buying decision.

An individual's consumption of a product or a service is not a fixed attribute and can go through change over time due to personal or professional growth. Consumption has become essential in people's current activities, discussions about a society of consumption (Baudrillard, 1970) emerged as early as the 1970s with a focus on the negative effects that it has on the individuals, such as obesity, stress or the negative effects that the society of consumption has on the environment through pollution and global warming. Modern society offers individuals the possibility to choose their own roles to pursue along their lives and postmodern society places the individuals within a social dimension that allows them to delimit their tangible reality (Perri, 2010).

Cultural, economical, political and technological changes, as well as shifts within the online medium, have contributed to the change in actual consumption behavior. The emergence of a socio-economical or sanitary crisis can limit or change the consumption pattern at any time, both from the perspective of the consumer and the economic agent. For example, with the start

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of the global pandemic, people shifted toward safer environments with distribution channels adapted to the online medium. Thus, the need for wide distribution and multiple methods of payment or delivery have determined the appearance of numerous online activities that are easy to access by users.

## 2. LITERATURE REVIEW

Thomas and Znaniecki (1918-20) were among the first to analyze attitude as a useful instrument in the study of cultural, economical and political changes. Allport (1935), Thurstone (1928) and others have elaborated procedures for the measurement of attitude in relation to changes in public opinions or the delimitation of social classes. Some authors (Krech et al., 1962) underline the fact that attitude represents a fundamental psychological link between a person's capacity to perceive a stimulus and to learn while adapting to a complex social environment.

Rosnov and Robinson (1967) considered that attitude is an attribute in organizing feelings, beliefs and predispositions. Fishbein and Ajzen (1975) defined attitude as a learned predisposition to responding favorably or unfavorably to a situation or a certain object. In a psycho-sociological approach, Allport (1935) defines attitude as a mental state that is organized through the accumulation of experiences that influence the response or future action of an individual.

According to Murphy (1931), attitude can be established in accord with an object or against it, while Baldwin (1934) considers that attitude can be available for the attention or action of a defined consumption pattern. According to Warren (1934), the mental disposition specific to input type experiences through which routine is modified is considered attitude. Cantril (1932) underlines the fact that an attitude represents a semi-permanent state of preparedness of thought that predisposes an individual to react in a certain way to a given stimulus, good or situation. Individuals tend to have negative attitudes toward different nationalities.

LaPierre (1934) has demonstrated through an empirical study conducted from 1930 to 1932 that 92% of the American population had a negative attitude toward other cultures when it came to offering housing services, preferring to maintain their accommodations vacant and thus earning no income. Petrof (1988) states that attitudes determine the trajectory to which the organism will react in a certain way to new situation or different stimuli. Attitude is a complex concept that refers to the individual's behavior. It can be defined through 4 components (Mendras, 2001): attitude as a deductive variable, attitude that forms under a tendency, attitude in relation with emotions and personal beliefs, attitude as an external influence. Attitude has been integrated into consumer behavior within the model developed by Nicosia (1966), where he placed attitude as a key-component through the perspective of its influence over purchasing alternatives while leading to the purchase decision, but also having a role in the emergence of motivation. The integration and interpretation of attitude at a consumer behavior level were also done by Howard and Sheth (1969), the authors considering that attitude was a direct result of a predisposition, or a response-variable. Attitude is also present in the EKB model developed by Engel, Kolat and Blackwell (1968), where it is involved in the purchase decision within consumer behavior. Attitude is closely related to objects, people or beliefs and can have an initial motivational construct.

Through social interaction people can develop either a positive or a negative attitude, which depends very much on the ensemble of experiences and knowledge that the person possesses (Tassinari, Orr, Wolford, Napps, & Lanzetta, 1984; Englis & Lanzetta, 1989). Some authors



(Solomon, 2012) have defined attitudes based on three components: cognitive, affective and conative, and have used the hierarchy of effects to characterize the types of attitudes that are formed. The cognitive dimension contains the person's value system, perceptions and stereotypes regarding the object of the attitude. The affective component of social attitude underlines the emotional aspect of attitude, also being a component that is resistant to change. The conative, or behavioral component indicates the tendency to react in a certain way to the attitudinal object or the way in which the individual states he will act.

Cătoiș and Teodorescu (2004) state that attitude resides within a system of dynamic relations that result in consumer behavior. An attitude can summarize positive or negative evaluations, emotional reactions and predispositions regarding an object or an idea (Kotler, Dubois, & Manceau, 2003). The attitude of individuals can be inherited, at least partially, through genetic transmission from parents (Olson, Vernon, Harris, & Jang, 2001), can be learned through direct or indirect experiences (De Houwer, Thomas, & Baeyens, 2001), can be learned from the media (Levina, Waldo, & Fitzgerald, 2000; Hargreaves & Tiggemann, 2003) or through interactions with other people (Poteat, 2007).

### 3. ATTITUDE AND ITS INFLUENCE ON CONSUMER BEHAVIOR

Attitudes that are formed from cognitive, affective and conative components can influence the decision process in the purchase of products and services. Although the majority of attitudes are determined by feelings, values, knowledge and experience, some of them are based more on emotions, others on behaviors or more on values (Hawkins & Mothersbaugh, 2010). In the case of the consumption of private education services, attitude is influenced by several variables that can be directly observed and by some that are less evident. An important aspect is illustrated by the desire to form and develop a pupil so that they benefit from a better future or an improved professional career in order to attain a greater social standing or by the fact that the education services that are provided by the state cannot cover the needs of the consumer.

Attitude is closely linked to learning, especially through the perspective of the user's education and when it comes to the consumer of educational services, regardless of them being provided by the state or private companies. Numerous studies regarding attitudes have shown the link between competency and beliefs (Mantley-Bromley, 1995), but also the influence that culture has (Horwitz, 1999). For example, in the case of learning a new foreign language, the student's attitude is based on primary factors that can influence the success or lack of success in achieving their goal. Also in the context of learning, Victori and Lockhart (1995) define personal values as being "general assumptions that individuals hold regarding their own self, regarding factors that affect or aid learning, but also about the nature of learning a new subject". Horwitz (1988) claims that knowledge of preconceptions or values of students regarding a new subject can help teachers better understand "expectations, motivation, success but also satisfaction when it comes to their course". Thus, this method can also be adjusted for education services in order to better facilitate the learning of a new ability, but also to lessen the manifestation of possible negative attitudes.

### 4. RESEARCH METHODOLOGY

In order to understand and study the subject of attitude, qualitative research has been conducted in the form of 32 in-depth interviews that took place from November 2017 to January 2018. The selected respondents were recruited by using a selection questionnaire designed by the author,



carried out at fairs and expos related to education and education-adjacent subjects that took place in Bucharest. The participants were males and females between 20 and 59 years of age, that were parents or belonged to families where there are children present, but also people who have, or have not used private education services. The 32 individual interviews were divided into 4 age intervals: 20-29, 30-39, 40-49, 50-59. Each group comprised of both men and women. The first two groups in which the individual interviews were conducted were comprised of: men and women with different occupations, medium and above medium income, medium or superior educational levels and who were users or non-users of private pre-university education services, but the respondents had to have children within their household. The age of the first two groups were between 20 and 39 years of age, represented by individuals who were at the incipient stage of their career and who were in the stages of starting their own family, or people who already had a degree of financial, emotional and social stability. The last two groups were comprised of men and women who were users or non-users of private pre-university education services, who had children within their household, individuals who have a relatively good financial situation and a certain social status, medium or high degrees of education and who were in the 40 to 59 age bracket.

The respondents belonged to families in which the head of the household had various occupations and professions, from all social classes: A, B, C1, C2 and D, with medium or above medium incomes and medium or above medium education level. Each interview lasted between 80 to 100 minutes. The interview guide sought to investigate in a structured manner many aspects regarding both the consumer of private education services and their behavior, investigating aspects pertaining perception, motivation, personality, learning and effective behavior, but maintaining a particular focus on aspects regarding attitude. The objectives of the qualitative study were determined by the following elements relating to private pre-university education: identifying the main attributes that consumers consider in their decision making process; identifying relations between attributes and consumer attitude; identifying the dynamic between consumer attitude regarding private pre-university education and the purchase of this type of services; establishing the way in which attitude influences consumer behavior; establishing the influence that demographic, economic, marketing mix or situational factors have on attitude; determining the influence that exogenous factors have and establishing the way in which attitude is influenced by perception, learning, motivation and effective behavior.

## **5. THE RESULTS OF THE QUALITATIVE RESEARCH REGARDING THE ATTITUDE TOWARD PRIVATE PRE-UNIVERSITY EDUCATION SERVICES**

Respondents that took part in the individual discussions had different jobs ranging from product managers to sales representatives or medics and most of them had at least a bachelor's degree or were on their way to obtaining one. Also, a significant part of them have described their lifestyle as active and their social status to be well defined. Almost none of the respondents had used private pre-university education services directly; only one respondent had been enrolled during childhood at a private kindergarten and a private after-school organization. Thus, respondents were grouped into individuals that had purchased this type of services or respondents who have directly used this type of services and respondents that have not used private education services. It is to be noted that even as early as the selection questionnaire was conducted, respondents that participated in the study had a mostly positive attitude toward private pre-university education services.

More than half of the respondents said that purchasing private pre-university education services does not indicate snobbism or elitism, a fact that underlines a positive perception toward these

type of services. Private education services were summarized as: “Kindergarten, school or high school where you have to pay a fee. A small number of students or children in one class, unlike what the state provides.” (Respondent R7), or “an improvement over the quality provided by the education services offered by the state.” (Respondent R9).

When they were asked to explain what it is that makes an education service be considered good, respondents offered answers such as: “A good education service can be defined as: structured education plan, highly trained personnel and the presence of the materials that are necessary for activities.” (Respondent R4) or “Services that are provided in an environment that has more to offer and by people who take more interest in teaching and preparing your child.” (Respondent R30). A series of keywords were noted following the answers provided by the respondents, words that kept being used when the respondents found themselves describing what high quality services meant to them. Thus, the words that were most frequently used were: competency and the behavior of teaching and administrative personnel, the location of the educational institution where the services are offered, the educational materials that are used, the building itself, the conditions under which the curricular or extracurricular activities and the additional services take place. Another aspect that was frequently mentioned by the participants of the qualitative study regarded the fact that they derive a sense of superior quality from the way in which the educational institution communicates with the parents. Generally, people offer a high level of importance to education services and consider them on par with health or safety and security services.

Unlike the other two types of services, education employs a higher degree of implication from parents, grandparents, tutors and children. Another subject that was broached during the study was the perception that other individuals might have regarding people who use private education services. In Romania, the education system provided by the state continues to inspire confidence and is capable to form the base for future development of the preschooler, fact that can determine a slightly negative attitude toward people who choose private education services. It must be stated that this particular aspect can be observed when it comes to segments of the population with average or below average income, households that are preoccupied with elements found in Maslow’s pyramid at base levels. Although there were cases in which respondents expressed a slight fear of being judged by others when it came to purchasing private education services, they considered that this purchase was the only way of surpassing their present condition and were willing to support their children in this endeavor: “People could judge them [people who purchase private education service]. People could say that they’re spoiling their children or that they’re throwing away money.” (Respondent R6) or “People shouldn’t judge, but unfortunately in this country of ours, if you have the means to invest in your children, it would seem that you’re judged by others.” (Respondent R17).

Furthermore, when it came to the financial aspect of education services, respondents were of the opinion that there are sufficient levels of fees from which to choose in accordance with their budget. “I have a very positive opinion regarding private schools. They invest in their teaching capacities. Classes and groups are not as overcrowded as in the state-run system. Educators and teachers are more financially motivated than in the state system and everything is overall a better alternative than what the state can provide.” (Respondent R8). The projective technique is known as the Martian technique during the in-depth discussions, during which respondents were presented with a series of situations. For example, the interviewer took the role of a person who has no information whatsoever about private education services and wanted to find out as much information as possible regarding these services. The questions that were received by

respondents regarded the segment that these services are intended for, the particularities that characterize these services, the main benefits that derive from using the services but also the differences between the public education sector and the private sector. The Martian technique offered a multitude of information regarding the respondents' attitude toward private pre-university education services by offering them the opportunity to be as explicit as they could and to use as a reference point their own experiences and needs. Thus, the information gathered from respondents could constitute a basis for elaborating the profile for a consumer or a non-consumer of private pre-university education services.

The attitudes that were investigated throughout the qualitative study regarding private pre-university education were predominantly favorable, and the most used words that were extracted from the opinions of the respondents were: modern, personalization, activities, organization, uniforms, amenities, meal, healthy, relaxation, culture or memories. These words show that values and experiences are tightly linked with the emotional side of the individual, as respondents seem to believe that the path to educational development for a student is facilitated by an environment that not only offers material amenities but also offers pleasant memories, relaxation and freedom granted by personalization.



**Figure 1.** Cloud diagram of the words associated with the images shown during the collage exercise used as a projective technique during the interviews

**Source:** Created by the authors

Regardless of the participants in the study had children within their household or not, they seemed to offer a high degree of importance to private education services and tend to compare them to medical services, another type of service that are always present during the life and development of individuals. The qualitative study has identified a set of attitudes that can influence the behavior of consumers:

- attitude toward private pre-university education services, which seems to be mostly positive;
- attitude toward the location in which the private pre-university education services are offered, whether it is the building itself or the amenities;
- attitude toward the personnel that works in private pre-university education services;
- attitude toward the price of private pre-university education services;
- attitude toward the advertising of private pre-university education services.

Following the analysis of the attitudes that were identified during the in-depth interviews a series of elements pertaining consumer behavior was found, elements that can both influence attitude and be influenced by attitude: demographic factors, economic factors, factors specific to the marketing mix, situational factors, the family, the ingroup, the reference group, social class, perception, learning, motivation, effective behavior and the purchase decision process.

## 6. LIMITATIONS & CONCLUSION

The private education sector will remain dynamic and will continue to develop, both in Romania and on an international level, in order to deal with the needs and desires of consumers both in the present and in the future but to also identify and integrate modern, sustainable and equitable teaching solutions. Consumer attitude seems to be positive when it comes to the use of private pre-university education services, thus signaling the possibility of an increase in consumers that desire a higher standard of living for their children. The limitations for the study were the use of a relatively small population from which this first set of information was gathered for the qualitative study. Another constraint was the fact that elements of social pressure felt by the participants could not be extracted, requiring at least another study.

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# Gender Distribution of Enrolled Students in Institutions of a Higher Education in the Republic of Croatia

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Science field



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**Abstract:** *One of the basic demographic distributions is the one concerning the population gender structure. Through the share of highly educated women and men, it can be revealed their position in society. Gender equality is considered through the highest value of the constitutional order of the Republic of Croatia as in accordance with Article 3 of the Constitution of the Republic of Croatia.*

*Given the growth in the number of higher educational institutions in the Republic of Croatia and even greater offer of study programmes, we can put a question which gender of students enrolls in which study programme, what is also the purpose of this research paper. Following the published data of the Central Bureau of Statistics, in the paper are investigated and analysed data on enrolled students by the system of the higher institutions, by science field, the gender distribution of enrolled students on postgraduate specialist and doctoral studies in line with the field of science, and the students who graduated from higher institutions. The observed academic years are 2007 / 2008 and 2019 / 2020, respectively.*

## 1. INTRODUCTION

Higher education is a service activity that as such offers its service on the market. This service differs from the product based on its following characteristics: indivisibility, intangibility, heterogeneity and non-storage capabilities. This is also true for a higher education service that is difficult to define due to its specific nature (Mazzarol, 1998). The difference between a service and a physical product is that the service can neither be seen nor felt before the purchase (Kotler, Keller, 2006). The goal of this paper is to analyse and determine the gender structure of enrolled students in accordance with different levels of education and types of science, based on a publication published by the Central Bureau of Statistics from the Republic of Croatia. The general opinion that prevails is that female student's study more in social studies while male students are more involved in technical studies. Also, the paper analyses the data on enrolled students by gender structure and doctoral studies. The observed academic years are 2007/2008 and 2019/2020, respectively.

## 2. POPULATION AND SOCIAL DEVELOPMENT

Due to the connection between demographic and social processes, demographic indicators have a broader meaning than the level and structure of population reproduction indicators. Infant mortality rates, population reproduction rates, life expectancy, aging index and other indicators have a very different numerical value in countries with different levels of development (Wertheimer-Baletić, 2005). For a long time, the economic theory has emphasized the importance of research and development, expertise and knowledge of employees and social capital as important, and also as necessary prerequisites for the existence of competitiveness and economic growth (Aghion, Howitt, 1998, p. 34).

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Important development problems, such as the formation of labour potential, the formation of a motivational system, long-term changes in the structure of supply and demand of labour and consumer goods cannot be adequately measured without a deeper demographic analysis. Over the years, the relations between economic development and population development have become much more complex; reducing the problem of population in the framework of economic development only to the problem of surplus or shortage of labour that is now largely overcome in theory and practical development policy (Wertheimer-Baletić, 2017). The Republic of Croatia is one of the countries in which the population has not been renewed for several decades, i.e., it has been declining when observing as a whole and also by means of the existence of the individual generations. When the number of elderly people increases while reducing the number of young people - increases the imbalance between functional age groups (such as young, workable and old groups), what leads to demographic unsustainability (Chesnais, 1998). In recent decades, there has been a growing awareness of the importance of the impact of a country's demographic situation and also to the many long-term adverse effects that such demographic processes impacted on the country's overall development. Specific demographic consequences come to the fore in all activities (in education, health, economy, finance and social infrastructure). Depopulation and population aging cause changes in the productive potential and productivity of labour, in the educational structure of the population and labour force, in the scope and structure of personal and public consumption and investment and savings (Wertheimer-Baletić, 2005). Josiah Child, who was one of the leading economists of the seventeenth century, saw the population as a source of wealth and advocated for population growth. According to him, the depopulation of a country always leads to a country's impoverishment. William Temple proposed awards for large families and imposing taxes on the unmarried because he believed that the strength and wealth of a country consisted in the number and wealth of its population. In contrast, Matthew Hale gave a pessimistic view where he defined that poverty, disease and wars that occur with a larger population (Wertheimer-Baletić, 1999, p. 65). Alfred Marshall argued that although in some circumstances population growth may be negative for society, this increase allows the application of different economies that have arisen from the division of labour and specialization of machines, i.e., that population growth must lead to more than proportional enjoyment of each kind (Pjanić, 1957).

Along with "literacy", education is a basic feature for the understanding of the educational structure of the population, and it has been included in the census of 1910, and again since 1948. The characteristic education involved in censuses signifies the highest finished school (Pokos, 2005).

### **3. POPULATION'S GENDER STRUCTURE**

For the analysis of the population structure, the following components mostly often stand out: biological (population by age and sex), economic, socio-professional, educational, national, religious and cultural-ethnic (Friganović, 1990). The structure of the population by sex and age is a biological structure which does not mean that it is situated outside of the influence of socio-economic factors. The age-gender structure is important for the current and economic development of a country. This structure is the basis of the physiological division of labour that occurs primarily in the family, and together with the size of the population and its density sets the demographic framework for the expansion of the social division of labour. The importance of the age-sex structure of the population is also apparent in the fact that the structures of the population are categorised according to various economic and social characteristics (such as activities, occupation, education) are researched simultaneously according to gender and age. The gender structure of the population indicates the numerical amount between the male and female population when observed in the total population.

Demographic data show that the structure of the population by gender varies from country to country. The structure of the population classified by gender is the result of long-term effects of factors, such as: birth rate, mortality, migration (selective with regard to gender) and other external factors that are included. The impact of this structure on economic trends is reflected through its impact on the volume of the labour force, because the structure of the working age population classified by gender affects labour supply. The fact is that the level of economic activity of women is everywhere below the level of activity of the male population due to the biological and traditional role of women seen as mothers and housewives (Wertheimer-Baletić, 1999). The biological structure of the population is also important for the future movement of the population because it depends on changes in the age-sex structure (Glamuzina, Glamuzina, 1996). As one of the measures for expressing the numerical ratio of female and male population is the femininity coefficient, which indicates the number of women per thousand of men (Friganović, 1990). In the Republic of Croatia in accordance with the 2001 census, women represent a slightly smaller share in the total higher and highly educated population (in total, 49,0% share of women with higher education and 50,4% of women with the completed university). Significant differences between women and men are visible in completed master's and doctoral degrees in which women hold smaller shares i.e., 41,0% of women have a master's degree, and less than a third of them have a doctorate (Pokos, 2005).

#### **4. METHODOLOGY AND RESULTS OF A RESEARCH ON THE GENDER STRUCTURE OF STUDENTS ENROLLED IN HIGHER EDUCATION INSTITUTIONS**

The research conducted in 2020 on the segmentation of the higher education market (Marjanović, Učeta, 2021), proved that differences are existing in the motivation factors when choosing a higher education institution and the course of study. However, male and female students are equally motivated within the decision-making process if the ratio of specific benefits, such as material and professional, financial, social and personal and institutional benefits are observed. The results indicate that men and women generally agree in the context of material and professional benefits.

For the purposes of this survey, a secondary survey was also conducted by analysing published data issued by the Central Bureau of Statistics from the Republic of Croatia, in the article named "Women and Men in Croatia in 2021". The main goal of the research is aimed at identifying differences in the gender structure of students enrolled in higher education institutions in the Republic of Croatia. The observed academic years were 2007/2008 and 2019/2020, respectively.

In accordance with the set theoretical-methodological approach and the title of the observed issue, it is possible to set hypotheses:

**H<sub>1</sub>:** A larger number of female students enrolls in social science colleges, and a larger number of male students enrolls in technical colleges.

**H<sub>2</sub>:** More male students are enrolled in doctoral studies.

In the higher education institutions in the Republic of Croatia in the academic year 2019/2020, a total of 156.325 students were enrolled of which 57,2% were women and 42,8% were men. A total of 6.605 students were enrolled in schools of professional higher education (of which 41,7% were women and 58,3% were men), 23.496 students were enrolled in polytechnics (of which 47,4% were women and 52,6% were men), and to the vocational college's studies 18.022 students (of which 54,5% were women and 45,5% were men), and at colleges - university studies were enrolled 105.572 students (of which 60,6% were women and 39,4% were men) and at art academies total of 2.630 students (of which were 64,4% women and 35,6% were men).

In accordance with the fields of science at higher education institutions in the Republic of Croatia, in the academic year 2019/2021 year was enrolled as follows:

- on natural sciences: 6.225 students (of which 64,7% were women and 35,3% were men)
- on technical sciences: 40.938 students (of which 27,8% were women and 72,2% were men)
- on biomedicine and health: 17.999 students (of which 74,1% were women and 25,9% were men)
- on biotechnical sciences: 7.418 students (of which 62,9% were women and 37,1% were men)
- on social sciences: 67.905 students (of which 66,2% were women and 33,8% were men)
- on the humanities: 10.418 students (of which 71,4% were women and 28,6% were men)
- on the art studies: 2.892 students (of which 61,6% were women and 38,4 % were men)
- enrolled on interdisciplinary fields of science: 2.530 students (of which 71,9% were women and 28,1% were men).

In the Republic of Croatia, the postgraduate specialist studies in the academic year of 2007/2008 were enrolled 2.232 students, of which 61,7% were women and 38,3% were men, while in the academic year 2019/2020, 1429 students were enrolled, of which 66,3% were women and 33,7% were men, respectively.

To the postgraduate doctoral studies in the Republic of Croatia in the academic year 2007/2008, 3.052 students were enrolled, of which 50,8% were women and 49,2% were men, while in the academic year 2019/2020, 3.873 students were enrolled, of which 54,9% were women and 45,1% were men, respectively.

In accordance with the fields of science at postgraduate doctoral studies in the Republic of Croatia, in the academic year 2019/2021 was enrolled:

- on natural sciences: 660 students (of which 61,4% were women and 38,6% were men)
- on technical sciences: 801 students (of which 30,5% were women and 69,5% were men)
- on biomedicine and health: 812 students (of which 64,8% were women and 35,2% were men)
- on biotechnical sciences: 214 students (of which 63,6% were women and 36,4% were men)
- on social sciences: 751 students (of which 58,7% were women and 41,3% were men)
- on humanities: 395 students (of which 53,7% were women and 46,3% were men)
- on interdisciplinary fields of science: 240 students (of which 67,1% were women and 32,9% were men).

In Table 1 are shown the number of students who graduated from higher education institutions, distributed by their age and gender.

**Table 1.** Students who graduated from higher education institutions

| Year | In total | % Women | % Men |
|------|----------|---------|-------|
| 1960 | 3 488    | 31,8    | 68,2  |
| 1970 | 8 509    | 46,1    | 53,9  |
| 1980 | 13 955   | 44,6    | 55,4  |
| 1990 | 9 706    | 53,7    | 46,3  |
| 2000 | 13 510   | 55,6    | 44,4  |
| 2010 | 32 378   | 60,8    | 39,2  |
| 2019 | 33 704   | 60,2    | 39,8  |

**Source:** Central Bureau of Statistics of the Republic of Croatia, chapter “Women and Men in the Republic of Croatia in 2021”, p. 31.

The number of graduate students in the Republic of Croatia has been growing over decades. In 1960, there was indicated more than twice the number of graduated male students, but over the years that number dropped and finally the number of female and male graduates have been equalized, but since 1990 the number of graduated male students has declined. According to the data, it is visible that in 2019 the number of graduated female students is higher by 20,4% than the male students.

In 2019, graduated a total of 33.704 students, of which 60,2% were women and 39,8% were men. In accordance with the forms of higher education institutions in the Republic of Croatia, in 2019 the students graduated from:

- schools of professional higher education: 1.562 students (of which 44,2% were women and 55,8% were men)
- polytechnics: 5.073 students (of which 54,6% were women and 45,4% were men)
- faculties: 26.368 students (of which 62,7% were women and 37,3% were men)
- art academies: 701 students (of which 65,8% were women and 34,

## 5. CONCLUSION

In line with the many demographics and economic theorists, a country's economic development also depends on the educational structure of its population. The gender structure of the population is part of the biological structure. The analysis of data on the gender structure of students at higher education institutions in the Republic of Croatia has led to the conclusion that higher education institutions in the academic year 2019/2020 were enrolled more female than male students. The largest number of enrolled female students take place on faculties - university studies and art academies, while the largest number of male students are enrolled on colleges and polytechnics. According to the field of science, most female students are enrolled at higher education institutions of social sciences, while male students are enrolled on higher education institutions of technical sciences; 50,3% of the total number of enrolled female students and 34,3 % of the total number of male students enrolled in higher education institutions (thus  $H_1$  hypotheses has been confirmed: *A larger number of female students enrolls in higher social education institutions, and a larger number of male students enrolls in higher technical sciences educational institutions*). In the Republic of Croatia, more female than male students are enrolled on postgraduate specialist studies, and this difference has increased over the years. More women than men are also enrolled on postgraduate doctoral studies in the Republic of Croatia, consequently rejecting the  $H_2$  hypothesis that stated: *More male students are enrolled in doctoral studies*.

During the recent decades, there has also been an increase in the number of women graduating from higher education institutions when compared to men. In 2019, the number of female students who graduated was higher by 20,4% when compared to the male students. Most women and men graduated from colleges- university studies, but this percentage is higher for women than for men. From all of the above said, it can be seen an increase in the number of women enrolled at higher education institutions in the Republic of Croatia, especially in doctoral studies. The reason for the aforementioned is the change in the women's lifestyle of today than it was the matter in the past.

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# Analysis of Differences in the Manifestations of Manipulation among Traders in Terms of Gender and Education

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## Keywords:

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**Abstract:** Manipulation occurs quite often in the work of a trader and is related to personal and socio-demographic characteristics. The term manipulation is included under the term Machiavellianism, which describes the abuse of other persons to achieve the manipulator's own goals. The aim of the paper is to examine the differences in the manifestations of manipulation in traders in terms of their gender and education. The research sample consisted of 123 traders, of which 54 (44%) were men and 69 (56%) women. In terms of education, 47 (38%) respondents achieved secondary and vocational education and 76 respondents (62%) completed higher education. Data were collected through a questionnaire survey using two methodologies. For the purposes of detecting Machiavellian manifestations, it was the CASADI methodology (Calculativeness, Self-Assertion, Diplomacy) and for the determination of Machiavellian personality the MPS methodology (Machiavellian Personality Scale). The results of both used methods confirmed the expected differences. According to the CASADI methodology, from the point of view of gender, a statistically significant difference was found in the assessment of one of the attributes of Machiavellian manifestations, namely the attribute Diplomacy, where women scored higher. In terms of education, a statistically significant difference was found in the Self-Assertion attribute, where traders with a university degree scored higher. According to the MPS methodology, significant differences were recorded in the assessment of the attributes Amorality and Desire for status. In comparison, men scored higher on these two indicators. The results of the analysis in terms of education showed higher scores in all attributes for traders with a higher education. The obtained results are similar to the results of previous research and confirm the importance of socio-demographic characteristics in the manifestations of manipulative behavior.

## 1. INTRODUCTION

When manipulating, we are talking about the misuse of psychological means often with a not humane purpose. The reason for such action is to make a profit, political influence, or to abuse a group of people in certain circumstances. We are talking about a highly valued ability to be successful, assertive, to achieve your goals, to motivate yourself. These may include manipulation training, recruitment, deprivation of decision-making, as well as financial and personal freedom. This knowledge of psychology is often misused in order to control people (Birknerová, Tomková & Čigarská, 2021). Manipulators are people characterized by a certain type of personality disorder. It is a feeling of lack in a certain aspect of the psyche that distorts the subsequent dealings with others.

It manifests in the level of cognition, perception and interpretation of oneself and other people, as well as the intensity of emotional experience (Birknerová & Tomková, 2020; Rovňák, Bakoň

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& Tychaničová, 2020). Manipulation is a way of influencing other people for the benefit of the manipulator. In terms of managerial work, we can specify manipulation as a means to achieve the benefit of the whole organization or as a means to achieve personal benefit (Oravcová, 2004).

Manipulative behavior is often referred to as Machiavellianism. The construct of Machiavellianism was originally developed by Christie and Geis (1970) based on their studies of political and religious extremist groups, and eventually focused on how the leaders of these groups manipulated their subordinates to fulfill their desires. They identified several topics that are extremely important for effective manipulators, such as the willingness to use manipulative tactics, amoral action, and the promotion of a cynical, distrustful view of human nature. Machiavellists use other means to accomplish their own goals (Christie & Geis, 1970; Wilson, Near & Miller, 1996; Grams & Rogers, 1989; McHoskey, Worzel & Szyarto, 1998; Paal & Bereczkei, 2007).

Individuals who exhibit a high level of Machiavellianism tend to resist social influences, try to control their interpersonal interactions, and show a general lack of influence in their personal relationships (Bedell, Hunter, Angie, & Vert, 2006). Dahling et al. (2009) describe Machiavellianism as a construct based on inner beliefs, values and motivations. Although it involves amoral manipulation, those who are highly Machiavellian are not constantly and actively involved in amoral manipulation. They tend to be very adaptive, and if they realize that this will accelerate their goals and interests, they can engage in pro-organizational behavior in a friendly and cooperative manner.

It happens that the manipulation is carried out so cleverly that we do not even notice that something like this is happening around us. The manipulated person mistakenly thinks that he decides on his behavior independently. However, he does not realize that it is only a tool in the hands of the real author to serve important goals for him (Wilson, Near & Miller, 1996). Such manifestations of Machiavellian behavior are also pointed out by Judge et al. (2009).

Machiavellianism as such speaks of the means that man chooses to achieve something. The analyses of Wilson, Near, and Miller (1996) also show that unethical Machiavellian tactics in real life rarely lead to success. The fact that the positive correlation between Machiavellianism depends on the context, i.e. on the specificity of the field to the level of education or the ambiguity of the situation, has also been proven. In unclear situations where people receive asymmetric information, the advantage is highly Machiavellian people who are able to more easily and quickly adopt and apply more adaptable strategies that lead to maximizing their own profits.

The structure of the organization and the way of working according to Křížková (2002) correspond to male characteristics and abilities, which was also shown in the research. Women described men at work as aggressive, competitive, confident, but also calm. They further described them as vain, less responsible, lazy and impractical. The author states that the first set of characteristics corresponds to the nature of the business environment. The second circle fits into the image of the position, but also the responsibility for their tasks.

## 2. METHODS

The aim of the research was to compare selected groups of sociodemographic data with manifestations of manipulation among traders at the workplace. Based on the goal, two hypotheses were established:

**Hypothesis 1:** We assume that there are statistically significant differences in selected attributes of assessing the level of manipulation of leaders and Machiavellian manifestations in the business process between men and women.

**Hypothesis 2:** We assume that there are statistically significant differences in selected attributes of assessing the level of manipulation of leaders and Machiavellian manifestations in the business process in terms of education.

The research sample consisted of 123 traders, of which 54 (44%) were men and 69 (56%) were women. The average age of the respondents was 31.85 years (the standard deviation was 9.637 years, ranging from 18 to 65 years). In terms of education, the sample consisted of 47 (38%) respondents with secondary education and 76 (62%) respondents completed higher education.

Within the quantitative research, a questionnaire method of collecting empirical data and mathematical-statistical methods were used to analyze the obtained data in the SPSS program. In order to verify the established hypotheses, the data were obtained from the respondents through the following questionnaires:

## 2.1. Questionnaire CASADI

The CASADI methodology (Frankovský, Birknerová and Tomková, 2017) was designed for the purpose of detecting Machiavellian manifestations in business and managerial behavior. Three factors were extracted by factor analysis: calculativeness (CA), self-assertion (SA) and diplomacy (DI). The new CASADI methodology contains statements that relate to the respondent's personal opinion on manipulation between people. The individual items of the questionnaire were inspired by the publication *The Prince* by Niccol Machiavelli (2007). The questionnaire contains 17 items, to which the respondents answer using the scale «0 - definitely no, 1 - no; 2 – rather no than yes; 3 – rather yes than no; 4 - yes, 5 - definitely yes “.

Factor analysis using the Principal Component method with Varimax rotation extracted three factors that confirmed the existence of the presumed factor structure of Machiavellian manifestations in business behavior. These factors were characterized as:

1. **Calculativeness** – respondents who score higher in this factor are more convinced that people's control must be maintained at all costs. These respondents hold the view that it is necessary to tell others what they want to hear and that it is necessary to gain knowledge so that they can be used to control others. Calculating people believe that when two competitors compete, it is necessary to recognize whose victory is more beneficial for them, and in any case it is beneficial to base their power on the control of other people. Cronbach's alpha: 0.760.
2. **Self-Assertion** – respondents who score higher in this factor are characterized by the fact that they believe that only such a person is reliable, who relies on himself and on his own strength. A successful person must always keep in mind that he must avoid allies stronger than himself. This factor also adheres to the view that whoever helps another to seize power cuts the branch on which they sit. And then the one who wants to stay in power must consider all the necessary tough measures in advance and take them all at once so that he does not have to return to them later. Cronbach's alpha: 0.521.
3. **Diplomacy** – respondents who score higher in this factor are characterized by the fact that they are constantly collecting information that can later be used for their own benefit.

Skillful diplomacy is used to control others, and false and indirect communication is preferred. Respondents surround themselves with capable people and society in general and show them generosity and recognition at the right time. Cronbach's alpha: 0.696.

## 2.2. Questionnaire MPS

The MPS (Machiavellian Personality Scale) methodology was developed by Dahling, Whitaker and Levy (2009). This methodology was created for leaders in determining the level of their manipulation. The construct is based on studies of political and religious extremist groups as leaders of these groups manipulate their subordinates (Christie, Geis 1970).

The methodology contains 16 items and its internal consistency (Cronbach's alpha) is 0.89. Items are judged on a 5 - point scale (1 - strongly disagree, 5 - strongly agree). Factor Component Analysis with Varimax rotation extracted 4 factors determining Machiavellianism, which Dahling et al. (2009) named:

1. **Amorality:** Those who score higher in this factor believe that by deception they will prevail over others. They know how to use information to their advantage and just have a conversation with others. These people behave unethically if they believe it will help them succeed. They often commit fraud and are able to sabotage others as long as they threaten their goals. Cronbach's alpha: 0.790.
2. **Desire for status:** Higher scoring individuals in this factor know that social status is a good sign of success in life. Their efforts are focused on material security and wealth. These people want to be rich and influential. Cronbach's alpha: 0.709.
3. **Desire for control:** People who are characterized by a higher score in this factor enjoy being able to have control over the situation. In interpersonal relationships, there are those who give orders, and overall control over others satisfies them to the maximum. Cronbach's alpha: 0.831.
4. **Distrust of others:** People who are characterized by a higher score in this factor do not like teamwork and do not trust other people. If they are already in the team, they kick each other's knees because they want to be unique. They are motivated only on the basis of personal gain. They claim that others will use the situation to their advantage without any hesitation if they show them any weakness at work. They think that people are planning ways to benefit from the situation on their behalf. Cronbach's alpha: 0.731.

## 3. RESULTS AND INTERPRETATION

In Hypothesis 1, we assumed that there are statistically significant differences in selected attributes of assessing the level of manipulation of leaders and Machiavellian manifestations in the business process between men and women. To verify the hypothesis, a t-test was used to determine differences in a sample of respondents. In Table 1, we describe selected attributes for assessing the level of manipulation of leaders and Machiavellian manifestations in the business process from the perspective of the gender of respondents.

A statistically significant difference was found in the assessment of one attribute of Machiavellian manifestations (CASADI) of Diplomacy, with women scoring higher. The results show that women, compared to men, expressed a higher degree of agreement with the way of conducting business, which is saturated with this attribute of Machiavellianism.

Mathematical-statistical analysis of differences in the responses of women and men carried out on the basis of data obtained by the MPS methodology also confirmed the existence of two statistically significant differences. Significant differences in traders were noted in the assessment of the attributes of manipulation of leaders (MPS) Amorality and Desire for status. Compared to women, men scored higher on these two indicators.

**Table 1.** Differences of selected attributes of manipulation of leaders and Machiavellian manifestations within the gender

|                           | Gender       | Mean          | St. Deviation | t      | Sig (2-tailed) |
|---------------------------|--------------|---------------|---------------|--------|----------------|
| Calculativeness           | Man          | 2.5556        | 1.07083       | -.709  | .480           |
|                           | Woman        | 2.6928        | 1.06140       |        |                |
| Self-assertion            | Man          | 3.0093        | .64968        | -.662  | .509           |
|                           | Woman        | 3.1087        | 1.00776       |        |                |
| <b>Diplomacy</b>          | Man          | 3.2269        | .73092        | -3.710 | <b>.000</b>    |
|                           | <b>Woman</b> | <b>3.6739</b> | .60528        |        |                |
| <b>Amorality</b>          | <b>Man</b>   | <b>2.9852</b> | 1.09810       | 2.888  | <b>.005</b>    |
|                           | Woman        | 2.3855        | 1.17689       |        |                |
| Desire for status         | Man          | 3.2901        | .97784        | .140   | .889           |
|                           | Woman        | 3.2657        | .94727        |        |                |
| <b>Desire for control</b> | <b>Man</b>   | <b>3.2284</b> | .82372        | 1.994  | <b>.048</b>    |
|                           | Woman        | 2.8841        | 1.03820       |        |                |
| Distrust of others        | Man          | 3.2148        | .85460        | .737   | .463           |
|                           | Woman        | 3.0899        | .99086        |        |                |

Source: own processing

In Hypothesis 2, we assumed that there are statistically significant differences in selected attributes for assessing the level of manipulation of leaders and Machiavellian manifestations in the business process in terms of education. The t-test for detecting differences in a sample of respondents was also used to verify the second hypothesis. Table 2 describes selected attributes for assessing the level of manipulation of leaders and Machiavellian manifestations in the business process in terms of the education of respondents.

**Table 2.** Differences of selected attributes of manipulation of leaders and Machiavellian manifestations within education

|                           | Education               | Mean          | St. Deviation | t      | Sig (2-tailed) |
|---------------------------|-------------------------|---------------|---------------|--------|----------------|
| Calculativeness           | secondary               | 2.4340        | 1.12468       | -1.639 | .104           |
|                           | higher education        | 2.7553        | 1.01172       |        |                |
| <b>Self-Assertion</b>     | secondary               | 2.8617        | .77811        | -2.073 | <b>.040</b>    |
|                           | <b>higher education</b> | <b>3.1908</b> | .89988        |        |                |
| Diplomacy                 | secondary               | 3.4681        | .74247        | -.119  | .905           |
|                           | higher education        | 3.4836        | .67248        |        |                |
| <b>Amorality</b>          | secondary               | 2.2596        | 1.01717       | -2.976 | <b>.004</b>    |
|                           | <b>higher education</b> | <b>2.8895</b> | 1.21035       |        |                |
| <b>Desire for status</b>  | secondary               | 3.0567        | .97634        | -2.028 | <b>.045</b>    |
|                           | <b>higher education</b> | <b>3.4123</b> | .92515        |        |                |
| <b>Desire for control</b> | secondary               | 2.5532        | .78413        | -4.740 | <b>.000</b>    |
|                           | <b>higher education</b> | <b>3.3333</b> | .94438        |        |                |
| <b>Distrust of others</b> | secondary               | 2.8809        | .75373        | -2.692 | <b>.008</b>    |
|                           | <b>higher education</b> | <b>3.3079</b> | .99676        |        |                |

Source: own processing

A statistically significant difference was found in traders in the assessment of one attribute of Machiavellian manifestations (CASADI) Self-assertion. In this case, traders with a university degree scored higher.

Significant differences were noted in all attributes in the assessment of Leader Manipulation Attributes (MPS). In all attributes, traders with the highest education scored higher.

The hypotheses can be considered confirmed because the assumptions that there are statistically significant differences in selected attributes of the manipulation of leaders and Machiavellian manifestations in terms of gender and according to the education of traders have been confirmed.

#### **4. DISCUSSION AND CONCLUSION**

In the context of the topic, we examined the existence of statistically significant differences in selected attributes of assessing the level of manipulation of leaders and Machiavellian manifestations in terms of gender distribution of traders. Higher values were measured within women traders in the attribute of Machiavellian manifestations of Diplomacy. As part of the manipulation of leaders, men scored higher with the attributes Amorality and Desire for Control. We have found that women traders are more inclined to communicate falsely and indirectly than men traders. Conversely, male traders more than women tend to cheat, sabotage others and have control over others.

According to Rutherford (2011), women are convinced that they can listen better, have a better ability to empathize and have easier relationships to establish and maintain relationships in the workplace. Among the main aspect of cooperation is humanity, women are adaptable in terms of aligning their leadership style with the team, they are creative and have better organizational skills compared to men in management. Křížková (2002) states that women managers describe themselves and their way of working and leading as emotional, systematic, communicative, practical, caring, critical, with a sense for detail. Kaufmann (2008) points out that women, unlike men, are more often underestimated and unable to see their own strength and influence.

Khelerová (2006) highlights an important area of communication skills, namely non-verbal communication, which is mainly dominated by women. It is non-verbal expressions that add emphasis and persuasion to the spoken. Women are able to make contact with their partner, negotiate successfully through words as well as non-verbal signals.

Čerešník (2011) describes gender differences, stating that the feminine trait is characterized by interest in others, cooperation, sensitivity to the needs of others, emotional openness. The masculine feature, on the other hand, is characterized by a quest for independence, power, control, striving for performance, and self-promotion.

Wilson, Near and Miller (1996) emphasized that women generally have low Machiavellian tendencies compared to men. Correspondingly, Pope (2005) in his study conducted among Accountancy students (with 68 participants total) found that females were less Machiavellian than males. Following this further, findings in another study conducted by Austin, Farrelly, Black and Moore (2007), reported that men performed high scores on the Mach IV scale compared to female counterparts.



Significant differences between women and men were found by Birknerová and Frankovský (2014) when assessing Machiavellianism in the factor of deception and the overall score of Machiavellianism. In both cases, male managers expressed a greater degree of Machiavellianism than women. The difference was reflected in a higher rate of rejection of these attributes by women. In this research, manifestations of Machiavellianism were accepted in both men and women.

As part of the manipulation of leaders and Machiavellian manifestations, we examined the existence of statistically significant differences in the business process in terms of the highest achieved education of traders. Higher values were measured at the highest achieved university education within all attributes of manipulation of leaders. Within Machiavellian expressions, university-educated respondents scored higher with the Self-Assignment attribute. We have found that university-educated business people are the ones who rely heavily on themselves. Rather, these traders use lies and long for social status, have an overview of interpersonal relationships and are not advocates of teamwork.

Education has been shown to be an influence on the individual's Machiavellianism. In the Christie and Geis (1970) research and again Webster and Harmon (2002) the results confirmed that hypothesis. Specifically, persons with a higher level of education are generally the higher Machiavellian persons. Although literacy rate is not the same as education level, a comparison of literacy rates across countries may be an appropriate proxy for a society's educational development relative to another society's development even though the comparison is made with university students.

The research by Harmon, Webster, and Hammond (2008) refutes the expectation that a higher level of education (i.e., using literacy rate as a proxy) is associated with higher Machiavellian scores.

Manipulation is a way of influencing other people for the benefit of the manipulator. In terms of business work, we can specify manipulation as a means to achieve the benefit of the entire organization or as a means to achieve personal gain. Manipulation does not manifest itself openly, but in a masked form (Oravcová, 2004).

We believe that these findings will provide insight into the understanding of the behavioral dynamics of current high school and university students and will indicate the continuing social movement of Machiavellian behavior.

## ACKNOWLEDGMENT

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# Influence of External Factors on the Domestic Price of Agri-Food Products

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Net export;  
Ukraine



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**Abstract:** *The aim of the study was to identify the influence of external factors on the price dynamics of the domestic market of agri-food products. A separate task was to evaluate the effectiveness of the policy of maintaining price stability and to develop recommendations for its improvement. The influence of external factors (world price, net export, import price) on the domestic price of agri-food products is studied. The analysis covers the period 2003-2021. The influence of external factors on the domestic price of agri-food products in the conditions of the global financial crisis of 2007-2009 and the COVID-19 pandemic is investigated and compared. The effectiveness of measures to stabilize domestic prices in the context of the COVID-19 pandemic is considered. Proposals for maintaining the price stability in the domestic market of agri-food products have been developed.*

## 1. INTRODUCTION

In autumn 2020, Ukraine saw a significant increase in prices for some agri-food products. This rise in prices also continued in 2021. This primarily concerned sunflower oil, sugar, flour, and eggs. Before that, the dynamics of prices for these goods was stable and even for some goods was declining. The supply of these goods to the domestic market was stable, which ruled out the possibility of a deficit. Ukraine is a major supplier to the world market of sunflower oil and grain. Exports of sugar, flour and eggs have increased over the past five years. Since these products form the basis of the consumer basket, the urgent task of identifying the causes of rising prices.

The rise in prices was caused by internal and external factors. Internal factors were related to the supply of and demand for agri-food products in the domestic market. As agri-food products were export-oriented and their production was highly developed, their supply in the domestic market was stable. Domestic demand was also stable, as real incomes remained low in 2020-2021 in the context of the COVID-19 pandemic. Thus, it is most likely that the rise in prices was caused mainly by external factors.

The study aimed to identify the influence of external factors on the price dynamics of the domestic market of agri-food products. A separate task was to evaluate the effectiveness of the policy of maintaining price stability and to develop recommendations for its improvement.

## 2. METHODOLOGY AND DATA

To conduct the study, all agri-food products were divided into 3 groups: 1) goods that enter the domestic market mainly through imports; 2) goods, the production of which is aimed mainly at

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exports; 3) goods that are produced mainly for domestic consumption. The first group included bananas and rice, the second group included sunflower oil and poultry, and the third group included sugar and pork. The choice of goods for each group was determined by the available statistical base.

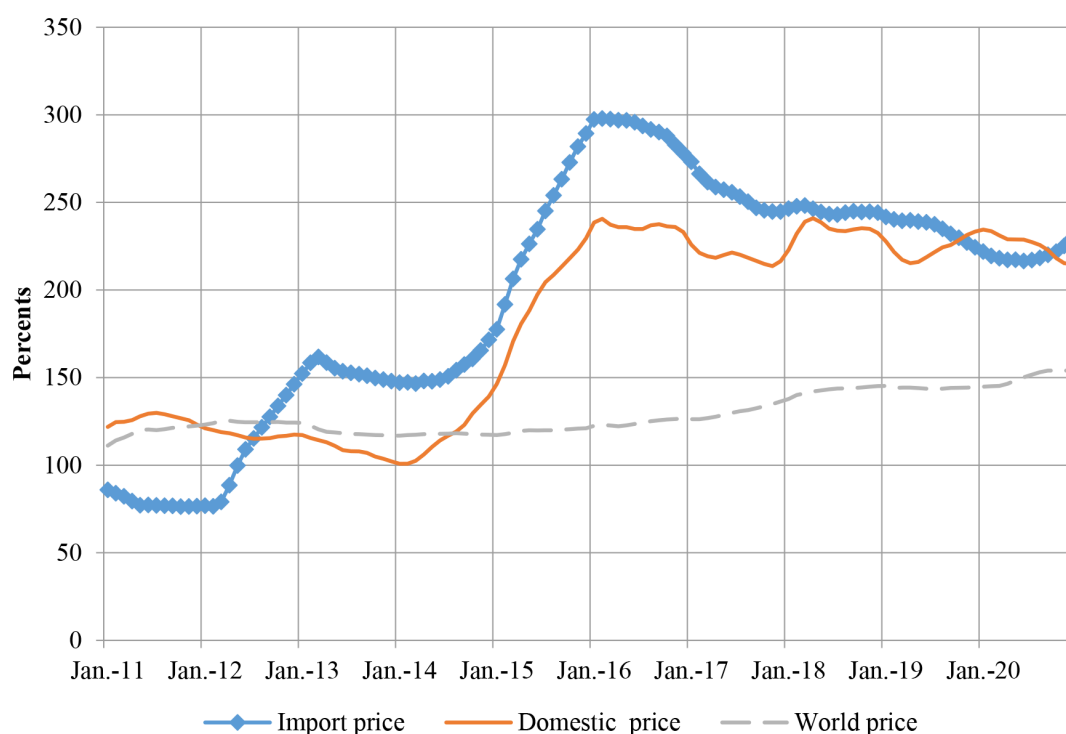
The influence of the following external factors on domestic prices was studied: world price, net exports, import price. The analysis covered the period 2003-2021. The impact on price dynamics during the global financial crisis of 2007-2009 and the COVID-19 pandemic was compared.

The methods of seasonal smoothing of time series, regression-correlation and factor analysis were used in the study.

The information bases of the study were: 1) IndexMundi database; 2) UN Comtrade statistical base; 3) statistical data of the State Statistics Service of Ukraine; 4) statistical data of the National Bank of Ukraine.

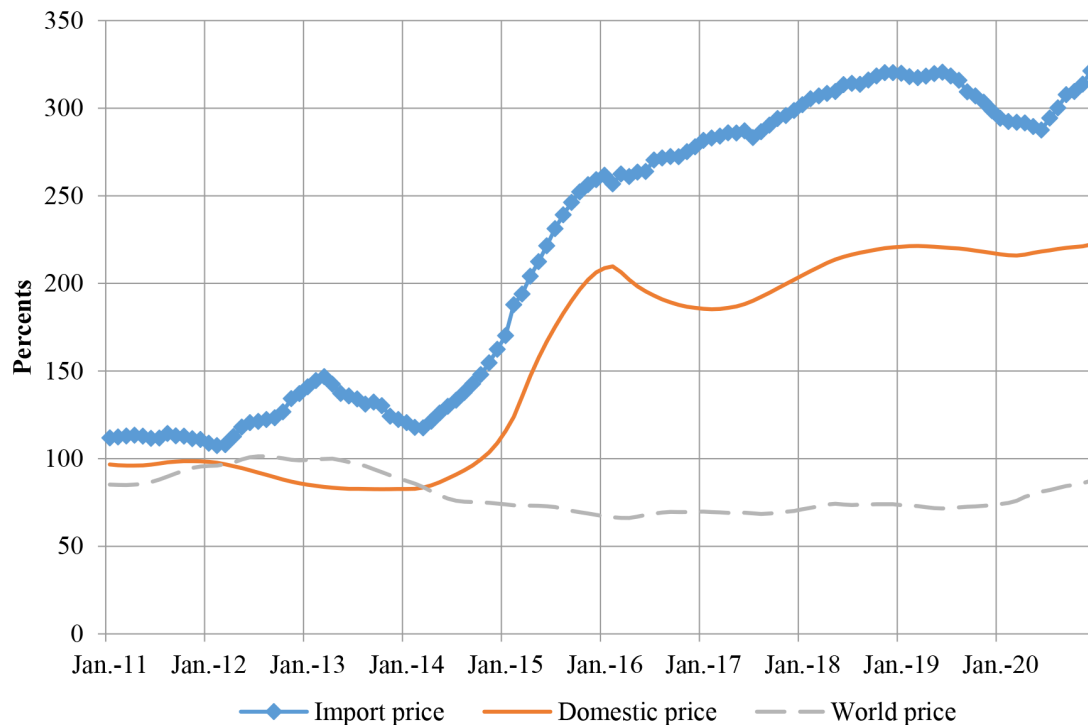
### 3. RESULTS

A close correlation between the import price and the domestic price of Group A goods during 2011-2020 was revealed (Fig. 1, Fig. 2). The import price was fixed in hryvnia, taking into account the official exchange rate. For bananas, the Pearson correlation coefficient was 0.887, for rice - 0.980. The price of the import contract, taking into account the exchange rate, was decisive for the dynamics of the domestic price. However, in some years the increase in the import price did not lead to a corresponding increase in the domestic price. In these cases, the influence of internal factors was more significant.



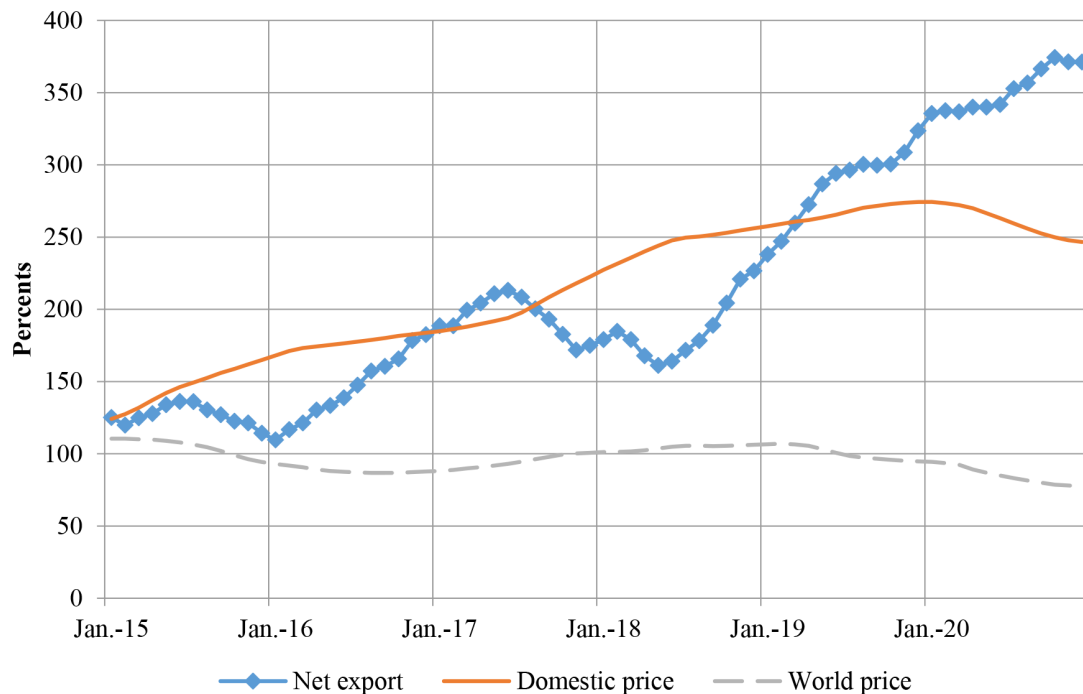
**Figure 1.** Monthly, seasonally adjusted banana price index, January 2010 - 100%

**Source:** United Nations, 2021; State statistics service of Ukraine, 2021;  
National Bank of Ukraine, 2021



**Figure 2.** Monthly, seasonally adjusted rice price index, January 2010 - 100%

**Source:** United Nations, 2021; State statistics service of Ukraine, 2021;  
National Bank of Ukraine, 2021

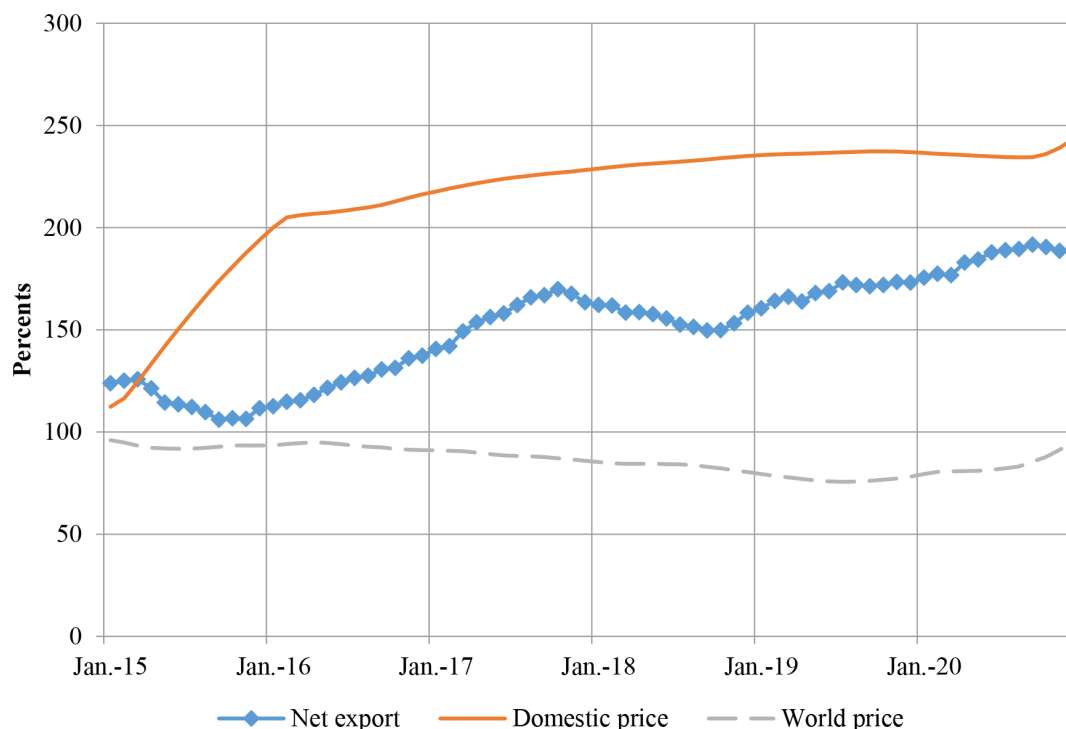


**Figure 3.** Monthly, seasonally adjusted poultry meat price index, January 2014 - 100%

**Source:** United Nations, 2021; State statistics service of Ukraine, 2021; IndexMundi, 2021

A close correlation was found between the volume of net exports and the domestic price of Group B goods during 2015-2020 (Fig. 3, Fig. 4). The Pearson correlation coefficient between net export and domestic price for poultry meat was 0.811 and for sunflower oil 0.745. The growth of net export reduced the supply in the domestic market and stimulated the growth of the do-

mestic price. For Group B goods, the effect of the net export factor on the domestic price was more significant than the effect of the world price factor. The Pearson correlation coefficient between the world and domestic prices for poultry meat was -0.127 and for sunflower oil -0.648. The negative values of the coefficient can be explained by the significant increase in prices for agri-food products in 2015 due to the internal economic crisis in Ukraine.

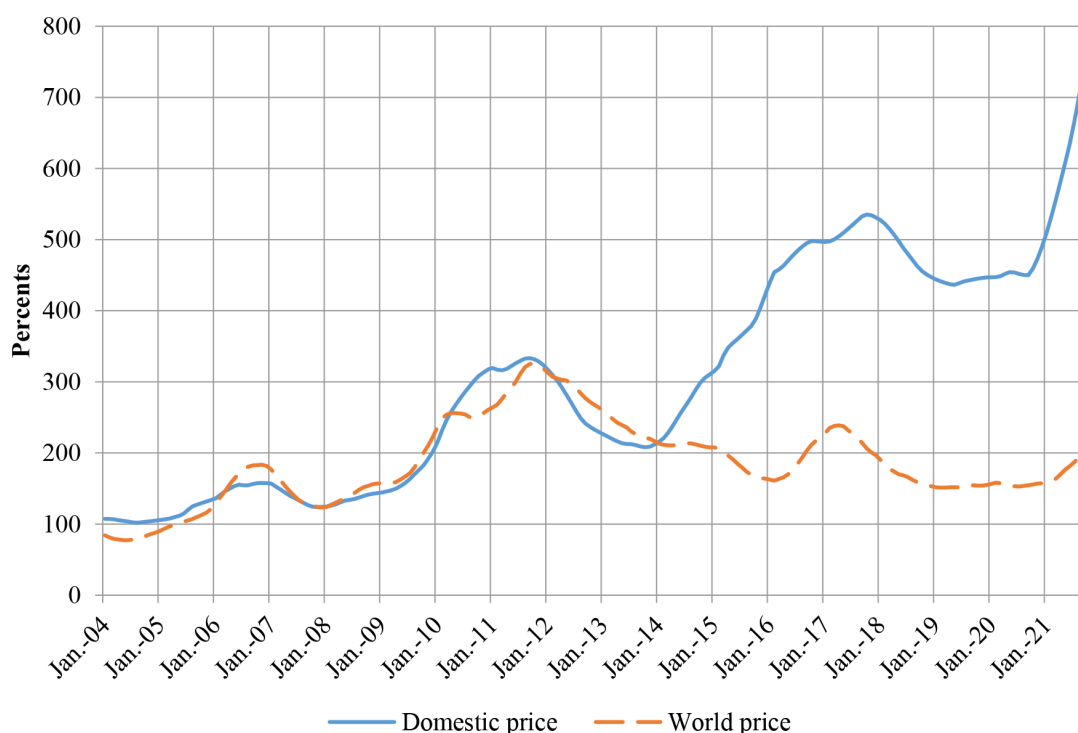


**Figure 4.** Monthly, seasonally adjusted sunflower oil price index, January 2014 - 100%

**Source:** United Nations, 2021; State statistics service of Ukraine, 2021; IndexMundi, 2021

The world price turned out to be the most important external factor for the domestic price of certain goods of group C. The effect of world prices was analyzed for sugar and pork. The analysis was performed at two-time intervals: 2004-2013 and 2016-2020. The Pearson correlation coefficient between the world and domestic price for sugar was 0.956 during 2004-2013, and 0.804 during 2016-2020. Fig. 5 clearly shows how the dynamics of the domestic price of sugar repeat the dynamics of the world price.

For pork, the relationship between world and domestic price was less close (Fig. 6). The Pearson correlation coefficient between the world and domestic pork price was 0.485 during 2004-2013, and -0.430 during 2016-2020. Production of both pork and sugar was directed mainly to the domestic market with minimal imports. This was especially true for sugar during 2004-2013 and for pork during 2016-2020. At the same time, the Pearson correlation coefficient for sugar during 2004-2013 was 0.956, and for pork during 2016-2020 was -0.430. This can be explained as follows. Sugar production is concentrated mainly in agricultural holdings. Agricultural holdings are engaged in large-scale foreign trade and monitor world prices. Pork production in Ukraine is mainly carried out by small and medium-sized enterprises that are not connected with the world market. Therefore, the domestic price of sugar repeats the dynamics of the world price, and the dynamics of the domestic price of pork does not depend on the world price.



**Figure 5.** Monthly, seasonally adjusted sugar price index, January 2003 – 100 %

**Source:** State statistics service of Ukraine, 2021; IndexMundi, 2021

The world price affects the dynamics of domestic prices. The strength of this effect may be different for different product groups. However, as far as the conditions of foreign trade are concerned, they do not significantly affect this relationship. In particular, both the global financial crisis of 2007-2009 and the economic crisis caused by the COVID-19 pandemic did not change the nature of this impact. For the product groups that were studied, the nature of this impact did not change during the crisis. It remained the same as it was in the pre-crisis and post-crisis periods.

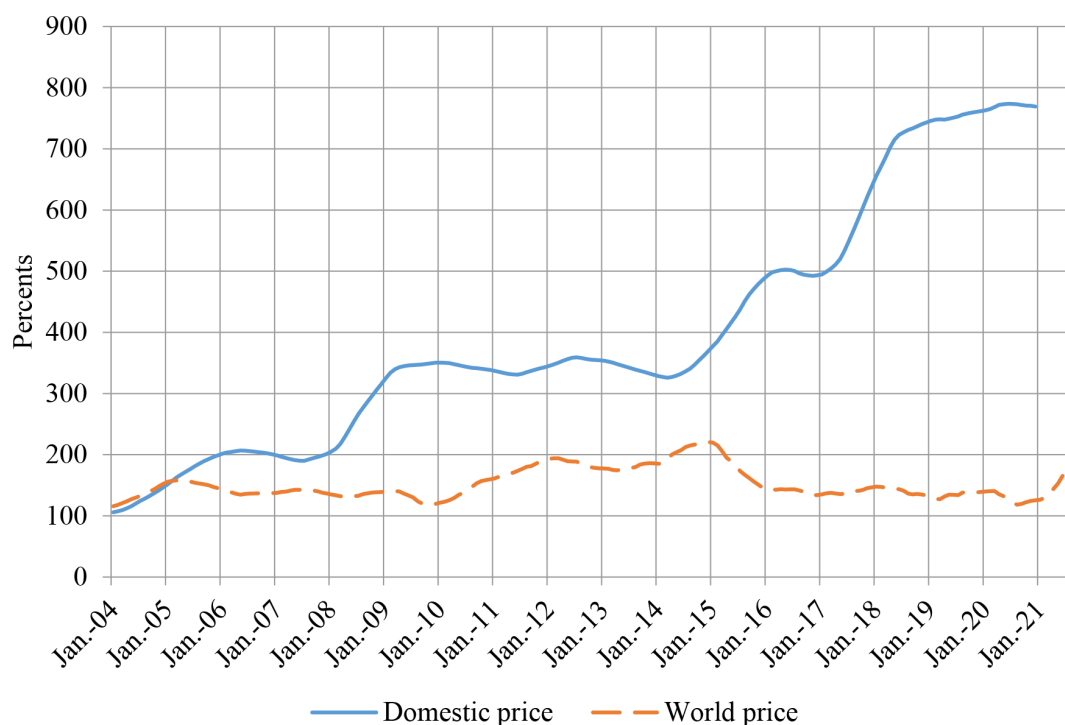
In general, both the global financial crisis of 2007-2009 and the economic crisis of 2020 caused by the COVID-19 pandemic had little effect on the agri-food market. In 2020, prices for food and non-alcoholic beverages in Ukraine increased by 3%, in 2009 - by 12%. For comparison, during the internal economic crisis of 2015, prices for food and soft drinks increased by 49%. During the COVID-19 pandemic, the service sector suffered the most. Agriculture and the food industry have suffered minimally.

During the lockdown in Ukraine in 2020, domestic food supply channels were blocked. However, the external supply channels were operating at full capacity. In 2020, compared to 2019, import of rice, bananas and pork increased, while export of sunflower oil and poultry increased too. Thus, the general economic crisis both in 2009 and in 2020 had a minimal impact on the agri-food sector. Its main negative impact was a decrease in demand for agri-food products due to lower incomes of households. The causes of crises in the agri-food sector are related to specific factors in certain commodity markets.

The main reason for the increase in sugar prices in 2020 was the reduction of sown areas and adverse weather conditions. These factors were more important than the factor of the world sugar price, which in 2020 was generally stable and a factor of the COVID-19 pandemic. In 2020, the area under sugar beets in Ukraine amounted to 209 thousand hectares, while to meet



the needs of the domestic market it is necessary to plant 228 thousand hectares. Small volumes of sugar beet sowing in 2020 were a continuation of the negative trend of reducing sown areas, which lasted for 10 years.



**Figure 6.** Monthly, seasonally adjusted pork price index, January 2003 – 100%  
**Source:** State statistics service of Ukraine, 2021; IndexMundi, 2021

To overcome the deficit of sugar, 163 thousand tons of sugar were imported to Ukraine for 8 months of 2021. In addition, 228 thousand hectares of sugar beet were sown in Ukraine this year. Under a normal harvest, this should provide the minimum domestic needs and stop the growth of the domestic price. As of the beginning of October 2021, 3.4 million tons of sugar beets were harvested in Ukraine (only 0.8 million tons were harvested on this date in 2020). A good harvest has stabilized the price situation. Beginning in September 2021, the domestic price of sugar stopped rising.

The situation on the sunflower oil market developed in a similar scenario. The rapid rise in domestic prices began in October 2020 at about the same time as world prices rose. In April 2021, the growth of world prices stopped. In July 2021, the domestic price of sunflower oil also stabilized.

A similar world price spike for sunflower oil has taken place before - in 2008 and 2011. Then the rise in world price also led to a rise in price in the domestic market. But it was much smaller in scale. The large increase in prices in 2020-2021 was the result of the combined action of two factors: the growth of world prices and the growth of net exports. In 2008 and 2011, exports were much lower.

Rising prices for sugar and sunflower oil have increased tensions in the consumer market. Especially since this happened in the context of the COVID-19 pandemic when household incomes declined. The rapid rise in the price of sugar did not deter the mandatory introduction by the

Government in May 2020 of producers to declare their intention to raise the retail price. This requirement did not apply to sunflower oil. The signing of a memorandum between the Government and sunflower oil producers in April 2021, which limited exports in 2021, had a positive effect on the domestic market of sunflower oil.

From the point of view of trade policy, the best way to stop the rise in prices is to ensure a balance of supply and demand in the domestic market through many measures: restricting exports, intervening inventories, increasing imports, reducing demand and more. Less effective is the administrative fixation of the price, which leads to a shortage of goods in the legal market and the growth of its supply in the illegal market at a high market price.

#### 4. CONCLUSION

The obtained results confirmed the hypothesis of a significant influence of external factors on the domestic price of agri-food products. The domestic price of imported goods depended most on the import price, taking into account the exchange rate. The domestic price of export goods depended on net exports and world prices. The domestic price of goods that are focused on the domestic market was “tied” to the world price.

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# Impact of Government Spending on the Growth of Agricultural Production in Kosovo and Export of Agricultural Products

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**Abstract:** *The purpose of this paper is to investigate the impact of government spending on the volume of production and the export of agricultural products from Kosovo. For that purpose, secondary data sources from relevant state institutions were used. Based on these data, calculations of the coefficient of determination and the correlation coefficient were made in order to determine whether and to what extent government expenditures in Kosovo affect the volume of agricultural production and exports of agricultural products. Based on the obtained results, it can be concluded that government expenditures for the agricultural sector have almost no impact and do not contribute to increased production and export of agricultural products. The fact that the import of agricultural products in Kosovo is far greater than the export of agricultural products speaks even more in favour of this thesis.*

## 1. INTRODUCTION

Agriculture sector corresponds to ISIC 4 divisions 1-5 and includes cultivation of crops and livestock production, forestry, hunting and fishing. Agriculture is the backbone of any country economy; in broad sense it comprises the entire range of agricultural technology related production of plants and animals, including crop production, soil cultivation and livestock.

It is the cultivation of plants, animals, fungi, and other life forms for food, fiber, biofuel, medicinal and other products used to sustain and enhance human life. Agriculture is an important and dynamic sector and it has a high contribution to economy of every country because it provides employment, poverty reduction, export potential and financial impact on the overall economy. Respecting its important role to every country, many studies have been made on impact of government expenditure on agriculture and economic. The aim of this research is to investigate the effect of government spending on agricultural sector in Kosovo and exports of its products.

## 2. AGRICULTURAL SECTOR IN KOSOVO

Agriculture has traditionally played an important role in the Kosovo economy. Agriculture, forestry and fishing participate with 7.7% of GDP in 2019 in Kosovo. Compared to 2008 when the share of agriculture, forestry and fishing in GDP was 11.3%, in the period 2009-2019 there is a significant decrease in their share in GDP of Kosovo (Table 1).

According to the data of the Kosovo Agency of Statistics, today, agriculture, forestry and fishing account around 4,8 % of total employed in Kosovo. Around 16 900 people are involved in this sector of which 14 200 men and only 2 700 women. Compared to 2013, when 20 300 people

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were employed in this sector, i. e. 5.9 % of the total number of employees in Kosovo, this number has started to decrease significantly over the years (Table 2).

Enterprises registered in agriculture, forestry and fisheries in Kosovo had the highest share in the total number of enterprises registered by sections of economic activities in 2016 with a share of 10.4 %, while in 2019, there was a very small share compared to other years with only 1.21 %. With regard to the number of enterprises dealing with agriculture, the most rapid growth was recorded in 2016 with 1,090 of them registered. While, very small number compared to other years emerges in 2019, with only 121 enterprises registered within the year (Table 3).

**Table 1.** Share of agriculture, forestry and fishing in GDP of Kosovo 2008-2019

|             | <b>GDP<br/>(in 000 in current prices)</b> | <b>Agriculture, forestry<br/>and fishing<br/>(in 000 at current prices)</b> | <b>Agriculture, forestry<br/>and fishing<br/>% of GDP</b> |
|-------------|---|---|---|
| <b>2008</b> | 3 537 599                                 | 398,374   | 11.3  |
| <b>2009</b> | 3 610 441                                 | 298,805   | 8.3   |
| <b>2010</b> | 4 030 991                                 | 381,204   | 9.5   |
| <b>2011</b> | 4 555 903                                 | 370,512   | 8.1   |
| <b>2012</b> | 4 797 278                                 | 357,179   | 7.4   |
| <b>2013</b> | 5 071 333                                 | 427,595   | 8.4   |
| <b>2014</b> | 5 325 095                                 | 441,914   | 8.3   |
| <b>2015</b> | 5 674 422                                 | 435,635   | 7.7   |
| <b>2016</b> | 6 037 273                                 | 493,337   | 8.2   |
| <b>2017</b> | 6 356 456                                 | 470,932   | 7.4   |
| <b>2018</b> | 6 671 522                                 | 435,728   | 6.5   |
| <b>2019</b> | 7 056 172                                 | 510,773   | 7.7   |

**Source:** Revision of National Accounts 2008-2019

**Table 2.** Employed in agriculture, forestry and fishing sector in Kosovo by sex, by year

|             | <b>Employed in 000</b> |               |              | <b>Share in %</b> |               |              |
|-------------|------------------------|---------------|--------------|-------------------|---------------|--------------|
|             | <b>Male</b>            | <b>Female</b> | <b>Total</b> | <b>Male</b>       | <b>Female</b> | <b>Total</b> |
| <b>2012</b> | 10.5                   | 3.4           | 13.9         | 4.4               | 5.3           | 4.6          |
| <b>2013</b> | 14.4                   | 5.9           | 20.3         | 5.5               | 7.6           | 5.9          |
| <b>2014</b> | 7.5                    | 1.1           | 8.6          | 3.0               | 1.8           | 2.6          |
| <b>2015</b> | 6.0                    | 0.7           | 6.7          | 2.6               | 1.1           | 2.3          |
| <b>2016</b> | 12.5                   | 1.7           | 14.2         | 4.8               | 2.3           | 4.2          |
| <b>2017</b> | 13.4                   | 2.5           | 15.9         | 4.7               | 3.3           | 4.4          |
| <b>2018</b> | 11.6                   | 0.7           | 12.3         | 4.2               | 1.0           | 3.5          |
| <b>2019</b> | 16.8                   | 2.4           | 19.2         | 5.9               | 2.8           | 5.2          |
| <b>2020</b> | 14.2                   | 2.7           | 16.9         | 5.4               | 3.1           | 4.8          |

**Source:** Kosovo Agency of Statistics

**Table 3.** Number of registered enterprises by economic activities

| <b>Years</b> | <b>Enterprises registered in<br/>agriculture, forestry and<br/>fishery</b> | <b>Total enterprises registered<br/>by sections of economic<br/>activities</b> | <b>Share (%)</b> |
|--------------|--|--|------------------|
| <b>2015</b>  | 945  | 9 833  | 9.6              |
| <b>2016</b>  | 1 090  | 10 424   | 10.4             |
| <b>2017</b>  | 822  | 9 223  | 8.9              |
| <b>2018</b>  | 626  | 9 805  | 6.4              |
| <b>2019</b>  | 121  | 10 004   | 1.2              |

**Source:** Kosovo Agency of Statistics

The table below presents the data on registered agribusiness enterprises for 2015-2019: annual monetary turnover, number of employees, as well as the number of active businesses. Agribusinesses have recorded an increase during this period, starting from 2015, when this amount was 323.4 mil. EUR, until 2019 when turnover reached 499.8 mil. EUR, which compared to 2018, it records an increase of 8.2 %. The average of employees in agriculture businesses, in the period 2015-2019, was 10,977. In 2019, there was a decrease in the number of employees in agribusinesses for 5.2 % compared to 2018. Number of active businesses in 2019 was 2 405 which compared to 2018 it records decrease of 18,25 % (Table 4). The annual working units in agriculture in 2019 according to KAS are 82 657. Compared to 2014, when the annual working units are 86 620, in 2019 there is a decreasing of 4.58 %.

**Table 4.** Registered agribusiness enterprises, 2015-2019

| Years       | Turnover ('000 EUR) | Number of employees | Number of active businesses |
|-------------|---------------------|---------------------|-----------------------------|
| <b>2015</b> | 323 370             | 8 790               | 2 130                       |
| <b>2016</b> | 360 536             | 10 024              | 2 314                       |
| <b>2017</b> | 432 301             | 10 449              | 2 398                       |
| <b>2018</b> | 461 626             | 13 156              | 2 942                       |
| <b>2019</b> | 499 821             | 12 467              | 2 405                       |

**Source:** KAS, prepared by DEAAS –MAFRD

Agricultural land represents 29 % of total land use in Kosovo in 2019. The total area of used agriculture land in Kosovo in 2019 is 420 141 hectares (ha). The largest area of utilized land is occupied by meadows and pastures (including common land) which constitutes 51.9 % of the total utilized area of agricultural land. In 2019 this area was 217 932 ha, which represents a decrease compared to 2018 by 0.1 %.

After meadows and pastures, the category of arable land-fields accounts for the largest area, with a share of 44.8 %, which represents the area of 188 365 ha, which includes the area of vegetables in the open field (first crop) and greenhouses (first crop). The area of arable land-fields includes vegetables in the open field as the first crop (8 319 ha) and vegetables in greenhouses as the first crop (518 ha). In 2019, the area of vegetables increased compared to other years, where compared to 2018 this area has increased by 6.4 %. In 2019, the total arable land turns out to be 0.11 ha per capita, while the average of the total utilized agricultural area per capita was 0.24 ha. Even greenhouse area recorded an increase in area compared to other years. The data show that in 2019 compared to 2018 there was an increase in the area cultivated with vegetables in the greenhouse as the first crop by 10.6 %. The smallest area with gardens is presented in 2016 with 994 ha, continuing to increase in the following years. In 2019 this area was 1 122 ha, which is an increasing difference by 11.9 % compared to 2018. The area of tree plantations in 2016 was 5 493 ha, with continuous growth until 2019, when this area reached 9 244 ha. In 2019 we have an increase of 20.3 % compared to 2018. Regarding the area of vineyards, we do not have significant changes in the period 2016-2019. Increase in the area of vineyards is presented in 2019 which shows an increase compared to 2018 by 2.9%.

When it comes to the use of agricultural land, in 2019, we have these categories: meadows and pastures (including common land) with a share of 51.9 %, arable land-fields 44.8 %, vegetables (in open field and greenhouses as a first crop), gardens and nurseries 2 %, tree plantations 2.2 % and vineyard plantations 1 %. The land use increases among the most important crops (fruit



and vegetables). There has also been a significant increase in tree plantation (over 40 %) and greenhouses (11.6 %) between 2014 and 2019 (Table 5).

In Kosovo, farm size of 2 up to less than 5 ha represents 34.86 % of the total area of arable land, followed by size of 5 up to less than 10 ha (21.14 %), size 1 up to less than 2 ha (16.11 %) and other sizes with less share where the size with the smallest area is that from 0 up to less than 0.5 ha (Table 6). The largest number of agricultural holdings is in farm size 0 up to less than 0.5 ha (30.4 %), followed by size 2 up to less than 5 ha (23.0 %), size 1 up to less than 2 ha (21.9 %) and other groups. The smallest number of agricultural holdings is in the sizes: 20 up to more than 30 ha (0.2 %) and 30 and more (0.2%). The average farm size in Kosovo is 1.76 ha (Table 6).

**Table 5.** Land use by type in 2019

| Type of land  | In hectares    | Share in % |
|---|----------------|------------|
| Arable land – fields                                    | 188 365        | 44.8       |
| Of which with vegetables in the open field (first crop) | 8 319          |            |
| Of which with vegetables in greenhouses (first crop)    | 518            |            |
| Garden  | 1 122          | 0.3        |
| Fruit tree  | 9 244          | 2.2        |
| Vineyard  | 3 367          | 0.8        |
| Plant Nursery   | 111            | 0.0        |
| Meadows and pastures (including common land)            | 217 932        | 51.9       |
| Total utilized agricultural land                        | <b>420 141</b> | <b>100</b> |

Source: Agricultural Household Survey, 2019

**Table 6.** Size of holdings by arable land area, 2019

|                       | Area (Ha) | Share (%) | No. of agricultural holdings | Share (%) |
|-----------------------|-----------|-----------|------------------------------|-----------|
| 0 and less than 0.5   | 5 929     | 3.17      | 32 020                       | 30.41     |
| 0.5 up to less than 1 | 12 065    | 6.45      | 18 355                       | 17.43     |
| 1 up to less than 2   | 30 123    | 16.11     | 23 022                       | 21.87     |
| 2 up to less than 5   | 65 202    | 34.86     | 24 231                       | 23.01     |
| 5 up to less than 10  | 39 533    | 21.14     | 6 013                        | 5.71      |
| 10 up to less than 20 | 16 013    | 8.53      | 1 203                        | 1.14      |
| 20 up to less than 30 | 5 146     | 2.75      | 245                          | 0.23      |
| 30 and more           | 13 016    | 6.96      | 200                          | 0.19      |
| Total                 | 187 026   | 100       | 105 289                      | 100       |

Source: KAS – Agricultural Household Survey, 2019

**Table 7.** Farm size

|         | Number of agricultural holdings |        |        |        |        | Arable land area (ha) |         |         |        |        |
|---------|---------------------------------|--------|--------|--------|--------|-----------------------|---------|---------|--------|--------|
|         | 2015                            | 2016   | 2017   | 2018   | 2019   | 2015                  | 2016    | 2017    | 2018   | 2019   |
| 0 ≤ 0.5 | 39939                           | 33312  | 39251  | 31648  | 32020  | 9142                  | 5677    | 5976    | 5 801  | 5 929  |
| 0.5 ≤ 1 | 24562                           | 22340  | 18543  | 19508  | 18355  | 16 703                | 14603   | 12 584  | 12 718 | 12 065 |
| 1 ≤ 2   | 23827                           | 25086  | 22323  | 24522  | 23022  | 31 905                | 33 384  | 29 898  | 32 096 | 30 123 |
| 2 ≤ 5   | 18726                           | 21792  | 20460  | 21359  | 24231  | 55 257                | 64 877  | 59 696  | 63 042 | 65 202 |
| 5 ≤ 10  | 4 493                           | 4 531  | 5 712  | 5 719  | 6 013  | 29 518                | 29 498  | 37 458  | 38 085 | 39 533 |
| 10 ≤ 20 | 1 203                           | 1 253  | 1 331  | 1 342  | 1 203  | 15 755                | 16 258  | 17 219  | 17 347 | 16 013 |
| 20 ≤ 30 | 228                             | 223    | 226    | 240    | 245    | 5303                  | 5300    | 5332    | 5 717  | 5 146  |
| ≥ 30    | 253                             | 263    | 263    | 194    | 200    | 16 798                | 16 109  | 16 967  | 12 201 | 13 016 |
| Total   | 113231                          | 108800 | 108108 | 104532 | 105289 | 180381                | 185 705 | 185 130 | 187007 | 187026 |

Source: KAS – Agricultural household survey 2015 - 2019

Arable land area by farm size and number of agricultural holdings by size by year (from 2015 to 2019) are presented in Table 7. From this table it can be noticed that the number of agricultural holdings with size 0 and less than 0.5, 0.5 up to less than 1, 1 up to less than 2, as well as the arable land area by those size farm significantly decreased in the period 2015-2019.

### 3. GOVERNMENT SPENDING (SUPPORT) FOR THE AGRICULTURAL SECTOR

Ministry of Agriculture, Forestry and Rural Development in Kosovo (MAFRD), supports the agricultural sector based on two programs designed: the Direct Payments Program and the Rural Development Program. Support through direct payments was made for agricultural crops, livestock heads, inputs (produced seedlings) as well as support for wine produced and agricultural insurance for raspberries. Through grants are supported investments in the primary sector, but also in the processing industry and tourism development in rural areas as well as irrigation of agricultural lands.

In 2019, total support through direct payments amounte to EUR 30.6 million. Compared to the previous year, the support through direct payments has increased by 3.38%, and compared to 2014 direct payments increased by 42.99 %. In the period 2015-2018, grants increased. Thus, in 2015 they amounted to 19.5 million euros, in 2016 22.5 million euros, and in 2018 31 million euros. But in 2019 the grants are significantly reduced and amount to only 16.1 million euros, which compared to the previous year is a decrease of 48.06 %. Also, the total support in 2019 decreased by 22.94 % compared to the previous 2018 (Table 8).

**Table 8.** Support of the agriculture and rural development sector  
(direct payments and grants in mil. EUR)

|                        | 2015 | 2016 | 2017 | 2018 | 2019 |
|------------------------|------|------|------|------|------|
| <b>Direct payments</b> | 21.4 | 26.1 | 27.0 | 29.6 | 30.6 |
| <b>Grants</b>          | 19.5 | 22.5 | 15.4 | 31.0 | 16.1 |
| <b>Total</b>           | 41.0 | 48.6 | 42.5 | 60.6 | 46.7 |

Source: ADA -MAFRD

### 4. RESEARCH METHODOLOGY

The purpose of this paper is to show the impact of government spending on the volume of agricultural production in Kosovo and export of agricultural products. For that purpose, secondary data sources from relevant state institutions were used. The study used time series data (2015-2019) for the variables: production of agriculture industry (at basic prices in mil. EUR), government spending of agriculture (in mil. EUR) and agricultural exports (in mil. EUR). This data was collected from Kosovo Agency of Statistics; Kosovo Agency of Statistics - Economic Accounts for Agriculture 2015, 2016, 2017, 2018 and 2019; Ministry of Agriculture, Forestry and Rural Development of Kosovo (MAFRD) and ADA. Based on this data, calculations of the regression coefficient and the correlation coefficient were made in order to determine whether and to what extent government expenditures affect the volume of agricultural production in Kosovo and exports of agricultural products.

## 5. RESULTS

Production in the agricultural industry in 2015 amounted to 656.1 million euros. In 2019, this production amounted to 782.3 million euros, which is an increase of 19.3% compared to 2015. Gross value added and net value added of agriculture increase over the years. Gross value added of agriculture in 2019 increased by 14.42 % compared to 2015. The increase of the net value added is 12.14% (Table 9).

**Table 9.** Main aggregates of economic accounts for agriculture at basic prices, mil. EUR

|   | 2015  | 2016  | 2017  | 2018  | 2019  |
|---|-------|-------|-------|-------|-------|
| <b>Production of agriculture industry</b> | 656.1 | 741.9 | 734.4 | 704.7 | 782.3 |
| <b>Intermediate consumption</b>           | 239.3 | 256.9 | 270.6 | 302.0 | 305.4 |
| <b>Gross value added</b>                  | 416.8 | 485.0 | 463.8 | 402.7 | 476.9 |
| <b>Consumption of fixed capital</b>       | 95.5  | 102.4 | 105.4 | 108.2 | 116.7 |
| <b>Net value added</b>                    | 321.3 | 382.5 | 358.3 | 294.4 | 360.3 |
| <b>Other subsidies on production</b>      | 0.6   | 1.0   | 0.1   | 2.1   | 0.3   |
| <b>Factor income</b>                      | 322.0 | 383.5 | 358.4 | 296.5 | 360.6 |
| <b>Entrepreneurial income</b>             | 313.4 | 375.0 | 349.1 | 280.5 | 343.5 |

Source: KAS- Economic Accounts for Agriculture 2015 - 2019

Linear regression and correlation coefficient are used to analyze the contribution of government spending of agriculture to the volume of agricultural production in Kosovo. The results of this analysis are as follows (Table 10).

**Table 10.** Regression

|                   | DF | Sum of Square | Mean Square | F statistic<br>(df <sub>1</sub> ,df <sub>2</sub> ) | P- value |
|-------------------|----|---------------|-------------|--|----------|
| <b>Regression</b> | 1  | 50.2342       | 50.2342     | 0.0172 (1,3)                                       | 0.9039   |
| <b>Residual</b>   | 3  | 8760.0538     | 2620.0179   |  |          |
| <b>Total</b>      | 4  | 8810.288      | 2202.572    |  |          |

Overall regression F (1,3) = 0.0172,

P-value = 0.9039, p-value  $\geq \alpha$  (0.05)

R Square (R<sup>2</sup>) = 0.005702

Coefficient of correlation (R<sup>2</sup>) = 0.07551

Covariance = 27.4495

Sample size (n) = 5

Coefficient of linear regression R Square (R<sup>2</sup>) equals 0.005702. It means that 0.6 % of the variability of Y (agricultural production) is explained by X (government spending for agricultural sector). Coefficient of correlation (R<sup>2</sup>) of 0.07551 means that there is a non-significant very small positive relationship between X and Y.

Therefore, it is quite clear that government spending, ie state investments in agriculture have no impact on agricultural production in Kosovo, i.e. do not contribute to increasing agricultural production in Kosovo.

Also, linear regression and correlation coefficient are used to analyze the contribution of government spending on exports of agricultural products in Kosovo. The results of this analysis are as follows (Table 11).

**Table 11. Regression**

|                   | DF | Sum of Square | Mean Square | F statistic<br>(df <sub>1</sub> ,df <sub>2</sub> ) | P- value |
|-------------------|----|---------------|-------------|--|----------|
| <b>Regression</b> | 1  | 97.089        | 97.089      | 0.7186 (1,3)                                       | 0.4589   |
| <b>Residual</b>   | 3  | 405.323       | 135.1077    |  |          |
| <b>Total</b>      | 4  | 502.412       | 125.603     |  |          |

Overall regression F (1,3) = 0.7186,

P-value = 0.4589

R Square (R<sup>2</sup>) = 0.1932

Coefficient of Correlation R = 0.4396

Covariance = 38.161

Sample size (n) = 5

Since R Square (R<sup>2</sup>) equals 0.1932, it means that 19.32 % of the variability of Y (agricultural exports) is explained by X (government spending for agricultural sector). Coefficient of correlation (R<sup>2</sup>) equals 0.4396. Results of the Pearson correlation indicated that there is a non significant medium positive relationship between X and Y.

Based on the data, it can be concluded that government spending on the agricultural sector has almost no impact and does not contribute to the export of agricultural products. The fact that the import of agricultural products in Kosovo is far greater than the export of agricultural products speaks even more in favor of this thesis. As a result, trade in agricultural products in Kosovo has a large trade deficit. Trade balance for agricultural products in 2015 is – 595 million euros and it increases over the years. Trade balance in 2019 is – 693.8 million euros that is increased by 17.20 % compared to 2015 (Table 12).

**Table 12. Agriculture in economy**

|   | 2015   | 2016   | 2017   | 2018   | 2019   |
|---|--------|--------|--------|--------|--------|
| <b>Agricultural exports (mil. EUR)</b>                    | 41.7   | 45.2   | 61.3   | 64.0   | 65.5   |
| <b>Share of agricultural exports in total exports (%)</b> | 12.8   | 14.6   | 16.2   | 17.4   | 17.1   |
| <b>Agricultural imports (mil. EUR)</b>                    | 633.7  | 658.7  | 694.5  | 712.3  | 759.4  |
| <b>Share of agricultural exports in total exports (%)</b> | 24.1   | 23.6   | 22.8   | 21.3   | 21.7   |
| <b>Trade balance for agricultural products (mil. EUR)</b> | -592.0 | -613.5 | -633.2 | -648.4 | -693.8 |

Source: Kosovo Agency of Statistics

## 6. CONCLUSION

Kosovo is a net importer of agricultural products due to a surplus of consumption over production. Land fragmentation, lack of efficient irrigation, limited research and slow improvement of production technologies are among the key factors impacting productivity. Although Kosovo has implemented several plans to improve irrigation infrastructure, it remains underdeveloped and inefficient. Domestic support for agriculture in Kosovo remains underfunded. While investment grants are divided according to the EU IPARD structure, they are only financed by the budget supported by World Bank loans within the framework of rural development programmes. Investments are co-financed with government participation at 60 % and farmer participation at 40%. Kosovo's agriculture trade policy is based on international and regional trade commitments. There are no tariffs or VAT on agricultural inputs imports to stimulate agriculture development. In terms of trade policy, the general prospects are complex, and there are no export support measures for agricultural commodities.

All these shortcomings should be taken into account and efforts should be made to increase agricultural production in Kosovo and stimulate its exports. Some of these measures would be: improve irrigation water management, improve the land consolidation process, meet the preconditions and increase capacity for the facilitation of IPARD funds, reduction of taxes on agriculture, increase domestic support for agriculture etc.

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# The Social Sustainability of Organic Cultivation with S-LCA Application in Research Project

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**Abstract:** *In this paper, the authors aim to present the methodology used to measure social sustainability, which is being implemented in a research project called “Innovations in organic agriculture to improve the sustainability of Apulian farms for cereal and industrial crops.” The authors used the social life cycle assessment (S-LCA), based on the life cycle assessment, particularly the subcategory assessment method.*

*The authors developed a questionnaire to collect information about workers and the time worked (weekly working hours, working weeks) in each plot of the experimentation plan. The authors administered the questionnaire to multiple recipients categorized as three identified types of stakeholders (workers, local community, consumers) to triangulate the answers. The use of the S-LCA in experiments in the agricultural sector, which presents critical issues in the social sustainability of production, could become a strategic tool for achieving sustainable development in agri-food sector.*

## 1. INTRODUCTION

In this paper, we aim to present the methodology used to measure social sustainability, which is being implemented in a research project called “Innovations in organic agriculture to improve the sustainability of Apulian farms for cereal and industrial crops” (referred to hereafter as “the project”) that a farm association lead. We carried out this project in the south of Italy to analyze not only technical and agronomical aspects but also the sustainable aspects of a new agro-ecological model based on the rotation of arable crops, legumes and vegetables.

We used the social life cycle assessment (S-LCA) to measure social sustainability, based on the life cycle assessment (LCA). This methodology has attracted the scientific community’s attention in recent years (Traverso, Petti, & Zamagni, 2020, p. v). It has been increasingly used in an effort to adopt a rigorous methodology that is based on LCA, according to ISO standards 14040 updated in 2021.

The S-LCA is part of a life cycle sustainability assessment (LCSA) used to analyze the three pillars of sustainability: (environmental-LCA - E-LCA), economic (life cycle costing - LCC) and social (S-LCA). However, the combination of E-LCA, LCC and S-LCA is not easy to implement in practice due to overlapping issues in results and interpretation (UNEP 2020, p. 16).

It should be noted that in the assessment of social impacts, the implementation of the S-LCA method contributes to the achievement of the sustainable development goals (SDGs) of Agenda 2030, mainly regarding SDGs 12 (Responsible Consumption and Production), 1 (No Poverty), 2 (Zero Hunger), 3 (Good Health and Well-Being), 4 (Quality Education), 5 (Gender Equality), 6 (Clean Water and Sanitation), 8 (Decent Work and Economic Growth), 10 (Reduced Inequality).

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ties), 16 (Peace, Justice and Strong Institutions), and 17 (Partnerships for the Goal). In relation to SDG 8, the S-LCA, in the ILO Decent Work Agenda, contributes to the assessment of working conditions (UNEP, 2020, p. 24).

Despite these benefits, the S-LCA is still evolving from the first guidelines published in 2009. This methodology is also of interest to the EU, with Directive 2014/95/EU, which seeks to promote the responsibility of human rights within global value chains.

In 2013, the S-LCA Guidelines were supplemented with the publication of methodological sheets that are in updating. These methodological sheets are operational support in the selection of the categories and sub-categories of impact and the generic and specific indicators, with the related database sources. This supplementary material has allowed for an increase in experiments, with other documents that led to the updating of the Guidelines in 2020 (UNEP, 2020, p. 17).

However, the S-LCA approach still has few implementations in the agri-food sector (UNEP, 2020, p. 45). To measure the project's social impact, following the 2020 Guidelines, we have chosen to use the subcategory assessment method (SAM) (Sanchez Ramirez, Petti, Haberland, & Ugaya, 2014, p. 1518) and follow the ISO assessment path (UNI EN) 14040 (2021). This choice allows us to consolidate the implementation of the methodology in the project.

## 2. RESEARCH BACKGROUND

SAM has been used in the food sector for the production of tomatoes, which is a crop subject to experimentation (Petti et al., 2018, p. 569). Additionally, SAM is easy for supply chain stakeholders to understand for the purpose of widespread implementation among the organic farms in the area. SAM allows for analysis of organizations' behaviors during the product's lifecycle process. SAM is an objective method for evaluating each subcategory (SBC), as it transforms qualitative information into a quantitative evaluation with a scale score (Table 1).

We selected these SBCs with the related indicators from the methodological sheets (UNEP - SETAC, 2013, p. 5) and the literature regarding the food sector (Petti, Sanchez Ramirez, Traverso, & Ugaya, 2018, p. 573) (Sanchez Ramirez, Petti, Haberland, & Ugaya, 2014, p. 1518).

Furthermore, we sought an S-LCA that the stakeholders in the supply chain could easily understand for the sake of widespread implementation among the organic farms in the territory because the SAM is an objective method for the evaluation of SBC that allows for analysis of organizations' behaviors during the process relating to the product's life cycle. The methodology is characterized by four steps:

- (1) the use of the organization as a unit process, in which we decided to assess the social profile of the organization responsible for the processes involved in the product's life cycle,
- (2) the definition of the basic requirement to assess each subcategory,
- (3) the definition of levels based on the environmental context or organizational practice and the data's availability and
- (4) assignment of a quantitative value (Table 1).

The system's boundaries are defined as the gate of the farm to the gate of the product collection center, and any by-products, according to the circular economy. We chose a functional unit of 1 kg of organic product from experimentation with the crop rotation model.

**Table 1.** Scale score and meaning

| Scale score | 1   | 2 | 3                                      | 4  |
|-------------|---|---|--|--|
| Meaning     | Denotes the inability to meet the basic requirements of social sustainability |   | Compliance with the basic requirements | Shows a proactive behavior higher than the basic requirements (best) |

Source: own elaboration

We adopted questionnaires for the collection of social data to implement the SAM according to the UNEP (2020) (Life Cycle Inventory phase). We adapted the questionnaires adopted in the food sector to the project's needs.

The first phase is the preparatory phase, which is the same initial phase used in the E-LCA and LCC studies to conduct an integrated sustainability analysis according to the life cycle sustainability assessment (LCSA) study. The processing unit identified concerns soil management and product collection (and any by-product), with relative transport for each type of production. We made the identification according to a testing scheme implemented in two pilot organic farms (A and B) that practice crop rotation with legumes (chickpeas and peas), durum wheat (cultivar Senatore Cappelli and Nadif), industrial tomatoes, clover and field beans. Table 2 shows the testing scheme used to analyze innovation in crop rotation and innovative seeders.

**Table 2.** Testing scheme foresees with innovation in crop rotation and innovative seeder

| ID test | Farmer | Previous crop | Crop        | Variety    | Innovation             | Surfaces (ha) |
|---------|--------|---------------|-------------|------------|------------------------|---------------|
| 1       | A      | Legumes       | Durum wheat | Cappelli   | Innovative seeder CREA | 0.25          |
| 1a      | A      | Legumes       | Durum wheat | Cappelli   | Traditional seeder     | 0.25          |
| 2       | A      | Legumes       | Durum wheat | Nadif      | Innovative seeder CREA | 0.25          |
| 2a      | A      | Legumes       | Durum wheat | Nadif      | Traditional seeder     | 0.25          |
| 3       | A      | Durum wheat   | Durum wheat | Cappelli   | Innovative seeder CREA | 0.25          |
| 3a      | A      | Durum wheat   | Durum wheat | Cappelli   | Traditional seeder     | 0.25          |
| 4       | A      | Durum wheat   | Durum wheat | Nadif      | Innovative seeder CREA | 0.25          |
| 4a      | A      | Durum wheat   | Durum wheat | Nadif      | Traditional seeder     | 0.25          |
| 5       | A      | Durum wheat   | Tomato      |            |                        | 0.50          |
| 6       | A      | Legumes       | Tomato      |            |                        | 0.50          |
| 7       | B      | Tomato        | Durum wheat | Cappelli   | Innovative seeder CREA | 0.25          |
| 7a      | B      | Tomato        | Durum wheat | Cappelli   | Traditional seeder     | 0.25          |
| 8       | B      | Tomato        | Durum wheat | Nadif      | Innovative seeder CREA | 0.25          |
| 8a      | B      | Tomato        | Durum wheat | Nadif      | Traditional seeder     | 0.25          |
| 9       | B      | Durum wheat   | Tomato      |            |                        | 0.50          |
| 10      | B      | Legumes       | Tomato      |            |                        | 0.50          |
| 11      | A      | Durum wheat   | Legumes 1   | Chickpea   |                        | 0.50          |
| 12      | A      | Durum wheat   | Legumes 2   | Pea        |                        | 0.50          |
| 13      | A      | Durum wheat   | Legumes 3   | Field bean |                        | 0.50          |

Source: own elaboration

The *testing scheme* highlighted the need to prepare 14 questionnaires based on crop precessions. The cutoff criteria are related to the number of hours worked in each unitary process of the life cycle (Petti, Sanchez Ramirez, Traverso, & Ugaya, 2018, p. 571), as follows:

$$W_h = W \times h \times n / p \quad (1)$$

where:

- $W_h$  is the number of labor hours,
- $W$  is the number of workers involved in the processing unit,
- $h$  is the number of working hours per week,

- $n$  is the number of working weeks per year and,
- $p$  is the total production (kg) per year.

The number of working hours refers to the FU (WFU) for each unit process and is given as

$$W_{FU} = W_h \times c \quad (2)$$

where  $c$  is the amount of all materials necessary to produce 1 FU.

In this way, we could add work hours to the traditional quantitative information (material and energy flows) to identify the labour-intensive processes.

Furthermore, we used the questionnaire to collect information about workers (numbers, gender, employment contract) and the time worked (weekly working hours, working weeks) in a year and the entire annual production of the product in each plot to calculate the working hours in each unitary process (minutes or hours).

Table 3 shows an example standardized by questionnaire for each culture object of cultural rotation. By considering tomato production as an example the survey addressed to the top management referring to the stakeholder category “workers”, subcategory “working hours” is related to the following questions:

- indicate the number of overtime hours on average per week per worker;
- indicate the number of hours worked on average per week per worker.

**Table 3.** Example standardized from the questionnaire for each crop

| Phases                     | Working process           | Which company carries out each type of processing |               | How many work hours per hectare? | How many workers were employed? |         | Which type of contract? Duration? |       |            |                 |
|----------------------------|---------------------------|---|---------------|----------------------------------|---------------------------------|---------|-----------------------------------|-------|------------|-----------------|
|                            |                           | own   | third parties |                                  | males                           | females | farmer                            | other | hours/week | number of weeks |
| Soil management            | ploughing                 |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | fertilising               |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | ...                       |   |               |                                  |                                 |         |                                   |       |            |                 |
| Harvesting                 | harvesting                |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | transport                 |   |               |                                  |                                 |         |                                   |       |            |                 |
| By-product                 | by-product harvest        |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | transport                 |   |               |                                  |                                 |         |                                   |       |            |                 |
| End-of-life plants         | end-of-life plants        |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | a) grinding and burying   |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | transport                 |   |               |                                  |                                 |         |                                   |       |            |                 |
| End-of-life mulching sheet | harvesting mulching sheet |   |               |                                  |                                 |         |                                   |       |            |                 |
|                            | transport                 |   |               |                                  |                                 |         |                                   |       |            |                 |

**Source:** own elaboration

An example from the stakeholder category “workers”, subcategory “fair wage” follows:

- what is the basic salary of the production manager?
- what is the basic salary for the agricultural worker?

- what are the types of employment contracts of the company each month? (fixed-term contract, permanent contract, part-time contract etc).

In this sense, particular attention should be paid to these labour-intensive processes' social aspects because a problem could occur (presence of forced labor, no fair wage, etc.).

We administered (in progress) the questionnaire to multiple recipients categorized as three types of stakeholders (workers, local community and consumers) to triangulate the answers (Table 4). For each of these categories, we have selected subcategories, according to the literature, that follow the 2013 guidelines. Table 5 shows the categories of stakeholders with their related subcategories.

**Table 4.** -Questionnaire recipients, contents, stakeholders

| Questionnaires recipients             | Questionnaires Contents and/or Stakeholder   |
|---------------------------------------|--|
| Legal Representative                  | Information about the farm, production, type of processing, manufacturing companies and workers; Stakeholder: Workers, Local Community; Consumer |
| Marketing /sales manager              | Stakeholder: Consumer  |
| Worker                                | Stakeholder: Workers   |
| Trade union delegate                  | Stakeholder: Workers   |
| Representative of the local community | Stakeholder: Local Community   |

Source: own elaboration

**Table 5.** Categories of stakeholders with the related subcategories (SBC)

| SUBCATEGORY | STAKEHOLDER                                      |  |                            |
|-------------|--|--|----------------------------|
|             | WORKERS  | LOCAL COMMUNITY                        | CONSUMERS                  |
|             | Benefits / Social security                       | Relocation and migration               | Health & Safety            |
|             | Working hours                                    | Community involvement                  | Feedback mechanism         |
|             | Forced labor                                     | Cultural heritage                      | Consumer privacy           |
|             | Fair wage  | Respect for the rights of "indigenous" | Transparency               |
|             | Freedom of association and collective bargaining | Local employment                       | End-of-life responsibility |
|             | Health and safety in the workplace               | Access to intangible resources         |                            |
|             | Equal opportunities / discrimination             | Access to material resources           |                            |
|             | Child labor                                      | Safe and healthy living conditions     |                            |

Source: own elaboration

### 3. FUTURE RESEARCH DIRECTIONS

We will use the questionnaires' results to conduct an S-LCA study related to the experimentation in progress in the project. We used this process to define a model to measure social sustainability with the S-LCA methodology in the pilot companies' activities.

Future research will concern the recognition of third parties to improve corporate reputation as determined by the target audience of customers/consumers.

### 4. CONCLUSION

The use of the S-LCA in experiments in the agricultural sector treated some critical issues in the social sustainability of production. Facing these issues could become a strategic tool to achieve sustainable development in the agri-food sector.

The S-LCA in this project represents a complement of LCA and LCC to obtain an LCSA once we evaluate the answers we collect with the survey. The S-LCA's results will allow us to analyze an ex-post situation. We will transfer this methodology to the members of the farm association.

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## CONTRIBUTION OF THE AUTHORS

*A. Di Noia carried out the bibliography, the collection and processing of the data, G.M Cappelletti and A. Di Noia carried out the application of the methodology, C. Russo reviewed the paper.*

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# Economic Viability of the Hydromulching in Artichokes

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**Abstract:** *Although its utility, excessive use of low-density polyethylene mulches is contributing to the accumulation of high amounts of plastic wastes and environmental problems for agricultural ecosystems. The objective of this work was to study the economic viability of the use of different hydromulches in an artichoke crop. Three blends were prepared by mixing paper pulp and cardboard with different additives: wheat straw (WS), rice hulls (RH), and substrate used for mushroom cultivation (MS). These were compared with low-density polyethylene (Pe), a treatment without mulching on bare soil where hand weeding was performed (HW), and treatment without mulching on bare soil where herbicide was applied (H). The results indicate that the use of hydromulch in an artichoke crop represents a good alternative for reducing plastic waste in agriculture. The net profits of the hydromulch treatments (MS, WS, RH) were higher than for HW and H, and slightly lower than for Pe.*

## 1. INTRODUCTION

Treatment of herbicides in agricultural areas can be a cause of soil and water contamination and their use have to decrease. The use of plastic mulching in horticultural crops is a very common practice due to its agronomic (Kader et al., 2017; Kannan, 2020), it is a good technology used to manipulate the crop environment to reduce weeds, it also increases the yield of the crop and improves the quality of the product, controlling the temperature and retaining the humidity of the soil. Plastic mulches provide higher performance and quality of products and, consequently, greater economic value for farmers, with linear low-density polyethylene being the most widely used material for growing vegetables in the southeast of Spain (López-Marín et al., 2012). Despite the multiple benefits of polyethylene in cultivation, the use of these materials carries long-term detrimental effects on soil quality and environmental contamination due to their removal (Steinmetz et al., 2016). The main disadvantage of using polyethylene is its disposal after use. Material that is not recycled or disposed of properly can break and cause soil degradation in the agroecosystem, with the consequent loss of crop yield (Scalenhge, 2018). Modern agriculture has to increase yields and product quality while reducing environmental impacts. An alternative could be liquid mulches or “hydromulches” consisting of a liquid mixture of recycled paper pulp in combination with different types of agricultural residues, which later solidify in the soil, simulating the effect of mulches on the crop. Hydromulch has been used in many land rehabilitation projects - for instance, to mitigate post-fire runoff and erosion (Warrick, 2006). Hydromulch is an innovative mulching technology in the horticultural area, which, in preliminary studies has proven to be an efficient strategy for increasing yield in horticultural crops (Romero et al., 2019).

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One of the most important crops in the Mediterranean area is the artichoke. The major production and consumption areas worldwide are located in Spain and Italy (FAOSTAT, 2021). However, the consumption of artichoke has also increased in other locations in the last few years, due to its organoleptic, nutritional, and nutraceutical properties (USDA, 2021).

This work aims to compare the economic outcomes of artichoke cultivation, with mulch (one plastic and three hydromulches), without mulch (with and without herbicide). For each of these, the yields of two consecutive years will be valued.

## 2. MATERIAL AND METHODS

Plants of artichoke (*Cynara cardunculus* var. *scolymus* L.) cv. Symphony (Nunhens-BASF), grown from seed, were cultivated at the IMIDA agricultural experimental farm, located in Murcia (Spain) (latitude 37° 45'N, longitude 0° 59'W). They were transplanted on 8 August in the first year and on 1 August in the second, the final harvests taking place on 28 and 16 March, respectively. The crop density was 5,000 plants/ha. A standard nutrient solution for artichoke was used, applied through an underground drip irrigation system at a depth of 5 cm, with emitters of 4 L/h.

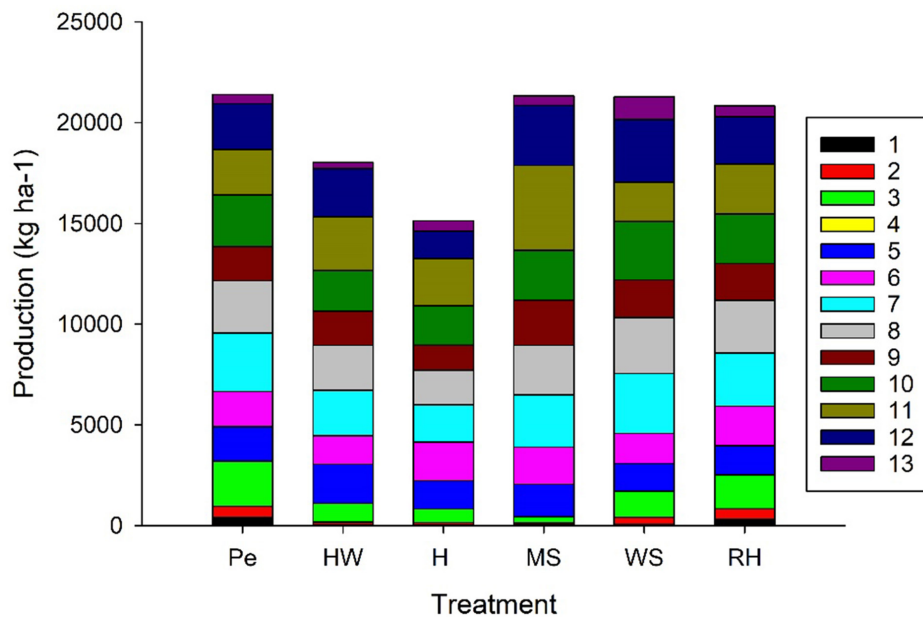
The hydromulches consisted of different mixtures (blends). Recycled paper pulp and paper pinus pulp were used as the basic components and sodium silicate was used as a matrix for the hydromulch samples. To prepare the blends, in addition to paper pulp, the following crop products were used: wheat straw (WH), used mushroom (*Agaricus bisporus*) substrate (MS), and rice husk (RH). Three random cultivation blocks were established, with five treatments each: two-color low-density Pe (white/black, top/bottom), the three hydromulches (WS, RH, and MS), a treatment without mulching on bare soil where hand weeding was carried out (HW), and treatment without mulching on bare soil where a herbicide was used (H). Each block comprised 25 plants.

**Economic analysis.** A cost-benefit has been carried out comparing incomes with costs for each treatment. Weekly production has been considered to obtain the income, multiplying it by the weekly average price, available on the web page of the Murcian Government (CARM, 2021). The average weekly prices of the latest 20 years have been considered. Regarding the costs, they have been classified into overhead costs and annual costs. For the first ones, annual depreciation has been considered, as the result of dividing the purchase price allocation of each element by its useful life, in particular, toolshed (with a useful life of 25 years), an irrigation pumping head (15 years), a localized irrigation network (10 years), a regulating reservoir (30 years), and various auxiliary materials (5 years). For the annual costs, the average cost of the two studied years has been considered. Keeping in mind the biennial character of the artichoke cultivation, costs of preparation and planting as well as of the mulching materials and their installation were distributed between the two years. For mulching costs, it has been assumed that the covering of one hectárea requires 4,600 m<sup>2</sup> of hydromulche. In order to better comprehend, costs were classified into common costs (not affected by the treatments) and specific treatment costs. On the other hand, each year, four treatments with herbicides and five with phytosanitary products were carried out where required. The considered harvesting cost has been 0.1 € kg<sup>-1</sup> and the cost of the water 0.23 € m<sup>-3</sup>. Regarding the cost of personnel, it has been considered that a worker could manage 20 ha with an hourly cost of 7.5 € h<sup>-1</sup>. Finally, this paper considers an hourly cost of the tractor of 36 € h<sup>-1</sup>.

**Statistical analysis.** For the analysis of the yield and income of each treatment, the Levene test was used for the analysis of the homogeneity of variances. The non-existence of significant differences in the variance ( $p > 0.05$ ) allowed the application of a one-way ANOVA to determine the existence of significant differences in yield and income among the treatments. When a difference was significant ( $P < 0.05$ ), the treatment means were separated by Tukey's honestly significant difference (HSD) multiple-range test, using lowercase letters to indicate significant differences between treatments. The statistical package used was SPSS (Chicago, IL, USA).

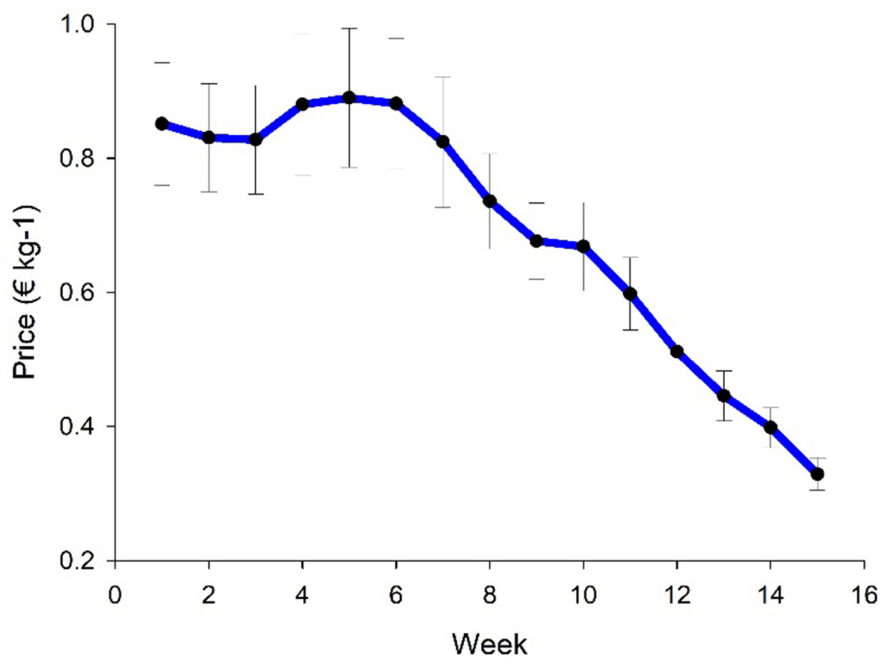
### 3. RESULTS

**Income.** Figure 1 shows the weekly production of each treatment (2019). Production of the year 2019 (2020 is not shown) begins the second week of the year (mid-January) and increases from the fifth (early February), reaching the highest production from the seventh week (late September). Weekly changing production is very similar for all treatments. From the seventh week, prices decrease from 0.85 € kg<sup>-1</sup> to 0.33 € kg<sup>-1</sup>. Such decreases are due mainly to the supply increase. According to Prestamburgo and Saccomandi (1995), the greater the offer, the faster the decline in agricultural prices. Production is similar for the Pe and organic mulches, being a bit lower in H (15%) and HW (29%). The three organic mulches give similar results. The product of the weekly prices for the productions allows obtaining the income, the summary of which is shown in Figure 3. As can be seen, H and HW treatments present similar incomes to Pe and can be used as their substitutes.



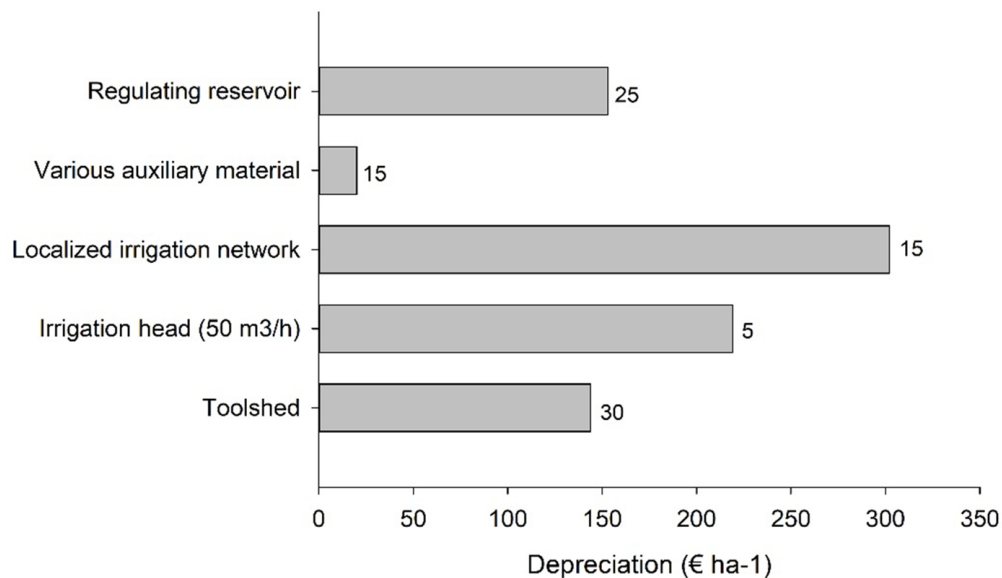
**Figure 1.** Weekly production (weeks 1 to 13 of the year 2019)

In order to analyze the possible differences between the productions of each treatment, the application of the Levene test has allowed verifying the homogeneity of the variances and the subsequent application of the ANOVA analysis that showed that there are significant differences between treatments ( $p = 0.000$ ). Finally, the application of the Tukey test showed that treatments H and HW gave significantly worse production, with no significant differences between the rest. The results were similar for the income analysis, which also showed that the H and HW treatments offered significantly lower results than the rest.



**Figure 2.** Weekly artichoke prices

**Costs.** The cost has been classified into overhead costs and annual costs. The overhead costs are shown in Figure 3. Localized irrigation networks are the largest with 302 € ha<sup>-1</sup> with a useful life of 15 years.



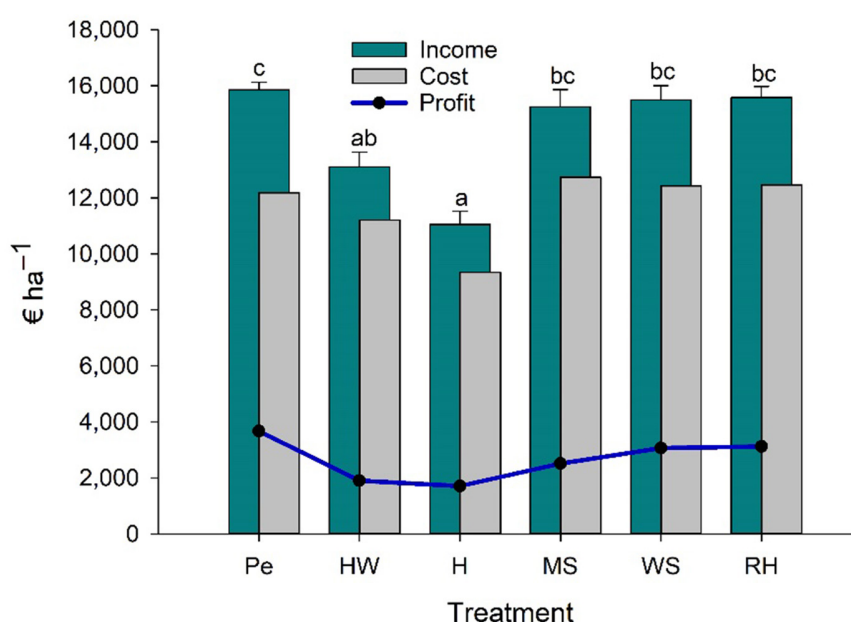
**Figure 3.** Overhead costs (€) and useful life (years)

Annual costs are summarized in Table 1, in which the specific costs analyzed in this work (mulching, mix, plastic Mechanical mulching, etc.) have been separated from the costs common to the six treatments (common cost). In this table, mix refers to recycled paper pulp, pinus paper pulp, and sodium silicate and self-production and installation of mulch (semi-mechanical). On the other hand, harvesting costs have been considered as a fixed cost of 0.1 € kg<sup>-1</sup> regardless of the yield. In particular, the costs (without considering the structure costs) were lower for HW (8.60% lower than Pe) and H (25.07% lower than Pe) since mulch was not used. The treatments WS, RH, and MS had slightly higher costs than Pe (between 2.14 and 4.88%).

**Table 1.** Total costs per year

|                                     | Pe     | HW     | H     | MS     | WS     | RH     |
|-------------------------------------|--------|--------|-------|--------|--------|--------|
| <b>Specific costs per treatment</b> | 4,600  | 3,624  | 1,756 | 5,154  | 4,843  | 4,878  |
| Mulching material                   | 610    | 0      | 0     | 553    | 219    | 259    |
| Mix                                 | 0      | 0      | 0     | 2,475  | 2,475  | 2,475  |
| Plastic mechanical mulching         | 570    | 0      | 0     | 0      | 0      | 0      |
| Cost of removal of mulch            | 1,260  | 0      | 0     | 0      | 0      | 0      |
| Hand weeding                        | 0      | 1,800  | 0     | 0      | 0      | 0      |
| Herbicides                          | 0      | 0      | 232   | 0      | 0      | 0      |
| Harvesting                          | 2,160  | 1,824  | 1,524 | 2,126  | 2,149  | 2,144  |
| <b>Common costs</b>                 | 7,585  |        |       |        |        |        |
| Preparation and planting            | 1,853  |        |       |        |        |        |
| Machinery                           | 749    |        |       |        |        |        |
| Personal cost (non-harvesting)      | 700    |        |       |        |        |        |
| Taxes                               | 491    |        |       |        |        |        |
| Phytosanitary products              | 636    |        |       |        |        |        |
| Fertilizers                         | 719    |        |       |        |        |        |
| Maintenance                         | 151    |        |       |        |        |        |
| Electrical energy                   | 169    |        |       |        |        |        |
| Irrigation water                    | 1,279  |        |       |        |        |        |
| Overhead costs                      | 838    |        |       |        |        |        |
| <b>Total Costs</b>                  | 12,185 | 11,210 | 9,341 | 12,739 | 12,428 | 12,463 |

**Net profit.** The highest net yield (Figure 4) has been obtained for Pe, followed by WS and RH (16.54 and 14.95% respectively lower than Pe), obtaining the lower values in HW and H (53.37 and 31.56% lower, respectively). The latter two, despite presenting lower costs than the rest, the net profit was lower because of the low income obtained. On the other hand, HW despite high revenues, did not obtain great net profit due to high costs. The MS treatment presents higher costs than the WS and RH due to the transport costs from the place where the substrate was obtained. This suggests the convenience of using the mulching in places close to its generation to avoid transport costs and externalities such as pollution.

**Figure 4.** Income, cost and profit for each treatment

Mulching improves the soil moisture regime by limiting the evaporation rate of water at the surface; in general, mulching gives higher soil moisture contents compared to bare soil (Chakraborty, et al. 2008, Zaho et al, 2017), which means that the yields are lower in treatments without mulching, as happened in our work. The power of plastic mulches to retain soil moisture is greater than that of organic mulches (Chakraborty, R.C.; Sadhu, 1994). However, in our work, in both growing cycles, there were no statistical differences between the hydromulches and the treatment with plastic. This may have been because these organic mulches (hydromulches), with the intervention of the soil moisture and temperature, affected the dynamics of the soil organic matter, augmenting the contents of dissolved organic carbon (C) and nitrogen (N) through the decomposition of plant materials, as has been found with other organic mulches (Chantigny. 2003, Huang et al. 2008).

#### 4. FUTURE RESEARCH DIRECTIONS

The environmental benefit of hydromulches is evident, and their production is very similar to polyethylene. However, its high costs prevent its commercial application, so future research must focus on reducing producer prices.

#### 5. CONCLUSION

Hydromulches are a good alternative for artichoke cultivation, for the reduction of plastic waste. Their use can reduce the carbon footprint, and be more sustainable and profitable as well as being eco-friendly. The use of mulch increases the production in a similar way to polyethylene with regards to H (15% lower) and HW (29% lower), and, in addition, it gives environmental advantages. Organic mulching presents higher costs to Pe (up to 5% higher) and consequently, future research should be aimed at reducing these costs. It should be mentioned that their application must be carried out close to the generation of their components to avoid high transport costs. Profit of organic mulching (MS, WS, and RH) were higher to HW and H, but lower to Pe due to its higher costs. That's why, despite its undeniable environmental benefit, their implementation will not be effective till there is a cost cut.

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# Negative Migration Balance as an Indicator of Regional Political System Sustainability before and during the COVID-19 Pandemic (The Case Study of the Trans-Baikal Territory)

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**Abstract:** *The article deals with the impact of the COVID-19 pandemic on indicators of migration outflow from the Trans-Baikal Territory and interpretation of the results obtained based on the authors' theoretical provisions concerning the sustainability of a regional political system (a constituent entity of a federal state). The analysis of theoretical approaches to sustainability of the political system allowed us to formulate the essence of the sustainability towards the regional political system operating within the framework of the federal organization of political and territorial space of the state. The analysis of migration processes and comparison of the results of the similar periods (before the COVID-19 pandemic and during the pandemic) revealed a general trend of non-decreasing migration outflow of the population from the Trans-Baikal Territory. The restrictive conditions of the COVID-19 pandemic had little impact on the quantitative indicators of migration in the Trans-Baikal Territory, without reducing negative migration balance. The obtained results allowed us to conclude that the regional political system is unstable – it is unable to create comfortable and attractive living conditions for the regional community.*

## 1. INTRODUCTION

The idea that crises and emergencies (pandemics) have an impact on social processes, including migration, is always reflected in publications, reviews, and expert discussions. It can be a near-instantaneous reaction after the phenomenon occurred, and subsequent realization, a study, as a result of evaluating the impact over time. The analysis of some publications written by domestic and foreign researchers allows us to conclude that in this context migration and mobility become a subject of close observation and study in the era of multiple crises. Within a special issue, R. King and M. Pratsinakis raised the question concerning the impact of crisis situations on the processes of free movement in the political and territorial space of the European Union (King & Pratsinakis, 2020, p. 5). Developing typologies of evolution phases for the European migration and mobility models, the authors identified three stages in mobility development within the European Union over the past decades. Emphasizing the preservation of motives of population migration, the authors note that any crisis event leads to a complication of the existing models of relations in society.

The model of population mobility that has developed over the past three decades includes both continuity and changes. Evaluating the impact of crisis situations, the authors define the tendency to increase the state's influence on free movement and to renationalize the state's power in the sphere of migration control (King & Pratsinakis, 2020, p. 7). According to A. Triandafyllidou, COVID-19 is used as an argument to control migration and to avoid international obligations to-

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wards refugees and migrants (Triandafyllidou, 2020). This statement is appropriate, because in the context of the pandemic borders were closed and population movement was restricted, both between states and within states. Thus, international obligations towards refugees and migrants have faded into insignificance.

Also, the studies concerning the impact of the COVID-19 pandemic cover the problems of identifying threats and raise the questions of resolving the “health or economy” conflict, the solution of which falls within the competence of national authorities in the field of labor migration policy (Veizis, 2020).

The COVID-19 pandemic is one of the most extensive and comprehensive crises to hit the global community in recent decades. It will have far-reaching consequences for society and economy and will likely lead to permanent changes in the way people work, travel, and interact. We must admit the crisis cannot be evaluated unambiguously. On the one hand, it gives us opportunities related to innovation and digitalization – “crises are progressive with all their painfulness” (Yakovets, 1999); on the other hand, it causes difficulties and uncertainty of the processes taking place at that time and makes authorities take responsibility for maintaining functionality of administrative and political processes. Therefore, scientific interest in the stability concept for regions as political systems under risk conditions is growing. The classical stability theory deals with stability of a system as its ability to return to the condition of the steady-state equilibrium after the removal of a perturbation that has disturbed this equilibrium. The stability of a political system is characterized by the ability of operating actors to keep changes within the specified boundaries, in certain parameters.

Taking into account the existence of the separate direction of political thought that distinguishes sustainability and political stability (Ersson & Lane, 1983), we believe that within the framework of the study, such a distinction is possible, but it is not principal. Political stability falls into the category of situational and operational characteristics of political dynamics, while sustainability is related to its strategic, historical dimensions (Bilyuga, 2018). Therefore, in our study we will consider sustainability of a regional political system as a functional characteristic of a regional political system depending on existing authorities to address issues of regional importance. The characteristic is also expressed through actions of regional government and public reaction to the decisions and actions. Meanwhile, both Russian and foreign researchers do not always distinguish between sustainability and stability in relation to the study of political systems at different levels. In foreign research practice, it is explained by the coincidence of the essence and meaning of these terms. Regardless of the terminology used (sustainability or stability), researchers emphasized the multi-factor nature, the multi-criteria character, and complexity of their definition concerning such nonlinear systems as a society or political (political and territorial) system (Duff, & McCamant, 1968). By identifying different indicators, criteria, and variables, researchers try to specify the parameters (thresholds, intervals) that can be used as indicative ones to distinguish between the stability and instability of a system and to determine its critical points. Thus, we propose to consider migration indicators as one of these criteria.

Speaking about the Trans-Baikal Territory, on the one hand, as an element of the federal system (constituent unit of the Russian Federation), and, on the other hand, as a political system at the regional level, we believe that the sustainability of the constituent unit of the federation is not only the ability of the political and territorial entity to exist within the specific federal system, but also the ability of regional authorities to make optimal decisions that ensure viability of the region

through implementation of vital interests of its population. In this case, sustainability implies that the constituent unit of the federation as a mesosystem performs its main functions both in relation to the federal center and in relation to its population (Matafonova, 2016). Meanwhile, for a long period in the Trans-Baikal Territory, one could observe a steady trend of migration outflow, which can be considered as an indicator showing the unsustainability of the regional political system. From the perspective of a systematic approach to any political system, migration can be seen as a reaction of population to political decisions made by the authorities when those decisions deal with the vital interests of the population of the corresponding political and territorial entity.

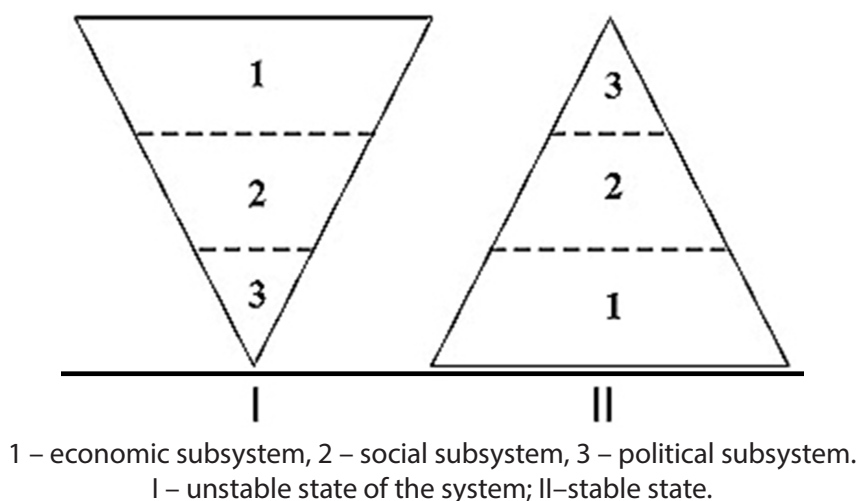
The purpose of the study is to reveal the impact of the COVID-19 pandemic on the indicators of migration outflow from the Trans-Baikal Territory and to interpret the results obtained on the basis of the authors' theoretical provisions concerning sustainability of the regional political system (a constituent entity of a federal state). Developing these provisions, we relied on the studies of classics within the theory of federalism and political regionalism, representatives of the system approach and the sustainability theory, as well as the works of modern researchers in the sphere of political regionalism and related fields.

## **2. SUSTAINABILITY OF A REGIONAL POLITICAL SYSTEM (A CONSTITUENT UNIT OF THE FEDERATION): CONCEPTUALIZATION OF THE TERM**

Any political system is a complex, self-organizing structure with a special impact on society and socio-political processes taking place within the society. To assess both sustainability of a political system as a whole and sustainability of its separate elements, phenomena, and processes objectively, it is necessary to imply multi-criteria approaches based on postulates of system theory and sustainability theory, taking into account the specifics of study in the field of the social and political objects and systems.

Describing the models that can be used as a complex for economic and political forecasting, P. B. Salin and V. A. Yurga note that sustainability of a social system directly depends on the correlation of three constituent subsystems: political, social and economic ones (Salin & Yurga, 2012, p. 38). These authors define sustainability not only having regard to its structure and correlation of these subsystems, but also based on the target functions (first of all, the target functions of the economic subsystem) and the thesis about the priority of the economic subsystem in relation to others. They note that sustainability of a political system depends on its equilibrium, while the equilibrium is directly dependent on the condition and target functions of the economy. As examples of such functions, the researchers list long-term, medium-term, and short-term target functions. A stable economic subsystem is characterized by an optimal combination of target functions, such a type of their ratio when they do not conflict; "medium-term and long-term target functions are the basis for the formation of the country's economic strategy and represent a kind of background to implement short-term goals that do not contradict the background." (Salin & Yurga, 2012). In the absence of such coherence and the so-called guiding economic background, the set of short-term goals forms a chaotic variety of contradictory targets that ultimately lead to an increase in the instability of the system.

As for the social system as a whole, the authors note that the system is in the state of sustainability (i.e. sustainable development) only in the case of economic priorities of development and subordination of political purposes to social interests. If political goals are declared to be primary ones, the entire system becomes unstable (Figure 1).



**Figure 1.** System states

The authors consider that the sustainability degrees for these subsystems are initially different - “the economic subsystem has the highest degree of sustainability, the same parameter for the political subsystem is the least”(Salin & Yurga, 2012, p. 38). Similar schemes are used to assess the sustainability of a social subsystem (a social structure), which can also be determined using a pyramidal structure through the analysis of a ratio (a share) of the main groups that constitute the society. V. K. Levashov, studying the issues of socio-political sustainability of a society, developed a scale where he presented the main (nodal) points of development for a socio-political system:

- 1) sustainability (sustainable socio-political development) is a state of the system when a balance is found in the system of relations “political parties – state – society”, and the balance allows the system to perform the functions of self-organization and self-support and creates a sustainable development regime at present and in the near future for all subjects and institutions of the system of socio-political relations;
- 2) stability (stable socio-political development) is characterized by the stable functioning of the system in the current period, its ability to cope with balance disorders (dysfunctions, according to T. Parsons) due to the action of internal regulators and reserves, when the development of the system does not occur;
- 3) a crisis of socio-political relations means a disbalance and emergence of degradation tendencies and possibility of a system catastrophe;
- 4) a catastrophe occurs when the system is destroyed and disintegrated and the ties between the subjects of the socio-political sphere are broken;
- 5) disintegration means the death of this system of socio-political relations with destruction of all or most of its components (Levashov, 2011).

These system states are constructed on the basis of international experience in studying socio-political relations. To determine the system state, the following criteria are used as indicators and indices:

- a system of social indicators measured by empirical methods using representative public opinion polls, therefore they can express the interests of certain subjects of socio-political relations and society as a whole (the attitude to the course of economic reforms, socio-political alienation, the need to transform the political system, the level of confidence in social and political institutions, the state’s provision of norms of democratic society, party orientations);
- an integral index of socio-political sustainability of society (SPSI) based on a set of six indicators (each indicator is measured according to its own scale).

The main directions in the study of political system sustainability are related to the classical ideas of the founders of the general systems theory and works of the classics in the sphere of the political systems theory, such as T. Parsons, D. Easton, G. Almond, K. Deutsch, etc. K. Deutsch presented a political system as a purposefully organized complex of information links aimed at management and regulation of socio-political processes (Deutsch, 1974). Recently, the idea of sustainability of a political system as a whole has been raised in many domestic scientific works. A.P. Kochetkov studies conceptual approaches to the political system sustainability problem which are available in the political discourse and analyzes the political system sustainability of modern Russia noting problematic aspects (Kochetkov, 2017). Based on D. Easton's theory, I.E. Diskin and V.V. Fedorov define the sustainability of a political system as a kind of equilibrium state between the "input" and "output", pointing to the fundamental condition for sustainability of a political system – the correspondence between the political decisions made by the system and demands of society (Diskin & Fedorov, 2010). Significantly, Russian researchers make attempts to determine criteria, indicators or regulators of the political system sustainability combining the provisions of the systems theory and the political science. Both A.I. Kochetkov and O.E. Grishin define such criteria (regulators) based on the democratic nature of the state (Grishin, 2015).

Depending on the direction of research interest, scientists consider different institutions and phenomena as regulators of political sustainability. The variety of theoretical studies indicates both the relevance of the problem and the fact that the concept of "sustainability" is only taking shape in Russian political theory. As S. E. Biluga rightly notes that there are significant difficulties in determining sustainability of a state – the reason for this is a multi-factor character of the analysis and the need for researchers to focus on studying different aspects of the system response to various internal and external challenges (Bilyuga, 2018).

L. Hurwitz presents a descriptive model of sustainability characterized by the absence of violence, stability of its political regime, the existence of legitimate constitutional order, absence of structural changes, and a behavior model (regularity and normality of proper behavior within society) (Hurwitz, 1973). In foreign scientific literature, there are also scientific works that distinguish the categories of stability and sustainability and the researches where they are considered to be equal. T. Sheehan defines the dependence of political stability (sustainability) on four main conditions: provision of basic services, management of public resources, civil society involvement, empowerment, independent media and political parties, political moderation and accountability (Sheehan, 2015).

In addition to the structural and systemic interpretation of sustainability, foreign studies have also developed a behaviorist paradigm that originated from the position that within society a political structure is a network of role expectations that impose restrictions on political actions. Therefore, in fact, political sustainability is found when such conditions exist to the extent that members of society are limited by behavior that oversteps the bounds set by the political structure, and any action that deviates from these limits causes political instability and unsustainability (Ake, 2011). Outside of Russia, the study of political system sustainability takes place in a practical perspective to a much greater extent than it happens in our country. K. Dowding and R. Kimber note that studies of political stability and sustainability need a clearer explanatory link between empirical data and hypotheses of the political stability theory (Dowding & Kimber, 2006).

The federal organization of the political and territorial space leaves its mark on the sustainability of a political system. We consider sustainability as one of the characteristics of a constituent



unit as a regional political system (mesosystem) the main content of which is associated with the implementation of tasks by regional authorities to satisfy the basic living needs of population of a particular region. Sustainability of a constituent unit within the existing federal system can also be seen as an effective execution of powers by the constituent unit (regional authorities). If via its authorities, the regional political system complies with its obligations in relation to the population of the political and territorial entity effectively, it means the system is able to provide conditions for satisfaction of people's daily needs and their self-realization (this is the purpose of the level of a constituent unit in the federal state). Focusing on the needs of the population should be the main paradigm for activities of the authorities playing the role of an institutional basis for any political system. Focusing on the needs of the regional community and the ability to meet (to satisfy) them can be a criterion for the effectiveness of the regional political system functioning in the context of federalism.

The experience of the federal structure of the Russian Federation demonstrates that constituent units differ from each other significantly in terms of social and economic indicators. Nevertheless, there are some constituent units where the migration outflow is not so significant or it is absent at all, and positive migration balance takes place. People move to places where there are conditions and opportunities for comfortable life and self-realization. Thus, migration indicators can serve as a basis for assessing the effectiveness and sustainability of regional political systems.

Within the framework of political theory, these conclusions are correlated with the classical scheme of D. Easton considering any political system from the point of view of "input", "output", and "feedback" (Easton, 1979). Migration processes are demonstrative. They show a reaction of population to decisions and actions of a regional political system. As a comparison, in this case, we took specific time intervals: from March to August in 2019 and from March to August in 2020. It was done to determine the degree of the COVID-19 impact on migration processes within the political and territorial boundaries of the separate constituent unit of the federation - the Trans-Baikal Territory.

### **3. THE ANALYSIS OF MIGRATION PROCESSES IN THE TRANS-BAIKAL TERRITORY AND NEGATIVE MIGRATION BALANCE**

The interdependence of socio-political and demographic processes is also evident when negative changes in demographic factors aggravate the state of a political system. This dependence must be taken into account and foreseen for all social models and management systems of various levels including regional ones.

Demographic behavior is sensitive to external "stimuli". It can be a sufficient argument to list demographic parameters as the main empirical indicators in order to identify general trends in social development of society as a whole, as well as in the social development of territories and their units in particular. Moreover, each territory has its own specifics in the nature of the movement under study, and some nuances reveal differences even within the region. The results of the empirical data analysis based on the material of the Trans-Baikal Territory confirm this fact and are consistent with scientific ideas about the priority of place of residence over other environmental factors in the structure of external factors guiding the vector of population development.

The dynamics analysis of the main indicator – the total population size – and some selected indicators of its assessment is extremely important for the territory of the constituent unit of the

Federation. The analysis of population dynamics with the help of the index of population change shows a significant decrease in the number of residents of municipal districts of the Trans-Baikal Territory as a reaction to the ongoing processes in the country, including crisis-related ones. Changes in the permanent population of a territory are influenced by natural increase/decline and migration flows. Taking into account the purpose of our study, we focus our attention on the second component. In terms of this parameter, our region is in the worst position among the constituent units of the Far Eastern Federal District (Table 1).

**Table 1.** The Trans-Baikal Territory in terms of migration inflow (outflow) among the constituent units of the Far Eastern Federal District (2019)<sup>1</sup>

| Constituent Units within the Far Eastern Federal District | Migration inflow, outflow (-), persons |
|---|--|
| Republic of Buryatia                                      | 1 037                                  |
| Primorye Territory  | 679                                    |
| Chukotka Autonomous Area                                  | 554                                    |
| Amur Region   | 12                                     |
| Republic of Sakha (Yakutia)                               | -229                                   |
| Magadan Region  | -741                                   |
| Kamchatka Territory                                       | -1 568                                 |
| Jewish Autonomous Region                                  | -1026                                  |
| Sakhalin Region   | -1057                                  |
| Khabarovsk Territory                                      | -2 711                                 |
| <i>Trans-Baikal Territory</i>                             | <i>-5 489</i>                          |
| <i>Total for the Far Eastern Federal District</i>         | <i>-10539</i>                          |

**Source:** Compiled by the authors based on official data of the Federal State Statistics Service on the population size and migration in the Russian Federation in 2019 (Federal State Statistics Service of the Russian Federation, [https://rosstat.gov.ru/bgd/regl/b20\\_107/Main.htm](https://rosstat.gov.ru/bgd/regl/b20_107/Main.htm))

The concept of population migration was modified over time, and at the same time, the scheme of approach to its study changed. As data concerning migration as a phenomenon were accumulated, the most stable characteristics and factors determining migration processes were identified. The main objects of the study according to the definition of population migration are the process of migration, its consequences, migrants and the general unity of the items named above that allows us to talk about migration as a holistic phenomenon of public life. Migration is not a homogeneous phenomenon, since its agents differ significantly among themselves. Among the reasons for population movement, economic and social ones (movement to find work or to get education, family movement, etc.) were studied more carefully. Political, national, religious, military, and environmental reasons acquire particular importance, especially in modern conditions. The increased influence of the last-named has resulted in a growth of the number of refugees and forced migrants.

The objective factors are determined by objective conditions of society's transformation in the economic, political and social dimensions. The subjective factors include the characteristics of main participants in migration processes: age, work experience, qualification, level of education, marital status, value orientations, work motivation, changes in attitudes, etc. It should be noted that these factors have both federal and specific regional contexts determining characteristics of social behavior of migrants in particular territories.

The results of our researches, the secondary analysis of the data mentioned in our earlier sociological studies (Lukashin, 2006) indicate that the problems of population migration in the Trans-Baikal Territory remain topical ones for a long period. The continuous migration outflow

(Table 2) is a threat to the security of the region. It becomes an indicator of unsustainability for the constituent unit of the federation as it shows the inability of the regional political system to cope with its pressing problems and create conditions that ensure the attractiveness of the Trans-Baikal region.

**Table 2.** Negative migration balance of the Trans-Baikal Territory<sup>2</sup>

| Indicators   | From January to October 2018 | From January to October 2019 | From January to October 2020 |
|--|------------------------------|------------------------------|------------------------------|
| <b>1. Arrivals in the Trans-Baikal Territory (persons)</b> | 24460                        | 24807                        | 18496                        |
| <b>2. Departures (persons)</b>                             | 30190                        | 29162                        | 20885                        |
| <b>3. Migration outflow (persons)</b>                      | 5730                         | 4355                         | 2389                         |
| <b>4. Total population ( by January, 1), persons</b>       | 1072800                      | 1065800                      | 1059700                      |
| <b>5. Negative migration balance (‰)</b>                   | 5.3                          | 4.1                          | 2.3                          |

**Source:** Compiled by the authors based on official data of the Regional Office of the Federal State Statistics Service for the Trans-Baikal Territory (Regional Office of the Federal State Statistics Service for the Trans-Baikal Territory. <https://chita.gks.ru/folder/47256>, [http://www.chita.gks.ru:8080/bgd\\_site/](http://www.chita.gks.ru:8080/bgd_site/))

The main reasons for leaving the region were and are: “low living standards” - 24.4 %, “absence of work” - 12.9 %, “absence of opportunities for self-realization” – 9.7%, “severe climatic conditions” - 8.9 %. In the context of our research and the formulation of the scientific task, the relocation motives based on socio-economic reasons are of particular interest, since these parameters of life in the region, or rather their certain level, should be provided by the regional authorities as they are an institutional component of the political system.

However, both regional and interregional migration flows (international migration) were sometimes limited by processes and phenomena of a large-scale, global nature, having, above all, the character of a crisis. Such fundamental problems as absence of regulation or improper regulation, decision-making based on insufficient or unreliable information, etc. are common characteristic of these crises. The COVID-19 pandemic and the subsequent decisions and actions of the authorities in countries and regions of the world represent a special case. There is no doubt that this phenomenon has a crisis character. However, an attempt to determine its type and structure leads to the conclusion about its eclectic nature. In fact, we find here economic (the destruction of most business sectors), social (degradation and destruction of social structures and institutions, declining living standards), political (inability of authorities to “explain” people the necessity of preventive measures, the protest movement of the COVID-19 “dissidents”) and other failures. And, according to its consequences, it is possible to say this crisis has an innovative character, since it led to the renewal of different systems. For example, first of all, we speak about health care systems around the world.

The rapid spread of the COVID-19 pandemic at the beginning of 2020 has changed the lives of millions around the world in record time. A significant change in the way of life that can lead to material status changes, combined with the risk of being infected and the possibility of serious illness, as well as anxiety about potential losses now can be considered as factors affecting migration processes. However, after analyzing the data on migration indicators of the Trans-Baikal Territory for the comparable period of 2019 and 2020 (the pandemic period), presented in Table 3, we made the following conclusion.

**Table 3.** Migration indicators (by month)

**Migration in 2019 (before the pandemic)**

| Indicators                                       | March | April | May  | June | July | August |
|--|-------|-------|------|------|------|--------|
| Arrivals in the Trans-Baikal Territory (persons) | 2422  | 2210  | 1689 | 3488 | 2609 | 2592   |
| Departures (persons)                             | 2819  | 2736  | 2137 | 3142 | 3047 | 3067   |
| Migration outflow/inflow (persons)               | -397  | -526  | -448 | 346  | -438 | -475   |

**Migration in 2020 (the pandemic period)**

| Indicators                                       | March | April | May  | June | July | August |
|--|-------|-------|------|------|------|--------|
| Arrivals in the Trans-Baikal Territory (persons) | 2081  | 1225  | 1376 | 2923 | 2649 | 2346   |
| Departures (persons)                             | 2472  | 1175  | 1390 | 2403 | 2784 | 2824   |
| Migration outflow/inflow (persons)               | -391  | 50    | -14  | 520  | -135 | -478   |

The pandemic conditions had an impact on the quantitative indicators of the migration process in the Trans-Baikal Territory. However, the tendency of negative migration balance continued to exist, despite restrictive measures. Even in the context of the COVID-19 pandemic, the migration outflow in the Trans-Baikal Territory remains a stable trend. Being a reaction of the population to the decisions and actions of the regional political system, the migration outflow is an indicator of the system's sustainability (unsustainability) expressed in the inability to cope with the existing situation. There is a kind of "people's voting with their feet", showing the population's attitude to the processes taking place within the political and territorial space of the constituent unit of the federation. As a hypothesis, we assume that after the removal of the restrictions, the figures of negative migration balance will return to their previous level.

#### 4. CONCLUSION

We interpret the sustainability of a constituent unit of a federal state on the basis of a combination of the federalism theory and the systematic approach. On the one hand, sustainability is an ability of a political and territorial entity to exist within a specific federal system, and, on the other hand, it is an ability of regional authorities to make optimal decisions that give a chance to provide its viability through the implementation of the vital interests of its population. Sustainability is a functional characteristic of a political system. The essence of regional political system sustainability within the framework of a federal political and territorial structure is connected not only with the period of existence of a particular political system and its structural content but also with its functional characteristics. Within the meaning of political science, a system can be considered sustainable, if it fulfills its intended purpose. Therefore, its understanding should be built around the satisfaction of interests and needs of a regional community (population of a constituent unit).

A negative migration balance is an indicator that allows us to assess the sustainability of a regional system as this parameter correlates with the effectiveness of managerial actions at the regional level. Migration outflow is a kind of indicator of socio-economic, political and managerial problems of the Trans-Baikal Territory. The analysis of migration processes and comparison of the results of the similar periods (before the COVID-19 pandemic and during the pandemic) revealed a general trend of non-decreasing migration outflow of the population from the Trans-Baikal Territory. The restrictive conditions of the COVID-19 pandemic had little impact on the quantitative indicators of migration in the Trans-Baikal Territory, without reducing the indicators of the negative migration balance. The obtained results allowed us to conclude that the regional political system is unstable – it is unable to create comfortable and attractive living conditions for the regional community.

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## DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

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# The Use of Liquefied Petroleum Gas (LPG) in the Republic of North Macedonia as a Sustainable Alternative Fuel: Regulation, Condition and Market Participants

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Retail network



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**Abstract:** First and foremost, the main inspiration for a specific issue in this paper is the use of the Liquefied Petroleum Gas – „LPG“ as a sustainable alternative fuel for transport in the Republic of North Macedonia. The questions that arise as a basis are: finding the reason why the progress in usage of alternative fuels is still slow and insufficient in the country and what are the advantages of the „LPG“ as most available fuel of this type, including the reduction of harmful CO<sub>2</sub> emissions- as the most important benefit. By summarizing in one place all the theoretical and empirical aspects, we are finding the answer by analyzing the legal framework, the condition and the participants in the market of oil and oil derivatives in the country for the analyzed period of three years (2017-2019). The results and conclusions of the research shall be achieved via comprehensive analysis, and by finding the answers to the posed questions through the: theoretical analysis, the inductive and deductive methods, as well as description methods, whereas the techniques utilized shall be questionnaires, interviews, observations.

The goal is achieved through: elaboration of legislation in the Republic of North Macedonia, emphasizing benefits of the LPG as alternative fuel and determination of the obstacles for its usage.

## 1. INTRODUCTION

The name liquefied petroleum gas (‘LPG’) has been used more recently, as a name for several types of hydrocarbons, such as propane, butane, iso-butane, and a mixture of propane butane in various ratios, unlike natural gas, which is composed of lighter methane. Propane and butane, as their most important representatives, are in a gaseous state at ambient temperature and atmospheric pressure. It is called liquefied because at a relatively low pressure it turns into a liquid and in such a state is transported and stored. The basic raw materials for its extraction are oil and gas fields.

In the English-speaking countries, it is denoted ‘LPG’ (liquefied petroleum gas), in French and Italian it is denoted by ‘GPL’ (Gas petrolier liquefiable or Gas di petrolio liquefatti) or just propane-butane, in Russian it is called ‘сжиженни углеводородниј газ’.

LPG is a flammable hydrocarbon mixture used as a fuel for industry, households and vehicles (so-called «autogas»), and is also used in cooling technique to replace halogenated hydrocarbons (freons).

LPG has a typical specific calorific value of 46,1 MJ/kg compared to oil where it is 42,5 MJ/kg as well as gasoline where it is 43,5 MJ/kg, but has an energy density per volume of 26 MJ/L which is lower than that of oil and gasoline because it has a lower relative density (about 0,5-

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0,58 compared to gasoline 0,71-0,77). LPG evaporates at atmospheric pressure and has a higher calorific value (94 MJ/m<sup>3</sup> equivalent to 26,1 kWh/m<sup>3</sup>) than natural gas (38 MJ/m<sup>3</sup> equivalent to 10,6 kWh/m<sup>3</sup>). This means that LPG cannot simply be replaced by natural gas, and in order to use the same burner and obtain the same combustion characteristics, LPG must be mixed with air to obtain synthetic natural gas (SNG).

Autogas fuel has been the most popular alternative fuel for vehicles on the Macedonian market for decades. The main advantage of autogas fuel is the lower price compared to other types of motor fuels, which allows a quick return on the invested assets for the installation of the device.

This is followed by a number of other benefits, from preserving the environment by reducing harmful combustion emissions in the engine, maintaining the cleanliness and technical integrity of the engine, to extending the life of the engine and the vehicle exhaust system. LPG has some disadvantages and difficulties for full market representation in the country, but they are minor in terms of the benefits of its use.

This paper elaborates the regulation, the situation and the participants in the market of oil derivatives for which the officially published data for the period (2017-2019) are analyzed.

The European Green Agreement envisions a 90 per cent reduction in greenhouse gas emissions by 2050, and to that end, the European Union is working to increase the availability of sustainable alternative transport fuels and predicts that by 2025 there will be around thirteen million vehicles with zero or low emissions on European roads. Alternative fuels as defined by the European Commission include electricity, hydrogen, biofuels, synthetic and paraffin fuels, natural gas (including biomethane), methane or compressed natural gas - CNG, liquefied natural gas (LNG) and liquefied petroleum gas (LPG)

## 2. LEGISLATION

The energy infrastructure in the oil sector in the Republic of North Macedonia enables import, export and transport of crude oil and oil derivatives, processing of crude oil, production of bio-fuel, distribution, transport and sale of oil derivatives.

The market with oil and oil derivatives in the Republic of Northern Macedonia, in addition to being regulated by the Law on Energy (Official Gazette of the Republic of Macedonia No. 96/2018, 96/2019) is also regulated by the following laws: The Law on Trade, the Law on Protection of Competition, the Law on Customs, the Law on Value Added Tax, the Law on Excises and the Law on Market Inspection.

In addition to these laws, the market with oil and oil derivatives is regulated by the Rulebook on quality of liquid fuels, the Rulebook on establishing the highest retail prices of certain oil derivatives and fuels for transport ('Official Gazette of RNM' No. 103/2019 and 212/2019), the technical regulations (storage and transport of oil derivatives, standards and similar), as well as the ratified international agreements: the Stabilization and Association Agreement with the European Union, the Energy Charter Agreement and the Energy Community Treaty.

Also, the relations in this market are influenced by our country's accession to the World Trade Organization.

According to the Law on Energy, activities in the field of crude oil, oil derivatives, biofuels and transport fuels are:

- processing of crude oil and production of oil derivatives;
- production of biofuels;
- production of fuels intended for transport by mixing fossil and biofuels;
- transport of crude oil through pipelines,
- transport of oil derivatives through product pipelines and
- wholesale of crude oil, oil derivatives, biofuels and transport fuels.

The transport of crude oil and oil derivatives through the pipeline takes place in accordance with regulated prices, but their transport through roads, railways and other ways - is at free prices.

The import, transit and *wholesale* trade of oil and oil derivatives as well as their storage is in accordance with free prices.

The refining of oil and the production of oil derivatives takes place by applying the Methodology for determining refinery prices.

*Retail* trade of oil derivatives (petrol stations) also takes place by applying the Methodology for determining the retail prices of oil derivatives and by making a decision by the Energy Regulatory Commission of RNM for the highest retail prices of certain oil derivatives and fuels for transport, and in terms of the provision of Article 149 of the Law on Energy.

The establishment and approval of the highest retail prices of individual oil derivatives by the Energy Regulatory Commission until the adoption of the relevant Rulebook, i.e. by May 23, 2019, was in accordance with the Methodology prescribed by Annex D of the Agreement for purchase and sale of shares and concession of Refinery AD 'OKTA' - Skopje, signed between the Government of the Republic of Macedonia and the joint-stock company 'EL.P.E.T. - Balkanike' as a strategic investor.

In accordance with the provisions of the *'Rulebook on the establishment of the highest retail prices of certain oil derivatives and transport fuels'*, adopted in accordance with Article 24 and Article 28 of the Energy Law, the highest retail prices for certain oil derivatives are determined every seven days, for which are determined separately:

- the highest purchase prices (based on the stock exchange prices of oil products published on Platts European Marketscan (<https://www.spglobal.com/platts/en/productsservices/oil/european-marketscan>), with parity FOB Med,
- wholesale and retail margin fees including transport costs from warehouse to petrol stations and final consumers,
- the values of specific excises, as well as other fees determined by laws and bylaws.

This approach enables stability and predictability in the formation of retail prices of oil derivatives and transport fuels, as well as transparency in the procedure for determining the retail prices of oil derivatives. The Rulebook reflects the functioning of the market for procurement and sale of oil products in our country and abroad by wholesalers of crude oil, petroleum products, biofuels and transport fuels.

The adoption of the new Rulebook on the establishment of the highest retail prices of certain oil derivatives and transport fuels, which introduced a new and exact approach to the establishment of retail prices of certain oil derivatives was a significant event that marked 2019 on the market with crude oil, oil derivatives, biofuels and transport fuels in the Republic of North Macedonia.

With the mentioned Rulebook, for the first time after 20 years from the application of the Methodology for determining the highest prices of certain oil derivatives (defined in Annex D of the Purchase Agreement for shares and concessions for the OKTA refinery), a new Methodology is applied based on the real developments on the market with oil and oil derivatives in North Macedonia.

Furthermore, all the above activities can be performed by domestic and foreign persons on the basis of licenses issued by the Regulatory Commission for Energy and Water Services of the Republic of Northern Macedonia (<https://www.erc.org.mk>), who submit monthly and annual reports on their work.

The manner and conditions for sale of liquefied petroleum gas and compressed natural gas are regulated by the provision of Article 147 of the Law on Energy.

Pursuant to Article 147 paragraph 1) of the law, the wholesaler of crude oil, oil derivatives and transport fuels may fill and distribute pressure vessels with liquefied petroleum gas, i.e. compressed natural gas for single or multiple use, if it owns or has the right to use fillers for liquefied petroleum gas, i.e. compressed natural gas, which meet the prescribed conditions and standards for construction, maintenance and safe operation.

Paragraph 2) of the same Article 147 of the law stipulates that the company or part of the company of the trader must be displayed on each individual pressure vessel for liquefied petroleum gas and compressed natural gas.

The description of the type of facilities and storage conditions are determined in the provision of Article 148 of the Law on Energy. Pursuant to Article 148 of the Law, a facility for storage of crude oil, oil derivatives, biofuels or fuels for transport is a technical-technological and functional unit intended for storage consisting of tanks and auxiliary plants, which should meet the prescribed conditions for construction, maintenance, fire protection, environmental protection, as well as the conditions for recording the quantities and the required capacity, and the Minister with a rulebook prescribes the conditions for recording the quantities and the required capacity of these facilities.

Furthermore, in terms of the provision of Article 150 paragraph 1) and paragraph 2) of the Energy Law, the Government, at the proposal of the Ministry, adopts - Decree on the quality of liquid fuels which must be adhered to by the participants in the liquid fuel market, and which in particular regulates:

- 1) the type of liquid fuels that can be placed on the market as well as their characteristics,
- 2) the manner of determining the quality of liquid fuels,
- 3) the manner and procedure for monitoring the quality of liquid fuels,
- 4) the rights and obligations of the participants in the market of crude oil, oil derivatives and fuels for transport; and
- 5) the rights and obligations of the market participants and the state bodies in the transitional period necessary for replacement of the reserves of the mixtures of oil derivatives and biofuels for transport.

Paragraph 3) of Article 150 of the law, stipulates that the quality of oil derivatives and fuels for transport is confirmed by a Statement of Conformity wholesalers of derivative or transport fuel, retailers of fuels, as well as consumers who procure oil derivatives, biofuels and fuels for transport from abroad are provided by legal entities accredited in accordance with the standard MKS EN ISO/IEC 17020 based on a report for examination of the quality of the derivative or fuel for transport by laboratories accredited in accordance with the standard MKS EN ISO/IEC 17025.

Paragraph 4) of Article 150 of the law contains an explicit ban on import and trade on the market with crude oil, oil derivatives, biofuels and / or transport fuels if the previously described - Statement of Conformity has not been issued for those products.

### **3. SITUATION AND PARTICIPANTS IN THE MARKET FOR OIL, OIL DERIVATIVES AND TRANSPORT FUELS AND THE LATEST OFFICIAL STATISTICS**

#### **3.1. LPG Production**

The main raw materials for the production of LPG are natural gas and oil. Almost the total world production of LPG, according to the Analysis - 'Gasification systems', part 1 of the Faculty of Mechanical Engineering Skopje, Republic of North Macedonia, is realized through two main sources:

- plants for LPG extraction from natural gas (through methods of absorption, low-temperature separation and adsorption).
- Oil refineries as a by-product (by decomposition of oil into fractions, through distillation): light gasoline, petroleum, heating oil and heavy residues. Additional processing of distillation products, especially heavy gasoline and distillation residues, is performed through the following thermochemical methods: cracking, reforming and hydration. In order to complete the previously started refining process with LPG, it is necessary to list the processes in which LPG is used as a raw material, as follows: Polymerization and Alkylation.

#### **3.2. Transport and Retail Network**

The transport of LPG from the producer to the industrial and other major consumers is done by using all types of transport, by special means of transport (tankers, wagons, water transport tankers) as well as through special pipelines that directly connect the producers with the LPG consumers.

There are currently about 371 gas stations in the Republic of North Macedonia.

Despite the fact that today the ownership structure in the retail sector has changed significantly, Makpetrol AD Skopje owns the largest number of gas stations, 127, followed by Lukoil Macedonia DOOEL Skopje with 31 gas stations, OKTA Brand with 27 gas stations, while the remaining (about 186) gas stations are privately owned by several domestic small companies. Some of the companies that own gas stations, in addition to their main activity to sell fuels at their gas stations, also appear as wholesalers, i.e. they do not sell some of the purchased liquid fuels through gas stations but directly to the final consumers.



### 3.3. Storage Capacities of Oil And Oil Derivatives

The total capacity of the tanks for oil and oil products in the Republic of North Macedonia is about 382 thousand m<sup>3</sup>. The reservoir capacities in the Republic of North Macedonia are sufficient for 90 days of current average consumption of each type of oil products. OKTA Oil Refinery AD Skopje, Makpetrol AD Skopje, Lukoil Macedonia DOOEL Skopje, State Commodity Reserves of the Republic of North Macedonia, as well as other smaller private and state joint stock companies, have their own reservoir warehouses, and all of them together constitute the reservoir capacities in the Republic of North Macedonia.

The establishment, storage, renewal and use of the mandatory reserves of oil and oil products are regulated in accordance with the Law on Mandatory Reserves of Oil and Petroleum Products and the Directives of the European Union.

According to the technical analysis and according to Bahadori, A., Nwaoha. C., Clark. M.W. (2013), the capacity of the storage tanks depends on the size of the consumers and the distance of the refinery from the station. Depending on the type of liquefied gas (propane, butane or propane-butane mixture), as well as the size of the storage space, the solution of the tank space is usually performed in two variants, as horizontal cylindrical tanks or as ball tanks. The choice of ball tanks for storage of large quantities has usually proved to be the most economically justified because there are large savings in the weight of the material compared to cylindrical tanks. It is clear that in the case of ball (ball tanks), the pressure distribution is most favorable.

### 3.4. Situation and Participants in the Oil and Oil Derivatives Market

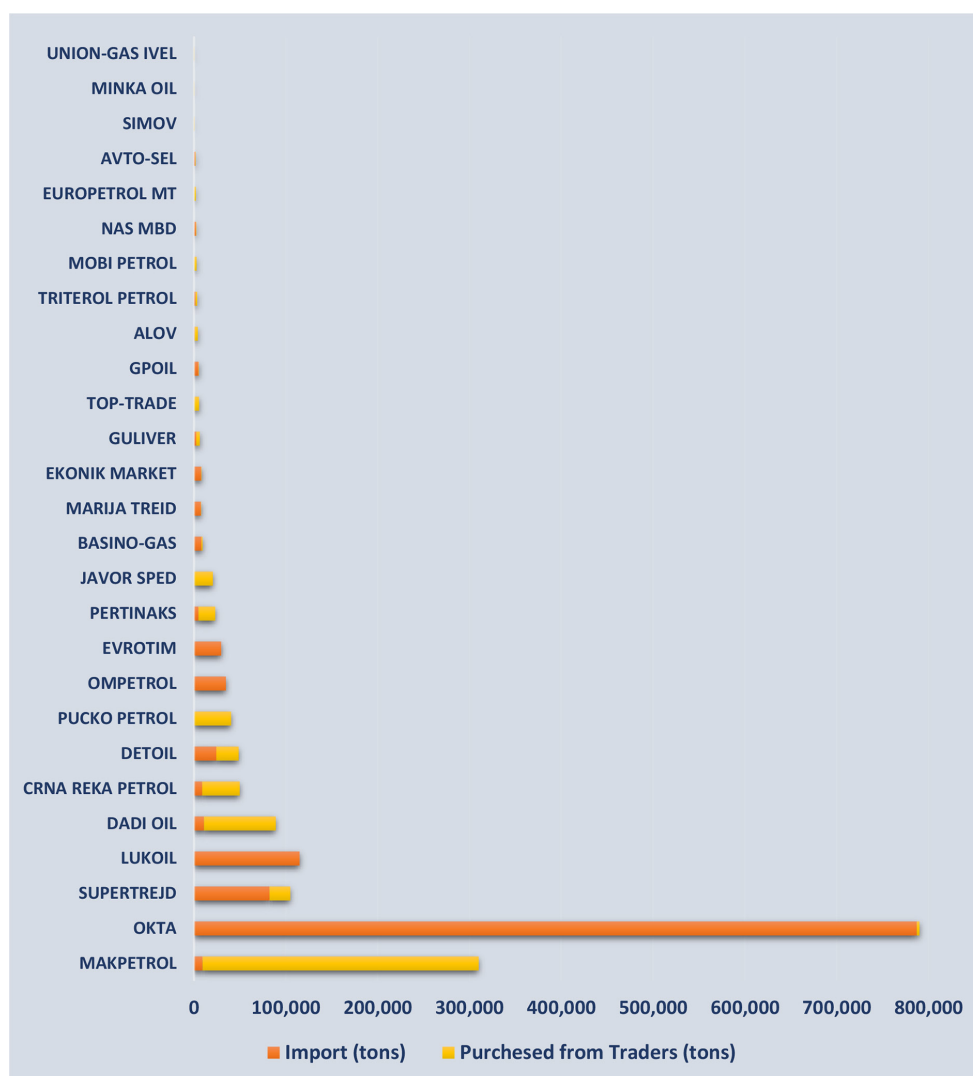
#### 3.4.1. Participants in the Oil and Oil Derivatives Market

There are several participants in the oil and oil derivatives market, i.e. performers of energy activities and there is a balance between supply and demand, although there are dominant participants in certain market segments.

The OKTA refinery started operating in 1982 and is designed as a hydroskimming refinery with a projected capacity of 2,5 million tons per year, or 5480 bbl/per day and has the capacity to produce: unleaded motor gasoline (95 octane) - Euro V, unleaded motor gasoline (98 octane) - Euro V, diesel fuel with 10 ppm sulfur - Euro V, fuel for jet engines - JET A-1, liquefied petroleum gas (LPG) - propane-butane mixture gas and commercial butane.

In 2019, crude oil was not imported into the country by OKTA Oil Refinery AD Skopje, and for that reason during 2019 on the domestic market there was no processing of crude oil and production of oil derivatives.

The procurement and sale of oil derivatives in the Republic of North Macedonia, during 2019, were *actively* performed by 27 legal entities - licensed for wholesale trade in crude oil, oil derivatives, biofuels and transport fuels, and their share is shown in Figure 1. The Regulatory Commission for Energy and Water Services, in the period from 2004 to December 31, 2019, has issued a total of 60 licenses in the field of crude oil and oil derivatives, of which at the end of 2019 - 37 are active and valid licenses, of which even 33 licenses are for wholesale trade in crude oil, oil derivatives, biofuels and transport fuels.



**Figure 1.** Total purchase and sale of oil derivatives in the country by traders in 2019

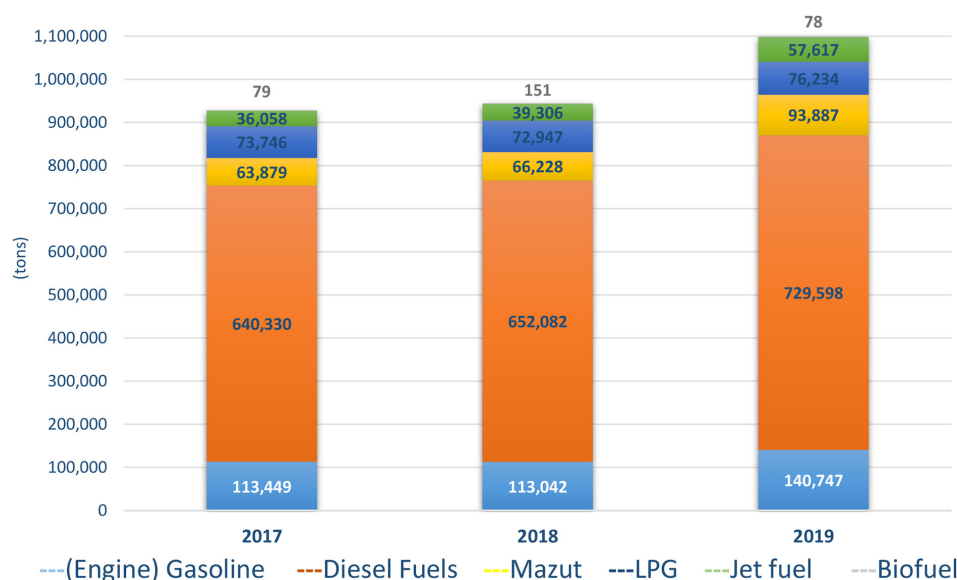
**Source:** Annual Report for 2019 of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia <https://www.erc.org.mk>

### 3.4.2. Import of Oil Derivatives

Total imported quantities of oil derivatives in the Republic of Northern Macedonia in 2019 (for which there was the latest official data during the preparation of this paper) amount to 1.143.276 tons, which is 15.76% more compared to the imported quantities of oil derivatives in 2018 (987,662 tons).

The largest importer in 2019 is OKTA Oil Refinery AD Skopje which participates with 68.85%, followed by Lukoil Macedonia DOOEL – Skopje with 10,06%, Super Trade Skopje with 7,19%, OM Petrol Skopje with 3,04% and other traders with about 10% share in the total import of oil derivatives in 2019.

In 2019, diesel fuel was mostly imported, i.e. 63.82% of the total import, followed by motor gasoline with 12.31%, mazut with 8.21%, propane-butane (LPG) with 6.67%, extra light fuel (EL-1) with 3.95%, jet fuel with 5.04% and a small percentage of biofuel imports.

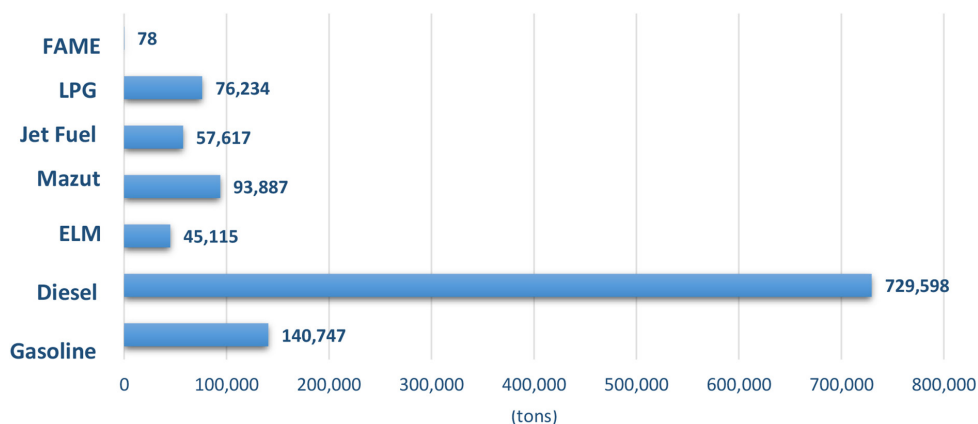


**Figure 2.** Import of oil derivatives in Republic of North Macedonia for 2017, 2018 and 2019 (tons/year)

**Source:** Annual Report for 2019 of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia <https://www.erc.org.mk>

From the chart above it can be seen that the import of oil derivatives in 2019 has increased significantly compared to the previous two years. There is increase in gasoline imports by 24.5% compared to 2018, while imports of diesel fuel in 2019 are increased by 11.9% compared to the previous (2018) year.

Significant increase of as much as 41.8% is registered with the import of mazut in 2019, compared to 2018, while **with LPG there is an increase of 4.5%.**



**Figure 3.** Imports of oil derivatives in 2019 (in tons)

**Source:** Annual Report for 2019 of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia <https://www.erc.org.mk>

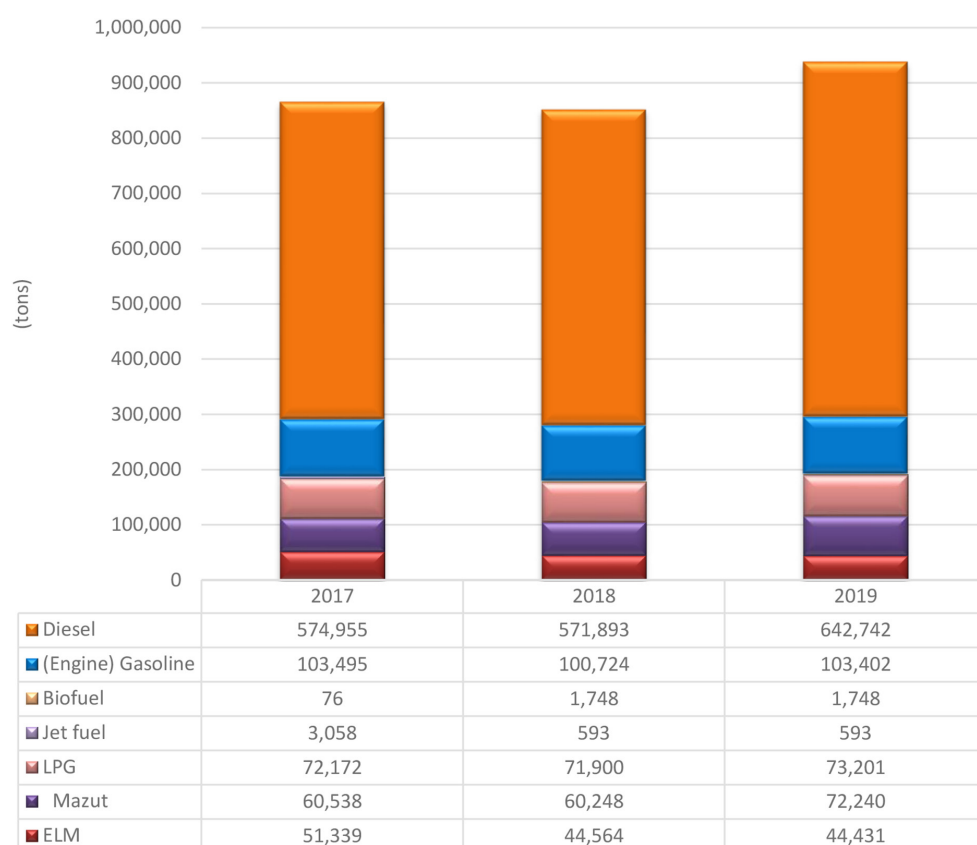
During 2019, the wholesalers of crude oil, oil derivatives, biofuels and transport fuels, has performed the import of oil derivatives in the Republic of North Macedonia from 13 countries, with most oil derivatives imported from neighboring countries, namely from Greece with 79.75%, then from Bulgaria with 10.82%, Serbia with 2.91%, Bosnia and Herzegovina with 2.60%, Albania with 2.06%, Romania 1.02% and a small percentage of imports from other countries.

### 3.4.3. Export of Oil Derivatives

The export of oil derivatives in 2019 amounted to 194,417 tons, and the same compared to 2018 (140,445 tons) has increased by 38,43%. The largest exporter of oil derivatives in 2019 is OKTA Oil Refinery AD Skopje with 81.90%, Makpetrol AD - Skopje with 13.31%, OM Petrol Skopje with 3.13% and the remaining export of 1.66% was realized by other traders.

### 3.4.4. Sale of Oil Derivatives

The sale of oil derivatives on the domestic market in 2019 amounted to 938,356 tons, which is an increase of 10.17% compared to the sale of oil derivatives in 2018 (851,770 tons).

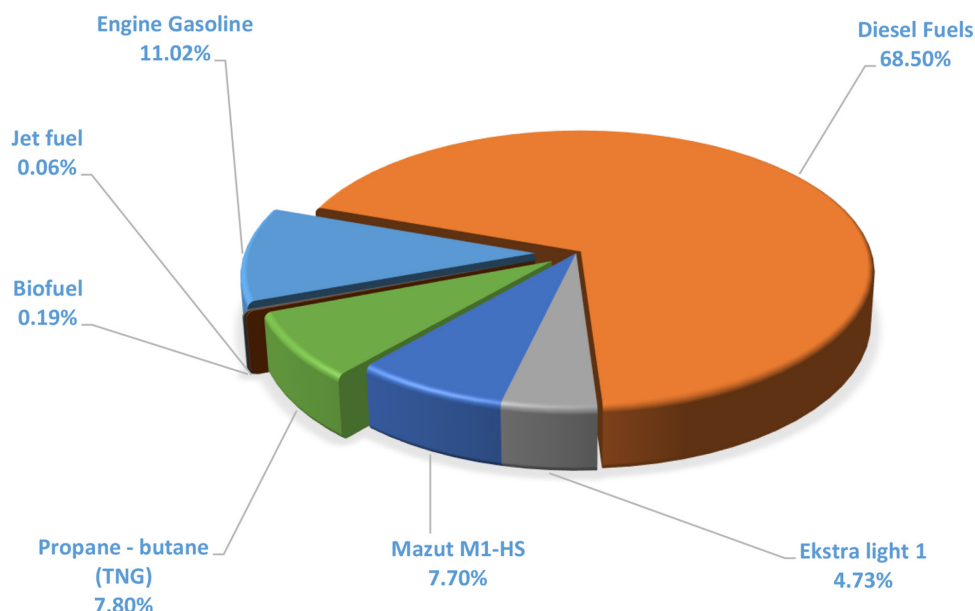


**Figure 4.** Sales of oil derivatives on the domestic market in 2017, 2018 and 2019 (tons/year)

**Source:** Annual Report for 2019 of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia <https://www.erc.org.mk>

Thereby, the sale of diesel fuels in 2019 has increased by 12.4% compared to the previous 2018, while the consumption of gasoline has increased by 2.7% compared to the previous year, i.e. the consumption of gasoline is approximately at the same level as 2017.

Significant increase in consumption in 2019 is also recorded in fuel oil, whose sales are 20% higher than sales in 2018, and sales of other oil derivatives are at approximately the same level as in 2018, i.e. 2017. The consumption of oil derivatives on the domestic market in 2019 is dominated by diesel fuels with 68.50%, unleaded gasoline with a share of 11.02%, mazut with 7.70% and liquefied petroleum gas with 7.80%, followed by extra light oil (EL-1) with 4.73%, biofuel with 0.19% and jet fuel with 0.06%.



**Figure 5.** Participation of oil derivatives in the consumption of oil derivatives in the Republic of North Macedonia in 2019

**Source:** Annual Report for 2019 of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia <https://www.erc.org.mk>

The dominant share in the total sales had OKTA Oil Refinery AD Skopje, followed by Makpetrol AD Skopje, Lukoil, Supertrade, Dadi Oil, Crna Reka Petrol, Detoil, Pucko Petrol and the remaining smaller wholesalers of oil derivatives. Wholesale trade is dominated by OKTA with 92.5%, and retail trade is dominated by Makpetrol with 33.28%, followed by Supertrade with 10.77% and Lukoil with 10.69% and these three companies together have over 54.73 % of retail trade.

| Type of oil and oil derivative | Status of stock / reserves at the beginning of year | PURCHASE                  |         |                         | TOTAL Available<br><br>(2+5) | SALE           |               |                |        |                      | Status of stock / reserves at the end of year<br><br>(6-11) |
|--------------------------------|---|---------------------------|---------|-------------------------|------------------------------|----------------|---------------|----------------|--------|----------------------|---|
|                                |   | In the country            | IMPORT  | TOTAL Purchase<br>(3+4) |                              | In the country |               |                | EXPORT | TOTAL Sale<br>(9+10) |   |
|                                |   | OKTA Refinery Production. |         |                         |                              | Gas Stations   | End Consumers | TOTAL<br>(7+8) |        |                      |   |
| 1                              | 2   | 3                         | 4       | 5                       | 6                            | 7              | 8             | 9              | 10     | 11                   | 12  |
| Crude oil                      | -   | -                         |         | -                       | -                            | -              | -             | -              | -      | -                    | -   |
| Unleaded petrol                | 4.060   | -                         | 140.747 | 140.747                 | 144.807                      | 99.916         | 3.486         | 103.402        | 36.491 | 139.893              | 4.914   |
| Diesel Fuels                   | 14.106  | -                         | 729.598 | 729.598                 | 743.704                      | 453.661        | 189.082       | 642.742        | 81.126 | 723.868              | 19.836  |
| Extra Light 1 (EL - 1)         | 2.379   | -                         | 45.115  | 45.115                  | 47.494                       | 7.748          | 36.682        | 44.431         | -      | 44.431               | 3.063   |
| Mazut (Fuel oil) M1-HS         | 1.756   | -                         | 93.887  | 93.887                  | 95.643                       | -              | 72.240        | 72.240         | 20.146 | 92.386               | 3.257   |
| Propane – Butane (TNG)         | 2.698   | -                         | 76.234  | 76.234                  | 78.932                       | 57.837         | 15.364        | 73.201         | 3.242  | 76.443               | 2.489   |
| Jet fuel                       | 2.161   | -                         | 57.617  | 57.617                  | 59.778                       | -              | 896           | 896            | 56.413 | 57.309               | 2.469   |
| Biodiesel                      | 2.106   | -                         | -       | -                       | 2.106                        | 1.497          | 122           | 1.619          | -      | 1.619                | 487   |
| FAME                           | 145   | -                         | 78      | 78                      | 223                          | 99             | -             | 99             | -      | 99                   | 124   |

**Figure 6.** Overview of crude oil supply, supply and sale of oil derivatives in 2019, in tons

**Source:** Annual Report for 2019 of the Regulatory Commission for Energy and Water Services of the Republic of North Macedonia <https://www.erc.org.mk>

## 4. CONCLUSION

Of all the alternative fuels currently available on the market, liquefied petroleum gas - LPG is the best and most reasonable short-term solution for converting the existing fleet of light vehicles, it is available in our market and is expected to be widely used until electric vehicles become more accessible to our citizens, as stated in the Strategy for Energy Development of the Republic of North Macedonia until 2040. In our country, a satisfactory network of gas stations and services for installation and maintenance of LPG vehicles has already been established. But, there are still many reasons for insufficient use of liquefied petroleum gas (LPG) both in our country and in other countries. Those reasons according to the Analysis - 'Gasification Systems', part 1 of the Faculty of Mechanical Engineering Skopje, RN Macedonia, come down to the following:

- insufficient knowledge of LPG, its advantages and disadvantages,
- relatively low production of LPG in refineries,
- lack of domestic manufacturers of special equipment for LPG,
- lack of accurate calculations for the price of energy consumed, either in households or in industry,
- fear of accidents, related to technical primitivism, etc.

In the developed world there is no hesitation in the use of LPG, and the main consumers are:

- households,
- commercial heating (via central heating system),
- cooling technique,
- food industry (ovens, dryers),
- glass and ceramics industry,
- textile industry,
- as fuel in SVS engines of various vehicles,
- agricultural forms (drying, heating, burning),
- synthetic materials industry,
- for city gas production.

Hence it is concluded that wherever heat, air conditioning, power and cooling are required, the use of LPG is possible. Lately, LPG has become more widely used in petrochemistry where it is used to produce synthetic resins and synthetic fibers.

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- Strategy for Energy Development of the Republic of North Macedonia until 2040



