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Business resilience in a changing world

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BUSINESS RESILIENCE IN A CHANGING WORLD



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BUSINESS RESILIENCE IN A CHANGING WORLD

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ABOUT FINIZ 2022 CONFERENCE

It is our great pleasure to introduce the proceedings of the International Scientific Conference FINIZ 2022, which is online on December 2, 2022. The main topic of this year's conference is: “**Business resilience in a changing world**”.

Business resilience could be defined as an organizational capacity to adapt to disruptions while maintaining continuous business operations and safeguarding human capital, assets, and brand equity. The COVID-19 pandemic as a global risk and challenge has changed the terms of business operations on the global level. Therefore, business resilience should include not only recovering from disruptions but also finding new strategies that will enable continuing business operations in case of new adversities. Considering this, the importance of all the elements of business resilience for the modern functioning of organizations in the whole world must not be neglected.

The following sections outline how papers contribute to the application of the “**Business resilience in a changing world**” by thematic areas of conference (accounting, internal audit, external audit, corporate governance, evaluation and risk, business finance, banking, entrepreneurship, forensics, marketing and management, and human resource management).

The international scientific conference **FINIZ 2022** is an ideal opportunity for all its participants to present their work and results to the general public and exchange experiences and ideas with other distinguished experts from relevant fields. Three papers, in the expanded form (30%), will be selected and proposed for publication in *The European Journal of Applied Economics* (M51) in an accelerated procedure.

In addition, one special session at the conference will be related to COST CA 19130 project entitled: *Fintech and Artificial Intelligence in Finance – Towards a transparent financial industry*.



All the accepted papers have undergone a thorough review process, performed by the reputable members of the Conference Organizing and Scientific Committee.

The overall statistical data on the conference are as follows:

- The total number of submitted papers/abstracts: 20
- The total number of full papers submitted: 18
- The total number of accepted papers: 17
- The total number of rejected papers: 1
- The total number of withdrawn papers: 0

The number of papers according to their related field:

- Accounting: 2
- Internal Audit: 1
- External Audit: 1
- Corporate Governance: 1
- Evaluation and Risk: 2
- Business Finances: 1
- Banking: 3
- Entrepreneurship: 2
- Forensics: 1
- Marketing and Management: 2
- Human Resource Management: 1

The total of 43 authors from 11 countries has taken part in this year's conference. The number of authors according to their country of origin: Albania: 1; Bosnia and Herzegovina: 1; Croatia: 1; Greece:1; India: 4; Lithuania: 1; Montenegro: 1; Poland: 1; Serbia: 30; Sultanate of Oman: 1; United Kingdom: 1.

All the accepted papers are published on the Conference portal. Each paper is assigned its DOI number, a reference on Google Scholar, and the Conference Proceedings have an ISBN number.

**Organizing Committee of the
International Scientific Conference FINIZ 2022**



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INVITED PAPERS



INVITED PAPERS

There are 3 invited papers in the areas of External Audit (1), Banking (1), and Evaluation and Risk (1). The first invited paper titled *The impact of COVID epidemic on financial statements auditing* notes that both audit clients and auditors had to respond to various challenges regarding financial reporting and auditing that were caused by the global pandemic in 2019. The authors emphasize that uncertainty and risk arising from the current environment have resulted in changes in reporting and audit procedures, although these areas are strictly governed by the legal and regulatory framework. The paper analyses the existing guidelines on COVID-19 considerations related to financial statements audit, issued by global and national regulators and professional institutes. Namely, all ISA remain in effect and additionally COVID-19 related guidelines should be used as a supplementary material. The authors suggest that auditors should pay close attention to following matters: audit quality, circumstances under which audit is complied, new techniques and technologies, changes in audit procedures and approaches, obtaining audit evidence, professional judgment, and professional skepticism, as well as assessment of audit materiality.

The second invited paper titled *Concentration level in the banking industry: Serbia, Croatia and Montenegro* aims to conduct a comparative analysis between Serbia, Montenegro and Croatia, given that the banking sector takes up the biggest part of financial sector in these countries. The analysis covered the period of 2017-2021 and selected ratios of concentration were calculated to define market structures in these countries. Market changes are also reflected in the reduced number of banks due to mergers and acquisitions in the last few years. The results of the static and dynamic analysis of concentration indicate that Serbia's banking sector is slightly less concentrated than Croatia's and Montenegro's banking sector. The authors suggest that the decrease in the number of the banks had a significant impact on market structure.

The third invited paper titled *The impact of the Russia-Ukraine conflict on stock market performance: Event study analysis* aims to analyse short-term volatility and the Indian stock market's reaction following the start of the Russia-Ukraine military conflict. In order to assess instantaneous market reaction, the event study method was used for the National Stock Exchange of India (NSE), with a specific emphasis on three dominant sectors – Information Technology (IT), Banking and Energy. Stock market performance one week before and after the event day was taken into consideration for comparison purposes and calculation of cumulative abnormal return rates. Furthermore, two event study methods have been applied: the mean-adjusted return model (MAR) and the market-adjusted return model (MKAR). According to expectations, analysis has shown negative reaction for all sectors on the event day. However, there was a positive market recovery in the post-event period for two out of three sectors, exhibiting predominant behavioural overreaction and heightened volatility.



THE IMPACT OF COVID EPIDEMIC ON FINANCIAL STATEMENTS AUDITING

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Abstract:

The global pandemic caused by the coronavirus in 2019 had significant consequences on financial reporting and auditing of those statements, which lead to numerous challenges that both audit clients and auditors had to respond to in a timely manner. Uncertainty and risk arising from the current environment have resulted in changes in reporting and audit procedures, although these areas are strictly governed by the legal and regulatory framework. This paper will analyse the existing guidelines on COVID-19 considerations related to financial statements audit, issued by global and national regulators and professional institutes. Namely, all ISA remain in effect and additionally COVID-19 related guidelines should be used as a supplementary material. Results indicate that auditors should pay close attention to following matters: audit quality, circumstances under which audit is complied, new techniques and technologies, changes in audit procedures and approaches, obtaining audit evidence, professional judgment and professional scepticism, as well as assessment of audit materiality.

Keywords:

audit environment, COVID-19, specific matters for consideration, financial reporting, auditor reporting.

1. INTRODUCTION

The global pandemic caused by the COVID-19 is still ongoing. Today, its consequences are widely observed and recognized at the world level because it caused serious health, economic and ultimately financial crises. Measures taken to combat the virus are still in force and affect various aspects of the economy, market, and daily business activities of companies. Despite the current situation, companies are obliged to align their operations with the legal and regulatory framework. For example, having in mind legal deadlines in the field of accounting and auditing, and in order to ensure transparency and trust in these uncertain times, management of a company is obliged to submit its ordinary or consolidated financial statements on time, while auditors are obliged to submit their audit reports in a timely manner (Accountancy Europe, 2020).

There are numerous challenges that auditors are faced with in the process of performing an audit from 2019 year-end and beyond. In fact, auditors are required to fully comply with ISA to obtain reasonable assurance that the financial statements are free from material misstatements. However, mentioned standards do not place specific requirements in detail on how to perform attestation process and acquire assurance (AICPA, 2020). Therefore, one way to respond to the challenges caused by the COVID-19 is to make certain changes related to access to: source and methods of acquiring audit information, risk assessment, as well as the use of new information and communication technologies in performing audit procedures (Mizdraković, Kljajić, & Hadrović Zekić, 2021). Guidelines issued by global and national regulators, as well as professional institutes, can help auditors in responding to emerging challenges.

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2. HIGHLIGHTING AREAS OF AUDIT CONSIDERATION IN COVID-19 ENVIRONMENT

There are several guidelines on implications of COVID-19 crisis in financial statements audit, and the most relevant ones are issued by The International Auditing and Assurance Standards Board (IAASB), International Federation of Automatic Control (IFAC), Auditing and Assurance Standards Board (AASB), Committee of European Auditing Oversight Bodies (CEAOB), International Forum of Independent Audit Regulators (IFIAR), American Institute of Certified Public Accountants (AICPA),

Accountancy Europe, and Chartered Accountants (IAASB, 2020), (IFAC, 2020), (Accountancy Europe, 2020), (AASB–AUASB JOINT FAQ, 2020), (Chartered Accountants, 2020), (CEAOB, 2020), (IFIAR, 2020) and (AICPA, 2020). Those guidelines highlight certain areas that should be further considered in the process of planning and performing audit procedures to obtain sufficient and appropriate audit evidence. The main goal of the issued guidelines is to provide assistance to the management of the company when compiling financial reports, and to audit practitioners when performing audit engagements in the age of COVID-19 (Drew, 2020). The following table will show specific issues for consideration by area, that is, taking into account the relevant ISA.

Table 1. Highlighted areas that should be further considered

Relevant ISA	Specific matters for consideration
Impact of epidemic on professional judgment and scepticism	
ISA 200 - Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with International Standards on Auditing	<ul style="list-style-type: none">• Circumstances under which audit is complied;• Determination of audit materiality;• Keeping records on the basis of which professional judgment is made.
Impact of epidemic on audit planning	
ISA 320 - Audit Materiality	<ul style="list-style-type: none">• Impact of changes of audit materiality level;• The impact of previously unadjusted differences in materiality level that need to be considered now due to changes of circumstances.
ISA 240 - The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements	<ul style="list-style-type: none">• Circumstances under which audit is complied;• Increased risk of fraud;• Professional scepticism in the process of considering the risk of fraud;• Use of newer technologies in the process of interviewing staff (e.g. Video meetings).
Impact of epidemic on risk assessment	
ISA 315 (Revised) – Identifying and Assessing Risks of Material Misstatement	<ul style="list-style-type: none">• Possible revision of already made risk assessments due to new significant risks in the current circumstances;• Impact of new or revised risks arising from the epidemic;• Impact of changes related to internal control systems and the control environment;• The impact of changes in legal and other regulations (e.g. Extension of the reporting period).
ISA 330 – The Auditor's Responses to Assessed Risks	<ul style="list-style-type: none">• Changes in planned actions resulting as a result of environmental development;• Pay extra attention to: the process of closing financial statements; assessment of the overall presentation of financial statements, including appropriate disclosures; as well as the conclusion whether a sufficient amount of evidence was collected in the audit process.



Impact of epidemic on obtaining audit evidence

ISA 500 – Audit Evidence	<ul style="list-style-type: none"> • Obtaining audit evidence due to the epidemic because e.g. auditors were not able to attend the inventory process; • Change in audit approach due to the epidemic because, for example, auditor team did not have access to sufficient staff; • Developing alternative audit procedures due to the epidemic because auditors, for example, were not able to obtain the original documentation; • Using newer information solutions when sharing data and holding virtual meetings; • The use of professional scepticism in relation to the collection of audit evidence in the age of epidemic; • Developing new audit procedures to test the reliability of electronic evidence.
ISA 501 - Audit evidence - Specific Considerations for Selected Items	<ul style="list-style-type: none"> • Use of new technologies in the inventory process; • Performance of alternative audit procedures.
ISA 600 - Special Considerations - Audits of Group Financial Statements (Including the Work of Component Auditors)	<ul style="list-style-type: none"> • Travel restrictions; • Transfer of data outside the jurisdiction; • Change in the way of communication in epidemic (due to remote locations).
ISA 230 - Audit Documentation	<ul style="list-style-type: none"> • The importance of documenting the auditor's considerations; • Professional judgment in relation to audit documentation.

The impact of the epidemic on the audit of accounting estimates

ISA 540 (Revised) - Auditing Accounting Estimates and Related Disclosures	<ul style="list-style-type: none"> • Revised ISA (in force from 15/09/2019) which has a significant impact on assessments due to the epidemic; • Changes in regulatory factors that may affect valuations for financial reporting; • Identification and assessment of the risk of materially significant misstatements related to estimates; • Effect of changing the inherent risk factors; • Professional scepticism to consider judgments related to accounting estimates.
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The impact of the epidemic on subsequent events

ISA 10 - Events After the Reporting Period	<ul style="list-style-type: none"> • Additional procedures in order to review and update estimates performed by the date of publication of financial statements taking into account current uncertainties; • Disclosure of subsequent events.
ISA 560 - Subsequent events	<ul style="list-style-type: none"> • Impact of postponement of financial reporting deadlines (based on certain jurisdictions) caused by the epidemic; • Additional event monitoring procedures until the date of financial statements publication due to the uncertainty of the current situation; • Undertaking procedures that would cover a longer period until the date of the audit report; • Presentation and disclosure of material subsequent events related to the epidemic in notes to the financial statements; • Greater focus on subsequent events and their impact (if any) on the financial statements.



The impact of the epidemic on Going Concern

ISA 570 (Revised) – Going Concern

- Auditor's assessment of the impact of the epidemic on going concern of audit client;
- Timeframe that the auditor should consider;
- Assessment of whether the audit client is liquid, that is, whether it can remain solvent during the pandemic;
- Budget revision;
- Assessment of reliance on state aid;
- Availability of financing data;
- Sensitivity analysis;
- Assessment of the degree of business activities disruption due to epidemic;
- Harmonization of the going concern assessment.

The impact of the epidemic on forming audit opinion and reporting on financial statements

ISA 700 (Revised) - Forming an Opinion and Reporting on Financial Statements and

ISA 701 - Communicating Key Audit Matters in the Independent Auditor's Report,

- New reasons for modifying the auditor's opinion due to the epidemic;
- New uncertainties introduced as a result of the COVID-19 virus.
- Impact of new or amended laws/regulations on financial reporting;
- New key issues arising from the impact of epidemic should be included in the audit report.

Source: Arranged according to (IAASB, 2020), (IFAC, 2020), (AASB–AUASB JOINT FAQ, 2020), (CEAOB, 2020), (IFIAR, 2020), (IFIAR, 2020), (AICPA, 2020), (IAASB, 2020), (IFAC, 2020), (Accountancy Europe, 2020), (Chartered Accountants, 2020), (CEAOB, 2020), (IFIAR, 2020) and (AICPA, 2020).

Taking into account the specific issues for consideration by area, i.e. the relevant ISA, the guidelines should be helpful in the process of conducting an audit, especially when assessing risks and formulating an appropriate strategy and audit plan. Bearing in mind that the global epidemic has created new market conditions, while auditors are required to comply with full ISAs, the guidelines specifically emphasize that the auditor should pay attention to:

1. Audit quality in the age of COVID-19. Authors Albitar, Gerged, Khaldoon, & Hussainey (2021) in their work point out that the decline in audit fees, the assessment of going concern, the level of reliability and sufficiency of audit evidence, as well as the loss of manpower (due to layoffs) will affect the overall quality of the audit of financial statements from 2019 year-end and beyond.
2. Change in circumstances amid the crisis caused by epidemic. Albitar, Gerged, Khaldoon, & Hussainey (2021) in their work note that the consequences of the current pandemic will pose more difficulties to auditors and audit clients than those that arose as a result of the financial crisis in 2008.

3. New techniques and technologies that will facilitate the audit process. Research results of authors Sharma, Sharma, Joshi, & Sharma (2022) show that since the onset of COVID-19, auditors support the integration of new technologies into audit practices to ensure data accuracy and transparency. Authors Nezhyva & Miniailo (2020) suggest that the use of audit information technology does not replace the audit process itself, but represents a tool that reduces the time and resources spent in the audit implementation process. Authors Kljajić, Mizdraković, & Hadrović Zekić (2022) in their work state that auditors could use the new business environment as an opportunity for complete digital transformation, and the widespread use of remote auditing. Authors Albitar, Gerged, Khaldoon, & Hussainey (2021) recommend audit companies to invest in digital platforms (artificial intelligence, blockchain, network security, development of data functions, etc.) in order to be able to perform remote auditing from now on.



4. Change in audit procedures and approaches. Authors Kend & Nguyen (2022) found that 3% of audit procedures in 2020 dealt with audit risks related to the epidemic. Authors Nezhyva & Miniailo (2020) claimed in their work that the technological integration of audit based on modern information systems increases the efficiency of defined audit procedures and approaches. The results of authors' research Sharma, Sharma, Joshi, & Sharma (2022) show that auditors have shown great interest in using remote auditing in the future.
5. Obtaining audit evidence (electronically). The author Kaka (2021) in his paper suggests that auditors should consider collecting audit evidence electronically due to the increasing presence of virtual technologies and online business methods. In the case of obtaining evidence electronically, the auditor should check the controls of the processes from which the electronic evidence was obtained.
6. Professional judgment and professional scepticism. The author Kaka (2021) suggests that auditors are expected to use professional judgment and professional scepticism, that is, to be focused on the public interest and ethical responsibility in these uncertain conditions. Farcane and other (2022) point out that COVID-19 has affected many aspects of the audit, especially those related to the determination of professional judgment; for example, determining materiality level requires its use.
7. Assessment of material significance. Authors Farcane and others (2022) point out that in the audit process it is necessary to modify the criteria related to the determination of materiality level due to significant changes in circumstances during the epidemic. In particular, authors point out that in the age of COVID-19, audit materiality level will need to be updated as the audit progresses more than before, due to changes in metrics relevant to users of financial statements (e.g. revenue).

3. IMPLICATIONS OF COVID-19 EPIDEMIC ON THE MARKET OF THE REPUBLIC OF SERBIA

When it comes to the economy of the Republic of Serbia during the state of emergency introduced due to the pandemic, the Decree was adopted on postponement of the deadlines for holding regular meetings of the assembly of companies and submitting annual and consolidated financial statements of business entities, cooperatives, other legal entities and entrepreneurs, as well as the deadlines for submission of applications for income tax and tax on income from self-employed activities, the validity of licenses of authorized

auditors and licenses for assessing the value of the real estate that expire during the state of emergency caused by the epidemic ("Official Gazette RS", No. 57/2020).

This decree sets the deadline for the submission of annual reports, i.e. annual financial statements with the auditor's report of all taxpayers whose reporting is regulated by the Law on Accounting ("Official Gazette of RS", No. 73/2019 and 44/2021 - other law), i.e. the Law on the Capital Market ("Official Gazette of the RS", No. 31/11, 112/15, 108/16 and 9/20), i.e. the Law on Investment Funds ("Official Gazette of the RS", No. 46/06, 51/09, 31/11 and 115/14) or the Law on Open Investment Funds with Public Offering ("Official Gazette of the RS", No. 73/19), is postponed to a period of 60 days from the day the state of emergency ends. Taking into account the aforementioned provisions, moving financial reporting deadlines will have an impact on both, the financial reporting process, and the audit process. Management of audit clients is specifically required to disclose materially significant subsequent events related to the epidemic in financial statements; while auditors to focus more on subsequent events and their impact on financial statements, implementing additional procedures that will cover a longer period until the date of the audit report, which was not previously the case.

4. CONCLUSION

The emergence of the global crisis caused by the COVID-19 epidemic affected both the process of preparation of financial statements, as well as the entire audit engagement. Namely, auditors had to promptly adapt to work in uncertain circumstances; adopt new audit procedures; and use new technological resources in order to obtain sufficient audit evidence in order to form an audit opinion. The aim of this paper is to highlight special issues for consideration by area, i.e. taking into account the relevant ISA. Emphasizing special issues should additionally help auditors in the process of defining audit procedures, that is, to respond to challenges arising from the uncertainty of the current environment. The results of the analysis of special issues for consideration show that the auditor in the age of pandemic should pay attention to: audit quality, circumstances under which audit is complied, new techniques and technologies, changes in audit procedures and approaches, obtaining audit evidence, professional judgment and professional scepticism, as well as assessment of audit materiality.



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CONCENTRATION LEVEL IN THE BANKING INDUSTRY: SERBIA, CROATIA AND MONTENEGRO

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Abstract:

In the last few years there have been significant changes in financial sector on the global level. The aim of this paper is to analyze banking sectors and make a comparative analysis between Serbia, Montenegro and Croatia, given that the banking sector takes up the biggest part of financial sector in these countries. The covered period of the analysis is 2017-2021 and selected ratios of concentration were calculated to define market structures in these countries. Market changes are also reflected in the reduced number of banks due to mergers and acquisitions in the last few years. The results of the static and dynamic analysis of concentration indicate that Serbia's banking sector is slightly less concentrated than Croatia's and Montenegro's banking sector. The decrease in the number of the banks had a significant impact on market structure and it will draw attention to further research.

Keywords:

concentration, competitiveness, market power, bank sector.

1. INTRODUCTION

In transition economies, the capital market is still not as developed as in the developed countries. Banks play a vital role in the economy of each country and their importance is emphasized in developing countries, where the financial system is characterized as a bank-based system (Fotova Čiković & Cvetkoska, 2022). In the last 15 years the transfer of European countries' capital to the region's banking sector has been accelerated. One of the most significant steps in the transition process has been the introduction of market competition, including the demonopolization of highly concentrated economies and expansion of the private sector in the economic activity (Đuranović & Filipović, 2021).

The decrease in the number of banks, especially those with domestic capital, has initiated changes in the structure of the region's banking sectors, which affect market concentration and the level of competitiveness. A great number of factors can be included in the analysis of the market structure but most important are the number of the competitors operating in the market and dispersion of the market share among competitors. Sometimes, when sector includes numerous competitors, it can be difficult to cover them all in the analysis. As long as the number of banks that operate in the regional banking sectors is not large, it is easy to include all market participants in the following analysis.

The rest of the paper is organized as follows. Section 2 summarizes the related literature. Section 3 explains the methodology and measurement of variables. In section 4 we discuss the empirical results and section 5 concludes the paper.

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2. LITERATURE REVIEW

In the last few decades market concentration, along with competition policy, has been the subject of many research studies. Most of the empirical studies that analyze banking sector include measuring the level of concentration, market power, efficiency of the banks and the relationship between them and profitability.

The concentration indices represent an essential element of the competitiveness analysis of a particular sector and the level of competitiveness determines the market structure as well as the market power of a certain sector. The widespread trend of the consolidation of banks and an increased concentration indicates a changed market structure of the economy (Anđelinović, Milec & Dumičić, 2022). Bubanić (2021) highlighted that the basic measures for assessing the concentration are the concentration ratio (CR_k) and the Herfindahl-Hirschman index (HHI). Most of the central banks include these measures of concentration in their official reports. Considering empirical research, it can be concluded that authors use different balance positions such as assets, loans, deposits and interest revenue.

Barjaktarović, Filipović & Dimić (2013) analyzed the concentration of the banking sector of 9 Central and Eastern European countries in the period from 2007 to 2012 in terms of the banking sector data such as assets, approved loans, and collected deposits. Their results suggest moderate to highly concentrated market according to CR5 and no market concentration to moderate concentration according to HHI.

Galetić & Obradović (2018) measured concentration of the banking market of the Republic of Croatia in 2017 using a great number of concentration index such as: the Herfindahl-Hirschman's index, the Hall-Tideman's, the Rosenbluth's index, the extensive industrial concentration index, the Hannah-Kay's index, the Index U, the Hause's index and the entropy measure. They concluded that monopoly competition exists on the market, but also that oligopoly operates in the market as eight banks control almost 90% of the market.

Đuranović & Filipović (2021) analyzed the impact of market concentration on competitiveness of the banking sector in Serbia using total assets, total collected deposits and total approved loans from 2018 to the third quarter of 2020. They concluded that competition among banks in Serbia is without threats of monopoly and, although there were plenty of participants in 2020, the market structure is not oligopolistic - it has more of a so-called loose oligopoly.

Grubišić, Kamenković & Kaličanin (2021) made a comparative analysis of the banking sector concentration in Serbia and Montenegro covering the period 2015-2019.

It is concluded that compared to Serbia, the banking sector of Montenegro is characterized by a smaller number of banks, a higher level of market concentration, and weaker competition.

3. METHODOLOGY

The concentration ratio is often used as a first step when analyzing the level of concentration because it is very simple to calculate. This indicator obtained represents the sum of market shares of the banks which are previously grouped from the biggest to the smallest one, i.e. from the bank with the largest share to the bank with the smallest share in the market. Summing only over the market shares of the k largest banks in the market, it takes the form:

$$CR_k = \sum_{i=1}^k s_i \quad (1)$$

giving equal emphasis to the k leading banks, but neglecting the many small banks in the market. There is no rule for the determination of the value of k , so that the number of banks included in the concentration index is a rather arbitrary decision (Bikker & Haaf, 2002). In equation 1 s_i stands for the market share of the i bank and k stands for the number of banks we use when calculating the ratio.

The Herfindahl-Hirschman Index is one of the most commonly used indicators to detect anticompetitive behavior in industries. In fact, an increase in the value of the index is usually interpreted as an indicator of actions which may lessen competition or even create a monopoly (Matsumoto, Merlone & Szidarovszky, 2012). If we consider a market where n companies are operating, and the market share of the i -th company is s_i , the HHI is defined as the sum of the squares of all market shares (Naldi & Flamini, 2014):

$$HHI = \sum_{i=1}^n s_i^2 \quad (2)$$

Hirshman-Herfindahl index taking values up to 100 marks competitive banking industry; up to 1,500 – unconcentrated industry; between 1,500 and 2,500 indicates moderate concentration, while HHI above 2,500 indicates highly concentrated industry (Vujanović & Fabris, 2021). In this paper the total balance sheet assets are used for calculating concentration ratio and Hirshman-Herfindahl index.



4. RESULTS AND DISCUSSION

Significant changes took place in the analyzed period 2017-2021 regarding the banking sector of the observed countries. There is a decrease in the number of the banks year on year, which is shown in Figure 1. In the banking sector of the Republic of Serbia in 2017, 29 bank operated in the market and in 2021 there were 23 banks, i.e.:

- At the end of December 2017, the banking sector of Serbia consisted of 29 banks with a license to operate, i.e. one bank less than at the end of September 2017. Jubanka Belgrade was merged with AIK Bank Belgrade.
- At the end of December 2018, the banking sector of Serbia consisted of 27 banks, which is one bank less than at the end of September 2018. The decrease in the number of banks, business units and the number of employees is primarily the result of the merger of Piraeus bank Belgrade with Direktna bank Kragujevac in October 2018. The Executive Board of the National Bank of Serbia made a decision to revoke the license for Jugobanka Kosovska Mitrovica.
- At the end of December 2019, the banking sector of Serbia consisted of 26 banks, which is one bank less than at the end of December 2018. OTP bank at the end of April 2019 became the 100% owner of Vojvođanska bank Novi Sad and changed its name to Vojvođanska bank. Novi Sad.
- At the end of June 2021, MTS bank was merged to Banka Poštanska Štedionica Belgrade. At the end of December 2021 Direktna bank and Eurobank Belgrade merged and continued to operate as Eurobank Direktna, so the banking sector of Serbia consisted of 24 banks at the end of 2021.

The banking sector of Montenegro consisted of 15 banks in 2017 and the number of the banks also decreased in the observed period, i.e.:

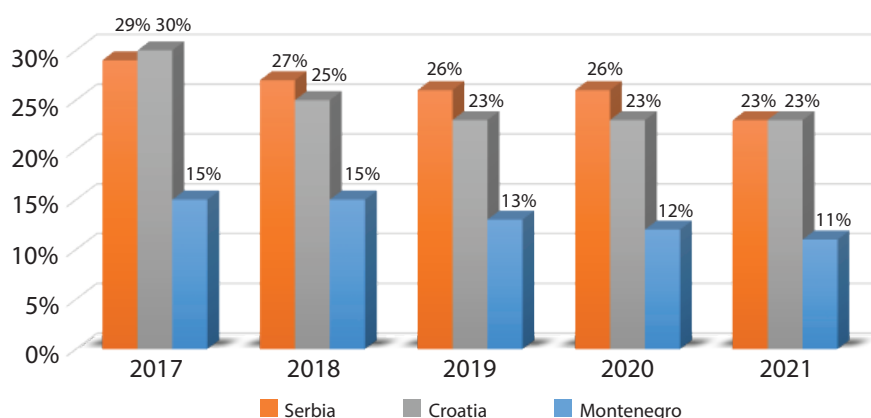
- In 2019 Central bank of Montenegro declared Invest bank Montenegro Podgorica and Atlas bank Podgorica bankrupt and started insolvency proceedings.
- In December 2020 Podgorička bank Podgorica was merged with Crnogorska komercijalna bank Podgorica so the banking sector of Montenegro consisted of 12 banks at the end of 2020.
- At the end of 2021 11 banks operated in the market until November 2021, when Komercijalna bank Podgorica was merged with NLB bank Podgorica.

The banking sector of Croatia consisted of 29 banks in 2017 and the number of the banks decreased in the observed period to 23 in 2021, i.e.:

- In 2018 there were four mergers in Croatia banking sector: Jadranska bank was merged with Hrvatska savings bank, Splitska bank was merged with OTP bank Hrvatska, Veneto bank was merged with Privredna bank Zagreb and Prva housing savings bank was merged with Zagrebačka bank. At the end of 2018, 25 banks operated in the market.
- In 2019 Jadranska bank and HPB savings bank were merged with Hrvatska savings bank.

Figure 2 shows a dynamic analysis of the market share of the leading banks, i.e. the concentration ratio of the leading banks in the period 2017-2021 measured by total balance sheet assets for Serbia, Montenegro and Croatia. As can be seen in the graph, it is Croatia that has the highest value of CR1 ratio, which was in the range of 26.1-28.4%. The bank with the highest market share measured by total balance sheet assets did not change - Zagrebačka bank. In Serbia's banking sector, the CR1 ratio was in the range of 14.8-16.8%.

Figure 1. Number of the banks, 2017-2021



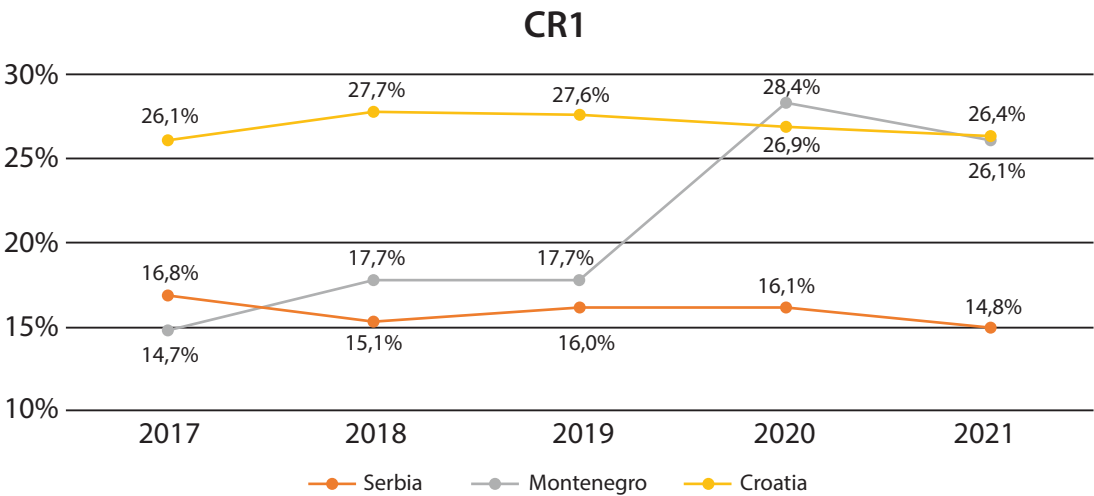
Source: NBS, Central Bank of Montenegro and Croatian National Bank



Banca Intesa, which is the leader on the banking market of Serbia, had the smallest market share in 2021. Dynamic analysis of the CR1 ratio of the banking sector of Montenegro shows a significant change in the ratio value in 2020-2021 compared to the ratio value in 2017-2019. The lowest CR1 value was in 2017 - 14.7%, while the highest value was in 2020 - 28.4%.

The increase in value is the result of the merger of Podgorička bank AD Podgorica with Crnogorska komercijalna bank AD Podgorica, by which Crnogorska komercijalna bank increased its share in the banking sector of Montenegro. It can be concluded that Montenegro and Croatia have significantly higher values of CR1 ratio compared to the Republic of Serbia.

Figure 2. Concentration ratios of the leading banks, 2017-2021

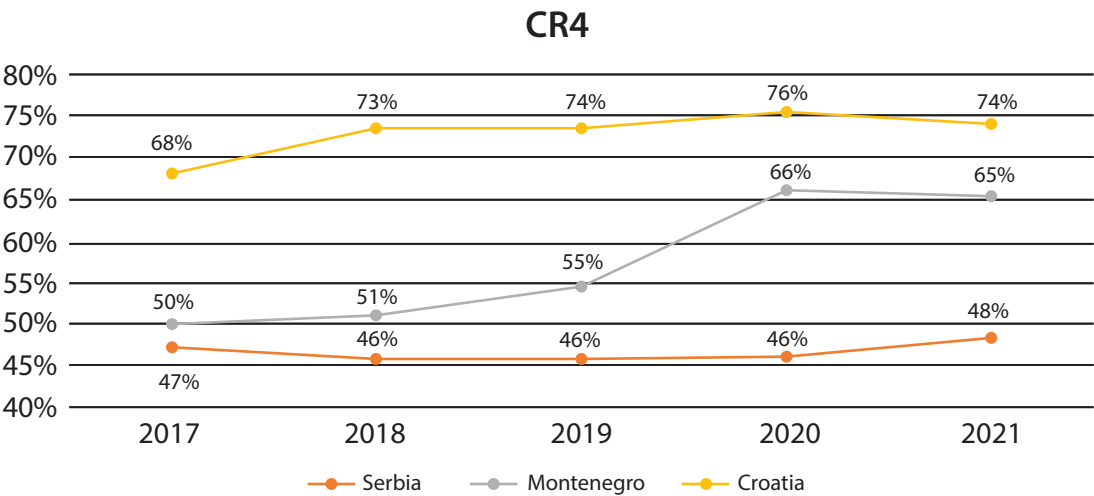


Source: Author's calculations based on Central banks reports

Figure 3 shows a dynamic analysis of the CR4 ratio measured by total balance sheet assets for Croatia, Montenegro and the Republic of Serbia. It is noticeable that Croatia has the highest value of the analyzed ratio, while Serbia has the lowest value. The cumulative share of the first 4 banks on the Croatian banking market ranged from

68 to 76%. Given that in 2021 the first four banks had three quarters of the market, it can be concluded that the remaining 19 banks shared 24% of the market. The aforementioned merger of Podgorička bank with Crnogorska komercijalna bank led to a significant increase in the value of Montenegro CR4 ratio.

Figure 3. Concentration ratios of the four leading banks, 2017-2021



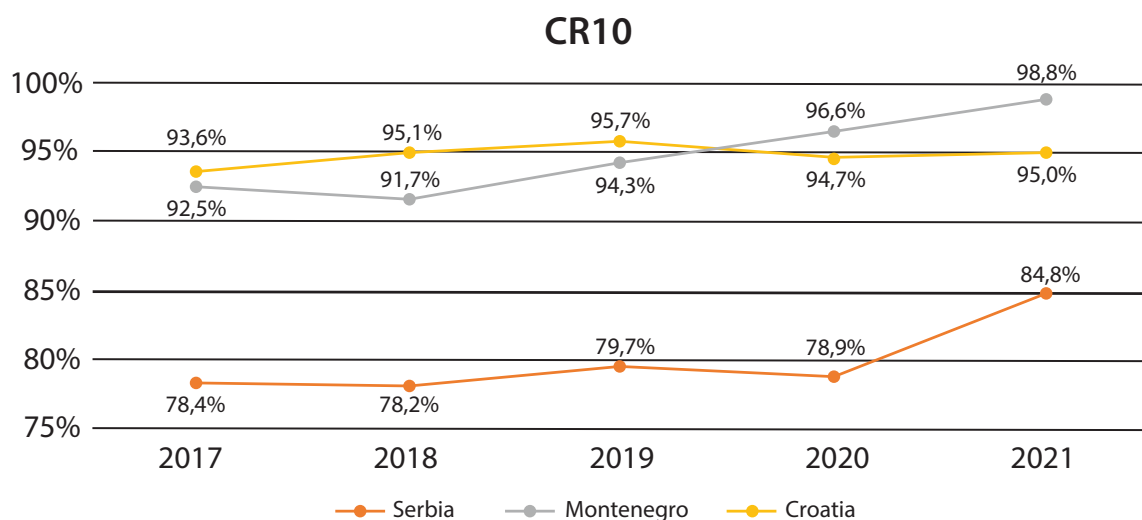
Source: Author's calculations based on Central banks reports



The value of the concentration ratio of the first four banks in the banking sector of Serbia did not change significantly in the observed period and was within the range of 46-48%. If the value of the cumulative market share of the first four banks is higher than 40%, it can be concluded

that such a market is characterized by an oligopoly market structure (Lončar & Rajić, 2012). Considering this, it can be concluded that these market sectors are characterized as oligopoly market structure.

Figure 4. Concentration ratios of the ten leading banks, 2017-2021

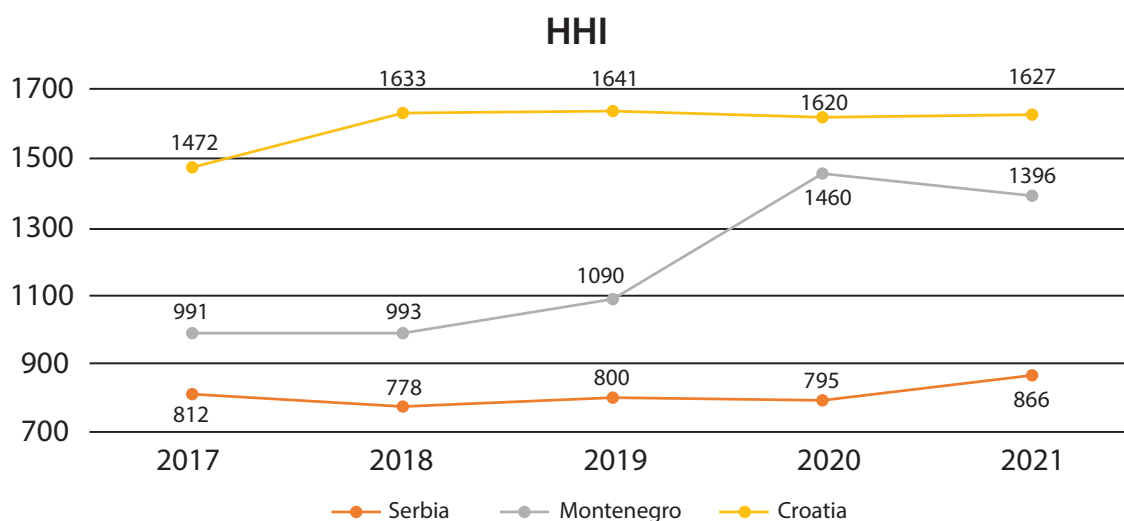


Source: Author's calculations based on Central banks reports

Considering the values of the CR10 in Figure 4 it can be concluded that Montenegro and Croatia have higher levels of this concentration compared to Serbia. The highest level was in 2021 for Montenegro's banking sector – 98.8%, which is expected considering that only 11 banks operated in the market. CR10 for Croatia's banking sector was 93.6-95.7% for the period 2017-2021. As the number of the banks operating in Croatia's banking sector in 2021 was

23, it is obvious that there was a great number of banks which had low market share – 15 banks had market share less than 1%. In the banking sector of Serbia there was a significant increase from 78.9% in 2020 to 84.8% in 2021. As 23 banks operated in 2021, 13 banks shared 15% of the market and 8 of them had market share less than 1%.

Figure 5. Comparative analysis of Herfindahl Hirschman index



Source: Author's calculations based on Central banks reports



Figure 5 shows a comparative analysis of Herfindahl Hirschman index for Serbia, Montenegro and Croatia covering the period 2017-2021. There were no significant changes in the value of Herfindahl Hirschman index in the case of Serbia and the range was 778-866. The slight increase in 2021 is due to the decrease in the number of the banks, from 26 in 2020 to 23. In the case of Montenegro, mergers had the impact on the value of Herfindahl Hirschman index which rose from 1090 to 1460. The highest value of Herfindahl Hirschman index is in Croatia's banking sector 1472-1641. Considering the Herfindahl Hirschman index values in Figure 5, it can be concluded that Serbia's banking sector is characterized by an unconcentrated supply and Croatia's and Montenegro's banking sectors are characterized by a moderately concentrated supply.

5. CONCLUSION

This paper has analyzed concentration level in the banking industry of Serbia, Croatia and Montenegro during 2017-2021. For this purpose, different concentration ratios were employed. The countries of the region differ in the degree of concentration and competition in banking. The balance sheet categories of the banking sector in Serbia have HHI Index below 1000. It means that the market is highly fragmented, with many small non-competitive banks that have not reached the volume of deposits and loans which provides sufficient potential for profitable business.

The picture of concentration and competition in the banking market becomes clearer if the market share of the group of the largest banks is considered. If we look at the first four banks by market share, there is a great similarity between Croatia and Montenegro in the distribution of market share, while Serbia has a different market structure. The first four banks in Serbia hold about half of the market. The banking sectors of Croatia and Montenegro have already reached a high level of concentration, where the first four banks have a market share of about 70%. There are also many banks in Croatia with a very small market share. This market structure shows that the process of inevitable concentration of banks in Croatia has progressed further than in the other two observed countries.

Research findings suggest that consolidation of the analyzing banking sectors has not yet been completed. In the coming years, we can expect that there will be consolidation and concentration in the banking sector of Serbia, in which the most competitive banks will take a significantly larger market share and improve profitability and business performance.

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THE IMPACT OF THE RUSSIA-UKRAINE CONFLICT ON STOCK MARKET PERFORMANCE: EVENT STUDY ANALYSIS

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Abstract:

The objective of this paper is to analyze short-term volatility and the Indian stock market's reaction following the start of the Russia-Ukraine military conflict. In order to assess instantaneous market reaction, the event study method was used for the National Stock Exchange of India (NSE), with a specific emphasis on three dominant sectors – Information Technology (IT), Banking and Energy. Stock market performance one week before and after the event day was taken into consideration for comparison purposes and calculation of cumulative abnormal return rates. Furthermore, two event study methods have been applied: the mean-adjusted return model (MAR) and the market-adjusted return model (MKAR). According to expectations, analysis has shown negative reaction for all sectors on the event day; however there was a positive market recovery in the post-event period for two out of three sectors, exhibiting predominant behavioural overreaction and heightened volatility.

Keywords:

stock market, event study, volatility, India.

1. INTRODUCTION

The stock market is one of the major pillars of any country's financial and economic wellbeing, with its amplified significance for developed economies. As such, it serves at the same time, as a catalyst and the reflection of economic conditions in a country. In the long run, it tends to move in the upward direction. However, in the short run, it faces many downtrends due to some major financial, economic and geo-political events. Some examples are Dot Com Bubble, the Asian financial crisis, the 2008 financial crisis (Wright, 2014), and the stock market collapse in 2020 as a result of COVID-19. On 24th February, the Russian government announced that it would start a special military operation against Ukraine (Alzazeera, 2022), although many countries treat it as a war over Ukraine. Since the start of military conflict, stock markets of many countries have started reacting negatively due to overall macroeconomic uncertainties and rising systematic risks. The stock market indices of Japan and South Korea fell by 2 percent, markets in Sydney as well Hong Kong fell by 3 percent, while in the case of the Indian market, both indices (Sensex and Nifty) fell by 3 percent (Tyagi, 2022) after the declaration of the military operation by the Russian government.

The conflict between Russia and Ukraine is leading to many negative repercussions in the coming future, such as food shortage, inflation, energy insecurity, oil price turbulences and much more. Those systematic negative events, along with strong dollar appreciation, have even more deteriorating implications for developing countries. India, as one of the leading developing economies, is no exception whatsoever. Thus, this study's objective is to determine this conflict's impact on

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the India's stock market performance. For the study, three NSE sectoral indices - IT, Banking and Energy have been chosen. The impact on these sectors has been examined using the event study methodology. The techniques of mean and market-adjusted return models have been used. The results indicated that all sectors exert a negative effect on the day when the announcement was made. However, these sectors gained their positions after the event day, except for the banking sector, which remained in a negative position.

2. LITERATURE REVIEW

The prominent statistical technique for assessing the short-run impact effects of any investigation is the event study method. Many academicians and researchers have applied this method in their studies. Zerbib (2019) found out that conventional bonds have a higher yield than green bonds, which demotivates investors toward green investment. Barua & Chiesa (2019) applied this method to find out the variables which affect the issue size of green bonds. This approach has recently been used in numerous studies to determine COVID-19's impact on the finance industry. The reaction of banking sectors has been analyzed using this method for eight countries by Rizwan et al. (2020). They found that for all the samples taken, the systematic risk was increased. Baek et al. (2020) examined the US stock market volatility and found out that whether it was positive or negative news, volatility was sensitive for both news. According to Zhang et al. (2020), who looked into how COVID-19 affected the risk on the world's financial markets, explained that the risk had increased as a result of this occurrence. (Boubaker et al., 2022; Sun et al., 2022) examined that the Russia-Ukraine war affected the global stock market as per their involvement with these countries. There was a huge negative impact on CAR for countries with close boundaries with EU countries. (Ahmed et al., 2022) analysed that the crisis of the Russia-Ukraine war led to a negative stock return for European stocks even after the event period.

3. RESEARCH OBJECTIVE

The following describes the paper's research objective:

- i) The primary goal of the study is to determine how the conflict between Russia and Ukraine has affected the performance of the NSE Energy, Banking and Information Technology sectors.
- ii) This paper aims to determine the possible cause and factors affecting these sectors during this period.

4. DATA AND METHODOLOGY

Data from secondary sources have been used as the basis for the analysis. The NSE website has been used to get the index values. The event study date has been confirmed using authenticated newspaper and the same has been verified from some other channels. The three sectors of NSE are Information Technology (IT), Banking and Energy.

The data is analysed using the event study method. This approach is based on the premise of a semi-strong form of market efficiency. This method makes a comparison of the performance before and after the event. It includes an event study timeline comprised of an estimation and observation period. The event day is considered as Day 0 which can be any declaration date of the event, such as the announcement of the demonetization of currency.

The 15-day event window has been taken, which includes 7 days before and after the event day. With the help of day 0 as the base, abnormal returns have been calculated. Two event study methods have been applied: the mean-adjusted return (MAR) model and the market-adjusted return (MKAR) model. Index average return has been calculated based on the daily closing index point for the duration of 216 days prior to the observation period. The calculation of the mean return is based on logarithmic return.

Abnormal returns were calculated for -7 days to +7 days from the announcement date of the special military operation. For the index i , abnormal return has been calculated by the below equation for the duration of period t :

$$AR_{it} = Rit - ER_{it} \quad (1)$$

AR_{it} represents abnormal return while Rit and ER_{it} represents the actual logarithmic return and expected logarithmic return of a particular sector.

Using the following equation, the daily return of all indices has been calculated:

$$Rit = \ln(Pit/Pit-1) \quad (2)$$

Pit and $Pit-1$ represent the daily index value of Nifty 50 and sectoral indices taking time t and $t-1$. Nifty 50 has been taken here as a proxy to represent the overall market return with respect to sectoral return.

Equation 1 has been used to calculate the mean adjusted abnormal return. The figure of abnormal return is arrived at by the difference between actual return (Rit) and expected return (ER_{it}). The expected return has been calculated by averaging the logarithmic return of 216 days before the observation period.



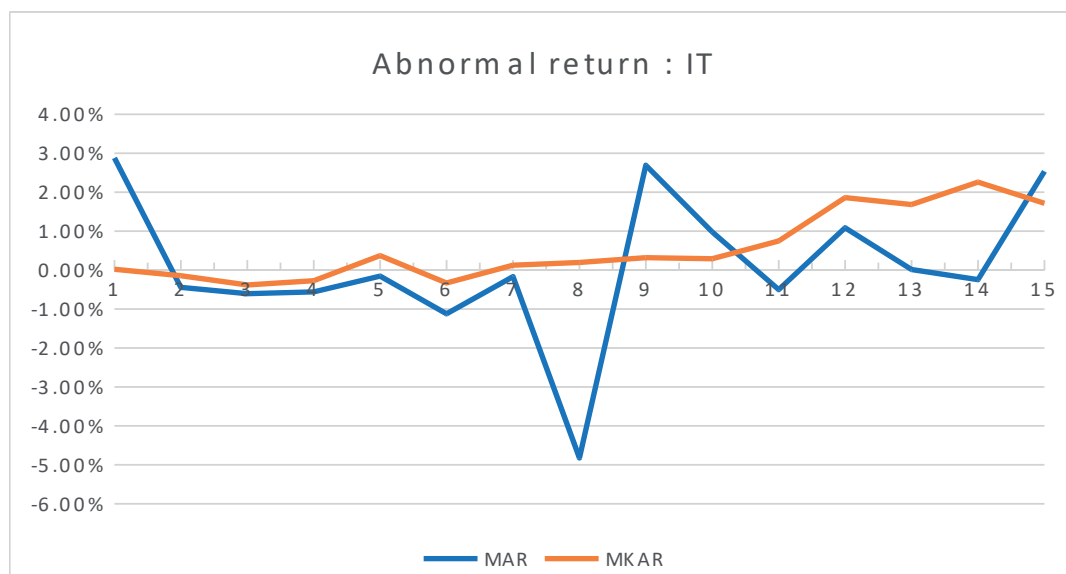
The sectors' performance was measured by comparing the cumulative abnormal return (CAR) values calculated using Equation (3).

$$CAR = \sum_{t=1}^N AR_{it} \quad (3)$$

5. RESULTS AND DISCUSSIONS

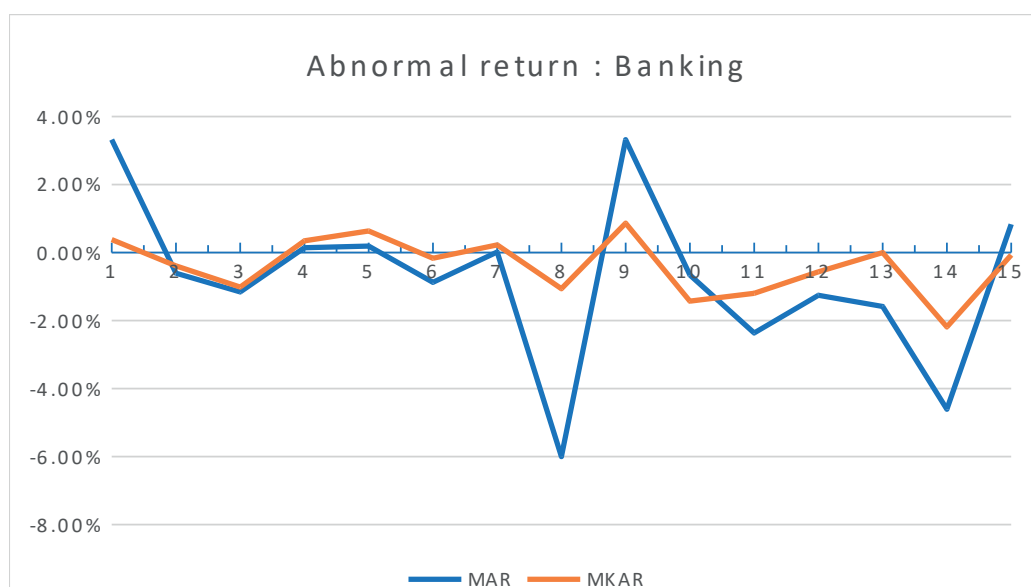
Figures 1, 2 and 3 show the abnormal return calculated using the mean and market-adjusted returns model. In Figure 4, the return of the sectoral indices has been shown which indicates the movement of all sectoral indices from days -7 to days +7, before and after the event. The pattern of movement showed the steep fall on the event day. Then steep upwards movement can also be observed in figure 4 the next day after the event. Again, the fall and fluctuation of index value can be seen, which might be the result of the prevailing negative sentiment of the market.

Figure 1. Abnormal return of IT sector



Source: Author's calculation

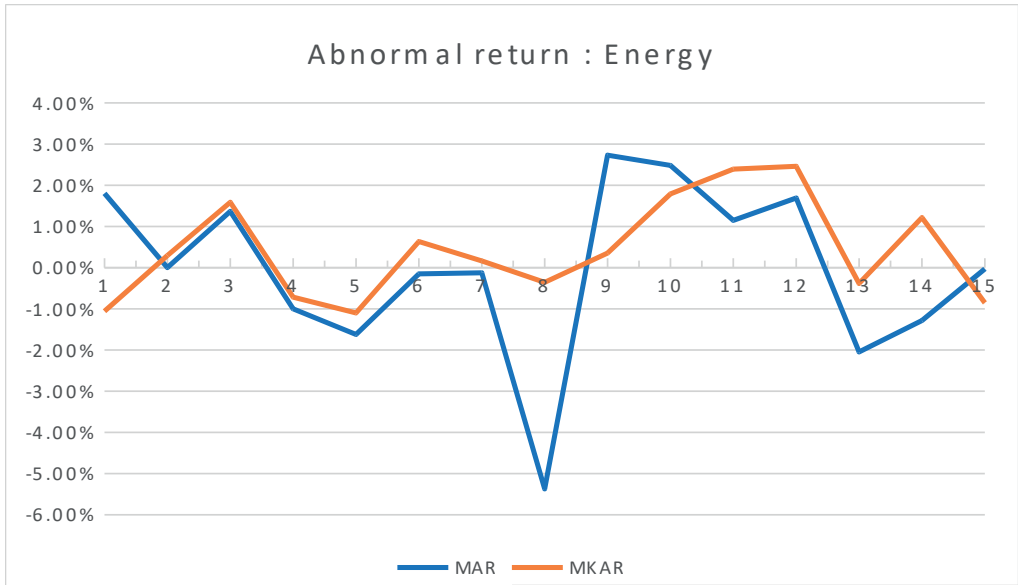
Figure 2. Abnormal return of Banking sector



Source: Author's calculation

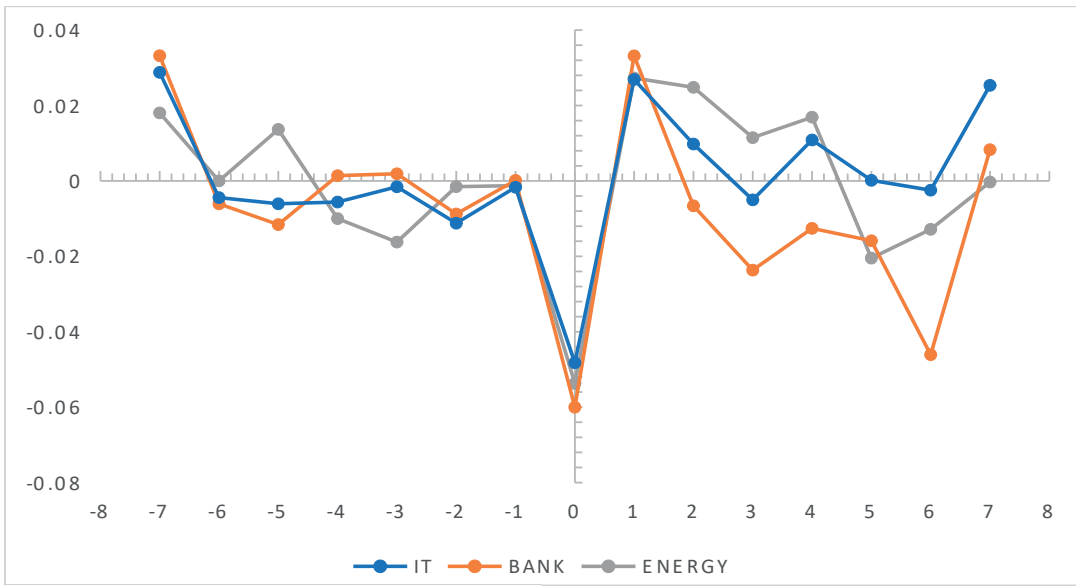


Figure 3. Abnormal return of Energy sector



Source: Author's calculation

Figure 4. Sectoral return of NSE



Source: Author's calculation

Table 1 represents cumulative abnormal returns (CAR) for the energy, banking, and IT sectors before and after the event, i.e., the day on which Russia declared a special military operation against Ukraine. CAR was calculated for the 7 days prior and the 7 days subsequent to the event. It was clearly indicated that, on the event day, the market has negatively reacted in the case of all the sectors where event day is represented by 0 (zero). This has been confirmed by both methods, i.e., mean-adjusted return as well as market-adjusted return model. When CAR is compared after the event period against before the event, except for the Banking sector, Energy and IT

sectors have gained their position as CAR was found to be positive. Thus, the output of the analysis and figure 4 confirms that the declaration of the military operation has had a negative effect on these sectors. Comparing these sectors' performance, recovery in one-week period was highest in the IT sector after the event and also this was the sector that negatively reacted more than the other sectors one week before the event.



Table 1. Cumulative abnormal return

NSE's Sectors	MAR			MKAR		
	{-1, -7}	0	{+1, +7}	{-1, -7}	0	{+1, +7}
IT	-0.18%	-4.82%	6.56%	-0.61%	0.20%	8.88%
ENERGY	0.27%	-5.37%	4.69%	-0.20%	-0.36%	6.97%
BANKING	1.02%	-6.00%	-6.34%	0.00%	-1.07%	-4.60%

Source: Author's calculation

6. CONCLUSION

The analysis investigated that the declaration of special military operation has exerted impact only on the event day. Sectoral stock indices plunged on the event day. This might be due to the panic created by the situation in the mind of investors and uncertainty regarding the future market. After the event day, too much fluctuation was seen because of negative market sentiment and new information related to many sanctions imposed on the Russian government by the USA and other countries. But the overall market movement seems to be positive with market recovery except for banking which could not gain the position day after the event day and kept its position negative. The constraint on the oil supply has raised the prices of crude oil very high. This might have been giving a positive signal for the investors in this sector and helping the faster recovery of the energy sector. SWIFT ban might be the reason for the low performance of the Banking sector due to the inability of transactions with Russian counterparts.

This study will help investors and the public about the stock market reaction due to this event. This may provide a reference for investment decision-making to the investors. However, certain limitations can be analyzed in future research. We have taken stock market sectors as a proxy for various sectors of the economy; future studies can take agriculture, industry, and service sectors of GDP for better representation of various sectors of the economy, which may give a broader understanding of the effect. This study has only examined the three sectors of the National Stock Exchange of India. Therefore, further study can be extended to other sectors. The event window taken for the study is very short, with only one combination. The researcher might be interested in a longer event study window and using other statistical tools in the event study umbrella, such as the risk-adjusted return model.

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PAPERS FROM THE THEMATIC AREAS OF THE CONFERENCE





PAPERS FROM THE THEMATIC AREAS OF THE CONFERENCE

There are 14 papers related to the thematic areas of the conference. Authors' research interests were related to Accounting (2), Internal Audit (1), Corporate Governance (1), Evaluation and Risk (1), Business Finance (1), Banking (2), Entrepreneurship (2), Forensics (1), Marketing and Management (2) and Human Resources Management (1).

There are two papers in the ACCOUNTING section. The first paper analyses the problem of the influence of legal requirements related to the calculation of transfer prices on the amount of taxable profit and the amount of income tax. Furthermore, the paper addressed compliance of the legislation in the Republic of Serbia with the relevant requirements of the European Union, as well as with the regulations of neighboring countries. Since numerous companies do business with related parties both in the country and in neighboring countries, the emphasis was placed on analyzing the justification of harmonizing transfer prices with prices at "arm's length" and on comparing the requirements imposed on taxpayers by the legal regulations of the Republic of Serbia, the Republic of Croatia, the Republic of Montenegro, and Bosnia and Herzegovina.

The second paper outlines that the chosen accounting policies have a significant impact on the accuracy of financial statements. The paper discusses the findings of the research conducted on applied accounting policies in companies in the Republic of Serbia. The results demonstrate that the most deviations in the application of accounting policies were observed in micro and small companies, because these companies generally do not have a clearly defined internal act. When it comes to medium-sized and large companies, the results indicate that these companies have consistency in the application of the chosen accounting policies, that is, they adhere to the rulebook on accounting policies. The authors suggest that all economic entities, regardless of size, should respect the adopted internal acts, such as the rulebook on accounting policies, because in this way quality is achieved and trust in financial reports is created.

Paper in the field of INTERNAL AUDIT suggests that applying internal audit and its mechanisms of internal control systems contributes significantly to business resilience and emphasizes its potential to design new strategies to promote business stability and enhance business operations and success. The authors conducted a study based on examining the present state and degree of internal

auditing on a sample of companies doing business in the Republic of Serbia. The findings suggest that that internal audit helps improve business management in companies in the Republic of Serbia and that the level of development of internal audit does not correspond to the level of development of this profession observed in countries with highly developed market economies.

COPORATE GOVERNANCE section features a paper that emphasizes the tendency of behavioral corporate finance to add cognitive and psychological elements to the sophisticated mathematical and statistical models of modern corporate finance by observing and studying the behaviour of investors and managers. The authors note that the theory does not offer a model for predicting the decision that will be made, but that it provides the possibility to predict whether a 'riskier' or 'safer' decision will be made based on the 'exclusion from the context' through which it will determine its reference point and decision frame. This paper's objective is to highlight the limitations and reasons for the failure in modelling and concretization of scientific findings due to the limited access and the exclusion of the determination of the ultimate life purpose and expediency.

Paper in the field of EVALUATION AND RISK uses CSSD developed by Christie and Huang (1995) and CSAD developed by Chang, Cheng, and Khorana (2000) to test for herding in cryptocurrencies over the period 21/09/2018-21/09/2022. Two sets of cryptocurrencies were considered, one containing the 34 largest cryptocurrencies by market capitalisation and the other containing 15 cryptocurrencies with market capitalisations under \$200 million. Any cryptocurrencies launched after 21/09/2018 were excluded from the samples in the interests of consistency. Using CSSD, no herding was detected while with CSAD a weak herding effect was observed, though the results were not statistically significant.

A paper in the BUSINESS FINANCE section notes that EU member countries adopted certain measures in the sphere of fiscal policy to secure their macroeconomic stability. The paper aims to determine changes in the area of fiscal policy based on the analysis of the share of direct and indirect taxes, as well as the share of public spending in the gross domestic product of the European Union countries. The research refers to the period 2015-2020 and it is based on the method of comparative analysis.



The findings demonstrate that at the level of the EU27 average, there is a noticeable growth in the percent of direct taxes and public spending in the gross domestic product. Likewise, the results showed that the share of social benefits in the gross domestic product also increased. The authors interpret such a trend as a response of fiscal policy to changes that negatively affect the social security of citizens, but also as a need to ensure the stability of public finances in the countries of the European Union.

There are two papers in the BANKING field. The first paper views the appearance of credit risk as one of the key dangers for the banking portfolio because if it becomes impossible to collect claims from several key clients, the bank could remain insolvent. The authors observe that recent financial crises have highlighted the need for banks to identify, measure, assess, and control credit risk, as well as to ensure an adequate level of capital to cover potential losses in the event of loan defaults. As a result, risk management relies heavily on the direct application of mathematical and statistical methods and models, as well as on the use of their results for business purposes. This paper aims to gain knowledge regarding how banks manage credit risk in a changing world, bearing in mind that credit risk management is one of the indicators of the results of the banking operations of a particular bank.

The second paper notes that contemporary business environment is characterized by rapid changes, hyper-competition, globalization of business and an increasingly fast development of IT technologies. In response to these changes, banks have expanded their offer to include and develop electronic banking. The authors argue that the COVID-19 pandemic has shown the significance of electronic banking when it is necessary to reduce visits to bank branches due to isolation and avoiding threats to people's health. This paper analyses the development of electronic banking in Serbia during the COVID-19 pandemic and highlights the possibilities for further development of this type of banking in the country.

Two papers discuss current issues in the field of ENTREPRENEURSHIP. The first paper notes that a great disruption in both economic development and the business environment caused by the COVID-19, provoked a significant effect on youth unemployment. The paper views youth unemployment as an important problem for Western Balkan countries and recognizes entrepreneur-

ship as one of the best solutions for overcoming the stated problem due to its many benefits. The authors emphasize the importance of developing entrepreneurship among the young population to improve their economic independence and integrate them into the labor market. The paper discusses the post-Covid state of the unemployment levels, youth unemployment, and entrepreneurship, as possible steppingstones in the Republic of Serbia and the Republic of Albania.

The second paper perceives creative economy as one of the world's most rapidly growing sectors, contributing 3% of the global GDP. Based on creativity and innovation as the main factors, creative and cultural industries include different fields of activity. The authors argue that improving the growth and development of creative industry can significantly contribute to the economic development of a country, especially in countries with rich cultural and historical heritage, such as Serbia. The aim of the paper is to determine the significance of the Serbian creative industry sector considering its contribution to GDP, employment, and export. Results of the analysis showed that in 2021 creative industries contributed to 7.1% of GDP, achieving faster growth than other economic activities. Also, the average salary in the creative industry sector is higher compared to the average salary in Serbia. Since 2019, there has been a noticeable increase in the deficit in foreign trade exchange, which indicates that it is necessary to take systemic measures to improve this sector.

Paper in the FORENSICS field outlines that public procurement process comprises one-third of all budget spending in the Republic of Serbia. The authors argue that public procurement represents a very important process in which goods and services are purchased by various state-owned entities and governmental units. This process opens the space for committing fraud if it is not regulated or monitored adequately. The objective of this paper is to analyze the State Audit Institution report for the year 2020, which is publicly available, to synthesize the most widely recognized irregularities in this process, which could signalize possible red flags for procurement fraud, as well as to analyze the financial consequences of those deficiencies and whether responsible individuals are adequately sanctioned for it.



There are two papers in the MARKETING and MANAGEMENT section. The first paper outlines that the global crisis caused by the COVID-19 pandemic triggered the need for organizations to become more flexible to environmental changes, initiate and improve the processes of digital transformation in business, develop a corporate culture based on innovation and creativity and apply the concept of strategic management. This research is based on the analysis of the case of an organization that uses the Agile project management approach. The research contributes to the greater ability of organizations to adapt to changes in a turbulent and dynamic environment, especially in times of crisis, with the aim of maintaining, developing, and growing business through applying Agile.

The second paper aims to study the theory of Diffusion of Innovation in food ordering apps and to provide an understanding regarding how the innovation of Food Ordering Apps (FDAs) was diffused in the market amongst the various categories of customers. Two surveys were conducted with a time lapse of six months to examine whether there was any change in perception in the consumer regarding the FDA. The authors outline significant findings regarding each demographic factor including gender, age, monthly income, marital status, and work status.

Paper in the field of HUMAN RESOURCES MANAGEMENT recognizes that the pandemic has brought numerous challenges to organizations such as working from home, virtual communication, and management of interpersonal relationships. The paper aims to provide an understanding regarding how and in what ways leaders can support their employees during and after the pandemic. Authentic leadership was shown to be one of the most effective approaches when it comes to supporting employees' psychological and work needs. The paper outlines authentic leadership theory and provides an overview of the studies conducted during the pandemic that show the positive effects of authentic leadership on significant outcomes.



COMPARATIVE ANALYSIS OF LEGISLATION ON TRANSFER PRICING IN NEIGHBORING COUNTRIES

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Abstract:

This paper analyzes the problem of the influence of legal requirements related to the calculation of transfer prices on the amount of taxable profit and the amount of income tax. It also deals with the compliance of the legislation in the Republic of Serbia with the relevant requirements of the European Union, as well as with the regulations of neighboring countries. Given that a large number of companies do business with related parties both in the country and in neighboring countries, the emphasis was placed on analyzing the justification of harmonizing transfer prices with prices at "arm's length" and on comparing the requirements imposed on taxpayers by the legal regulations of the Republic of Serbia, the Republic of Croatia, the Republic of Montenegro, and Bosnia and Herzegovina.

Keywords:

transfer prices, profit tax, "arm's length" principle, documentation on transfer prices, neighboring countries.

1. INTRODUCTION

In the Republic of Serbia, there are many legal entities that do business with related parties at the national and international level. In order to prevent the spillover of profits from one country to another, or from one legal entity to another, the goal of each country is to show the real tax liability for income tax of each legal entity in the group of related parties by using legislation to bring down the prices of transactions between related parties to market-acceptable prices. This paper points out the justification of harmonizing transfer prices with "arm's length" prices and harmonizing the regulations in the Republic of Serbia with the regulations of neighboring countries (the Republic of Serbia, the Republic of Croatia, the Republic of Montenegro, and Bosnia and Herzegovina). The subject of the research is the impact of the legislation regarding transfer prices on the amount of taxable profit and the amount of calculated income tax and the prevention of tax evasion based on transactions between related parties, as well as the compliance of the legislation of the Republic of Serbia with the regulations of neighboring countries. Transfer pricing as a problem is known in the world literature. It gains its greatest importance with the publication of the OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, which are relied upon by both legal regulations of our country, as well as the regulations of neighboring countries.

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2. TRANSFER PRICES AND THE JUSTIFICATION OF THEIR ADJUSTMENT WITH "ARM'S LENGTH" PRICES

A transfer price is considered a price arising in connection with transactions with funds or created by making obligations between related parties. In the literature, this price can also be found under the names of prices "at arm's length" or prices in controlled transactions. According to IAS 24 Disclosure of relationships with related parties (Decision on determining the translation of International financial reporting standards (IFRS) number 401-00-4351/2020-16 of September 10, 2020 ("Official Gazette of RS", no. 123/2020 and 125/2020)), transactions between related parties are business changes in the transfer of resources (assets - property), services or obligations between related parties, regardless of whether or not compensation is charged, i.e. whether "free" resource transfer is carried out (Petrović, 2021).

The essence of dealing with transfer prices and reporting them is that income and expenses incurred in transactions with related parties are recognized at the level of income and expenses that would arise in transactions between unrelated parties. Transfer pricing reporting is based on the "arm's length" principle. What the transfer price is compared to is the market price or the price at "arm's length" or the price in uncontrolled transactions, and that is the price arising in connection with the transactions of funds or created by making obligations between unrelated parties. Namely, the prices of transactions between related parties are compared to the prices of the same transactions that would be realized between unrelated parties on the market. If there appears a difference according to which the taxable profit shown in the tax balance sheet is lower than the one that would have been realized if the transactions were carried out at market prices, the taxable profit must be increased.

Transactions that affect the amount of taxable profit are transactions that are recorded in the taxpayer's accounting books within income and expense accounts. In the event that a taxpayer has shown a lower amount of income at transfer prices than they would have shown if "arm's length" prices had been used, a taxpayer is obliged to increase the taxable profit for the difference up to the amount of income at "arm's length" prices. In the same way, if they presented the expenses at transfer prices in a larger amount than it would be the case with at "arm's length" prices, the taxpayer is obliged to reduce them to "arm's length" prices and thus increase the tax base for determining the income tax of legal persons.

The justification for the special presentation of transactions between related parties and the reduction of transfer prices to "arm's length" prices lies in the fact that transactions between related parties are potentially risky areas for tax evasion. In doing business between related parties at the international level, multinational companies can strive to reduce the tax liability of the group by directing part of the taxable income to those countries where the tax rate is lower. In business between related parties within the country, taxpayers may strive to reduce the tax liability of the group by directing part of the taxable income to members of the group who have current or carried forward tax losses from previous years or the possibility of using tax incentives.

3. COMPATIBILITY OF LEGAL REGULATIONS REGARDING TRANSFER PRICING IN THE REPUBLIC OF SERBIA WITH REGULATIONS OF NEARBY COUNTRIES

In the case of multinational companies, the need to meet legal obligations that may differ from country to country creates additional problems. Different requirements can lead to a greater burden on multinational companies and can, as a consequence, have higher costs in fulfilling obligations than would be the case with a similar company that operates exclusively within the framework of one legal regulation. In applying the principles for taxation, the question of establishing appropriate transfer prices for taxation purposes arose. These are the prices at which the company transfers tangible goods and intangible assets or provides services to related parties. For the purposes of the OECD Guidelines, the concept "related person" refers to a person who meets the conditions set forth in Article 9 (paragraphs 1 a and 1 b) of the OECD Model 1 Convention. Under these conditions, two companies are connected if one of them participates directly and indirectly in the management, control and capital of the other and if "the same persons participate indirectly and directly in the management, control and capital" of both companies, i.e. if both companies are under single control (OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, 2011). When it comes to the compatibility of our legal regulations with the legal regulations of neighboring countries, it can be said that there is a great compatibility of our regulations with the regulations of neighboring countries. However, there are some exceptions.

In this part of the paper, we will briefly point out the similarities and differences in the reporting of transfer prices in the Republic of Serbia, the Republic of Croatia, the Republic of Montenegro and Bosnia and Herzegovina. The research sample consists of one EU member state and



three candidate states in order to compare the legislation of these countries, their similarities and differences, and how similar the legislation of the candidate states are to the legislation of the EU member states in this area. Also, these are the states from the closest environment.

Given that the legislation of all countries relies on OECD Guidelines, they can be compared. The content analysis of selected legislation is the research method used. Since the legislation is changing, below is a list of reviewed regulations.

Table 1. Overview of legislation by country

Republic of Serbia	Law on profit tax of legal entities ("Official Gazette of RS", no. 25/2001, 80/2002, 80/2002 (other law), 43/2003, 84/2004, 18/2010, 101/2011, 119/2012, 47/2013, 108/2013, 68/2014 (other law), 142/2014, 91/2015 (authentic interpretation), 112/2015, 113/2017, 95/2018, 86/2019, 153/2020 and 118/2021);
	Rulebook on transfer prices and methods that are applied according to the "arm's length" principle when determining the price of transactions between related parties ("Official Gazette of the RS", no. 61/2013, 8/2014, 94/2019 and 95/2021)
Republic of Croatia	Law on profit tax ("National newspapers", no. 177/2004, 90/2005, 57/2006, 146/2008, 80/2010, 22/2012, 148/2013, 143/2014, 50/2016, 115/2016, 106/2018, 121/2019, 32/2020, 138/2020);
	Rulebook on profit tax ("National newspapers", no. 95/2005, 133/2007, 156/2008, 146/2009, 123/2010, 137/2011, 61/2012, 146/2012, 160/2013, 12/2014, 157/2014, 137/2015, 1/2017, 2/2018, 1/2019, 1/2020, 59/2020, 1/2021);
	Rulebook on the procedure for concluding a preliminary agreement on transfer pricing ("National newspapers", no. 42/2017)
Republic of Montenegro	Law on profit tax of legal entities ("Official newspaper of the Republic of Montenegro", no. 065/2001, 012/2002, 080/2004, "Official newspaper of Montenegro", no. 040/2008, 086/2009, 040/2011, 014/2012, 061/2013, 055/2016, 146/2021)
Bosnia and Herzegovina	Law on profit tax of legal entities ("Official newspaper of the Federation of Bosnia and Herzegovina", no. 15/2016 and 15/2020);
	Rulebook on the application of the Law on profit tax ("Official newspaper of the Federation of Bosnia and Herzegovina", no. 88/2016, 11/2017, 96/2017, 94/2019, 87/2020 and 33/2022);
	Rulebook on transfer pricing ("Official newspaper of the Federation of Bosnia and Herzegovina", no. 67/2016)

Source: Websites of the ministries of finance of the sampled countries

3.1. TRANSFER PRICING REPORTING OBLIGEES

When it comes to determining related parties, in addition to the direct and indirect influence of legal and natural persons who exert this influence through their ownership or management function, related persons are also considered those who are natural persons' related persons, which have ownership or management function in the taxpayer. In the Republic of Serbia, any non-resident legal entity from a jurisdiction with a preferential tax system is considered a person related to the taxpayer. To a certain extent, the regulations of neighboring countries also consider natural persons' related persons, who have an ownership or management function in the taxpayer, as related parties. Likewise, the regulations of individual countries check transfer prices only at the international level, while at the level of the same country, the prices of transactions between related parties in that country are not checked. In the Republic of Serbia, transfer prices are checked both at the international and national levels. In the Republic of Croatia, related persons are considered to be persons where one person has direct or indirect participation in the management, supervision or capital of

another person, or the same persons have a direct or indirect participation in the management, supervision or capital of the company. Also, in the Republic of Croatia, if a legal entity has transactions with related parties abroad, it is obliged to report those transactions through documentation on transfer prices. If it does not do so, the tax administration has the right to deny those transactions. Apart from multinational companies, those liable to report on transfer prices are related companies that are residents in the Republic of Croatia if one of the related persons has the status of a privileged taxpayer and/or has the right to carry forward tax losses from previous tax periods.

In accordance with the above, the obligees responsible for the preparation of documentation on transfer prices are:

1. companies that do business with related parties abroad;
2. companies that do business with related parties in the Republic of Croatia if one of the related parties has a privileged tax position, i.e. pays income tax at rates that are lower than the prescribed rate or is exempt from paying income tax or has the right to carry forward tax loss from previous tax periods in the tax period.



In Bosnia and Herzegovina (unlike other countries where this is not intended to be done), a person who is found to be knowingly entering into a business relationship with a taxpayer with the aim of transferring profits is considered a related person. In such cases, the individual transaction is executed under the circumstances as if it were a related party.

3.2. APPLICATION OF METHODS FOR CHECKING TRANSFER PRICES

In the Republic of Croatia, it is prescribed that when it is possible to apply both the classic transaction method and the transaction profit method with equal reliability, preference is given to the classic transaction method, i.e. when it is possible to apply the method of comparable uncontrolled prices and some other method for determining transfer prices with equal reliability, preference is given to the method of comparable uncontrolled prices, with the emphasis that it is necessary to find the method that is most suitable for a specific case. When it comes to determining the price of a transaction in accordance with the "arm's length" principle, in Bosnia and Herzegovina the preference is given to the method of comparable uncontrolled prices, the cost price method increased by normal earnings and the resale price method, and only in the event that the mentioned methods cannot be applied one of the other methods can be used. The method of comparable uncontrolled prices has an advantage in application in relation to all other transfer pricing methods. In other countries, the legislation does not give priority to any method, so all methods can be used equally. Namely, when determining the transaction price according to the "arm's length" principle, the method that best suits the circumstances of the case is used, and it is possible to use a combination of methods.

3.3. TRANSFER PRICING DOCUMENTATION

The topic of transfer pricing in the Republic of Serbia has become relevant in the last few years, although the obligation to display transactions between related parties was introduced into our tax legislation through the Law on Corporate Profit Tax back in 1991. However, only since 2013 has there been an obligation to submit documentation on transfer prices with the tax balance sheet. The documentation is submitted in the form of a transfer pricing report (full and abbreviated transfer pricing report). From that moment, the calculation of transfer prices and their impact on the taxable profit gained great importance both in the tax legislation of the Republic of Serbia and in the tax practice of taxpayers.

According to the Law on Corporate Income Tax ("Official Gazette of the RS", No. 25/2001, ..., 118/2021), the taxpayer is obliged to separately show transactions with related parties in his tax balance sheet and together with it submit a report on transfer prices, in which it shows the value of transactions at transfer prices between related parties and at prices that would have been realized on the market for such or similar transactions if there were no related parties ("arm's length" principle). In the Republic of Croatia, the taxpayer is required to have a transfer pricing report and to submit it at the request of the tax administration. Also, the taxpayer can enter into a preliminary agreement on transfer prices and contractual relations, which is a preliminary agreement between the taxpayer and the Ministry of Finance of the Tax Administration, as well as the tax authorities of other countries where related parties are residents or operate through a business unit, which for transactions between related parties, before they began, establishes an appropriate set of criteria, to determine the transfer prices for those transactions over a period of time. In other countries, this possibility is not prescribed.

When it comes to the application of regulations on transfer prices in the Republic of Montenegro, from 2022, detailed regulations for reporting on transfer prices are being introduced. Large taxpayers are required to submit transfer pricing documentation to the Tax Administration, while other taxpayers should have documentation on transfer prices, but submit it at the request of the tax authority. Also, as in the Republic of Serbia, there are two types of transfer pricing reports, a full and abbreviated transfer pricing report. The method of determining transfer prices and the content of the documentation is carried out in accordance with the OECD Transfer Pricing Guidelines and other international organizations. In Bosnia and Herzegovina, a taxpayer who participates in transactions with related parties, at the time of submitting his tax return, is required to have documentation on transfer pricing that contains sufficient information and analysis in order to confirm that the terms of his transactions with related parties are in accordance with the principle of "arm's length". There are two types of transfer pricing reports in Bosnia and Herzegovina, a full and abbreviated transfer pricing report. The criteria for compiling a full or abbreviated transfer pricing report differ from country to country.



3.4. DEADLINES FOR DELIVERY OF TRANSFER PRICING DOCUMENTATION

In the Republic of Serbia, documentation on transfer prices is submitted to the tax authority along with the tax return which determines corporate income tax and the tax balance within 180 days from the end date of the tax period for which the tax is determined. If a tax return and a tax balance sheet are submitted in the event of a status change, opening and closing of liquidation or bankruptcy proceedings, a transfer pricing report is submitted with the tax return within 60 days. In the event that the taxpayer fails to attach transfer pricing documentation to the tax balance, i.e. attaches it in an incomplete form, the competent tax authority will issue a warning and order him to do so or to complete it within a period that cannot be shorter than 30 or longer of 90 days from the day of delivery of the reminder.

In the Republic of Croatia, the taxpayer submits documentation on transfer prices at the request of the tax administration, but together with the income tax return, they submit a report on business events with related parties on a specially prescribed form, if during the tax period business events with related parties in the business books were recorded. The profit tax application is submitted to the Tax Administration no later than four months after the end of the period for which the profit tax is determined.

In the Republic of Montenegro, from 2022, the obligation to submit documentation to the Tax Administration is for large taxpayers, while other taxpayers should own pricing documentation, but submit it at the request of the tax authority within 45 days of the request. The deadline for submitting documentation for large taxpayers is June 30, 2027. As of this date, the documentation will be submitted together with the tax return, no later than three months after the end of the period for which the tax is calculated.

In Bosnia and Herzegovina, the taxpayer is only required to submit documentation on transfer pricing within 45 days of receiving the request from the Tax Administration. If the total amount of the taxpayer's transactions exceeds the amount of 500,000.00 KM in the tax period, the taxpayer is obliged to submit to the Tax Administration, together with the tax return, a separate review of those transactions. The tax return is submitted to the Tax Administration within 30 days after the deadline prescribed for submitting annual financial reports.

3.5. OVERVIEW OF SIMILARITIES AND DIFFERENCES IN TRANSFER PRICING REPORTING IN NEIGHBORING COUNTRIES

For the sake of better transparency and systematicity, an overview of the basic similarities and differences in transfer pricing reporting in the Republic of Serbia, the Republic of Croatia, the Republic of Montenegro, and Bosnia and Herzegovina.

Table 2. Summarized similarities and differences

Country				
Similarities and differences	Republic of Serbia	Republic of Croatia	Republic of Montenegro	Bosnia and Herzegovina
Application of OECD Guidelines	Yes	Yes	Yes	Yes
Related persons	Persons who have direct and indirect influence through ownership or management functions; Related persons are also considered those who are natural persons' related persons, which have ownership or management function in the taxpayer; Any non-resident legal entity from a jurisdiction with a preferential tax system	Persons who have direct and indirect influence through ownership or management functions	Persons who have direct and indirect influence through ownership or management functions; Related persons are also considered those who are natural persons' related persons, which have ownership or management function in the taxpayer	Persons who have direct and indirect influence through ownership or management functions; Related persons are also considered those who are natural persons' related persons, which have ownership or management function in the taxpayer; A person who is found to be knowingly entering into a business relationship with a taxpayer with the aim of transferring profits is considered a related person



Level of transfer pricing reporting	International and national level	International level, and national level only if one of the related persons has the status of a privileged taxpayer and/or has the right to carry forward tax losses from previous tax periods	International and national level	International and national level
Methods for checking transfer prices	All methods can be used equally	When it is possible to apply both the classic transaction method and the transaction profit method with equal reliability, preference is given to the classic transaction method, i.e. when it is possible to apply the method of comparable uncontrolled prices and some other method for determining transfer prices with equal reliability, preference is given to the method of comparable uncontrolled prices, with the emphasis that it is necessary to find the method that is most suitable for a specific case	All methods can be used equally	The preference is given to the method of comparable uncontrolled prices, the cost price method increased by normal earnings and the resale price method, and only in the event that the mentioned methods cannot be applied one of the other methods can be used; The method of comparable uncontrolled prices has an advantage in application in relation to all other transfer pricing methods
Delivery of transfer pricing documentation	Documentation on transfer prices is submitted to the tax authority along with the tax return which determines corporate income tax and the tax balance within 180 days from the end date of the tax period for which the tax is determined	The taxpayer submits documentation on transfer prices at the request of the tax administration, but together with the income tax return, he submits a report on business events with related parties on a specially prescribed form no later than four months after the end of the period for which the profit tax is determined	From 2022, the obligation to submit documentation to the Tax Administration is for large taxpayers, while other taxpayers should own pricing documentation, but submit it at the request of the tax authority within 45 days of the request; The deadline for submitting documentation for large taxpayers is June 30, until 2027, after which the documentation will be submitted together with the tax return, no later than three months after the end of the period for which the tax is calculated	The taxpayer is only required to submit documentation on transfer pricing within 45 days of receiving the request from the Tax Administration ; If the total amount of the taxpayer's transactions exceeds the amount of 500,000.00 KM in the tax period, the taxpayer is obliged to submit to the Tax Administration, together with the tax return, a separate review of those transactions, within 30 days after the deadline prescribed for submitting annual financial reports



4. CONCLUSION

The legislation of the Republic of Serbia in the area of determining transfer prices is largely harmonized with the relevant legislation of neighboring countries because, as in other countries, it relies on the OECD Guidelines, which are based on the "arm's length" principle. Of course, as in the regulations of each country, there are additional specificities that the legislation requires from its taxpayers. When it comes to the issue of transfer pricing, one gets the impression that transfer pricing is still a relatively new and complicated topic for taxpayers. For this reason, knowledge and achievements in this area should be further spread through additional education and professional and scientific articles in order to bring transfer prices as close as possible to taxpayers. Transfer prices are significant for both tax administrations and taxpayers because they affect the amount of taxable profit of related parties in different tax jurisdictions, but also within one tax jurisdiction. The OECD Member States are encouraged to follow the Guidelines in their domestic practices related to transfer pricing, and taxpayers are encouraged to use the Guidelines in determining whether their transfer prices are within the „arm's length“ principle for tax purposes.

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THE IMPORTANCE OF CHOOSING AND APPLYING ACCOUNTING POLICIES IN THE CORPORATE MANAGEMENT SYSTEM

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Abstract:

The accounting information system's output, financial reports, serves as both internal and external users' main information source. Users can use them to see the company's financial performance, evaluate the resource management sector, and forecast the company's future growth. The foundation of the company decision-making process is data from financial reports. Financial statements are prepared using a variety of techniques and steps, all of which have an impact on the numbers that are displayed in them. The chosen accounting policies have a significant impact on the accuracy of financial statements. The attainment of the company's goals, which are represented in the achievement of the highest profit as well as the preservation of liquidity and the continuity of operations, is aided by decisions that are in line with the business policy of the company.

Keywords:

accounting policies, international accounting standards, financial reports, business decision-making.

1. INTRODUCTION

The financial reporting system is part of the accounting system in every company. As such, the financial reporting system is externally oriented. This very fact indicates its enormous importance and the need for a quality basis on which the financial reporting system is based. Given the tremendous significance of financial reporting and the numerous decisions made by diverse interest groups, it becomes evident why extra attention is paid to the quality of this system. Comprehensive data collection was conducted during 2019, as part of doctoral thesis research and partial data and analysis are used in this paper (Raičević, 2021). High-quality financial reporting is a fundamental requirement for luring investments (both local and foreign), which raises the competitiveness of businesses and the overall national economy. Financial reports represent the basic output of the financial reporting system in every company. In order for users to be able to make appropriate business decisions, reports need to be reliable and credible. Reliability and trustworthiness of financial reports is achieved primarily by the correct selection of methods and procedures in the assessment of materially significant balance positions, that is, by the correct choice of accounting policies. The company management has a great responsibility when it comes to the choice of methods and procedures for compiling financial reports, because in this way the financial and profitability position of the company can be greatly affected. The purpose of this study is to emphasize the value of selection and consistency in the application of appropriate accounting policies, the purpose of which is primarily reliable and high-quality financial reporting.

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2. THE ROLE AND IMPORTANCE OF QUALITY FINANCIAL REPORTING IN THE CORPORATE MANAGEMENT SYSTEM

A modern business environment, which is characterized by a high degree of globalization of the world market and liberalization of international trade and financing, has conditioned the intensification of flows of goods, services and capital. Doing business in such conditions allows economic entities new opportunities for growth and development, but also more stakeholders who are interested in the achieved performance of the company.

Quality and credibility requirements of the presented financial reports, which are determined by interest groups, aim to ensure the safety and stability of business operations, as well as reduce exposure to, above all, financial risks. The significance of accurate financial reporting has been further questioned by several instances of financial fraud around the globe.

Financial reporting is well known to play a vital role in enhancing investor protection, luring foreign money, expanding the capital market, and spurring economic progress. A low level of confidence in the financial reporting process provides space to question "the functioning of the capital market, the stability of the financial system, increases the risk and costs of capital and slows down the development of companies and the national economy as a whole" (Malinić et al., 2016).

The question of financial reporting quality and financial reports is particularly important today, and the reasons for this can be found in the environment itself. Some of the expressed trends, characteristic of that environment, are:

- the number of companies whose shares are listed on the stock exchanges is increasing;
- financial reporting is standardized and harmonized at the international level;
- the number of scandals related to financial and accounting affairs is increasing;
- there is an increase in the number of users of financial reports;
- the number of users and requests for information from financial reports is increasing;
- an increasing number of decisions on the placement of funds are made on the basis of information from financial reports" (Dmitrović & Milutinović, 2011).

In order to define the concept of quality of financial reports, it is necessary to start from the objective of financial reports themselves. "The goal of financial reports is to truthfully and objectively present the financial position, the result of operations and changes in the financial position" (Republic of Serbia. Ministry of Finance, 2018). If the financial reports meet this previously defined goal, they can be considered of high quality, "from the point of view of the potentially negative consequences of low-quality reporting, the impact of truthful and honest reporting on the stability and efficiency of financial markets, the functioning of economic entities and the development of the overall national economy" (Malinić, 2013).

When discussing the caliber of financial reporting, it is important to note that there is a correlation between this grade and the grade of corporate governance. Modern corporate systems are characterized by corporate governance as "a process in which management professionally manages entrusted capital in an effort to achieve pre-defined business goals - liquidity, profitability and solvency" (Stevanović & Belopavlović, 2012). Failures in the financial reporting process are often linked to failures in corporate governance.

Improvements in the quality of corporate governance, which includes the quality of rules related to the independence of the board of directors, the independence of the audit committee and the roles of directors, can improve the quality of the financial reporting process. The board of directors and the audit committee are independent bodies protecting the interests of capital owners and the corporate governance process. Within the scope of defined competences and responsibilities, "the board of directors performs internal supervision over the company's operations" (Official Gazette, 2019). The audit committee, as a supervisory body, "was appointed by the company's board of directors in order to supervise the accounting process, the process of financial reporting and the audit of financial reports" (Petković, 2010). The independence of the members of the board and the audit committee in the process of implementing tasks is necessary so as to ensure the effectiveness of the process of making and implementing decisions.



3. THE INFLUENCE OF THE CHOICE AND APPLICATION OF ACCOUNTING POLICIES ON THE QUALITY OF FINANCIAL REPORTING

Accounting practice and theory strive continuously to define rules and procedures that will enable adequate preparation and presentation of financial reports in accordance with the needs of end users. Given that financial reports represent the primary step in the business decision-making process, it is necessary to include methods and procedures in their preparation that faithfully present the values expressed in them. The methods and procedures used for those purposes represent the domain of accounting policies.

Accounting policies can be defined as "specific accounting principles assessed by economic entities as the most appropriate for their circumstances, and adopted with the aim of preparing and presenting financial reports" (Britton & Waterston, 1999).

The selection of accounting policies should always be based on the higher-level objectives of the company's business strategy in order to facilitate the achievement of those objectives, first of all "achieving maximum profit while ensuring liquidity and stability of business in the long term" (Todorović, 2012).

In this way, accounting policies represent an indispensable instrument for shaping accounting information for the needs of external users, with the aim of making positive business decisions in relation to a given company.

The procedure for choosing accounting policies is a "teamwork involving the accountant, finance manager, procurement manager, sales manager, production manager, as well as representatives of other functions of the entity" (Todorović, 2012). Accounting policies have a variety of objectives, but they all have the same goal - to improve the company's financial performance and position. The following variables will determine how much of an effect the selected accounting policy will have on the financial reports:

- "the share of a certain position in the total structure of assets, liabilities, income or expenses,
- characteristics of the chosen method,
- observed time period and
- other influences" (Žager & Žager, 1999).

For the purpose of comparing financial reports, certain accounting policies should be used over a longer period of time, and changes to those policies may be influenced by "requirements of changed international standards, changes in legislation or management assessment, so that a different accounting policy would contribute to a more objective presentation of a certain balance sheet position" (Todorović, 2012).

4. ACCOUNTING POLICIES IN THE PRACTICE OF CORPORATE MANAGEMENT

Modern business conditions, accompanied by economic globalization, imposed the need for transparent, timely and reliable financial reports. In addition, the users of financial reports have increasing demands regarding the publication of various types of information. In this sense, the management of the company is responsible for the management of the business entity, as well as its performance shown in the financial reports. Today, company management has independence in making decisions regarding the choice of methods and procedures when compiling and presenting financial reports. Therefore, it must select accounting practices that support the company's established business objectives. All of these policies must be in compliance with generally accepted accounting principles (GAAP) and/or international financial reporting standards (IFRS), even if they may vary from firm to company.

Accounting procedures that are extremely complex, such as depreciation methods, goodwill recognition, compilation of research and development costs, inventory valuation, and financial reports consolidation, require implementation of appropriate accounting policies (Investopedia, 2019). Therefore, the management must decide on the allowed accounting procedures taking into account several factors (what are the costs according to one method and what according to the other, what will be the value of the inventory, etc.). In the case of a deliberate choice of inadequate accounting policies for the management of a business entity, it can be said that it does not operate according to the "principle of a good host" (Vićentijević, 2013). Inadequate choice of accounting policies significantly affects the reliability of financial reports.

It should be emphasized that the accounting profession strives to respond to the increasing demands of users, by creating a normative basis that would ensure quality financial reporting, and thus the trust of users of the information contained in financial reports. However, sometimes the normative basis is not a sufficient condition for achieving that goal, especially when the management, which is responsible for the compilation and accuracy of financial reports, does not apply it adequately.

It often happens that management shapes financial reports according to their own goals. The approach towards achieving high earnings (bonuses) and gaining a reputation as a good manager due to the company's performance shown in the balance sheets, leads managers to deviate from international and national accounting regulations, which means that the results shown in the financial reports are not credible and reliable.



Such management behavior can create not only material losses suffered by the most important stakeholders, but above all it can affect the reduction of trust in financial reports. The loss of user confidence in the information presented in financial reports would have unforeseeable consequences for the financial markets, and thus the economy as a whole.

By preserving the integrity of the company's management with the help of an efficient system of internal control, independent external audit and by improving and encouraging the ethical behavior of management, accountants and auditors, the quality of financial reports as well as decisions made on the basis of information contained in financial reports is secured.

True and honest financial reporting ensures the "successful functioning of the reporting entities themselves, financial markets and the overall market economy" (Novićević, 2016). The production of high-quality financial reports fosters the inflow of foreign money, boosts investor confidence, investment activity, and overall economic activity.

5. RESEARCH ON APPLIED ACCOUNTING POLICIES

In this study, we examined the accounting practices used by businesses in the Republic of Serbia. These businesses were split into two categories: those with subsidiaries (i.e., those that consolidate) and those without subsidiaries (that is, that do not consolidate). The examination encompasses the analysis of the effects of applied accounting policies on the company's financial and profitability situation in the areas of intangible assets, real estate, plant and equipment, depreciation, long- and short-term financial placements and receivables, capital, and others. Individual balance sheet situations of the companies in the investigated groups of companies were different, as seen in the financial reports, due to variations in the accounting policies that were used in the aforementioned areas (Raičević, J. 2021).

"Collection of primary data was carried out using the survey method, using the questionnaire technique, which was sent by mail. The research was conducted during January and February 2019. The questionnaire was sent to 120 company addresses in the Republic of Serbia. The answer came from 49 companies, which represent the sample on which this analysis was made. For the purposes of statistical analysis, SPSS version 2017 software was used" (Pallant, J. (2011).

Table 1. Research on applied accounting policies

Question		Company size per employee number								N	%	χ2	df	p	φ/V
		Micro		Small		Medium		Big							
		f	%	f	%	F	%	f	%						
“Are there deviations in the application of accounting policies in relation to the accounting policies defined by the company's internal act?”	Yes	4	23,5%	1	7,1%	0	0,0%	2	28,6%	7	14,3%			0,488	
	No	13	76,5%	13	92,9%	11	100,0%	5	71,4%	42	85,7%				
“Are the disclosed account- ing estimates and judgments made by management reasonable in the circumstances and consistent with the conclusions drawn from the audit working papers?”	Yes	10	58,8%	10	71,4%	11	100,0%	7	100,0%	38	77,6%			0,004	
	No	7	41,2%	4	28,6%	0	0,0%	0	0,0%	11	22,4%				



“Does the entity change an accounting policy if it turns out that the adopted accounting policy does not contribute to the truthfulness, objectivity and fair presentation of the financial report?”	Yes	15	88,2%	13	92,9%	10	90,9%	7	100,0%	45	91,8%				
	No	2	11,8%	1	7,1%	1	9,1%	0	0,0%	4	8,2%				
“Whether the entity discloses information for events occurring after the balance sheet date”	Yes	9	52,9%	10	71,4%	10	90,9%	6	85,7%	35	71,4%	4,250	1	0,039	-0,295
	No	8	47,1%	4	28,6%	1	9,1%	1	14,3%	14	28,6%				
“Did applying a new accounting policy result in:”	Unchanged result	14	82,4%	13	100,0%	10	90,9%	7	100,0%	44	91,7%				
	Increasing profit	3	17,6%	0	0,0%	1	9,1%	0	0,0%	4	8,3%				

Source: http://www.eknfak.ni.ac.rs/dl/doktorske/2021/Dis_UNI_Jelena_R_Raicevic_2021.pdf, pp. 215

The result of Fisher's test indicates that companies by size according to the number of employees do not differ in the answer to the question: "Are there deviations in the application of accounting policies in relation to the accounting policies defined by the internal act of the company?", $p=0.49$. Out of 49 companies, 42 (85.7%) do not deviate from the accounting principles outlined in the internal act of the organization when applying its accounting policies. The greatest number of accounting policy applications that deviate from the internal act of the organization are found in micro enterprises (23.5%).

Discrepancies in micro-enterprises can be explained by the fact that these enterprises are not obliged to submit Notes to the financial reports. Namely, according to Article 2 of the Law on Accounting, the annual regular report of a micro-enterprise consists of a balance sheet, a profit and loss account and a statistical report.

The result of the Fisher test indicates that companies by size according to the number of employees differ in their response to the question: "Are the disclosed accounting estimates and judgments made by management reasonable in the circumstances and consistent with the conclusions of the audit working papers?", $p=0.00$. Out of 49 companies, in 38 (77.6%) the management's accounting estimates and judgements are reasonable under the circumstances and consistent with the findings from the audit working papers. Small businesses (28.6%), followed by micro enterprises (41.2%), exhibit the greatest degree of disagreement. Only medium-sized businesses do not have a mismatch between management's assessments and

accounting estimates, the findings from the audit's working papers, and the conditions.

The result of Fisher's test indicates that companies by size according to the number of employees do not differ in the answer to question: "Does the entity change an accounting policy if it turns out that the adopted accounting policy does not contribute to the truthfulness, objectivity and fair presentation of the financial report?", $p=0.53$. If it turns out that the adopted accounting policy does not support the accuracy, objectivity, and fair presentation of the financial report, 45 out of 49 companies (91.8%) change it.

In response to the question, "Does the business publish information for events occurring beyond the balance sheet date?", the Chi-square test result shows that companies vary in size according to the number of employees: $2(1, n=49)=4.25$; $p=0.04$, $=-0.30$. Out of 49 corporations, 35 (71.4%) share information concerning occurrences following the balance sheet date. The opinions of microbusinesses differ on this matter. The number of the companies that give information about the events that happened after the balance statement date is 9 (52.9%), while 8 (47.1%) do not.

The result of Fisher's test indicates that companies by size according to the number of employees do not differ in the answer to the question: "Did applying a new accounting policy result in:", $p=0.52$. Out of 48 companies, 44 (91.7%) had an unchanged result by applying some new accounting policy.



6. CONCLUSION

Quality financial information, i.e. quality financial reporting, is the basis of the financial system stability, which can encourage the development of national economies and attract investors. Information is especially important in the functioning of the capital market. Namely, a developed and stable capital market, a developed private sector and credit institutions contribute to economic effectiveness and efficiency, and generally to an increase in social well-being.

Each business's operations are a unique confluence of objectives, dealings, constraints imposed by the political, social, and economic environments, risks, and uncertainties. Therefore, the way of evaluating materially significant balance positions is decided by the company's management in accordance with the objectives of the business. Additionally, when it comes to management decisions, the accounting treatment of specific transactions and the established disclosure strategy impact the quality of financial reporting.

Financial reports are the accounting information system final product, and their preparation involves various methods and procedures, which have different effects on the values shown in the financial reports. By legal and professional regulations, the company is given the option of choosing between basic and alternative procedures for displaying and evaluating individual positions in financial reports.

Managers who are in charge of selecting accounting policies must give the matter their undivided attention as it can be very delicate and intricate. The responsibility of management is to advance the interests of all parties involved, particularly capital owners, investors, creditors, and other parties. The reasons, objectives, and results of selecting particular accounting rules are significant because they have an impact on how the public perceives the organization and, consequently, how stakeholders behave and make decisions. The financial situation and operational success of the company can be significantly impacted by the manager's selection of accounting policies.

Research on applied accounting policies was conducted in companies in the Republic of Serbia. Based on the analysis, we concluded that the most deviations in the application of accounting policies were observed in micro and small companies, because these companies generally do not have a clearly defined internal act. When it comes to medium-sized and large companies, we concluded that these companies have consistency in the application of the chosen accounting policies, that is, they adhere to the rulebook on accounting policies. Although small and micro enterprises have internal rules that define the treatment of certain business events, they often deviate from them. Likewise, small and micro enterprises are not subject to external supervision, i.e. audit, but only the control

of tax authorities. Accordingly, in order to improve the quality of financial reporting in our country, it is necessary to work on further improvement of the regulatory framework. Likewise, all economic entities, regardless of size, should respect the adopted internal acts, such as the rulebook on accounting policies, because in this way quality is achieved and trust in financial reports is created, which as the final result also has trust in financial reporting of a country, as well as its quality. A quality financial reporting system enables transparency and comparability of financial reports, which is of particular importance for developing countries, such as our country.

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THE IMPORTANCE OF INTERNAL AUDIT IN ACHIEVING SUCCESSFUL MANAGEMENT

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Abstract:

Applying internal audit and its mechanisms of internal control systems contributes significantly to business resilience, with the potential to design new strategies to promote business stability and enhance business operations and success. This paper introduces results of a study based on examining the present state and degree of internal auditing on a sample of companies doing business in the Republic of Serbia. In line with the results of the empirical research, it can be concluded that internal audit helps improve business management in companies in the Republic of Serbia. Also, the level of development of internal audit does not correspond to the level of development of this profession observed in countries with highly-developed market economies.

Keywords:

auditing, internal audit, internal control, management.

1. INTRODUCTION

Internal auditing is a part of the internal monitoring system of a company's operations. It includes all monitoring and preventive measures applied within companies to protect assets, accuracy, and reliability of accounting records and activities based on objectives and focusing on the compliance comparison between the existing condition and accepted criteria, according to all applicable standards and legal regulations. It is a complex process by which it is possible to determine the correctness or deviations of procedures and processes in relation to defined rules and standards. This paper illustrates research results on the role and importance of internal audit in corporate governance in sampled companies in the Republic of Serbia. The research results indicate the presence of internal audit and its role in the companies' business operations in the Republic of Serbia as well as that internal audit, contributes to the improvement of corporate governance. Still, the level of development of internal audit does not correspond to the level of development of that profession observed in countries with developed market economies.

2. LITERATURE REVIEW

An audit is a segment of an organization's control system and has several important roles. According to Lee & Alan (1984), if a person has a certain suspicion or doubt about the quality and status of particular business processes and cannot eliminate it independently, there is a need for an audit to resolve the problem. An audit has an important function as a kind of control mechanism, bearing in mind that auditors identify and investigate deviations from defined standards to deter

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individuals from making careless mistakes and creating false financial reports (Kagermann et al., 2008). According to Stanišić and Radović (2013), control as an element of management represents an essential link in the processes of successful business management of a company, and it is present in all phases of business activities - planning, organizing, and management. The projected business goals, processes, risks, and defined business management standards are reviewed, corrected, and monitored.

The internal audit examines and evaluates the implementation of policies, plans, and procedures, the credibility of operational and financial information, the functioning and organization of the accounting system, and related internal controls (Todorović & Vukoja, 2020). Coderre (2009) points out that The Institute of Internal Auditors (IIA) defines internal audit as an objective and independent activity of assurance and counseling, thereby improving business and adding value to the company. A systematized and disciplined approach helps the company achieve its goals. The task of internal audit is to "investigate, examine, and evaluate the system of internal controls and their effectiveness in the activities of each separate part of the business, to report on findings and propose solutions to the management" (Blay et al., 2007). According to Pickett (2010), the internal audit ensures effective organizational management and responsibilities, coordination of activities, and transfer of information between internal and external auditors, board, and management, giving appropriate recommendations for improving the management process, and promoting ethical values. To optimize data collection and achieve better results, Todorović & Perić (2020) highlight the importance of software applications in the audit processes.

Internal audit in Serbia began to develop extremely late compared to countries with developed market economies. Bearing in mind that the subjects of the analysis are companies from Serbia, this research's contribution lies in better understanding internal audit and its relationship with corporate governance through analysis of obtained results.

3. METHODOLOGY

Research on the role and importance of internal audit in corporate governance was carried out in an anonymous survey questionnaire conducted on a sample of 130 companies in the Republic of Serbia. The survey was addressed to internal audit department managers and employees who carried out other forms of internal supervision if the internal audit department was not established in the company. The survey was conducted in November 2020. The survey questionnaire had 23 questions, of which 17 were closed-ended questions with two or more pre-defined

responses. The questions were structured following the objectives of the research. Using Cronbach's Alpha test, it was corroborated that the selected numerical variables are very well connected and form a group of questions related to the functional focus of the internal audit. The mentioned results are illustrated below.

In the first part of the questionnaire, we collected general data on respondents, including gender, years of service, professional qualifications, and certificates, if any. Other data referred to the company's activity the number of employees, and information about the existence/non-existence of an internal audit department.

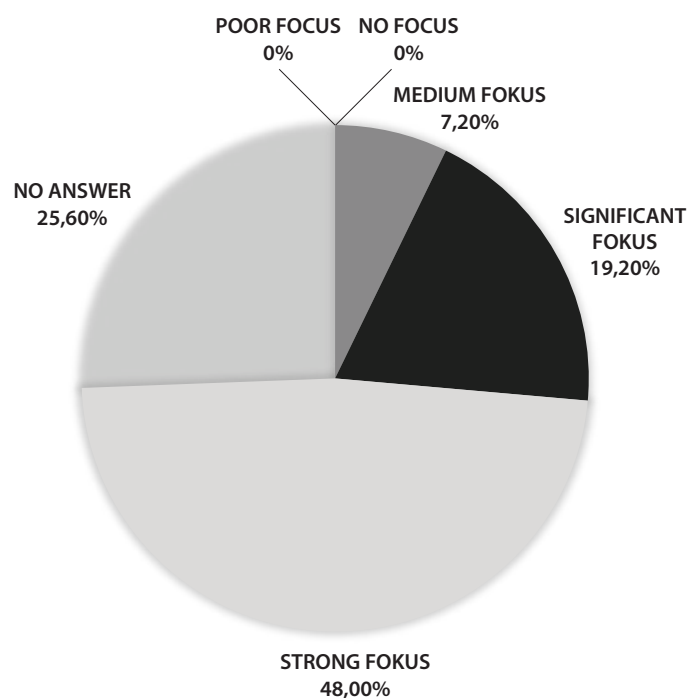
4. RESEARCH RESULTS

According to obtained data, 34.4% of respondents are male, and 65.6% are female, with the longest working life of 34 years and the shortest 3 years of service. As part of the organizational structure, the internal audit department is present in 56.25% of companies, with the number of employees in that department ranging from 1 to 3. As many as 43.75% of companies do not have an internal audit department, but some have developed other internal supervision forms, such as risk control and internal control.

Respondents rated the intensity of internal audit functional focus on internal control on a scale from 1 to 5, whereby a rating of 1 indicates that internal audit functional focus is not directed toward internal controls, and a rating of 5 shows that it is strongly directed toward internal controls (Fig 1.). Not one respondent defined ratings 1 (no focus) and 2 (poor focus) as a choice for internal audit functional focus on internal controls. Approximately half of the respondents opted for a strong focus, while about 1/5 of the respondents considered it to be significant.



Figure 1. Internal audit functional focus on internal control

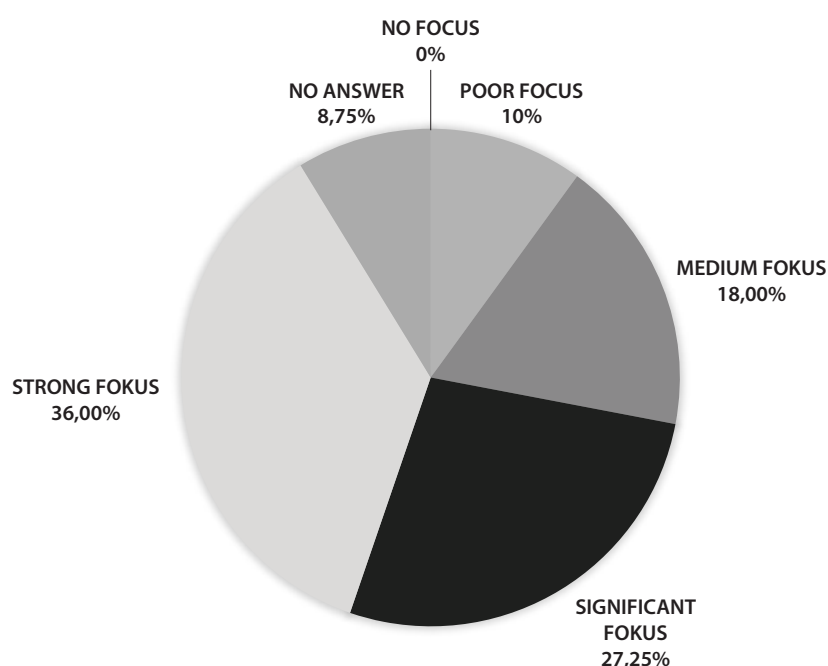


Source: Author's

Respondents evaluated the intensity of the internal audit functional focus on improving business processes on a scale from 1 to 5, whereby a rating of 1 indicates that the internal audit functional focus is not directed toward the improvement of business processes. A rating of 5 shows that it is strongly directed toward improving business processes.

Within this segment of the survey, 36% respondents believe that the functional focus of the internal audit is strongly directed toward the improvement of business processes in their companies, and 27.25% believe that this focus is significant (Fig. 2), which by consequential analysis indicates that more than half of the respondents observe the internal audit processes as successful.

Figure 2. Internal audit functional focus on the improvement of business processes



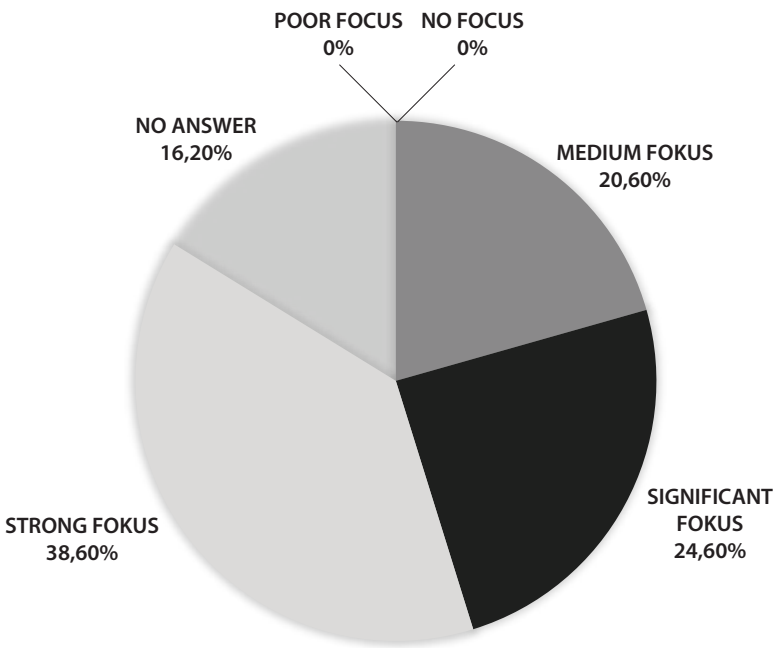
Source: Author's



Respondents rated the intensity of the internal audit functional focus and orientation toward information technologies on a scale from 1 to 5, whereby a rating of 1 indicates that the functional focus of internal audit is not directed toward information technologies and a rating of 5 means that it is strongly directed toward informa-

tion technologies. 63.2% of respondents recognized the orientation and synergy of internal audit and information technologies as significant and strongly (Fig. 3), and 20.6% of respondents' orientation is medium. 16.2% of respondents did not provide an answer.

Figure 3. Internal audit functional focus and orientation toward information technologies



Source: Author's

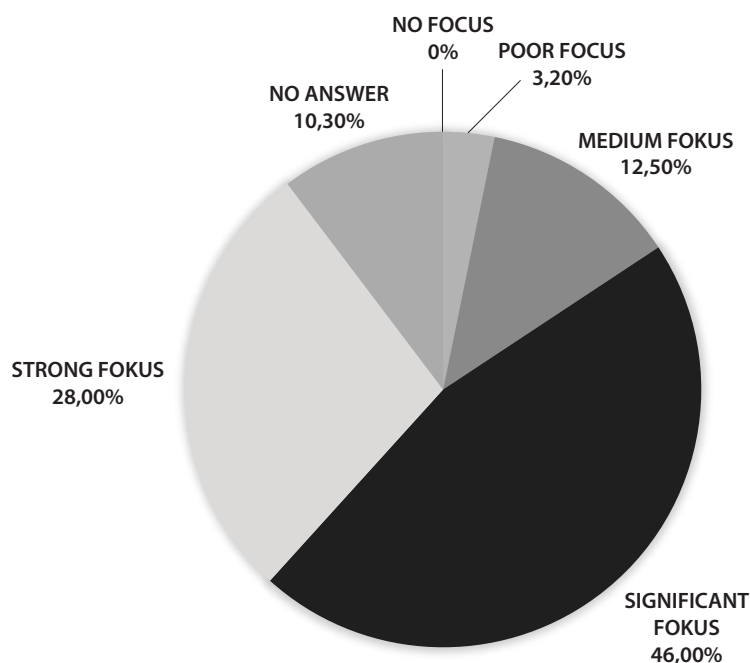
Based on the obtained results, it can be inferred that the focus of internal audit function in companies in the Republic of Serbia is significantly directed toward information technologies. In contrast it is strongly directed toward internal controls. The same number of respondents answered that in their company focus of the internal audit function is significantly and strongly directed to the improvement of business processes. 48% of those surveyed assessed that the focus of the internal audit function is directed toward internal controls, which points to the slow development of the internal audit as a profession. In those companies, there was no change in the focus of internal audit function. Therefore it cannot actively participate in the creation of value, i.e., in providing support and assistance to the company in achieving its projected goals.

The effectiveness of the internal audit department is assessed by the impact of internal audit on the quality of corporate decision-making and governance and its contribution to improving the quality of business operations. The respondents rated the effectiveness of the internal audit department on a scale from 1 to 5, where a rating of 1 indicates that the internal audit does not affect the quality of corporate decision-making and governance.

In contrast, a rating of 5 indicates that internal audit substantially impacts the quality of corporate decision-making and governance. 3.2% of respondents believe that internal audit's impact on the quality of corporate decision-making and governance is poor, while 12.5% believe that it is medium. The highest number of respondents, 46%, believe that internal audit's impact is significant, while 28% of them believe it to be strong. The answer was not provided by 10.3% of respondents (Fig. 4).



Figure 4. Impact of internal audit on the quality of corporate decision-making



Source: Author's

Based on the conducted research, it can be inferred that the internal audit department is very effective. In line with the results of the empirical research, it can be concluded that the internal audit contributes to the improvement and quality of corporate governance in the Republic of Serbia. This is supported by the fact that the internal auditor acts independently and makes objective assessments and recommendations and that the internal audit is very effective in providing an additional, higher level of supervision over the functioning of internal controls. Internal audit has a vital role in the risk management process.

5. CONCLUSION

Internal audit must continuously develop new approaches to internal audit and design new audit products and services as the entire future-oriented business becomes the scope of its examination. Internal auditors must maintain a high level of expertise, objectivity, and independence to be able to provide support and assistance to management in managing risks and designing and maintaining a complete system of internal controls. They must significantly change their approach to work – from the old, conservative, inspective, and passive approach in auditing to a new, proactive, customer-focused orientation. It can be expected that in the future, internal audit will continue to develop and evolve, enhancing its impact on the improvement of corporate governance and significantly contributing to business performance.

In line with research results, it can be inferred that internal audit improves corporate governance in the Republic of Serbia. This is supported by the internal auditor acting independently and providing objective assessments and recommendations. The internal audit effectively provides an additional, higher level of supervision over the functioning of internal controls. Internal audit has a vital role in the risk management process. Internal audit significantly impacts the quality of corporate decision-making and governance and contributes to improving business operations' quality. Sufficient attention is paid to internal audit planning, although in 13% of the surveyed companies, the plans are not flexible enough. As many as 53.12% of companies provide sufficient resources for quality internal auditing. Given the above, we can infer that the level of development of the internal audit in companies is not fully aligned with the modern understanding of its role in managing business operations. The research results indicate the presence of internal audit, its role in the companies' operations in the Republic of Serbia, and its contribution to corporate governance improvement. Still, the level of development of internal audit does not correspond to the level of development of that profession observed in countries with developed market economies. Properly defining the place and role of the internal audit in business entities can provide tremendous benefits in improving a company's performance and increasing operational and financial discipline and risk management quality. All this creates the added value of internal audit in the business environment of Serbia.



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OPPORTUNITIES AND LIMITATIONS OF BEHAVIOURAL FINANCE FOR EFFICIENT CORPORATE GOVERNANCE

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Abstract:

Behavioural corporate finance tends to add cognitive and psychological elements to the sophisticated mathematical and statistical models of modern corporate finance by observing and studying the behaviour of investors and managers. The theory does not offer a model for predicting the decision that will be made, but it provides the possibility to predict whether a 'riskier' or 'safer' decision will be made based on the 'exclusion from the context' through which it will determine its reference point and decision frame. The goal of this paper is to point out the limitations and reasons for the failure in modelling and concretization of scientific findings due to the limited access and the exclusion of the determination of the ultimate life purpose and expediency.

Keywords:

behavioural finance, behavioural economics, psychology in economics, corporate governance.

1. INTRODUCTION

We live in a complex and very dynamic reality where even structural changes happen unexpectedly quickly. From this arises the need for quick decision-making, both in terms of making everyday decisions and important structural ones. The reality of life has developed to such an extent that in almost every field, due to the distancing of the subject of study from the life context and a narrowly specialized professional view in work, external support is necessary for successful decision-making and management. Here we have a very interesting situation that, for the successful management of personal and family life, the support of cognitive structures which are part of psychological sciences is necessary. Although psychology has drifted away from its basic goal and broken the subject of study into segments, which it has not yet managed to unify through structural synthesis at least at the level of functional theories and thereby provide practically operational knowledge or insights for individuals, collectives and society, it undoubtedly possesses a large complex of knowledge in terms of personality behaviour, motivation, decision-making process and other things that are of great importance in teamwork, planning, organizing, decision-making and evaluation of achievements. Today, it is unthinkable to expect success in the business world and build a company based only on a business idea, personal capital and personal assessment of the market, no matter how much personal psychological knowledge, experience and intuition, and even special qualifications in the fields of psychology and economics, we might have.

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2. PSYCHOLOGY AND ECONOMICS AS THE BASIS OF BEHAVIOURAL FINANCE

To be able to understand the essence of behavioural finance, we should first start from behavioural economics, i.e. from the relationship between psychology and economics. The relationship between psychology and economics is as old as each of these scientific disciplines. At the very beginning, psychological findings and theories were present in economics and they were successfully applied on a personal level in planning and decision-making processes. Famous economists from the beginning of the creation of economics as a science applied psychological findings in various ways and modelled economic systems according to psychological matrix schemes, so it is sometimes difficult to separate those two realities in their work.

Before psychology developed as a separate science, economists considered themselves the psychologists of their time. A behavioural component has always been incorporated into economics, which has caused occasional turmoil in its history. At the beginning of the 20th century, economists and psychologists integrated the science of psychology into economics. It can be said that today behavioural economics represents a theoretical framework whose beginnings and history have been the subject of numerous research (Ricciardi & Simon, 2000). Behavioural economics can be defined “as a combination of economics and other social sciences that are more descriptive of behaviour. It arises when economists combine research and methods from economics and other social sciences with the aim of improving the descriptive value of economic theory” (Weber & Dawes, 2005). Behavioural economics researches the “way in which emotions and the mental structure of humans impact the process of making economic decisions” (Anger & Loewenstein, 2007). The essence of behavioural economics lies in its believing that it will improve the way we understand economics based on different results from empirical research (Diamond & Vartiainen, 2007).

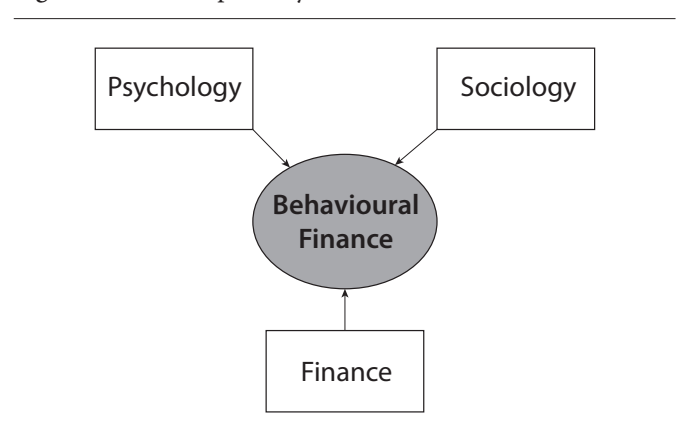
Behavioural psychology is only one of the directions within the psychological scientific system and its subject of research, which is limited to a certain extent to the study of behaviour as a visible and measurable manifest form of existence, cannot even conceptually encompass the economic reality. The contribution of behavioural psychology and its discoveries in the field of behaviour, both for psychology and for other scientific disciplines, is unquestionable. But that's just a drop in the ocean. Psychology has a much larger complex of discovered laws of human behaviour and theories and it is simply unnatural that the relationship between psychology and economics is designated as behavioural, despite the fact that the Nobel Prize was awarded in the domain of psychological study of the

economic model. American psychologist Daniel Kahneman and economist Vernon Lomax-Smith, winners of the Nobel Prize in Economics in 2002, laid the foundations of behavioural economics as a scientific field by pointing out the necessity of psychology in predicting and explaining human behaviour. Another winner of the Nobel Prize for achievements in this field in 2017 was Richard Thaler, a professor at the University of Chicago. By studying the effects of bounded rationality, social preferences, and lack of self-control, Thaler showed how given traits influence certain decisions and outcomes in the market.

3. BEHAVIOURAL FINANCE

Irregularities observed in the market that are not in accordance with the standard economic model that encouraged the development of the behavioural economics, are most represented in the financial sector. Behavioural finance is the most developed area of behavioural economics. Unlike traditional finance that relies on rational decision-making, behavioural finance introduces the component of irrationality, leading to the emergence of a new paradigm known as behavioural finance (Kumar & Chandel, 2018). In order to make more effective decisions in the financial market, it is necessary to get into the essence of behavioural finance, which combines cognitive psychological theories with conventional economics and finance (Sharna & Sarma, 2022). They aim to improve the understanding of financial markets and their participants using the behavioural sciences (Baltussen, 2009). The starting point for defining behavioural finance is defining psychology, sociology and finance and looking at their relationship, Figure 1.

Figure 1. Interdisciplinarity of behavioural finance



Source: (Ricciardi & Simon, 2000)

It has already been highlighted that psychology is a science that includes the systematic study of the psychological life of humans and animals based on the scientific study of objective behaviour and direct experience.



Sociology is a general science of society that studies “the origin, development, organization types, structure and dynamics of society as a whole, as well as individual social organizations and institutions” (Trebješanin, 2008). Sociology is closely related to psychology, but it should be emphasized that they have a different angle of observation in the study of the same subject: sociology investigates the connection of certain social and psychological events, and psychology the subjective aspect of social phenomena. Finance is defined as the science of money management. They cover three main areas: investment, financing and asset management planning (Van Horne & Wachowicz, 2007).

Elements of psychology in behavioural finance: cognitive psychology, perception, heuristics, thinking and expectation. Cognitive psychology is an area of psychology focused on understanding and explaining psychological processes. It emphasizes the importance of cognitive structures and functions for all aspects of human experience and behaviour (Trebješanin, 2008). Perception is the process of sensation, organization and interpretation of stimuli with the aim of determining their meaning (Robbins & Judge, 2010). Its determinants are physical, physiological and psychological in nature. It is not only a simple and passive reflection of reality, but also involves connecting sensory data with previous experience, categorizing them and giving them meaning. Heuristics is a part of scientific methodology and represents the ability to find the truth or new facts and insights. Thinking, in a broad sense, includes any cognitive process of processing ideas, representations, images, symbols and concepts. Critical thinking is “an opinion that is based on a systematic, impartial and careful examination of facts, premises, evidence and conclusions. Critical thinking is based on reason and facts and is independent of any authority” (Trebješanin, 2008), while in philosophy or science it is non-dogmatic, free from emotions, passions, prejudices, common sense and stereotypes. The expectation is the degree of belief in the possibility of achieving the desired goals with the help of the undertaken activity, i.e. “a cognitive-mental-motor attitude, an attitude of orientation towards what will come, which is anticipated based on past experience” (Trebješanin, 2008).

Behavioural finance brings psychology, sociology, and other research methods to the study of investment behaviour to explain how investors process information and take certain actions (Zhang & Zheng, 2015). This is in stark contrast to the traditional financial paradigm, which attempts to explain financial decisions by assuming that markets and many of their participants and institutions are rational (Baltussen, 2009). In a broader sense, behavioural finance “is the study of how psychology affects finance, that is, how human behaviour affects the price of assets” (Schinckus, 2011).

The fact is that many of the fundamental models of modern finance are based on assumptions about the rationality of investors and efficient markets. The assumptions for rational decision-making are: the problem is clear and unambiguous; one, well-defined goal should be achieved; all alternatives and consequences are known; priorities are clear, permanent and stable; there are no time and cost restrictions (Robbins & Coulter, 2005). Rational investors are the basic prerequisite for efficiency. However, modern capital markets are exposed to constant changes and risk that lead to anomalies in the behaviour of market actors, and investors make their decisions in conditions of limited rationality. Heuristics are simple, generally accepted, unwritten and untested rules, judgments, guesses and mental short-cuts, among which stand out: “1) representativeness – reasoning based on stereotypes and analogies, 2) availability – reasoning based on the most available information and 3) anchoring – reasoning based on initial assessments” (Todorović, 2011). The framing effect refers to the way the problem is formulated. For example, if a decision is framed as a gain, people will show risk aversion, and if the same decision is framed as a loss, they will show a tendency to risk. Instead of assessing the fundamental value of stocks, “investors try to guess future stock prices, diversify too little, trade too much, hold losing stocks and sell winning stocks, etc.” (Todorović, 2010). The two basic elements on which behavioural finance is developed are cognitive psychology (people are not rational) and the previously explained limitations of arbitrage (markets are not efficient). Behaviourists in corporate finance are considering a setting in which managers believe and think that when making financial and investment decisions they are working to maximize the fundamental value of the company, but due to psychological traps, they do not do that in reality. Managers' beliefs and preferences are often not logical, nor are these beliefs converted into decisions in a consistent and rational manner (Todorović, 2011).

It was highlighted that behavioural finance refers to decision-making regarding investment, financing and asset management planning. The study of decision-making processes and problems is the subject of decision-making theory. Theories of decision-making can be defined most simply as theories about decisions that define a set of general rules for making decisions in all spheres of life (Hansson, 2005). Decision-making theories can be normative and descriptive (behavioural). Normative theory deals with the concept of rationality and the logic of making decisions, as they should be, while descriptive theory deals with the discovery of these concepts in practice, as they are. The basic concept of normative theory is the concept of a perfectly rational decision-maker who has the ability to precisely formulate a problem and define the alternatives by which they can solve it in order to maximize



their well-being. Descriptive decision-making theories are concerned with describing the way decision-makers think, solve the problems they face, and the reasons why they decide on certain solutions. Descriptive theories of decision-making have their origins, to the greatest extent, in the field of experimental psychology.

The task of descriptive decision-making theories is to describe events in a real decision-making situation, while avoiding giving any value judgements about the quality of the decision that was made. Among the many descriptive decision-making theories, the most important are: behavioural decision-making theory, social choice theory, expected utility theory, naturalistic decision-making theory and image theory (Bell, Raiffa, & Tverski, 1988). Very often, behavioural decision-making theory is equated with descriptive decision-making theories, despite the fact that it represents only one of a large number of descriptive theories. Behavioural decision-making theories are based on the view that people have limited information processing abilities and that they lack the ability and motivation to perform the set of important calculations on which rational choice models are based (Gilovich & Griffin, 2010).

Behavioural economics has a wide range of applications. The results of numerous researches that had as their subject the rationality of investment decision-making have showed that this decision-making process is influenced by: gender and level of income (Kumar & Goyal, 2016); age, profession and frequency of trade (Prosad, Kapoor, & Sengupta, 2015); portfolios of older age groups and female investors achieve better performance (Talpsepp, 2010); male and female investors differ radically in terms of the disposition effect, herd effect tendency, and self-confidence when making investment decisions (Lin, 2011); investor beliefs and preferences (Sahi, Arora, & Dhameja, 2013); personality traits (Durand, Koh, & Tan, 2013); sources of information (Tauni, Fang, & Iqbal, 2016); emotions (Shen, Najand, Dong, & He, 2017); extroversion (Andreas, Stefan, Florian, & Matthias, 2018). Also, the perception of realised past portfolio returns affects individual and institutional risk-taking (Khan, Tan, & Chong, 2017). The aforementioned differences in investment decision-making should be taken into account when formulating a corporate governance model in order to make optimal decisions based on a holistic approach. Newer behavioural financial concepts have also been developed in this direction.

4. IN SEARCH OF A MODEL OF EFFECTIVE CORPORATE GOVERNANCE

The understanding of economics and our thinking depends on the current paradigm, which is part of the overall paradigm of understanding the world at a certain point in time.

The hologram paradigm, by changing the angle of observation and breaking the blockage of the mind, is a generator of the development of scientific thought. From the holographic paradigm, which says that the part is in the whole and the whole in the part“ (Van Daele, 2018), the dimensionality of the connection and conditioning of the part and the whole is indicated, which initiates the need to change the way of thinking. It basically says that the change of any little part of the community in the direction of decomposition will lead to the change of other elements of the community and its decline. The accumulation of wealth in one part and the impoverishment of other elements is a manifestation of destruction and leads to system imbalances, fractures and its breakdown.

By comparing the function of inter-structural changes in social reality and the correlation index of changes in scientific fields along the lines of paradigm shift, we can say that the capacity of classical psychology has been used to the greatest extent in economics and that the rest of the capacity potential is not a function of systematic and structural changes in the economy.

The effect of gradual building through quantum leaps is a natural pattern present in almost all life processes. It is interesting that this quantum leap effect is also encountered in the processes of social development. For the sake of illustration, we can refer to the process of civilisational development, i.e. the development of civilisations that, after the phase of initial gradual development of the construction of fundamental structures and their connections, enter the phase of dynamic development with the opening of crisis lines through which crisis situations come as an expression of alienation from the natural order and existential purposefulness in order to warn the society about the re-examination of basic life settings that are in the function of sustaining life and are united in a moral system that represents the soul of a civilisational being at the level of civilisation. The graphs of the development of civilisation represented by the coordinate system show the correlation of technological-technical and moral development in an inverse proportion. The maximum of one is followed by the minimum of the other and at that tipping point is where civilisations suddenly disappear. Looking at the current civilisation, periods of cyclical deepening of crises of universal segmental connection can be observed. There are talks about the economic crisis, the family crisis, the crisis of the education system, the crisis of the health



system, the crisis of identity, the crisis of morals, and there are large intercontinental paradoxes that keep warning us. Let us mention one of the paradoxes – the largest percentage of capital is owned by a very small part of the population. This paradox reflects all the illusory and dysfunctional nature of theoretical multidisciplinary knowledge that is claimed to be scientific. Societies are surrounded by shamelessness and immorality, which penetrate into the very essence of life and its sustainability. And we will take it as the starting point for considering the holographic paradigm, which implicitly indicates that we are all parts of the whole and that the whole is in each of us.

The key to understanding lies in understanding our personalities and discovering the matrix of meaning and purpose. The solutions to the existing crises cannot be found within the existing systems of knowledge and morality, but exclusively in the return to primordial values or in the application of the existing paradigms that are a cry for help and an expression of the cosmic regulatory system as an attempt to predefine basic values and change the direction of movement. It is interesting that the power of the paradigm, in this case the holographic one, is very visible in biology, neurology, physics, mathematics. The universality of the holographic paradigm is reflected in the applicable possibilities for solving the most significant crises in all the mentioned areas and beyond. If we look back at the basic crisis points in the economic science and in the society, we will notice the failure of structural solutions and the exhaustion that leads to indifference and loss of will while surrendering to life processes that lead to the complete devaluation of life and its extinction.

The key elements of management are: who manages; what they manage; on whose behalf they manage; ownership structure of life; laws of successful management. We can find all these elements in the model of the bee colony, and modelling the behaviour and organisation of the bee colony can serve as a basis for creating an economic model of successful management in the function of sustainable development. The basic characteristics of the bee colony are: the collective above the individual; clear division of roles; selflessness; dedication, clear communication; efficiency; creating values of universal application; the medicinal value of the product; creating shared prosperity; community work rhythms aligned with cosmic cycles; environmental friendliness; integration into the planetary purposefulness and the service of sustaining life.

After understanding the hologram paradigm and insight into the mechanism of the emergence of new higher cognitive structures in the function of restoring biological balance and balancing all other aspects of the life of a social being and community, we can freely express the opinion that the quantum economics has been conceived and that its anatomy is slowly taking shape. It is a cosmic

response to destructive processes and the alienation of life from the source of life by moving towards total materialism, sickness and autism of civilisation, which ultimately leads to destruction.

In the work of a prominent economist of our time, "Economics of Good and Evil" authored by Tomas Sedlacek, we notice a clear connection between the economics and the value system of morality. (Sedlacek, 2011): "Economics is nothing but a hidden value system." It is a big mistake to believe that economics is devoid of value. It is actually filled with values and nothing related to economics is without value. Every business decision, every consumer decision is actually a moral decision. Sedlacek observes the essential connection between morality and economics and points to the primary problem of today's global crisis, which is not in the global financial institutions that model the economic flow, but in ourselves and the acceptance of value systems that form a consumer society oriented towards consumerism whose function lies in us losing our economic and, consequently, personal freedom. Also, it indicates the need to re-examine our beliefs, which clearly speaks in favour of the thesis for a fundamental change in the value system and the liberation of the enslaved mind.

Let us outline the principles of quantum psychology, which are applicable in economics and offer the possibility of creating a model of optimal quantum management of all forms of economic systems that would be part of wider life systems united in the cosmic information field. It is interesting that by creating this model, we would also get a diagnostic apparatus for the economic system and economic processes that would objectively point out the nodal points of communication interruptions within it and blockages that lead to disturbances and turbulence in the monetary system. It is analogous in the human structure. The interruption of communication between cells leads to energy stagnation and disorder which, if not removed, develops into a disease of the organ, and later of the organism and system. By developing the quantum principle in psychology, medicine, biology, linguistics, and hopefully economics soon, humanity is being offered transformation and healing through regeneration.

5. CONCLUSION

By looking at economics as a scientific discipline that deals with the study of rules of behaviour and economic laws in economic activities, one loses sight of the entirety of life's reality and the problem of discerning the meaning and purpose of the life process and life activities, both at the individual level and at the level of groups, subgroups and communities. This paper and opinions here given do not diminish the importance of such a narrowly understood



economics, but give the perspective of its connection with the matrix form of life manifestation and the possibility of synthesizing previous scientific knowledge along the lines of the overall purposefulness of life activities. Life is a complex energy field and wave-particle structure in which the part is in the whole and the whole in the part. Injustice to someone is transmitted to the whole system and is a destructive process of decomposition.

This paper can be seen as a small contribution to the creation of the quantum economics and the understanding of the basic knowledge flows that offer solutions to today's intractable problems. Economic energy is a manifest form of life energy that regulates the proper distribution of material goods and their proper use for the sake of harmonised and balanced development of the individual, local and wider community and society while preserving and improving the natural environment.

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HERDING IN CRYPTOCURRENCIES: CSSD AND CSAD APPROACHES

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Abstract:

This paper uses CSSD developed by Christie and Huang (1995) and CSAD developed by Chang, Cheng, and Khorana (2000) to test for herding in cryptocurrencies over the period 21/09/2018-21/09/2022. Two sets of cryptocurrencies were considered, one containing the 34 largest cryptocurrencies by market capitalisation and the other containing 15 cryptocurrencies with market capitalisations under \$200 million. Any cryptocurrencies launched after 21/09/2018 were excluded from the samples in the interests of consistency. Using CSSD, no herding was detected while with CSAD a weak herding effect was observed, though the results were not statistically significant. This paper has important implications for cryptocurrency investors, researchers, and policymakers.

Keywords:

herding, cryptocurrencies, bitcoin, digital currencies.

1. INTRODUCTION

Based on a little-known procedure called proof-of-work which was initially intended to reduce spam emails (Back, 2002), Bitcoin has become a household name and a regular news story. Developed by the pseudonymous (Nakamoto, 2008), using HashCash's novel idea to prevent abuse of unmetered internet services, Bitcoin has sparked an entire new class of investment assets. Cryptocurrencies are famed for their volatility and risk, perhaps best exemplified by the precipitous collapse of LUNA in May this year: With the cryptocurrency's price dropping from \$85 per coin to a few fractions of a cent in a matter of days. On the other hand, cryptocurrencies offer the potential for investors to receive excess returns which makes them an attractive asset class for investors with high risk-appetites.

The efficient-market hypothesis holds that as returns increase or decrease, the dispersion of those returns should increase or decrease in a linear fashion. Whether this holds true in all situations has become a topic for research since the mid 1990's. Researchers have questioned this notion using various methods to detect a phenomenon known as herding. Herding occurs when the dispersion of returns reduces in comparison with market returns. This was theorized to occur in extreme market conditions, both in bear and bull markets and would demonstrate that investors are rallying around a consensus instead of trading based on fundamental information. Testing for herding has become a popular field of research with studies conducted on various asset classes in numerous of countries over the years since methodologies for testing it were first developed.

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Herding as a concept can be classed with the wider movement towards behavioural economics in recent years. Behavioural economists posit that social and psychological factors, amongst other things, influence the decisions of economic agents. The idea that economic agents are not completely rational at all times is a direct challenge to much of classical economic theory. Therefore, herding when discovered in data, can be used to question conventional economic thinking.

Testing cryptocurrencies for evidence of herding is a relatively new field. This is partially because cryptocurrencies are a recent class, with many of the top 100 cryptocurrencies established in the last 4 years or so. This paper uses cross-sectional standard deviation and cross-sectional absolute deviation in order to test for herding using two sets of cryptocurrency data. One set is comprised of the largest cryptocurrencies by market capitalisation and one set of cryptocurrencies with market capitalisations of under \$200 million as of 21/09/2022.

2. LITERATURE REVIEW

(Christie & Huang, 1995) proposed the CSSD method of detecting herding. Dummy variables are used to detect extreme market movements and a regression is conducted in order to test for herding.

(Chang, Cheng, & Khorana, 2000) developed the work of the previous authors, proposing the CSAD method of detecting herding. CSAD improves CSSD as it includes the entire dataset, not just the arbitrarily defined “extreme movements”. CSAD and its variants are the most popular way to test for herding in research.

Since the developments of these methodologies, herding has become a popular topic of research with various asset classes analysed for the presence of herding in a great number of countries. In general, the research results have been mixed on the existence of herding. For example, (Chang, Cheng, & Khorana, 2000) analysed intraday Australian equities and found no evidence of herding using both CSSD and CSAD. In contrast, (Economou, Katsikas, & Vickers, 2016) tested for herding on the Athens stock exchange and discovered strong evidence thereof during the sovereign debt crisis.

As pertains to cryptocurrencies, testing markets for herding is a relatively new field of research and results have again been mixed. For example, (da Gama Silva, Klotzle, Pinto, & Gomes, 2019) discovered evidence of herding in the cryptocurrency market using the CSSD model but not the CSAD owing to the low P-value of the result. In addition, (Kyriazis, 2020) discovered evidence of herding using the CSAD method during bull markets. (Poyser, 2018) also discovered evidence of herding using an asymmetrical CSAD approach, noting that market

stress often led to investors abandoning rational information. (Kumar A. S., 2018) discovered substantial evidence of herding but found no evidence that the effect was exacerbated by Coronavirus.

In contrast, (Vidal-Tomás, Ibáñez, & Farinós, 2019) find no evidence of herding and state that investor behaviour is not in contradiction with rational asset pricing models, they did however find some evidence of herding during down markets. In addition, (Bouri, Gupta, & Roubaud, 2019) discovered the presence of an anti-herding effect in their static model. They did; however, find some evidence of herding when a rolling window regression was conducted. Equally, (Stavroyiannis & Babalos, 2019), found that herding does not exist when a time-varying model was employed. The authors did find some evidence of herding during up market days.

One would expect that if herding were to be found anywhere, that place would be in the market for cryptocurrencies. As an asset class, they are extremely volatile and prone to days with extreme market movements. There is also a documented tendency for investors to purchase cryptocurrencies when they see the price going up, often referred to colloquially as “fear of missing out” (FOMO). Given the unclear evidence of herding in cryptocurrency markets, this paper attempts to contribute to existing research by helping to resolve the question of whether herding as a phenomenon occurs in cryptocurrencies.

3. RESEARCH METHODOLOGY

Two datasets of cryptocurrencies were collected with data spanning 4 years from 21/09/2018-21/09/2022. The first set contains the 33 largest cryptocurrencies by market capitalisation and the second containing a set of 15 cryptocurrencies with market caps below \$200 million. Any cryptocurrencies launched after 21/09/2018 were excluded from the datasets in the interests of consistency. All data was retrieved from CoinMarketCap, and Bitcoin was used as a proxy for market return for the purposes of this research.

In order to test the two datasets for herding, a variety of methodologies were used. Firstly, the cross-sectional standard deviation approach (CSSD) developed by (Christie & Huang, 1995) was employed. CSSD is defined as follows:

$$CSSD = \sqrt{\sum_{i=1}^n R_{i,t}^2}$$

where $R_{i,t}$ is the return of cryptocurrency i on day t , R_m is the average return on day t and n is the number of cryptocurrencies in the sample. Once the CSSD is calculated, a regression is conducted on the data. The regression is as follows:



$$CSSD_t = \hat{a} + \hat{a}^L D_t^L + \hat{a}^U D_t^U + \hat{a}_t$$

where both D_t^L and D_t^U are dummy variables which equal 1 during extreme market movements and 0 otherwise. For the purposes of this study, extreme market movements were identified as returns below the 5th percentile and above the 95th percentile.

There have been some criticisms of the CSSD model; primarily owing the arbitrary nature of defining “extreme” and the model’s sensitivity to outliers. As such, the CSAD model developed by (Chang, Cheng, & Khorana, 2000) is a more widely used methodology for detecting herding. CSAD is defined as follows:

$$CSAD_{it} = \frac{1}{n} \sum_{i=1}^n |R_{it} - R_{mt}|$$

where R_{it} is the return of cryptocurrency i on day t and R_{mt} is the market return on day t . After the cross-sectional absolute deviation was calculated, the following regression was applied to the data

The above regression was also conducted using a rolling window of 7 days and 30 days to test for differing levels of herding during different timeframes.

Finally, an additional regression was conducted to test for asymmetrical herding in the CSAD dataset. The regression is defined as follows

$$CSAD_{it} = \tilde{a}_0 + \tilde{a}_1 R_{mt} + \tilde{a}_2 |R_{mt}| + \tilde{a}_3 R_{mt}^2 + \tilde{a}_{it}$$

where $1-D$ and D are dummy variables which are equal to 1 depending on whether the market is up or down respectively.

4. EMPIRICAL RESULTS AND DISCUSSION

The results of the CSSD approach showed no evidence whatsoever of herding with both sets of D_t^L and D_t^U coefficients being positive. This is consistent with the findings of (Ren & Lucey, 2022) and (Vidal-Tomás, Ibáñez, & Farinós, 2019) as pertains to use of the CSSD model to detect herding. In contrast, (da Gama Silva, Klotzle, Pinto, & Gomes, 2019) did find evidence of herding using the CSSD model. The positive β_1 coefficients indicate that dispersion increases in the lower tail of both datasets with the positive β_2 coefficients demonstrating the same result is present in the upper tail of both datasets. This would seem to disprove the idea that there is a strong herding effect, at least at the day trading level of cryptocurrencies. Considering the differences between the CSAD and CSSD results, the lack of herding when using the CSSD methodology may partially explain the fact that fewer researchers now use CSSD with many opting to use the CSAD model and its variants.

Table 1. CSSD regression for small market cap cryptocurrencies

	Coefficients	Standard Error	t Stat	P-value
α	0.059915207	0.001061453	56.446	0
β_1	0.075320857	0.004628432	16.274	7.6563E-55
β_2	0.033819881	0.004628432	7.307	4.482E-13

Table 2. CSSD regression for large market cap cryptocurrencies

	Coefficients	Standard Error	t Stat	P-value
α	0.05037	0.000802	62.82747	0
β_1	0.075679	0.003496	21.6483	2.42E-90
β_2	0.048756	0.003496	13.94688	1.36E-41

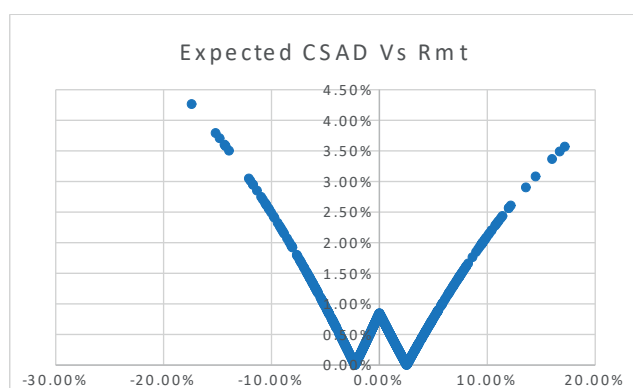
In contrast, the results of the CSAD approach with the static model detected herding in both datasets, but the results were not statistically significant in either case with P-values of 0.46 and 0.53 respectively. Equally, the results for the asymmetrical herding regression indicate the presence of herding during up market days, but the results are again not statistically significant with P-values of 0.4 and 0.46 respectively. Finally, the rolling regression windows of 30 days and 7 days do not detect negative r_{mt}^2 coefficients for the dataset with high market capitalisations but does find some evidence of herding in the dataset with smaller market capitalisations using a 7-day rolling window. The bowing effect in figure 1 demonstrates a slight reduction in return dispersion during extreme market movements. It is also possible to note that this effect is more pronounced during bull periods than in bear periods.

Table 3. Asymmetrical Herding Regression Results for Large Cap Cryptocurrencies

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.026067	0.000659	39.54321	6.8E-233
(1-D) * RMT	0.237048	0.043948	5.39382	8.04E-08
D * RMT	-0.24857	0.026163	-9.50058	8.24E-21
(1-D) * Rmt^2	0.534279	0.428173	1.247811	0.212301
D * Rmt^2	-0.08619	0.102847	-0.83802	0.402156



Figure 1. Absolute Rmt for large cap cryptocurrencies



These results are consistent with the research of a number of authors, including (da Gama Silva, Klotzle, Pinto, & Gomes, 2019) and (Bouri, Gupta, & Roubaud, 2019) where weak evidence of herding was discovered using static models. What is surprising about this research is that the asymmetrical herding measure and rolling window regressions also find only weak evidence of herding.

These findings would seem to imply that the cryptocurrency market is more efficient than it might be thought at first glance. Traders are unlikely to experience long-term irrationality in the form of herding when investing in cryptocurrencies.

Despite that, the weak, but ubiquitous, herding effect discovered using the CSAD methodology means that expanding this research using other methodologies may yield statistically significant evidence of herding. Two potential options could be introducing Markov-switching into the model to test for potential time-varying herding effects or the use of quantile regression as an additional measure. As pertains to policymakers, adequate regulation of cryptocurrencies as an investment asset is a necessary next step. The volatility of cryptocurrencies necessitates that investors receive the proper rights and protections when they elect to invest in this asset class.

5. CONCLUSION

Cryptocurrencies have developed into a popular class of assets in recent years owing to their potential to offer investors excess returns. The existence of herding in cryptocurrency markets is a much-debated topic in academic research. This paper contributes to existing literature insofar as it finds weak, statistically insignificant evidence of herding using both the CSSD and CSAD methodologies. It is of particular interest that the herding effect captured using the asymmetrical model is also statistically insignificant. One would expect stronger herding during bull markets as excited investors experience fear of missing out (FOMO), and abandon their own opinions about an asset in order to cash in on a bull market.

Future research should focus on establishing whether herding occurs in cryptocurrencies over longer time frames, as much of the research shows either weak evidence of herding or herding during specific market conditions over short periods of time.

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TAXATION AND PUBLIC SPENDING POLICIES IN EU ECONOMIES

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Abstract:

The countries of the European Union have faced numerous changes in the last few years, starting with Brexit, the large influx of migrants, the economic impact of pandemic, and the current energy crisis, etc. All those changes directly affected public finances. To ensure their macroeconomic stability, the member countries of the Union adopted certain measures in the sphere of fiscal policy. The goal of the paper is to determine changes in the area of fiscal policy based on the analysis of the share of direct and indirect taxes, as well as the share of public spending in the gross domestic product of the European Union countries. The research refers to the time period 2015-2020 and it is based on the method of comparative analysis. The research results show that at the level of the EU27 average, there is a noticeable growth in the percent of direct taxes and public spending in the gross domestic product. Likewise, the results showed that the share of social benefits in the gross domestic product also increased. Such a trend can be interpreted as a response of fiscal policy to changes that negatively affect the social security of citizens, but also as a need to ensure the stability of public finances in the countries of the European Union.

Keywords:

fiscal policy, taxation policy, public spending policy, European Union.

1. INTRODUCTION

It is clear that external factors such as Covid pandemic, migrant and energy crisis have effect on macroeconomic stability and demand intervention in the area of fiscal policy. The aforementioned changes increase public expenditures, which means that countries are forced to spend more in order to cover higher expenditures for health protection of their population inclusion of migrants, or in the case of an energy crisis, for paying a much higher import price of necessary energy sources and overcoming the consequences of their shortages.

According to Beker Pucar and Glavaški (2020), fiscal policy has two macroeconomic goals – the first is to ensure macroeconomic stabilization, and the second is to ensure budget balance. In a panel survey covering 24 European Union (EU) countries for the period 1995 – 2010, Szarowska (2013) using the method of regression analysis and the Granger analysis (test of causality), came to results that confirm, in accordance with the theory, that there was a positive effect of consumption tax and negative effect of labor tax on GDP growth; both of them being statistically significant. In the short run, there is bidirectional causality between the change in the implicit tax rate on consumption and GDP growth and unidirectional causality between the growth of GDP and the change in the implicit tax rate on capital and the implicit tax rate on labor.

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The budget balance can be divided into a discretionary component (measures implemented by the state to affect public spending or public revenues), an automatic component (the role of automatic stabilizers and a debt component (the burden that public debt carries with it). In developed market economies, there is a strong desire to ensure social peace in the interest of a stable economy and for the benefit of everyone between the well-organized and dominant social groups – labor and capital. Therefore, the state through its mechanisms (taxes and social transfers) ensures a certain redistribution of income from the richer to the poorer layers of society (Joksimović & Bajec, 2010).

Analysing the period 1993 – 1997, Stiglic (2008) in analysis of the public revenues of the USA, pointed to the growth of the relative importance of the personal income tax (which has been growing since 1947), and a decline in the corporate profit tax (decline since 1957). Besides, from the very beginning it was noted that excise and customs duties were in constant decline. Contributions for social security first had a tendency to fall (until 1947) and then recorded a significant increase from 1957. After that, the tendency of their share in federal revenues to fall again has appeared again since 1987.

The policy of taxation and public spending in the EU is the responsibility of the member states, and apart from the harmonization of the lower limit of certain excise taxes and indirect taxes, there were no changes in the direction of further harmonization of tax rates between the member states. Genschel and Jachtenfuchs (2010), based on an empirical EU tax legislation analysis and the tax legislation of the Court of Justice of the EU in the period 1958 – 2007, concluded that the EU exercises significant legislative control over the tax power of countries and imposes stricter restrictions than for example USA. In a theory, EU works in apolitical issues and highly politicized functions (such as taxation) are under jurisdiction of member states. These findings refute this theoretical claim. Autonomy of taxation is limited by EU regulations.

The total tax burden in the EU27 countries is very high and is among the highest in the world. (Prokopijević, 2012). For example, in December 2021, the personal income tax rate in Germany and France was 45%, while in the same period it was 37% in the USA. Additional pressures from the environment have a negative impact on public finances, and in the last few years EU countries have been forced to take certain measures in order to relax the tax burden and ensure the social security of their citizens.

Analysing the trend of the percentage share of direct and indirect taxes in the GDP of the EU 27 countries, as well as the public spending percent in the GDP for the mentioned countries, the aim of the paper is to determine the response of the fiscal policy to the important changes that come from its immediate environment.

2. SHARE OF DIRECT AND INDIRECT TAXES IN THE EU

Fiscal policy, which is the basis of Keynes’s approach to establishing macroeconomic balance (Filipović, 2021), enables the achievement of macroeconomic balance by changing the level of public spending. The goal is to find the optimum level of tax rates and public spending in order to ensure macroeconomic stability. For example, encouraging the growth of a stagnant economy by stimulating public spending and/or cutting taxes, which is known as expansionary fiscal policy. However, it should have on mind that even the long – term implementation of an expansive fiscal policy poses a risk for the appearance of inflation.

In modern business conditions, fiscal policy is extremely important in supporting intensive and dynamic economic growth in all market economies. Depending on the relevance of individual components in defining the dynamics of economic growth, the efforts of policymakers for the development of market economies to stimulate investment activity as much as possible with the instruments and measures of fiscal policy have also changed.

Considering the structure of public revenues in EU countries, the share of direct and indirect taxes will be analysed. A direct tax is considered a non – transferable tax (e.g. personal income tax), and indirect taxes are transferable (e.g. value added tax, excise taxes). An indirect tax can also be defined as a tax collected by one entity in the supply chain (more often a manufacturer or retailer), and paid to the government, but passed on to the consumer in the form of the final price of the good or service. Table 1 provides a comparison between these two groups of taxes.

Table 1. Direct vs indirect taxes

Direct taxes	Indirect taxes
Charged on converted activities, also on income.	Charged per product or service.
The tax burden cannot be shifted.	The tax burden has been shifted.
The tax burden cannot be shifted.	The tax burden has been shifted.
When the income arrives, the tax is paid by taxpayers.	When goods or services reach the taxpayer, the tax is already paid.
Collecting taxes is not easy.	Collecting taxes is easy.

Source: bankbazaar.com., Tax, Difference between direct tax and indirect tax, table.



Table 2 shows the trend of the share of direct taxes in the GDP structure of the EU members. We can conclude that in 2020, the direct taxes percentage in GDP in the EU 27 was 13.3%, or 13.2% in EA 19. In the observed period of 2015-2020, a slight and constant increase in the share of direct taxes, dominated by labor and capital taxes, was noticeable. Denmark (30.9%) and Sweden (18.2%) have the largest direct tax shares in GDP. The structure of direct taxes in these countries is dominated by personal income tax. According to the available data,

in Denmark in 2019 the income tax was 24.3%, and in Sweden 12.2%. Romania has the lowest share of direct taxes during the observed time period, with the tendency of its further decrease from 6.6% in 2015 to 4.7% in 2020. Likewise, a low share of direct taxes in GDP was recorded in Bulgaria (6.1%) and Croatia (6.7%). There are three different systems of taxation of the income of citizens, namely cedular taxation, synthetic taxation and combined or mixed taxation. The mixed model is most common in European countries.

Table 2. Direct taxes as percent of GDP

Country	2015	2016	2017	2018	2019	2020	Ranking 2020
EU27	12.9	13.0	13.2	13.2	13.3	13.3	
EA19	12.8	12.9	13.1	13.2	13.2	13.2	
Belgium	17.3	16.9	17.5	17.7	16.5	16.5	3
Bulgaria	5.6	5.8	6.0	6.0	5.8	6.1	26
Czech Republic	7.7	8.0	8.1	8.5	8.4	8.5	18
Denmark	30.3	29.6	29.8	28.2	30.6	30.9	1
Germany	12.5	12.9	13.1	13.5	13.5	13.0	10
Estonia	7.7	7.4	7.2	7.4	7.3	7.8	21
Ireland	10.8	10.8	10.3	10.6	10.4	10.2	13
Greece	9.6	10.3	10.1	10.4	9.9	9.3	16
Spain	10.5	10.5	10.6	11.0	10.8	11.6	12
France	13.1	12.9	13.3	13.7	13.7	13.7	7
Croatia	6.1	6.5	6.3	6.4	6.7	6.5	25
Italy	14.7	14.9	14.5	14.1	14.4	15.2	6
Cyprus	9.9	9.3	9.6	9.6	9.7	9.7	15
Latvia	7.8	8.3	8.6	7.4	7.0	7.2	23
Lithuania	5.4	5.6	5.4	5.6	8.7	8.8	17
Luxembourg	14.5	14.8	15.2	17.0	16.7	16.0	5
Hungary	6.8	7.3	7.2	6.6	6.7	6.8	24
Malta	12.5	13.3	13.7	13.4	13.8	13.1	9
Netherlands	11.5	11.8	12.9	12.7	13.4	13.4	8
Austria	14.2	12.9	13.0	13.6	13.7	12.7	11
Poland	6.9	7.1	7.3	7.8	8.0	8.0	19
Portugal	10.7	10.1	9.9	10.1	9.8	10.1	14
Romania	6.6	6.4	6.1	4.9	4.8	4.7	27
Slovenia	7.2	7.5	7.5	7.9	7.9	7.9	20
Slovakia	7.1	7.2	7.2	7.3	7.2	7.2	22
Finland	16.8	16.6	16.9	16.3	16.3	16.4	4
Sweden	18.3	18.9	19.0	18.6	18.0	18.2	2

Source: ec.europa.eu, European Commission, Data on taxation



From Table 3, it can be concluded that a slight share reduction of indirect taxes in GDP was noticeable, so that in 2020 their share in EU 27 was 13.3%, i.e. 13.2% in EA 19. Sweden had the largest share of indirect taxes during this period, followed by Croatia and Hungary. Ireland had the lowest percentage of indirect taxes in GDP (6.6%), which is a drop of even 2.1% compared to 2015. The cause of this may be lower tax collection or lower turnover of goods and services for which VAT is charged during 2020. Germany, Luxembourg, the Netherlands and Slovakia also have a low share of indirect taxes.

Theoretically, indirect taxes can also be defined as taxes imposed on the taxpayer by the state, on consumption paid by the taxpayer, that is, the consumer. Burden of indirect tax is falling equally on both the poor and the rich, which can be unfair. Rich individuals are able to pay the amount of tax without any problem, while the poor can be overburdened by this levy and thus reduce their already limited consumption.

Table 3. Indirect taxes as percent of GDP

Country	2015	2016	2017	2018	2019	2020	Ranking 2020
EU27	13.7	13.6	13.6	13.7	13.7	13.4	
EA19	13.2	13.2	13.2	13.2	13.3	13.0	
Belgium	13.5	13.8	13.7	13.8	13.8	13.4	16
Bulgaria	15.7	15.6	15.2	15.2	15.6	15.3	7
Czech Republic	12.3	12.4	12.4	12.1	12.1	11.6	21
Denmark	16.1	16.1	15.9	16.0	15.4	15.9	6
Germany	11.0	10.9	10.8	10.8	10.9	10.5	25
Estonia	14.3	14.7	14.2	14.0	14.2	13.8	14
Ireland	8.7	8.8	8.3	8.0	7.8	6.6	27
Greece	16.3	17.5	17.5	17.6	17.5	16.6	5
Spain	12.0	11.8	11.8	11.9	11.7	11.5	22
France	15.9	16.1	16.4	16.6	17.0	17.1	4
Croatia	19.2	19.4	19.6	20.0	20.3	18.8	2
Italy	15.2	14.5	14.6	14.6	14.6	13.9	12
Cyprus	15.0	14.9	15.1	15.3	15.1	13.7	15
Latvia	13.7	14.2	14.1	14.5	14.2	14.3	9
Lithuania	11.9	11.9	11.8	11.7	11.8	11.8	20
Luxembourg	11.1	11.2	11.5	11.8	11.6	11.2	23
Hungary	18.8	18.2	18.0	18.2	18.1	18.3	3
Malta	12.0	12.2	12.2	12.8	12.2	10.9	24
Netherlands	11.5	12.0	12.0	12.1	12.5	12.7	18
Austria	14.5	14.5	14.3	14.0	14.1	13.8	13
Poland	13.1	13.6	14.0	14.2	14.0	14.2	10
Portugal	14.7	14.9	15.0	15.3	15.2	14.8	8
Romania	13.4	11.4	10.4	10.5	10.7	10.5	26
Slovenia	14.9	14.7	14.4	14.2	13.8	12.8	17
Slovakia	11.7	11.6	12.0	12.0	12.2	12.3	19
Finland	14.2	14.4	14.1	14.3	14.2	14.2	11
Sweden	21.6	22.5	22.4	22.4	22.2	21.8	1

Source: ec.europa.eu, European Commission, Data on taxation



Table 4 shows the social contribution percent in the GDP of the EU 27 countries. It is noticeable that the social contribution percent was in the range of 13.1 – 13.5% in 2020. For Eurozone countries, that share is somewhat higher, with slight fluctuations – in 2020 it is 14.3%, which represents an increase of 0.3% compared to 2015.

Slovenia and Germany had the highest shares of social contributions in their GDP. In Germany there was an increase of 1.4% respectively during the observed time

period, while in Slovenia there was also an increase of 1.4% compared to 2015. Denmark had the smallest share of social contributions in 2020, namely 0.1%, while in previous years it recorded zero rates.

Table 4. Total social contributions as percent of GDP

Country	2015	2016	2017	2018	2019	2020	Ranking 2020
EU27	13.1	13.2	13.1	13.2	13.1	13.5	
EA19	14.0	14.1	14.0	14.0	13.9	14.3	
Belgium	14.2	13.6	13.5	13.3	13.3	13.7	8
Bulgaria	7.8	7.7	8.3	8.7	8.9	9.2	23
Czech Republic	14.3	14.6	14.8	15.4	15.5	15.9	3
Denmark	0.1	0.1	0.0	0.0	0.0	0.1	27
Germany	15.2	15.4	15.5	15.7	16.0	16.6	2
Estonia	11.1	11.1	11.1	11.5	11.6	12.4	13
Ireland	4.0	4.1	3.9	3.9	3.9	3.2	25
Greece	10.7	11.1	11.7	11.9	12.2	12.9	12
Spain	11.4	11.4	11.5	11.7	12.3	13.8	7
France	16.7	16.6	16.7	16.0	14.9	14.8	6
Croatia	11.7	11.6	11.6	11.7	11.6	11.7	14
Italy	12.9	12.7	12.7	13.0	13.2	13.5	11
Cyprus	8.3	8.2	8.5	8.6	10.7	11.2	17
Latvia	8.3	8.2	8.4	9.1	9.6	10.0	22
Lithuania	11.6	12.1	12.2	12.6	9.6	10.2	21
Luxembourg	10.7	10.5	10.8	10.8	10.8	11.2	16
Hungary	13.2	13.7	12.7	12.1	11.7	11.2	18
Malta	5.0	5.1	5.1	5.3	5.2	5.7	24
Netherlands	13.9	14.7	13.8	14.0	13.5	13.6	9
Austria	14.5	14.5	14.6	14.7	14.9	15.5	4
Poland	12.4	12.7	12.8	13.1	13.2	13.6	10
Portugal	9.0	9.1	9.2	9.3	9.6	10.5	20
Romania	8.1	8.0	8.4	10.6	10.5	11.1	19
Slovenia	15.4	15.4	15.4	15.4	15.7	16.8	1
Slovakia	13.7	14.2	14.7	14.8	15.0	15.5	5
Finland	12.6	12.7	12.0	11.8	11.8	11.6	15
Sweden	2.7	2.7	2.7	2.8	2.8	2.8	26

Source: ec.europa.eu, European Commission, Data on taxation



Each EU country has its own laws on social security. When the workers are working in one country, they have the same obligations and rights, whether they are domestic or foreign. National systems are coordinated by EU rules to ensure people who move to another state not to lose social security (e.g. pension rights and social protection) and always be aware of the law that applies to them. EU social security laws of only one country can be applied to one person at one time, meaning that they only have to pay contributions in that state. Contributions must be paid in the country where person actually works, whether employed or self-employed. Workers who are sent abroad for a period of less than two years – they can pay contributions even in the country from which they are sent.

4. PUBLIC SPENDING IN EUROPEAN UNION

It is now very important for the EU states, at a time of great challenges that they are facing, both individually and for the Union as a whole, to have secure tax revenues. EU wants to create efficient, sustainable and fair taxation system. Therefore, on July 15, 2020, the Commission created a new measure – called tax package. This package strengthens the EU wide fight against abuses of tax, helps tax administrations keep up with ever – fast changing economy and eases administrative burdens for her citizens as well as the companies. These measures also ensure a better cooperation with other European states and stronger support for developing countries. The tax package contains complementary initiatives towards fairer, simpler and modernized tax systems that will be implemented by 2024. The tax action plan sets measures for:

1. reduction of tax barriers for companies in the single market. Simplification of tax policy will have a positive effect on business in the Union, increase the competitiveness of companies and accelerate growing economy.
2. helping members to implement common laws and enable better compliance, ensuring that they will have a stable tax revenue.
3. helping tax authorities to make better use of available data and more efficiently exchange new data, in a way that can improve the application of tax rules and help in a more effective fight against tax evasion and fraud.
4. promoting the rights of taxpayers, guaranteed by EU law, making they obligations simply and making reconciliation with those obligations.

Now when EU countries have increased pressure on the public balance, resulting from demography (high costs on lifelong learning, pensions) and globalization (adjustment costs, mobile taxpayers), it is very important that

public resources are used on the best way, in terms of effectiveness and efficiency. Improving these characteristics of public spending not only helps maintain the fiscal policy required by the Pact for Stability and Growth, but also plays a significant role in promoting structural reform programs. The efficiency of public spending is defined as the ability of the government to maximize its activities with respect to the level of spending or to minimize its spending with respect to the level of economic activity.

Table 5 shows that at the EU 27 level, a 5% increase in public spending was recorded in the observed period of 2015 – 2020. For Eurozone countries, this increase in consumption is even higher and amounts to 5.3%. Ireland had the lowest percentage share of public spending in GDP, with a noticeable drop of 1.7% respectively until 2020. Malta and Estonia follow, recorded a significant increase in 2020. France had the largest percent of public spending in GDP. In 2020, it was as much as 61.6%, which is an increase of 4.8%. In addition to, France, Belgium (59.2% in 2020), Greece (59.8% in 2020) and Finland (57.5% in 2020) also records a very high percent of spending in gross domestic product. It is notable that in 2020, a growth in a percentage of public spending was recorded in all EU states, which can be interpreted as an economic consequence of Corona virus pandemic.

**Table 5.** Public spending (% of GDP)

Country	2015	2016	2017	2018	2019	2020
EU27	48.1	47.3	46.7	46.5	46.5	53.1
EA19	48.4	47.7	47.1	46.9	46.9	53.7
Belgium (B)	53.7	53.1	52.0	52.2	51.8	59.2
Bulgaria (BG)	40.4	34.8	34.8	36.9	35.5	41.8
Czech Republic (CZ)	41.9	39.8	39.0	40.6	41.1	47.2
Denmark (DK)	54.4	52.5	50.5	50.5	49.5	53.4
Germany (D)	44.1	44.4	44.2	44.3	45.0	50.8
Estonia (EE)	39.5	39.4	39.2	39.4	39.4	45.9
Ireland (IE)	29.1	28.1	26.2	25.3	24.2	27.4
Greece (GR)	54.1	49.9	48.5	48.5	47.9	59.8
Spain (ES)	43.9	42.4	41.2	41.7	42.1	52.4
France (FR)	56.8	56.7	56.5	55.6	55.4	61.6
Croatia (CRO)	48.2	46.9	44.7	44.5	46.0	54.5
Italy (I)	50.3	49.1	48.8	48.4	48.5	57.1
Cyprus (CY)	40.6	37.5	36.5	42.7	38.4	45.1
Latvia (LV)	38.6	37.4	38.7	39.3	38.2	43.1
Lithuania (LT)	35.2	34.2	33.2	34.0	34.8	42.9
Luxembourg (L)	40.4	40.0	41.3	42.1	42.9	47.2
Hungary (H)	50.4	46.8	46.7	46.1	45.7	51.6
Malta (M)	38.5	36.4	34.4	35.7	36.0	45.9
Netherlands (NL)	44.7	43.6	42.4	42.2	42.0	48.0
Austria (A)	51.1	50.1	49.3	48.7	48.6	57.1
Poland (PL)	41.7	41.1	41.3	41.5	41.8	48.7
Portugal (PT)	48.2	44.8	45.4	43.2	42.5	49.3
Romania (RO)	36.1	34.6	33.5	34.8	36.2	42.0
Slovenia (SI)	48.7	46.2	44.1	43.5	43.3	51.3
Slovakia (SK)	45.7	42.7	39.6	39.8	40.7	45.6
Finland (FI)	56.5	55.6	53.6	53.3	53.3	57.5
Sweden (S)	49.3	49.7	49.2	49.8	49.1	52.1

Source: appsso.eurostat.ec.europa.eu., dataset, Government spending

It is clear that certain economic factors have a very large and negative impact on the economies of both individual EU countries and the Union as a whole. This primarily includes the impact of the migrant crisis, the impact of Brexit, political problems (relations towards the countries of the East), the economic consequences of the pandemic, the impact of insufficient tax harmonization, the harmful impact of high public spending and the harmful impact of certain high tax rates, as well as the crisis on the energy market.

5. CONCLUSIONS

Public spending in the countries of the EU is among the highest in the world. In addition, the EU is also burdened with other economic and political problems, such as: migrant crisis, Brexit, energy crisis, very high public debts of Eurozone countries, refusal of certain countries within the Union to respect its legal regulations (countries of so – called Visegrad group), the crisis caused by the coronavirus pandemic, etc.



Modern fiscal theory implies a synthesis of public revenues and expenditures on the other hand. That synthesis represents the basis of the stabilization policy that every country must lead, especially in situations of high budget deficits and public debts that burden the budgets. On the other hand, a no less significant element of modern fiscal theory is the synthesis of fiscal and monetary policy measures, which represents the driving force of economic growth.

Based on the analysis of available data for the period 2015 – 2020, it can be concluded that in EU countries there was a noticeable growth in the percent of direct taxes from 12.9% to 13.3%, while at the same time a decline in the percent of indirect taxes was recorded. Likewise, it is noticeable that the share of social benefits is increasing, so that it increased from 13% to 13.5%. As a result of pressures from the environment, as well as internal problems at the EU level, there was a significant growth in the percentage of public spending in GDP from 48.1% to 53.1%.

The largest shares of direct taxes are traditionally recorded in the Scandinavian economies, but the increase can also be seen in the key economies of the Union, such as Germany, France, and Italy. Indirect taxes have high shares in the GDP of Scandinavian countries, primarily Sweden and Denmark, but also in some newer members of the Union, such as Hungary and Croatia. Unlike direct and indirect taxes, the situation is different with social contributions. Social contributions have high rates in the largest EU economies, such as Germany, but very low shares in Scandinavian countries, with the exception of Finland, where their share is around the Union's average. The conclusion is that the shares of direct taxes, social contributions and public spending at the level of the EU are increasing, while the percent of indirect taxes is decreasing during the observed time period.

It remains to be monitored to what extent and how all the mentioned negative phenomena and trends will cause changes and consequences in the economic sense and in terms of taxation and public spending. Also it is important to monitor how efficiently, accurately and adequately the key institutions of the EU will present in their announcements and publications the trends of these various economic phenomena and indicators.

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CREDIT RISK MANAGEMENT IN A CHANGING WORLD

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Abstract:

The appearance of credit risk is one of the key dangers for the banking portfolio because if it becomes impossible to collect claims from several key clients, the bank could remain insolvent. Recent financial crises have highlighted the need for banks to identify, measure, assess, and control credit risk, as well as to ensure an adequate level of capital to cover potential losses in the event of loan defaults. Therefore, risk management relies heavily on the direct application of mathematical and statistical methods and models, as well as on the use of their results for business purposes. The aim of this paper is to gain knowledge about how banks manage credit risk in a changing world, bearing in mind that credit risk management is one of the indicators of the results of the banking operations of a particular bank.

Keywords:

credit risk, collateral, bank.

1. INTRODUCTION

The banking sector of an economy represents a very high-risk activity. Impending losses or lower profits arising from banking activities are indicators of risk. Banks' exposure to risks increases because there are numerous types of risks, their intensity is different, and they are conditioned by the environment. To effectively manage risk, banks need to recognize it, measure it, and align their processes and objectives (Bessis, 2015).

Basel standards include credit, market, and operational risk (National Bank of Serbia, 2022). Banking operations are also subject to (il)liquidity risk, investment risk, exchange rate risk, country risk, transfer risk, interest rate risk, legal risk, reputation risk, and other risks. Risk is a condition in which a negative deviation from the desired outcome we expect or hope for is possible. Therefore, we can say that for risk to exist in the financial business, it must: be possible, cause economic damage, be uncertain, and be random (Hull, 2018).

In the scientific world, as well as among organizations and practitioners, risk management has become a very useful and popular management tool. Risk management includes identifying risk, assessing it, developing a plan to manage it, and determining where to allocate resources. High volatility and market instability are characteristics of the banking sector. As a result, the banking sector is a high-risk activity. Market risks are conditioned by frequent and rapid changes. Exchange rates, interest rates, stock prices, the volume of monetary derivatives, and other monetary phenomena change at lightning speed in the financial market, all due to modern communication systems.

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In addition, economic, political, and geostrategic influences are increasingly pronounced. The effects that occur are often fateful. The international banking sector is further complicated by a large number of market participants, speculation, and asymmetric information. Bank losses or reduced profits are more likely to occur when there is a high degree of uncertainty. The global financial crisis led to the bankruptcy of many banks. Others fell into financial difficulties and were saved by the states (with budget funds), others were nationalized for political reasons, others were privatized in transition economies, while some recovered and strengthened. Today's business environment is characterized by much more dynamic and turbulent changes. So, the risk is increasing day by day. Banks are increasingly exposed to risk.

2. CREDIT RISK

Credit risk is the risk from a typical banking business and, as such, the biggest risk for the bank (Barjaktarović, 2015). As credit risk management is a multidimensional problem, different approaches are used, some quantitative and others qualitative. Regardless of the method used, the key element is understanding behavior and predicting the likelihood that certain entities will default.

Credit risk is the risk of adverse effects on the bank's financial result and capital due to the non-performance of the debtor's obligations to the bank (Law on banks, 2015). Credit risk can also be defined as "the potential that the contracting party will not fulfill its obligations by the agreed terms". Credit risk is also variously called default risk, performance risk, or counterparty risk. All these refer to the same thing: the impact of credit effects on a firm's transactions.

Three characteristics define credit risk:

- 1) Exposure (to a party that could default or suffer a negative change in its ability to perform).
- 2) The probability that this party will not fulfill its obligations (probability of default).
- 3) Recovery rate (, how much can be recovered if there is a default).

Given the above, credit risk management is the process of controlling the potential consequences of credit risk. The process follows a standard risk management framework: identification, evaluation, and management. It is necessary to identify the cause of the risk, assess the degree of risk, and decide how this risk will be managed (Witzany, 2017). The bank's credit risk is determined by its capital adequacy, internal acts for credit risk management, and the classification of its assets and off-balance sheet items. In addition to creditworthiness and regularity, the bank's credit risk is also determined by the debtor's

creditworthiness, regularity in fulfilling his obligations to the bank, and the quality of the bank's debt security instruments.

What factors determine the risk associated with interest rates? In addition to the number of approved loans, the bank's credit policy determines its credit risk. Credit policies include customer selection, lending terms, billing terms, monitoring and collection. The bank will not have financial problems if its credit policy is set correctly. When a large number of loans are approved, the bank becomes exposed to risk (the potential loan loss increases). Credit risk management means eliminating risk. Due to the mentioned factors, the risk is almost impossible to eliminate. Management should mitigate risks as much as possible rather than eliminate them. Management of client credit requests requires maximum attention because this is where the first sources of problems and potential credit risks arise. Therefore, it is important to analyze the client's credit potential based on internal criteria (internal rating) and collateral as a secondary means of collection. Potential borrowers (clients to whom the bank has approved a loan) must be evaluated individually, on an average level, or in banking terminology, on a portfolio basis.

Defining lending conditions is the next step for the bank. This implies defining a series of criteria. The most important criterion is the interest rate. It can vary significantly for clients with similar characteristics (professional education, salary level, position, etc.). In what way? For instance, by saving, transferring money to a foreign currency account, using credit cards, etc. Risky customers usually pay higher interest rates because of the so-called risk premium. This means that banks want to protect themselves against potential losses by insuring risky customers. When defining lending conditions, banks consider repayment dynamics in addition to interest rates. By determining stricter dynamics for credit risks with a higher rating, banks insure themselves by setting higher annuities. Contracts often contain additional protective provisions. These safeguards do not apply to so-called golden clients (clients with high incomes, deposits, or turnovers). Finally, the main means of bank security is collateral. For a client with a higher credit risk, collateral is unfavorable because the bank wants to protect itself from losses (Đukić, 2021).

After the loan is approved, the bank must monitor the repayment of the loan, the so-called monitoring. The bank's operations are standardized, so financial reports are used for monitoring. Reporting should include measurement of mandatory losses, value adjustments, and provisioning for expected losses to maturity. Taking care of the final collection of receivables from the client is the main purpose of credit risk monitoring. Here, the bank controls credit risk by monitoring clients' operations, regularly checking the debtor's creditworthiness,



monitoring the servicing of annuities (interest and principal), checking the value of collateral, and observing protective provisions.

The final collection of receivables in case the client has problems with a regular collection of loans, i.e. repayment of annuity, should be done by the bank. As a result, the bank can extend the repayment term, restructure claims, for example, forgive part of the debt or convert it into equity, execute collateral, sell and/or assign claims, or initiate litigation.

To protect itself adequately, the bank has adapted its business policy as follows: the bank deals with credit control and debt management by establishing rigorous procedures to achieve minimum credit standards for the client and transaction completion time. In this regard, it is possible to monitor the exposure to those risks. At least once a year, the bank updates and adjusts its internal acts, policies, and procedures to ensure an adequate credit risk management system and reduce credit risks as much as possible. The bank assesses the risk of non-payment of obligations based on the probability that the client will enter the status of non-payment. As a measure of the risk that the other party will not fulfill its obligations, the bank determines the internal rating for each credit risk exposure and credit decision. The internal rating of each client is updated at least once a year. Provisions for credit risk are formed based on internal ratings at a quantitative level. In order to assess the risk of client default, all available information is considered (Đukić, 2021).

Groupings are made into four risk categories:

- Low risk - renowned and long-term clients, large internationally recognized clients, and clients using a wide range of services. Those clients who have not been in arrears recently or in the past year. This category of clients is also mainly used to conclude new business.
- Special supervision (management attention) - financially satisfactory and unsatisfactory clients. It is very uncertain whether the loan will be sustained in the medium term. Early payment reminders are sent to customers from the population segment with limited numbers or possible payment problems.
- Performance below average (sub-standard) - economically and financially sensitive clients.
- Problematic claim (non-performing) - meets at least one of the following criteria for non-payment of obligations, as defined by the bank's internal acts: uncertain collection, payment delay of 90 days, restructuring due to which the bank suffers a loss, realization of a loss, or bankruptcy proceedings. Restructured receivables that are not in arrears but are uncollectible are also problematic.

The level of non-payment of obligations is determined at the level of the client, including natural persons; when one product is overdue; all products of that product are overdue.

2.1. MONITORING AND SUPERVISION OF CREDIT RISK

Through the process of regular re-approvals, the bank analyzes the overall status of the debtor in order to recognize any deterioration in the quality of the loan portfolio that may cause material losses for the bank.

2.1.1. DEFAULT STATUS

There are five categories of status events in the bank, based on regulatory requirements at the banking group level:

- E1 – The decline in the debtor's credit quality makes it unlikely that the obligations will be settled in full;
- E2 – Payment of materially significant debt is delayed for more than 90 days;
- E3 – Changes in repayment terms due to the deterioration of the client's economic situation;
- E4 – Insolvency;
- E5 – Bankruptcy.

If the guaranteed exposures are not met, there is an outstanding exposure based on the total nominal amount.

It is possible to trigger an event at the individual placement or client level. Still, in principle, the client is assigned default status for all individual exposures, with an internal rating of 'R', regardless of where the default event occurs. When one of the default events E1 - E5 occurs, all bank clients default and each client is assigned an internal rating (R1 - R5). There is a precise minimum duration for each default event, and the exit from the default status requires the successful completion of the monitoring period, which occurs automatically after the expiration/termination of the validity period of the default event E1 - E5 for customers with any type of credit obligation and lasts at least 3 of the months. It is impossible to successfully complete the monitoring period if any criterion triggers or has triggered one of the previously defined default events E1 - E5.



2.1.2. WRITING-OFF OF RECEIVABLES

The bank writes off uncollectible receivables following the Bank's Rulebook on the write-off and transfer of receivables from balance to off-balance accounts after implementing all collection options. Additionally, write-offs may be considered when there is no alternative to the collection due to higher costs or when no further action is effective. Receivables are written off only for impaired and uncollectible placements. After determining that the court process or bankruptcy will take too long and thus burden the bank's balance sheets, a decision is made to transfer the claim from the balance sheet to the off-balance sheet, but the debt is not forgiven.

2.2. COLLATERAL AND OTHER MEANS OF PROTECTION AGAINST CREDIT RISK

Once the placement is approved, the bank expects the debtor's future cash flows to ensure payment. In addition, within this type of collection, the bank takes various security instruments (collateral) as protection against potential loss due to the potential default status of the debtor. The bank prefers collateral that is quickly and easily realized. Business competition and the current market situation determine whether collateral can be taken. Credit risk mitigation techniques can be measured and controlled by monitoring how long it takes to realize the collateral and how far the realized value deviates from the expected value (Tursoy, 2018).

The Strategic Risk and Collateral Management Department are responsible for all aspects of collateral management, from preliminary analysis to implementation. The stages of the process are divided into three categories:

- 1) The collateral analysis phase is the first step during the collateral management process. The identification, analysis, and documentation of collateral, as well as the registration of collateral in the collateral registration system, begin with the identification and analysis of potential collateral.
- 2) In the collateral monitoring phase, the value and determination of the collateral are monitored. The main function of this system is to record, monitor, update, and control collateral data.
- 3) When the collateral is realized (by selling to close the placement), the collateral is closed in the collateral record system, and the process is completed. The data collection phase for calculating the average realization and collateral recovery rate (eng. Collateral Recovery Ratio) is also included.

2.3. ASSESSMENT OF IMPAIRMENT OF FINANCIAL ASSETS

The bank establishes a structure, tools, and processes that enable the timely determination of credit losses following IFRS 9¹. To cover expected economic losses from financial assets, the bank regularly assesses the need and creates value corrections by regulatory and accounting standards (IFRS Foundation, 2022).

Expected credit loss/impairment represents all reductions in expected cash flows over the expected life of the financial asset. In contractual terms, the reduction represents the difference between the cash flows owed to the bank and the cash flows the bank expects to receive. Even though the bank expects to be paid in full, a credit loss may still occur after the expiration of the contractual term.

2.4. BASIC TYPES OF CREDIT PROTECTION PROVIDERS BASED ON GUARANTEES AND CREDIT DERIVATIVES

The state and commercial banks provide intangible credit protection with sufficient credit quality and international development banks - exposure secured by bank guarantees and international development banks.

2.4.1. EXPOSURES SECURED BY REAL ESTATE MORTGAGES

The decision on the adequacy of the bank's capital recognizes real estate as a protection instrument when all conditions are met. It is necessary to meet specific requirements to be placed in a particular class of exposure, exposure secured by real estate mortgages, which is assigned a more favorable credit risk weight than the recognition of the effects of the credit risk mitigation technique. The exposure or part of the exposure that is fully secured by a mortgage on residential real estate is assigned a risk weight of 35%; exposures that are fully secured by commercial real estate mortgages are assigned a risk weight of 50%.

Level 1 Impairment status

- a. Assets recognized on initial recognition (excluding POCI assets²),
- b. Assets that meet the criteria of low credit risk,
- c. Assets without a significant increase in credit risk after initial recognition.

Level 2 Impairment status

- Financial assets with increased credit risk are included but not impaired by credit losses, including initially recognized assets.

¹ International Financial Reporting Standards

² Purchased or originated credit impaired asset, POCI assets represent exposures for which, at the time of recognition, it was determined. Purchased or originated credit-impaired assets, POCI assets represent exposures for which, at the time of recognition, it was determined that credit losses reduced its value due to significant credit risk.



Level 3 Impairment status

- Financial assets are impaired due to credit losses at the time of reporting.

2.5. REPROGRAMMED LOANS

The bank should reprogram, respectively, to restructure loans rather than to realize collaterals when the conditions for reprogramming loans are met. To provide the client with better terms for the loan, one can extend the repayment period, reduce the interest rate, reduce the annuity, and partially write off the receivables or some other way. Reprograms can be business reprograms or forbearance restructuring. When the business is reprogrammed, the client is granted more favorable credit conditions that are not conditioned by worsening the debtor's financial position or mitigating its consequences. Due to the changing conditions in the market, the existing dynamics and lending conditions need to be adjusted to the new conditions. Due to financial difficulties, the debtor cannot fulfill the contractual obligations, and the bank must make concessions for the client to succeed.

2.6. RISK OF PLACEMENT CONCENTRATION

A bank faces a concentration risk when it has high exposure to a particular group of debtors or individual debtors. In the event of changes in economic, political, or other circumstances that equally affect them, there may be a significant concentration of credit risk when a significant number of clients from the same industry, region, or economic background are exposed to the same factors that affect their income or expenses. In order to minimize concentration risk, maximum exposure levels and credit limits are determined, with regular monitoring of compliance with the established limits, in order to achieve and maintain a safer credit portfolio. As part of this process, the bank analyzes the concentration of credit (as well as other) risk according to various criteria (exposure classes, economic sectors, collaterals, products, etc.). Considering all conditions defined by the Bank's Risk Management Decision, the bank analyzes exposure to credit risk by looking at two indicators: Exposure of one person or a group of related persons may not exceed 25% of the bank's capital, and the sum of all significant exposures may not exceed 400% (Law on banks, 2015).

3. RISKS RELATED TO CREDIT RISK

In addition to residual risk and credit impairment risk, settlement/delivery risk and counterparty risk, market and foreign exchange risk are also included in credit risk. Using the same credit risk control processes and procedures, the bank also overcomes other risks to which it is exposed in its operations.

4. CONCLUSION

In its operations, the bank is most exposed to credit risk. This risk is as old as banking itself because lending money to another contracting party always carries the risk that the borrowed funds will not be returned. Various activities were undertaken to mitigate this risk and avoid banking operations' adverse consequences. Of course, the complexity of the mechanisms used to manage credit risk was much simpler than today. When the financial market develops rapidly and new instruments and banking products are created, the management system's complexity is necessary. In order to prevent unfavorable situations, risk exposure must be adequately controlled and monitored, and preventive measures must be taken. The main task of this paper was to answer the question: How does the bank manage credit risk? The bank prefers collateral that is quickly and easily realized. Credit protection is primarily provided by cash and cash equivalents deposited with the bank. The state and commercial banks protect intangible credit with sufficient credit quality and international development banks.

5. LITERATURE

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DEVELOPMENT OF ELECTRONIC BANKING IN SERBIA DURING THE COVID-19 PANDEMIC

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Abstract:

Contemporary business environment is characterized by rapid changes, hyper-competition, globalization of business and an increasingly fast development of IT technologies. Monitoring and adapting to these changes, along with the continuous introduction of business innovation in the 21st century is the prerequisite for the survival and development of banks in the financial market. In response to these changes, banks have expanded their offer to include and develop electronic banking. The COVID-19 pandemic has shown the significance of electronic banking when it is necessary to reduce visits to bank branches due to isolation and avoiding threats to people's health. The development of electronic banking in Serbia during the COVID-19 pandemic is analysed in this paper, with the aim to determine whether the COVID-19 pandemic has affected the development of electronic banking in Serbia and to highlight the possibilities for further development of this type of banking in the country.

Keywords:

electronic banking services, electronic channels, financial market, COVID-19, Serbia.

1. INTRODUCTION

A bank, as a financial institution, represents a very important segment of society. That is why it is of crucial importance that it monitors and oversees all changes both in the internal, as well as external environment. The development of technology affects changes in business processes. The obligation of the banking sector is to listen to the market and to create new services, based on the information it collects, that will meet the needs of contemporary clients.

Contemporary clients are characterised by a fast lifestyle and lack of free time. This is why they need simple and fast access to bank products and services from all locations and at all times (Chaimaa et al., 2021). Today, electronic banking provides such possibilities, which offers an automatized delivery of services to clients through electronic channels of communication (Radenković et al., 2015), (Božić-Miljković et al., 2019). The following channels are most frequently used for the distribution of electronic bank services: home banking, internet banking, mobile banking, paying cards, e-money, POS (Point of Sales) and ATMs (Automated Teller Machine) (Hadžić, 2021).

Electronic banking as a new distribution channel of banking services enables the bank to quickly adapt to market changes and to completely fulfil the needs of contemporary clients, without having to be physically present in the bank's branch, without having to do any paperwork and with minimum spent time and money saved. Despite the numerous advantages of electronic banking, distrust of clients and insufficient IT literacy have restrained its development (Andreou & Anyfantaki, 2021), (Sa et al., 2022).

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The quick spreading of COVID-19 globally affected a large number of countries that introduced measures to protect people's health – a state of emergency and physical isolation of people, which implied limited movement, certain social distancing, home office, etc. Nikolić et al., (2021) which created the conditions for people to overcome the existing obstacles and to start using the services of electronic banking. Retail banks that mainly conducted their business and provided their services to clients in branches during COVID-19 switched to electronic banking (Global Data Financial, 2021).

The Global Findex 2021 survey showed that 64% of adults globally (84% of account owners) were involved in at least one electronic payment. Most adults do this in high-income economies 95% (98% account owners), while in, 57% of adults do that (80% account owners) (Demirguc-Kunt et al., 2022). Furthermore, economies with low- and middle-level income (not including China), more than 40% of adults make electronic payments in shops or online, by payment cards, by telephone or the internet, first since the pandemic began, and more than a third of adults in economies with middle-income pay utility bills electronically directly from their accounts (World Bank). In the euro area, the number of ATMs decreased by 4.2% in 2021, while the number of POS terminals increased by 9.8%. The total number of non-cash transactions for all forms of payments increased by 12.5% (European Central Bank, 2022). In the United Kingdom, during the COVID-19 pandemic, 8,500 branches and their businesses were organized through online banking (Global Data Financial, 2021). Electronic (digital) banking, which is realized through the internet or mobile phones, has become an important way of conducting transactions in the retail sector (Bhasin & Rejesh, 2021).

For years banks in the Republic of Serbia have operated electronically and they have offered new, digitalized services to their clients – checking their account balance, monitoring debts in the form of loans and credits, currency change, performing financial transactions locally and abroad, applying online for loans without having to go to the bank (Banca Intesa A.D. Beograd), (OTP Banka Srbija A.D. Novi Sad), (UniCredit Bank Srbija A.D. Beograd), (Raiffeisen Bank A.D. Beograd), (Erste Bank A.D. Novi Sad), (Eurobank Direktna A.D. Beograd) and (Procredit Bank A.D. Beograd). However, according to the World Bank research (2022) citizens in Serbia are still not using services of electronic banking sufficiently. This paper analyses whether the COVID-19 pandemic has affected the use of electronic banking services in Serbia in order to determine the effects of this pandemic on the development of electronic banking and to identify the possibilities for stimulating its development in the future.

The paper is divided into a few parts. Following the introduction, the second part provides a literature review. The third part describes the methodology of empirical research. The fourth part presents results and discussion, and the final part represents the conclusion.

2. LITERATURE REVIEW

The importance of digitalizing banking services for their survival and competitiveness in contemporary business conditions has been discussed in numerous studies. The outbreak of the COVID-19 pandemic increased the importance of digitalization and the use of electronic banking conditions, according to papers on this topic during the past few years.

Saka et al. (2022) investigated whether exposure to the COVID-19 pandemic affected the change of financial technologies used in a large number of countries. They combined data from the Gallup World Polls and Global Findex surveys in their research, covering about 250,000 individuals in 140 countries along with information on the incidence of epidemics and local 3G internet infrastructure and they used the linear probability model with difference-in-differences. They found that the pandemic affected the increase in remote access to banking services (an increase in transactions performed via online and mobile banking) and a decrease in those performed in branches. Al-Hayri et al. (2022) analyzed the development of electronic banking during the COVID-19 pandemic in Oman. Linear regression and t-test were used to analyze data obtained from a survey that included 200 bank clients in Oman. The research results showed that electronic banking services were used more frequently during the period of the COVID-19 pandemic, and they also showed that clients' willingness to accept these services depended on the perception of how easy they were for use, uncertainty, easier conditions and self-efficacy. In their research, Gani et al. (2022) examined the impact of the perceived usefulness, reliability of the banking system and the COVID-19 pandemic on the effectiveness of digital banking in Malaysia, using the technology acceptance model for analyzing data obtained from the survey, based on 228 customers of ABC Bank. The perceived usefulness and reliability of the banking system proved to be significant for the efficiency of digital banking, while the impact of the COVID-19 pandemic was not determined. Bekiris (2022) analyzed the impact of electronic banking on customer satisfaction in Greece during the COVID-19 period based on the data obtained from questionnaires/surveys of 237 Greek customers using correlation and regression analysis. According to the results of this research, the technology of e-banking and ease of use of e-banking services, as well as their costs, their adoption and their future purposes proved to be statistically significant for the satisfaction of bank clients.



Hag and Awan (2022) investigated the impact of e-banking services on e-loyalty during the pandemic in three systemically important banks in Pakistan. In order to collect data, they used questionnaires sent by e-mail and text messages, as well as the database of a local marketing company in Pakistan. Data collected from 976 respondents were analyzed using structured equation modeling. In their research, the authors found that website reliability and website design increase loyalty in e-banking. Stefanović et al. (2021) investigated the cross-section of digitalization and sustainability in banking and its effect on bank performance on a sample of 25 banks in Serbia, in the period from 2011 to 2022. The research results showed that banks oriented towards digitalization and sustainability were profitable even during the COVID-19 pandemic and that digital inability in banking needs to be included in the bank strategy in the post-covid period.

The importance of digitalizing banking services for their survival and competitiveness in contemporary business conditions has been discussed in numerous studies (Olmo et al., 2021), (Tinashe & Kelvin, 2016), (Krstić & Tešić, 2016) and (Dragišić, 2019). The outbreak of the COVID-19 pandemic increased the importance of digitalization and the use of electronic banking services, instead of paper or manual banking services. Saka et al. (2022) investigated whether exposure to the COVID-19 pandemic affected the change of financial technologies used in a large number of countries. They combined data from the Gallup World Polls and Global Findex surveys in their research, covering about 250,000 individuals in 140 countries along with information on the incidence of epidemics and local 3G internet infrastructure and they used the linear probability model with difference-in-differences. They found that the pandemic affected the increase in remote access to banking services (an increase in transactions performed via online and mobile banking) and a decrease in those performed in branches. Al-Hayri et al. (2022) analyzed the development of electronic banking during the COVID-19 pandemic in Oman. Linear regression and t-test were used to analyze data obtained from a survey that included 200 bank clients in Oman. The research results showed that electronic banking services were used more frequently during the period of the COVID-19 pandemic, and they also showed that clients' willingness to accept these services depended on the perception of how easy they were for use, uncertainty, easier conditions and self-efficacy.

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3. METHODOLOGY

The analysis of the growth and evolution of electronic banking in Serbia was conducted using quarterly data on the acceptance network¹ of electronic services, the number of users according to terms of the type of certain payment services and payment transactions number and value for the transfer of funds that were made using cards and e-money², as well as the number and value of the purchase of goods and services transactions through the internet using cards and e-money.

With the intent of determining the development of electronic banking during the COVID-19 pandemic, data from nine quarters of the pre-pandemic period and nine quarters from the period after the onset of the pandemic were analysed.

1 The acceptance network is a network that includes acceptance devices (ATMs, POS terminals, electronic money terminals) and virtual points of sale in the Republic of Serbia, where the payment service provider provides the service of accepting payment instruments.

2 Electronic money represents "specific monetary information that is transmitted by means of electronic impulses in real time between transactors performing payments" (Kovačević & Đurović, 2014, p. 34). Users can receive this money after making a payment of funds using a card, through account transfer or direct payment (NBS).



As the COVID-19 pandemic in Serbia became apparent at the end of March in 2020, the pre-pandemic period includes data from the first quarter in 2018 until the first quarter in 2020. The period after the outbreak of the pandemic includes data from the second quarter in 2020 to the second quarter in 2022.

The development of the acceptance network was conducted using the comparison method for the period from 2010 to 2021 and for the period from 2018 to 2022. The comparison method was used for analysing data on the number of users according to the type of payment services, after the changes in the number of users for each service in the period before and after COVID-19 was identified. The same method was applied in the analysis of the payment transactions number and value for the transfer of funds that were made using cards and e-money, as well as the number and value of payment transactions for the purchase of goods and services through the internet that were made using cards and e-money, but the comparison of these indicators was made on the basis of the total number of transactions and their value in pre and post COVID-19 pandemic period.

Two hypotheses were tested in the paper:

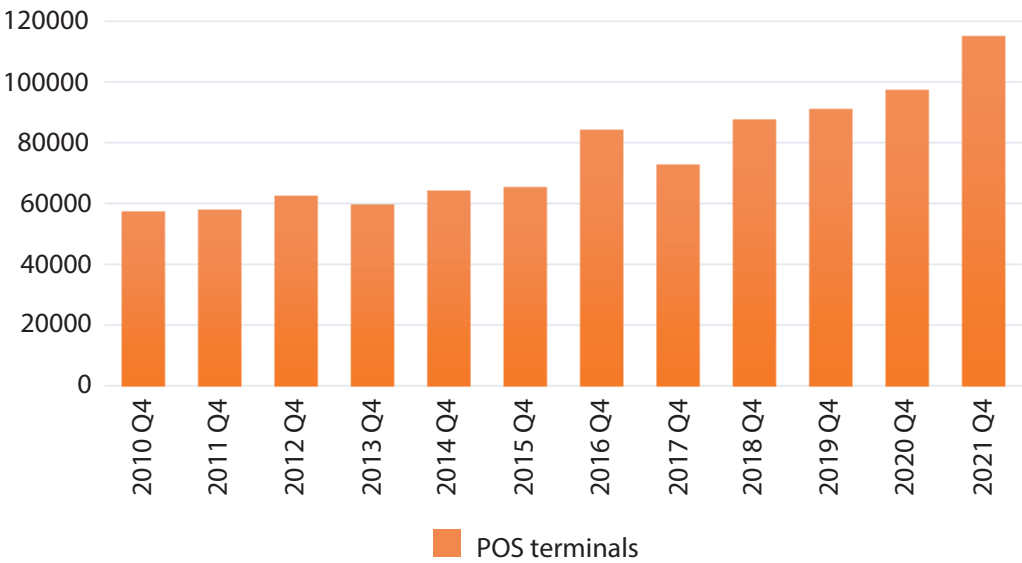
- H1: The increase in the use of electronic channels for the distribution of banking services and products in Serbia was affected by the COVID-19 pandemic;
- H2: During the COVID-19 pandemic, bank clients recognized the advantages of using electronic channels for the distribution of bank services.

Descriptive statistics and comparison methods were used for testing the hypotheses. Secondary data of the National Bank of Serbia (NBS) were used in the analysis. These data were processed in Microsoft Excel and SPSS.

4. RESULTS AND DISCUSSION

By observing the movement of the number of devices in the acceptance network and virtual points of sale in the period from 2010 to 2021 in Serbia, a trend of their increase can be noticed (Figure 1) (Figure 3). While the number of ATMs was relatively stable with occasional decreases and increases in the number of ATM devices, the number of POS terminals generally increased, with the increase being more pronounced during the COVID-19 period (Figure 2) (Figure 4).

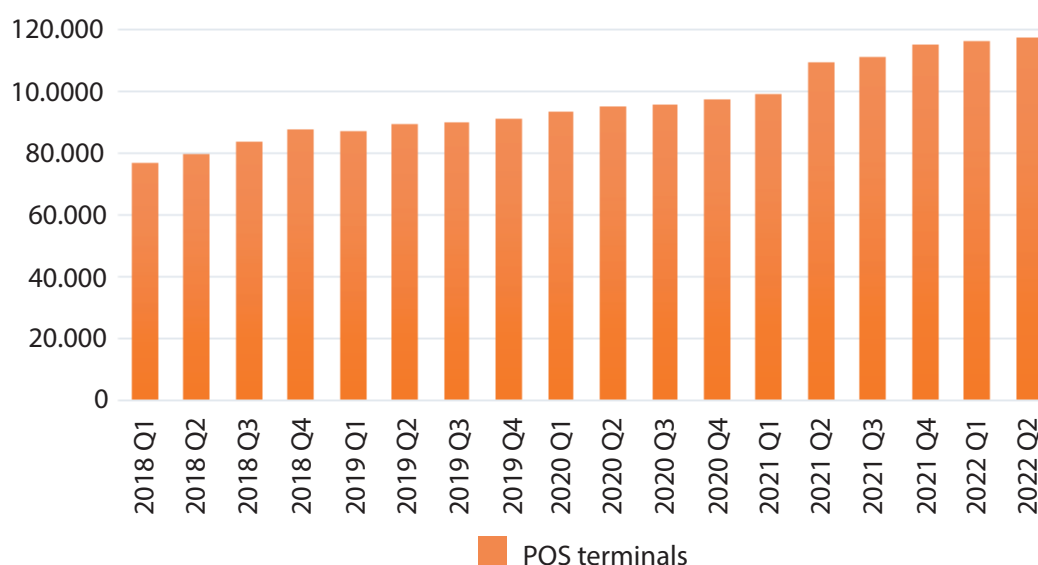
Figure 1. Acceptance network - POS terminals during the period from 2010 to 2021



Source: Author's presentation using NBS data(NBS, 2010-2015) (NBS, 2016-2022)



Figure 2. Acceptance network - POS terminals before and after COVID-19

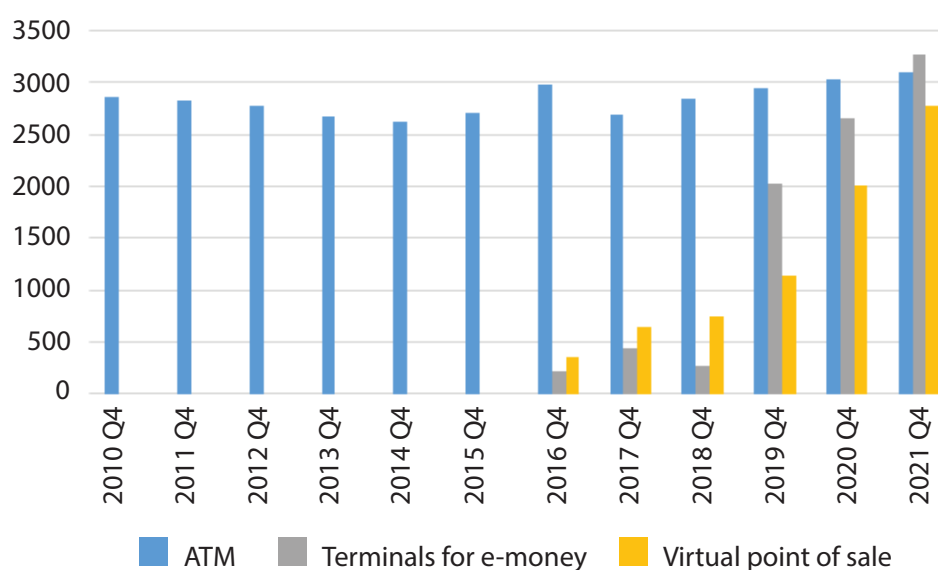


Source: Author's presentation using NBS data(NBS, 2016-2022)

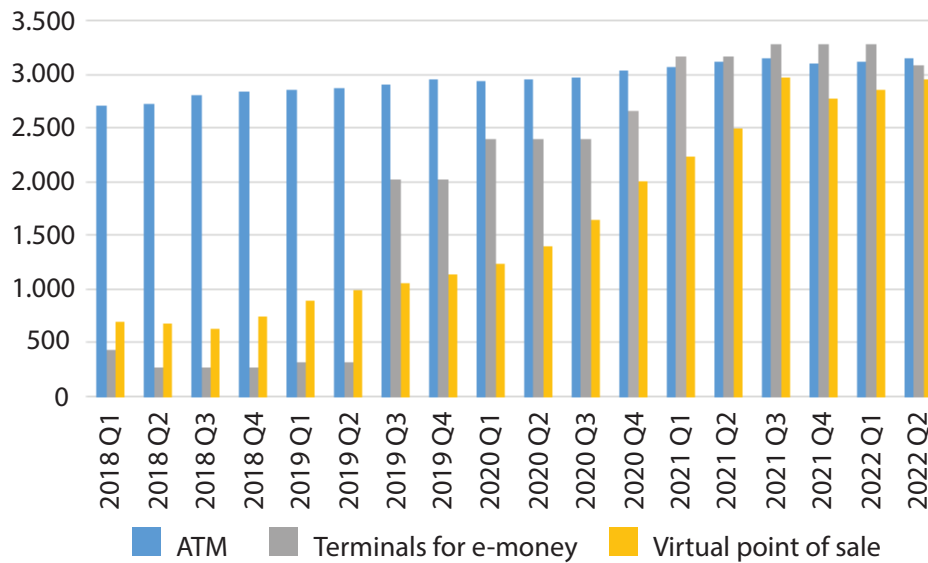
During the period from 2010 to 2021, an increase in the number of terminals for e-money and the number of virtual points of sale, especially during the pandemic when both indicators reached their highest values so far.

However, the increase in the number of e-money terminals was higher in the pre-COVID period, while the increase in the number of virtual points of sale was more pronounced during the COVID-19 period.

Figure 3. Acceptance network without POS terminals in the period from 2010 to 2021



Source: Author's presentation using NBS data(NBS, 2010-2015) (NBS, 2016-2022)

**Figure 4.** Acceptance network without POS terminals in the period before and after COVID-19

Source: Author's presentation using NBS data(NBS, 2016-2022)

The trend of increasing the number of users according to all types of payment services (except e-money) from 2018 to 2020 is obvious (Table 1). The greatest increase in the number of users of payment services both in the pre-COVID-19 and in the COVID-19 period was noted in current account, mobile, online and telephone payments.

The largest increase among electronic channels in the COVID-19 period was found in the number of users of mobile payment services, which clearly shows that this electronic banking channel is of crucial importance for the development and acceptance of electronic banking services in Serbia in the future. The number of users using e-money in Serbia was reduced in comparison with the time since the outbreak of COVID-19.

Table 1. Number of users by type of payment service

Type of payment service	Pre-pandemic	Post-pandemic
	Number	Number
Current account	302652	605363
Other payment account	10089	651912
E-money account	10059	-4846
Telephone payment	66982	107302
Online payment	796161	831715
Mobile payment	570738	1460174

Source: Author's calculation using NBS data (NBS, 2018-2022a)

The increasingly frequent use of electronic banking services during the COVID-19 pandemic is confirmed by data on the number and value of transactions related to the transfer of funds and the purchase of goods and services over the internet, using a card or e-money. The number of fund transfer transactions using cards and e-money during COVID-19 increased by 48.83%, while the number of purchase of goods and services transactions

via the internet using cards or e-money in RSD, Euros and dollars increased by 290.50%, 59.91% and 67.49%, respectively (Table 2).



Table 2. Transactions number by type of payment transactions

Type of payment transactions	Transactions number		
	Pre-pandemic	Post-pandemic	%
Payment transactions of funds transfer using cards	519399277	773031894	48.83
Payment transactions of the purchase of goods and services via the internet using cards and e-money (RSD, million)	12417066	48488196	290.50
Payment transactions of the purchase of goods and services via the internet using cards and e-money (EUR)	6529017	10440275	59.91
Payment transactions of the purchase of goods and services via the internet using cards and e-money (USD)	4984254	8348116	67.49

Source: Author's calculation using NBS data(NBS, 2018-2022b) (NBS, 2018-2022c)

An increase in the number of these transactions was accompanied by an increase in their value. When compared to the period before the COVID-19 pandemic, the value of funds transfers transactions using cards and e-money increased by 59.98%.

The value of the purchase of goods and services transactions via the internet using cards and e-money in RSD, Euros and dollars increased by 261.85%, 67.61% and 86.48%, respectively (Table 3).

Table 3. Transactions value by type of payment transactions

Type of payment transactions	Transactions value		
	Pre-pandemic	Post-pandemic	%
Payment transactions of funds transfer using cards	928645	1485647	59.98
Payment transactions of the purchase of goods and services via the internet using cards and e-money (RSD, million)	32734217948	118450122049	261.85
Payment transactions of the purchase of goods and services via the internet using cards and e-money (EUR)	280663492	470407994	67.61
Payment transactions of the purchase of goods and services via the internet using cards and e-money (USD)	123955403	231148093	86.48

Source: Author's calculation using NBS data(NBS, 2018-2022b) (NBS, 2018-2022c)

5. CONCLUSION

Electronic banking is a significant distribution channel of bank services and products, and it is necessary for the survival and development of contemporary banking. It enables a bank to make rapid adjustments of its business to the changes in the environment, in the financial market and emergency situations such as the COVID-19 pandemic so as to fulfil the needs of its clients and maximally protect them from numerous risks. Despite the insufficient IT literacy, distrust of citizens for electronic channels and insufficiently developed awareness about the importance and advantages of electronic banking in Serbia, a large number of clients started using the service of electronic banking during the COVID-19 pandemic.

The results of the empirical research confirm the set hypotheses. In the post-pandemic period, the expansion of the acceptance network continued, especially the

number of POS terminals and virtual points of sale. The largest increase in the number of users of payment services in non-cash payments was noted – mobile, online and telephone payments, as well as an increase in the number and value of funds transfer transactions and purchase of goods and services via the internet, using payment cards or e-money.

During the COVID-19 pandemic, the awareness of bank clients in Serbia about the importance and advantages of using electronic banking services has clearly increased. This fact is significant for the development of electronic banking in Serbia because it shows policymakers that special attention in strategic planning should be paid to the digitalization of banking services. Further development of electronic banking services in Serbia should be based on improving the protection of customer data and the security of electronic transactions, continuing the education of clients for the use of digital technologies in



banking, as well as investing in the improvement of the existing and the development of new innovative banking products and services which will improve customer experience. Priority should be given to the development of mobile applications since mobile banking is the distribution channel of banking services with the greatest potential for the development of electronic banking services in Serbia.

Considering the fact that not much time has passed since the onset of the pandemic, this research should be repeated over time (so that the analysis covers a longer period of time) and it should be supplemented with new research that will analyze the needs and satisfaction of clients by electronic banking services in Serbia and factors that influence their choice to use electronic banking services should be determined, as well as the factors that influence the increase of their satisfaction with these services.

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YOUTH UNEMPLOYMENT IN SERBIA AND ALBANIA: PROMOTING ENTREPRENEURSHIP AS A WAY FORWARD

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Abstract:

A great disruption in both economic development and the business environment caused by the COVID-19, provoked a significant effect on youth unemployment. Youth unemployment remains an important problem for Western Balkan countries, along with additional challenges concerning education and business systems brought on by the pandemic. Entrepreneurship is recognized as one of the best solutions for overcoming the stated problem due to its many benefits. It is important to develop entrepreneurship among the young population to improve their economic independence and integrate them into the labor market. This paper discusses the post-Covid state of the unemployment levels, youth unemployment, and entrepreneurship, as possible stepping stones in the Republic of Serbia and the Republic of Albania.

Keywords:

entrepreneurship, youth unemployment, post-Covid environment, Serbia, Albania.

1. INTRODUCTION

Unemployment is rightly considered one of the most severe macroeconomic and social problems, leaving various negative effects on the national economy. High unemployment indicates a low level of economic activity in the national economy, insufficient utilization of human resources, and a lower average quality of life in the country, as well as a cause of social instability. An additional and more severe problem is the youth unemployment rate and the struggle of young people in the labor market, who are faced with lesser-quality jobs, lower wages, and temporary contracts. Balkan countries are facing many unemployed young people (Pavlović et al., 2017), which represents one of the most severe economic and social problems in the region.

The pandemic disrupted the global business environment and caused additional challenges to this matter. Global economic activities declined (Onyele & Nwadike, 2020), resulting in the majority of companies suffering remarkable financial losses (Jaina & Vermab, 2020; Zahariev et al., 2020; Ahsany et al., 2020). According to the ILO (2021) in 2020, nearly 8.8 % of overall working hours were lost because of the pandemic, around half because of reduced hours, and the other half because of job losses. Compared with 2019, total employment fell by 114 million. The conclusion of the recent research result (Maital & Barzani, 2020; Chen, 2021), is that technology will continue to replace employees, and that there will be additional downturn among active companies, leading to an ever-growing unemployment rate.

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According to Šumpeter (2012), economic development is highly correlated with entrepreneurial activity. According to Bakator et al. (2022), present and future challenges of the fragile markets and global economic environment require a new type of young entrepreneurs more fitted to overcome the instability. Some of the authors emphasize the strong role of entrepreneurship in the advancement and implementation of the fourth industrial revolution due to technical and social innovation, which are common to both (Ferreira, & Lisboa, 2019; Nichant, 2021).

In its recommendations and policy proposals, the International Labor Organization places special emphasis on the importance of developing entrepreneurship among young people, because it integrates young people into the labor market and improves their economic independence.

This paper aims to analyze the level of youth unemployment in both countries, as well as the barriers that young people face in the labor market, especially during the years marked by the pandemic. Furthermore, the goal of the research to demonstrate that the positive entrepreneurship trends in both countries could be viewed as a potential solution to the problem with an adequate approach.

2. UNEMPLOYMENT TRENDS IN SERBIA AND ALBANIA

Unemployment has been a long-standing limiting factor for the growth and development of the economy of the Western Balkan region. In addition to the surplus of supply over demand for labor in the labor market, unemployment is, at the same time, a consequence of structural changes, that is, the mismatch between supply and demand for labor and, in general, the consequence of a transitional process that has been going on for an unexpectedly long time, almost two decades (Gnjatović, Leković, 2019).

Due to high unemployment and a lack of opportunities for young people to find employment and training, the Western Balkan (WB) region still faces many challenges today. In many countries of the WB region, young people are losing hope in their future and are considering leaving their country in search of greater material and personal fulfillment. Governments, non-governmental organizations, and businesses are continuously trying to find the most effective solutions.

2.1. THE CASE OF SERBIA

The situation in the labor market of Serbia measured by the basic Labor Force Survey (LFS) indicators reveals a significant labor market recovery in the period 2015–2020, during which time the unemployment rate decreased. According to available data from the National Bank of

Serbia (2022), COVID-19 and the negative effects of the pandemic disturbed the economy of Serbia more so than in the majority of European countries. The reason is previous responsible economic politics and fiscal consolidation that led to macroeconomic and financial stability.

Figure 1. Key labor market indicators in Serbia 2018–2022, according to Labor Force Survey (LFS), (%):

Year	2018	2019	2020*	2021*
Aged 15–64				
Activity rate	67.8	68.1	66.4	70.3
Unemployment rate	13.3	10.9	10.1	11.4
Inactivity rate	32.2	31.9	33.6	29.7
Aged 15–24				
Activity rate	30	29.6	28.0	33.3
Unemployment rate	29.7	27.5	27.7	26.4
Inactivity rate	70.0	70.4	72.0	66.7

Source: Statistical Office of the Republic (2019, 2021)

* LFS data revised according to the new methodology from 2021.

The pandemic and new economic crisis affected many individuals by preventing them to look for a job or start working, which caused greater unemployment and increased inactivity rates. However, despite the encouraging results, the problem of youth inactivity persists, while the youth unemployment rate remains higher among young people than prime-age adults. Young people in Serbia today, similar to their peers all over the world, struggle in the labor market by being confronted with a lack of experience, lesser-quality jobs, and lower wages.

When observing the statistical data, we can see that the positive trend of new entrepreneurs remained high during 2020, resulting in 9,971 new active entrepreneurs, despite the negative effects of the pandemic. That year also witnessed the highest number of newly established business subjects in the Belgrade region, when compared with previous years. Analyzing the types of activities shows that more than 60,000 enterprises were involved in wholesale and retail trade, the repair of motor vehicles and motorcycles, followed by over 40,000 in manufacturing and professional, scientific, and technical activities.

According to the Serbian Business Registers Agency (APR, 2021), among the registered active entrepreneurs, 66,977 domestic persons belong to the group of young entrepreneurs, since they are between 18 and 35 years old. This makes up 23.1% of the total number of registered entrepreneurs. Most young entrepreneurs are registered to perform computer programming activities, hairdressing and beauty salons, restaurants and mobile catering consulting activities related to business and other management,



road freight transport, beverage preparation, and serving services, maintenance and repair of motor vehicles, trade-in few in non-specialized stores, taxi transport, specialized design activities.

Despite the obvious benefits of empowering youth employment and entrepreneurship, most countries still face challenges when it comes to achieving desired results. The integration of young individuals into the labor market is not an effortless process. Young people face various obstacles, such as a lack of entrepreneurship education, lack of information on various initiatives and support services, lack of capital, etc. To overcome this problem, various state institutions, such as the Ministry of Youth and Sports, the National Employment Service, Development Agency government units, through youth offices, are aiming to encourage the entrepreneurial spirit among young people mainly through informal education, such as workshops, training, seminars, etc.

2.2. THE CASE OF ALBANIA

Knowledge and education are essential to Albania's human activities and manufacturing processes, just as they are in contemporary countries. The value of people who can adapt to innovation and possess high technical skills, in conjunction with the ongoing demand for change, is highlighted through changes in the labor market. As a result, the value of human capital and its technological capabilities for economic growth is emphasized even more. In Albania, women still outnumber men in the workforce, but the gap is closing every day. Since it is challenging to find work after graduating from college, which results in joblessness for individuals who have graduated, youth unemployment is a recurring issue in society.

Figure 2. Key Labor Indicators in Albania 2018-2022, (%)

Year	2018	2019	2020	2021
Aged 15-64				
Activity rate	68.3	69.6	69.1	69.3
Unemployment rate	12.8	12.0	12.2	12.0
Inactivity rate	31.7	30.4	30.9	30.7
Aged 15-24				
Activity rate	35.6	36.5	33.3	34.6
Unemployment rate	28.1	27.2	30.3	27.8
Inactivity rate	64.4	63.5	66.7	65.4

Source: ILOSTAT, 2022

The unemployment rate was 12% in 2021 and improved compared to the same period in 2020 when it was at 12.2%, while the employment rate was 60.9 %, with a difference of 1.4 % from 2018 at the level of 59.5%. According to speculation, COVID-19, which caused hundreds of firms to fail and thousands of employees to lose their jobs, is to blame for the decline in employment and increase in unemployment.

With a 27.8% unemployment rate, young adults aged 15 to 24—who frequently have more education than previous generations—find it particularly difficult to enter the labor market. This is according to INSTAT statistical data for the 2021 report and for the aged 15-64 which shows that this age group's unemployment rate is twice as high as that of the population of working-age adults. The government has changed a variety of policies related to vocational education and employment to combat youth unemployment. The Albanian Institute of Statistics (INSTAT) collects data from households and creates a snapshot of the labor market with its Quarterly Labor Force Survey.

The numbers clearly show that youth unemployment is very high. The majority of Albanians under the age of 30 believe that emigration is the only route to the future they want. They frequently emigrate because of their frustrations with socioeconomic policies, the job market, low wages, and bureaucracy. Their lifestyle, as well as their behavior, is affected by these insecurities.

Based on the Register of Enterprises in Albania (Instat, 2022a) at the end of 2021, there were 118,627 enterprises, which marked an increase of 1.1%, compared to 2020. During the year 2021, despite the crises produced by COVID-19, 14,946 active enterprises were registered. This presents an increase compared to the 12,376 registered in 2020. The highest percentage of newly-founded enterprises are involved in trade, accommodation, food services, information, communication, and other services, with the lowest percentage found in agriculture, forestry, and fishing. The largest number of enterprises is recorded in the region of Tirana, with 54,641 enterprises, while the smallest number is in the region of Kukes, with 1,261 enterprises.

COVID-19 is driving incredible global breakthroughs and innovation across numerous industries, even as it continues to inflict terrible damage to the world economy. These challenging circumstances have given rise to creating business opportunities, resulting in brand-new lucrative business options. Will the COVID-19 era's new, dangerous "opportunities" lead to prospects for systematic progress after the pandemic? The shift to digital technology will have an ever-lasting effect on civilization. In the wake of COVID-19, how are we going to create an inclusive digital economy? How will we respond, given that not everyone can go "rapid digital?"



A recent study demonstrates that a robust supporting framework is essential for overcoming obstacles and maintaining success. It can aid in both the discovery of new innovative capabilities in a company and the choice of the most effective resource allocation strategy by business leaders (Partners Albania for Change and Development, 2021).

3. CONCLUSION

Based on the results of the statistical data, it can be concluded that both countries faced disruption in economic activities during the peak of the pandemic. This resulted in an increase in the unemployment rate and changes in the labor market. During 2021, the rates of unemployment improved; however, the situation of youth unemployment remains severe. The analysis of the labor market in Serbia and Albania shows that countries deal with the same problems of youth unemployment, which is almost twice as high as the general unemployment rate. In addition, a significant percentage of those who are employed state that they are not offered full-time jobs, but rather part-time contracts or informal employment. Very often, they end up working in positions that are below their qualifications and hinder their professional development. Consequently, there is a significant migration movement, especially among young people, and that can be a long-term problem for the economy and society.

The emigration of young people and skilled employees, along with the absence of a competent education system, is identified as a joint problem for both countries. Moreover, the level of active young people in the labor market remains low in both countries, implying that entering the labor market remains a persistent challenge.

Numerous actors are trying to come up with an innovative approach that would help decrease the rate of youth unemployment, increase the rate of jobs available to young people, and contribute to the overall improvement of the economic situation. The positive trend of entrepreneurial activities in both countries and the increase in the number of new enterprises in 2021 are good indicators for promoting entrepreneurship and raising the entrepreneurial spirit among youth. Self-employment is typically linked to entrepreneurship and is frequently marketed as a solution to lower unemployment. Each region's entrepreneurial activity is influenced by both its own resources and, to some extent, the entrepreneurship environment. However, incentives for starting your own business rise when unemployment rises in nearby areas. This suggests that there is a "refugee" impact wherein self-employment is an answer to the lack of wage employment. This might be one of the solutions but, unfortunately, the actual number of those who start their own business is still low in

both countries. Young people are largely deterred by a business environment that does not provide any support. Problems range from lack of knowledge and experience, the inability to provide start-up capital and financial continuity, followed by the over-regulated and unstable business environment, unfair competition, and insufficiency of institutional support.

Formal education needs to be supported with knowledge application rather than knowledge acquisition, as well as internships, and experience, rather than just theoretical knowledge. The market's needs were rarely considered, despite the fact that higher education institutions have proliferated across the nation, largely as for-profit businesses. Currently, the focus is on education about entrepreneurship rather than for entrepreneurship. Furthermore, it is vital to continuously advance the level of entrepreneurship competencies among educators and educational institutions, as well as to create a supportive environment for young people with ideas and entrepreneurial intentions.

It is vital to encourage collaboration among universities by forming a consortium based on the distinct areas of specialization of the member institutions. This collaboration with specialized knowledge will act as a practical training facility for businesses and ensure the sustainability of information transmitted from programs fostering innovation in several economic sectors. If serious reform does not take place, this could eventually result in a skills gap in the workforce.

To support productive employment and decent work for young people, public institutions must comprehend the urgent need for continuous, focused, and coordinated action by a wide range of participants. Individual, dispersed interventions are unable to do this (INSTAT, 2022).

A strong strategy that proactively incorporates a job creation strategy must be developed by public institutions and key individuals with responsibility for youth employment. All targeted interventions would help Serbian and Albanian adolescents overcome the difficulties they have faced due to the COVID-19 pandemic and those associated with joining the workforce simultaneously.

In spite of all the collaborations and agreements, the private sector's contribution to job creation, economic growth, and youth employment, particularly for the category of young people aged 15 to 24, remains crucial. The issue of youth employment (with a focus on entrepreneurship) is a burning topic in both the WB region and Europe. It is also one of the common challenges for both analyzed countries, whose solution requires horizontal and vertical synergy, including stronger cooperation between the countries. Since it is not a single-country problem, it cannot be solved only through local or national efforts. It calls for regional actions to achieve desirable and permanent results.



This paper sheds light on the long-lasting problem of youth unemployment in two Western Balkan countries during the years of the pandemic. Both countries are facing the same challenges and might find a solution in entrepreneurial activities considering the positive trend even during the pandemic. It also states challenges and barriers that should be jointly addressed in order to inspire an entrepreneurial spirit among the youth, mainly through formal and informal education and different types of financial support. Further research could investigate the correlation between the level of youth employment and the establishment of new business entities and contribute to identifying strategies to effectively propel youth entrepreneurship. Finally, it could include a comparison with the region of the Western Balkan and the European Union.

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THE IMPORTANCE OF CREATIVE INDUSTRY FOR THE ECONOMIC DEVELOPMENT OF THE REPUBLIC OF SERBIA

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Abstract:

Creative economy is one of the world's most rapidly growing sectors, contributing 3% of the global GDP. Based on creativity and innovation as the main factors, creative and cultural industries include different fields of activity. By their nature, they are interdisciplinary and provide great potential for social and economic development. Improving the growth and development of creative industry can significantly contribute to the economic development of a country, especially in countries with rich cultural and historical heritage, such as Serbia. The aim of the paper is to determine the significance of the Serbian creative industry sector considering its contribution to GDP, employment and export. Results of the analysis showed that in 2021 creative industries contributed to 7.1% of GDP, achieving faster growth than other economic activities. Also, the average salary in the creative industry sector is higher compared to the average salary in Serbia. Since 2019, there has been a noticeable increase in the deficit in foreign trade exchange, which indicates that it is necessary to take systemic measures in order to improve this sector.

Keywords:

creative industry, employment, export, GDP, Republic of Serbia.

1. INTRODUCTION

The development of new technologies has accelerated the process of globalization and digitalization. Intense and turbulent changes in the international market as well as new development directions and trends have led to increased social significance of products whose creative and cultural elements represent their main content. Creative industries, as their name suggests, are based on creativity and innovation as their most important factors. These industries provide great potential for social and socioeconomic development at both international and local level.

"Creative industry" is a relatively new term. It was first mentioned in 1994 in the Australian Government report "Creative Nations: General cultural policy" (Moore, 2014). The Government of Great Britain, during the reign of Margaret Thatcher, noticed a great potential of this sector for faster economic development of the country. Within the Ministry of Culture, Media and Sports, a working group was established with the special focus on the definition and detailed elaboration of plans and strategies that can contribute to faster development of the creative industry sector (UNCTAD, 2008).

The term creative industry has been modified over time, so there is no generally accepted definition of the term and the sectors it includes. Over the past years, numerous analysts and economists defined the mentioned sector from their own point of view. The American economist Richard Caves advocated the opinion that creative industry includes those services and goods that have certain entertainment, cultural or artistic values (Caves, 2000).

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UNESCO also contributed to the definition of the mentioned term from the cultural aspect, focusing on the importance of culture when it comes to intangible cultural heritage.

One of the most widely accepted and used definitions was given at the United National Conference on Trade and Development (UNCTAD). Considering that trade is the main driver of the economy, UNCTAD pointed to the

growing potential growth of creative sectors in developing countries. It defined creative industry as a concept that connects innovation, creativity and intellectual property with knowledge and modern technologies (Throsby, 2008).

Based on creativity and innovation as the main factors, the Government of the Republic of Serbia stated on its website that cultural and creative industries include several areas of activity (cf. Figure 1).

Figure 1. Coverage of creative industries



Source: (Vlada Republike Srbije, 2022)

Starting from this scope of creative industries, the aim of the present work is to determine the importance of the creative industry sector of Serbia, its contribution to the country's GDP, employment and exports.

2. TRENDS AND CHARACTERISTICS OF CREATIVE INDUSTRY GLOBALLY

The development of creative industry is mainly a privilege of economically developed countries because it requires high financial resources, intensive development and application of modern information technologies, as well as a high degree of creativity and innovation. The economic importance is reflected in the fact that in recent years, the creative industry has recorded an increasing share in the GDP of countries, that is, the contribution it makes is comparable to the contributions of other sectors of an economy. The impact is also noticeable on other macroeconomic variables (increase in the number of entrepreneurs, number of employees, increase in exports).

For the mentioned reason, creative industries can be considered as drivers of the economic progress of countries in the coming period.

The sector of creative industry abounds in numerous peculiarities that differentiate it from other economic sectors. The basic feature of creative industry products is that their quality is determined after consumption (so-called "Experience products"). For most products of creative industry (such as numerous exhibitions, festivals, etc.), interaction between the service provider and its end user is of key importance. Within it a high degree of subjectivity is expressed that requires increased attention. Also, the products resulting from the work of the creative sectors contain a certain symbolic value. According to Bilton (2007), the value of the so-called "symbolic goods" is mostly derived from cultural or social norms, while to a lesser extent it is conditioned by its physical properties (Bilton, 2007).



When it comes to size and description of the work of the companies involved in creative industry, the key feature is their presence in the public sector, in addition to their daily activities in the private sector. More precisely, the number of employees in small companies is proportioned to their size. Their business organization consists of about ten highly educated workers, most of whom are under temporary contracts (Falk, Bakhasi, Falk, & Geiger, 2011).

One more in a series of numerous peculiarities of companies within creative industry is the one related to their business goals. These goals are not exclusively economic in nature, but are conditioned and largely depend on the cultural content of the products they produce.

The aforementioned peculiarities of the sector made it particularly sensitive during the COVID-19 pandemic, when the creative industry sector was among the most affected sectors of the economy. Due to the pandemic, there was a massive cancellation of all events in public places such as theatre, live music, festivals, cinemas and museums. Physical distancing measures have threatened the operations of many businesses and entrepreneurs in the creative industry sector. On the other hand, it was difficult to see the extent to which these sectors are directly affected by the consequences of the Covid crisis because there is an inconsistency in defining and collecting data in this sector, where there is otherwise a high degree of informality.

According to the data of the UNESCO study, (UNESCO, 2021) economic impact of the pandemic on creative industry sector was felt in 20 medium- and large-sized economies, which together make up 61% of the world economy (UNESCO, 2021). It is estimated that in 2020 there was a total decrease in the gross value added of creative industry in the amount of USD \$750 billion on a global level. This loss is higher than the GDP of some countries, that is, it represents 1% of the global nominal GDP in 2019. The drastic drop in income represents a huge blow to the capacity of this industry, which normally operates on the margins of economic sustainability. Estimates are that revenue losses in this sector at the end of 2020 ranged from 20% to 40% in different countries.

An equally problem is a serious disruption of global employment caused by the decline in employment. The huge loss of jobs in the cultural and creative industries, estimated at more than 10 million, has significantly affected the lives of employees in the creative industry sector.

3. CONTRIBUTION OF CREATIVE INDUSTRY TO SELECTED MACROECONOMIC VARIABLES OF THE REPUBLIC OF SERBIA

“Getting to know a country means feeling its spirit, knowing its hidden landscapes and the individuals who made it what it is. Join those who have already discovered why Serbia is irresistible” (Serbia T. G., 2022). The above sentence clearly indicates that the main priority of our country in the coming period is the accelerated growth and development of the creative industry sector, increasing their participation in the entire economic sector, intensive exploitation of intellectual property as well as numerous benefits and encouragement to young people in expressing their creativity, innovation and talent.

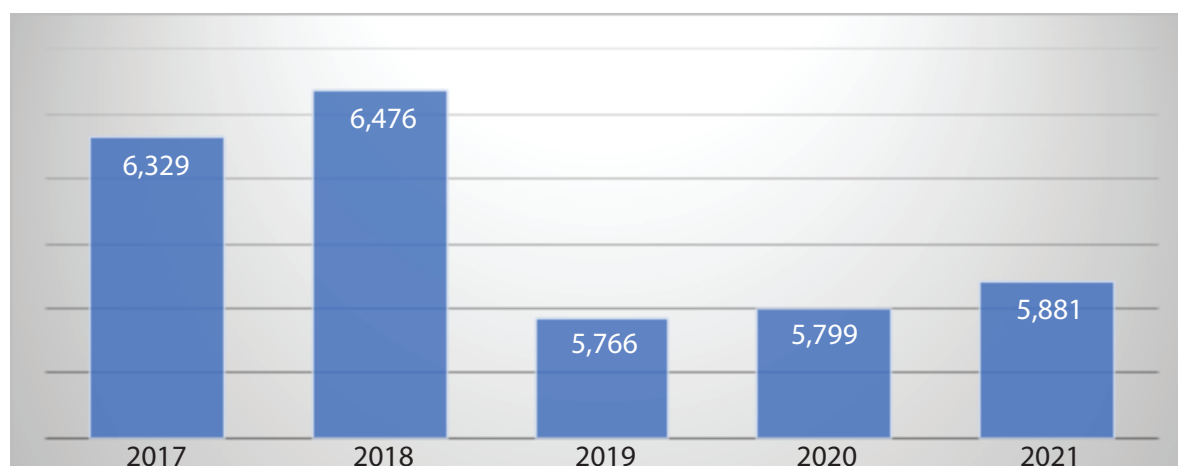
The beginning of the development of creative industry in our country dates back to the end of the 20th century. The last two decades have seen an increase in the cultural awareness of the population and the emergence of an increasing number of cultural creators. The first analysis of the creative industry in Serbia was done by the World Bank in 2017, so it is the first available data on the importance of this sector for the economy of our country. In the aforementioned report from 2017, it is stated that the creative industry sector had a share in the GDP of Serbia of only 3.7% (World B., 2021). According to the data from the website of the Government of the Republic of Serbia (2022), the participation of the sector, depending on whether it is a narrower or broader approach to creative industry, ranges from 3.4% to 7.1%.

According to the data of the Agency for Business Registers for the year 2021, the number of companies belonging to the creative industry was 5,881, which is 4% more than in 2020.

Data provided by the Serbian Chamber of Commerce and Industry (cf. Graph 2) indicates that the number of the companies belonging to the creative industry in Serbia recorded a proportional growth in the period between 2017 and 2021. Exceptions are the years 2019 and 2020, in which there was a decline in the number of companies caused, above all, by the COVID-19 virus and the decline in economic activities at global level (Bulletin of the Creative Industry for the second quarter of 2022, 2022).



Graph 2. Number of companies in the creative industry

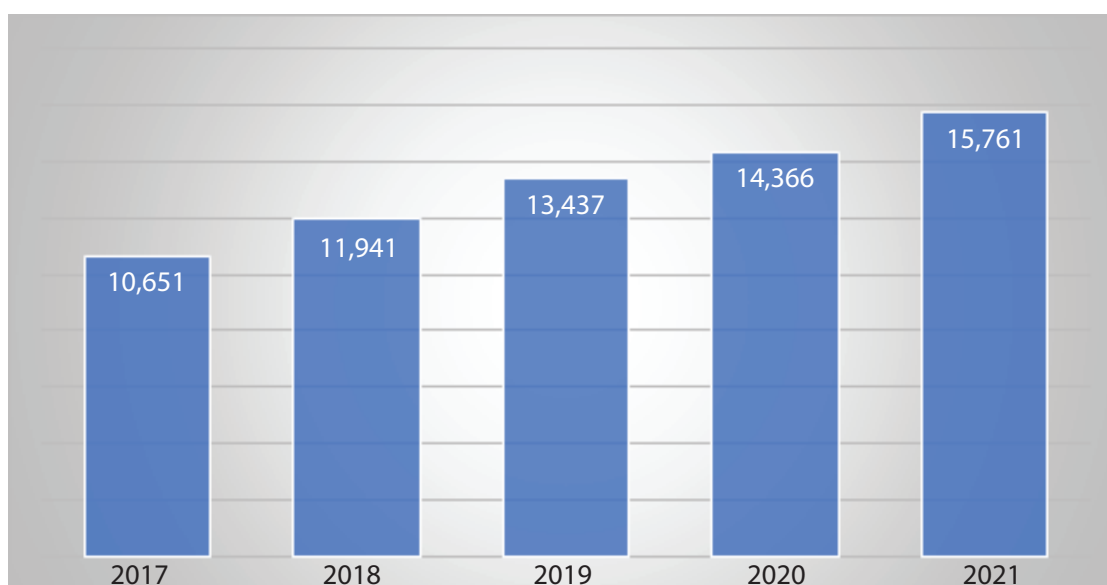


Source: Bulletin of the Creative Industry Association for 2021, Chamber of Commerce and Industry of Serbia, Belgrade, 2022, p. 12

Contrary to the stagnation of the number of companies in the creative industry in Serbia during 2019 and 2020, the number of entrepreneurs in this industry recorded a constant growth during the last 5 years (cf. Graph 3). This trend points to the effective policy of the Republic of Serbia

to encourage the development of the mentioned sector and the motivation of young people to be involved *in this sector* (Bulletin of the Creative Industry Association for 2021, 2022).

Graph 3. Number of entrepreneurs in the creative industry



Source: Bulletin of the Creative Industry Association for 2021, Chamber of Commerce and Industry of Serbia, Belgrade 2022, p. 12

According to the data provided by the Statistic Office of the Republic of Serbia (cf. Graph 4), the total number of employed person in 2021 was approximately 2.2 million, while the total number of employed persons in the creative industry sectors reached 59,345, which is 3.3% more than in 2020. Employees in the activities of the creative industry participate with 2.7% in the total employment in

the Republic of Serbia (Bulletin for the Creative Industry Association for the second quarter 2022, 2022).



Graph 4. Number of employees in the creative industry



Source: Author's according to data of Statistical Office of the Republic of Serbia

On the basis of the data available on the Chamber of Commerce and Industry of Serbia's website, a comparative presentation of the number of employees according to the activity of the creative industry in the second quarter of 2021 and 2022 was made (cf. Table 1).

Table 1. Number of employees according to creative industry activities in the second quarter of 2021 and 2022 in the Republic of Serbia

	Number of employees	
	Q2 2021	Q2 2022
Republic of Serbia	2,208,783	2,247,857
Printing and duplicating audio and video recordings	9,508	9,381
Publishing activities	6,537	6,512
Cinematographic, television and music production	3,708	4,251
Program activities and broadcasts	8,347	8,444
Other professional, scientific and technical activities	7,032	7,472
Creative, artistic and entertainment activities	9,728	10,116
Activities of libraries, archives, museums and galleries	6,861	7,046
Advertising and market research	7,338	7,773
In total	59,059	60,995

Source: Bulletin of the Creative Industry Association for the second quarter of 2022, Chamber of Commerce and Industry of Serbia, Belgrade, 2022, p. 15

The above data indicate that there was a slight increase in the number of employees in all the sectors of creative industry in the second quarter of the current year compared to the same period of the previous year. Exceptions are publishing activities as well as printing and duplicating audio and video recordings, which show a tendency to

decline, which can be expected in the coming period due to the advent of IT and the application of digital marketing.

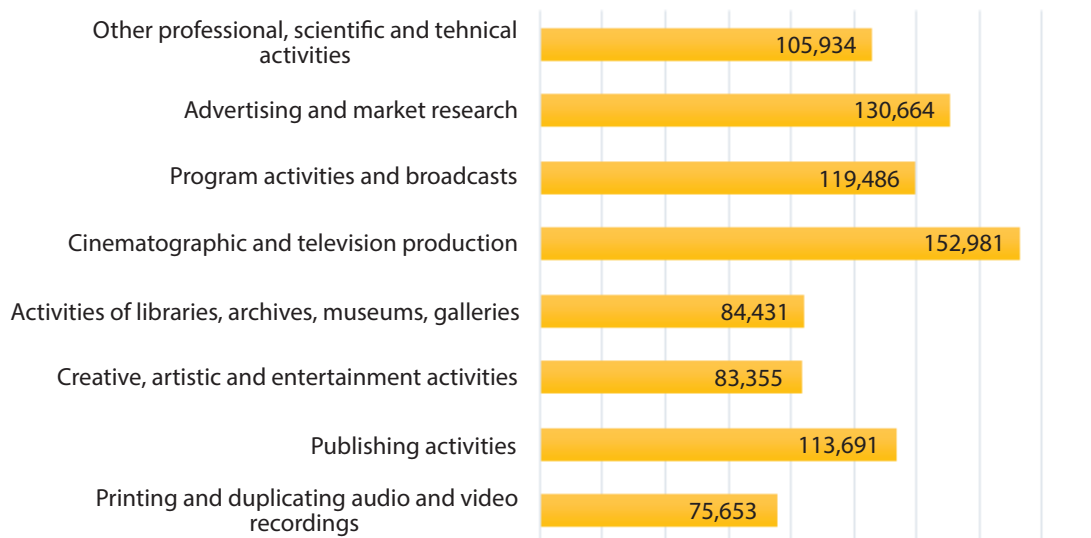
During 2022, there was an increase in gross and net earnings as compared to 2021. The average gross salary in Serbia was 100,250 dinars, while the net salary was 72,680 dinars. Based on the available data (cf. Graph 5),



the highest average salary (as much as 152,980 dinars) is achieved in cinematographic and television production and sound recording and publishing of music records, which is 50% more than the average salary in the Republic of Serbia. The lowest average wages are in the creative,

artistic and entertainment activities, the activities of libraries, archives, museums, galleries and other cultural activities, as well as the sector of printing and duplicating video records, whose incomes amount to only 75,653 dinars (Serbia S. O., 2022).

Graph 5. Average earnings of the creative industry sector in the second quarter of 2022 in the R. of Serbia



Source: Bulletin of the Creative Industry Association for the second quarter of 2022, Chamber of Commerce and Industry of Serbia, Belgrade, 2022, p. 18

According to the data on investments in the creative industry sector in 2020, most of the investments were made in domestic and imported equipment (45%), followed by investments in construction facilities (35%), while investments in intellectual property amounted to 20%. The presented data indicate that the primary goal is investment in technology, which represents a necessary element in the development of creativity and innovation in the modern world.

Based on the data of the Statistical Office of the Republic of Serbia, the Chamber of Commerce and Industry of Serbia, and on the data of the foreign trade exchange in the creative industry sector (cf. Table 2), during the period between 2017 and 2021, Serbia had a continuous decline in exports and an increase in the value of imports, so that, as of 2019, there has been an exchange deficit in creative industry. Although an increase in exports was recorded in 2021, imports also increased, resulting in a deficit of 12.5 million euros. The negative impacts caused by the pandemic of the COVID19 virus are still visible, resulting in the deficit during the previous three years (Bulletin of the Creative Industry Association for 2021, 2022).

Table 2. Foreign trade exchange of products of the creative industry sector

	Exports in millions EUR	Imports in millions EUR	Balance in millions EUR
2017.	81,7	61,1	20,6
2018.	69,0	60,2	20,6
2019.	67,8	68,4	-0,6
2020.	59,3	66,3	-7,1
2021.	63,8	76,2	-12,5

Source: Bulletin of the Creative Industry Association for the second quarter of 2022, Chamber of Commerce and Industry of Serbia, Belgrade, 2022, p. 17



4. CONCLUSION

The creative industry sector in Serbia in the period between 2017 and 2021 recorded an increase in share of the achieved GDP, which is among the key indicators of the importance of this sector for the economy of our country. The sector has a growing participation in the number of companies and employees. There are currently more than 30,000 registered companies that employ more than 115,000 people, or 3.2% of the total number of employees in our country. The majority of employees, more precisely 70% of them, are aged between 25 and 44, and more than half of them are women. The average salary of the creative industry sector for 2021 was higher than the average salary of other branches of the economy, which certainly represents an additional incentive for the inclusion and development of the creative economy in Serbia. And yet, since 2019, the sector has recorded a deficit in foreign trade exchange.

The Government of the Republic of Serbia has recognized the potential of the creative industry for Serbia's further growth and development. Investing and stimulating the development of this sector, particularly by supporting and motivating the young, highly educated and talented citizens to get involved, will lead to numerous economic and social benefits. Raising cultural awareness of the population by increasing its involvement in cultural trends will enable the promotion of Serbia, i.e., its own particular brand and image on the international market. The creation of a new brand and image of the country will require global repositioning of Serbia with an aim of establishing her as a country that owns, promotes and appreciates creativity, and for this purpose the Serbia Creates platform was created.

5. LITERATURE

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FINANCIAL INVESTIGATION OF PUBLIC PROCUREMENT FRAUD

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Abstract:

Public procurement process comprises one-third of all budget spending in the Republic of Serbia. According to the Public Procurement Office report, since its establishment in 2002, the government of Serbia has been making more and more investments in this area. Public procurement represents a very important process in which goods and services are purchased by various state-owned entities and governmental units. This process opens the space for committing fraud if it is not regulated or monitored adequately. The aim of this paper is to analyze the State Audit Institution report for the year 2020, which is publicly available, to synthesize the most widely recognized irregularities in this process, which could signalize possible red flags for procurement fraud, as well as to analyze the financial consequences of those deficiencies and whether responsible individuals are adequately sanctioned for it.

Keywords:

public procurement, fraud, public financial spending, forensic accounting.

1. INTRODUCTION

Public procurement - was introduced in Serbia in 2002 based on the methodology and processes already established in the European Union Member States. The aim is to make the whole public procurement procedure efficient, economic and transparent. Public procurement Law has been amended several times in order to increase the efficiency of the process and to decrease corruptive practices in the public procurement. Public procurement office of the Republic of Serbia publishes annual reports of public procurement transactions in Serbian governmental entities and state-owned companies. Based on the analysis of those annual reports covering the period 2002-2019 we have found that the average number of suppliers submitting bids on one procurement contract has decreased. In the year 2019 the number of suppliers per contract was 2.5 (Public Procurement office, 2020). The Decrease in the number of suppliers reflects the decrease of competition in the public procurement process. So, fraudulent activities such as corruption and various manipulations could have taken place. This could influence the cost of procurement based on higher prices that state entities accept because there is a lack of competitors. Contracts are then realized at higher prices than the prices for the same products purchased by other entities when bids are submitted by many competitors. Procurement process in the state sector has been under control of State Audit Institution, which is responsible for the external control of the public procurement. State Audit Institution investigates each procurement contract through its planning, execution and purchases stages.

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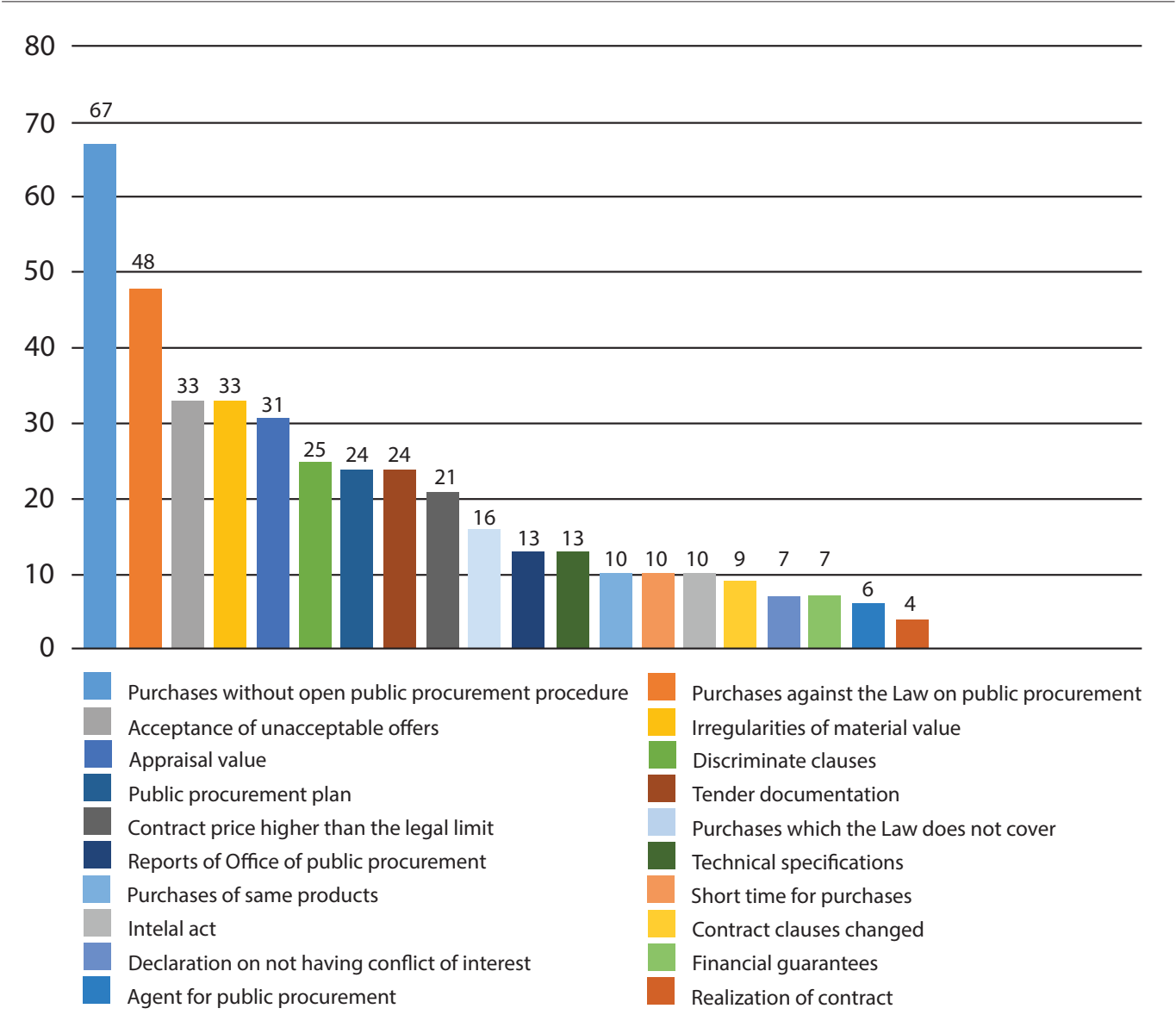


Besides investigating whether the whole process is in line with the Law, State Audit Institution also does the investigation of the effectiveness and purposefulness of the process, e.g. whether the purchased products and services are really needed by the state entity and in the quantities announced in the public procurement. In this paper, we are going to analyze 67 reports of State Audit Institutions for the period covering 2018 and 2019 and present some of the most common irregularities during the public procurement process conducted by the state institutions and other state-owned entities. Those irregularities should point out the elements or stages of the public procurement process which are the most vulnerable to misuse. In order to add value to our research, we will conduct an analysis of the Anti-corruption council's reports and present the results of the actions taken by the prosecutor's office based on criminal reports submitted

by the State Audit Institution and other authorized institutions. While examining this topic we rely on many research articles published in Serbia regarding white collar crime cases (Arežina, et.al, 2016) or published in the area of purposfulness of public procurement (Duin, et.al, 2017; Živković, 2017; Janković and Sretenović, 2015) or criminal procedures (Kostić, 2018; Kostić, 2020; Matić and Bošković, 2017; Spahić, 2014; Petković, 2010; Špiler 2018; Ostojić and Damjanović, 2013).

2. ANALYSIS OF PUBLIC PROCUREMENT REPORTS IRREGULARITIES FOUND IN THE PUBLIC PROCUREMENT PROCESSES BY THE STATE AUDIT INSTITUTION'S REPORTS EXPRESSED IN % IN THE YEAR 2020

Picture 1. Percentage analysis of public procurement process deficiencies of state institutions



Source: Author's own analysis based on State Audit Institution Report for 2020 from the web page <https://www.dri.rs>



- **Public procurement in which the process of public announcement has not been done comprises 67% of all irregularities found in the report.** This means that the highest percentages of financial resources that are allocated by the State budget to the various governmental entities are spent for products and services avoiding the process of public procurement, which is against the Law. Public tender is therefore won by the suppliers which are selected by the state institution in need of those products/services, which results in prices higher than those that could have been found if the public procurement process has been done properly and as a transparent procedure.

- **48% of all irregularities are done against the Law.** This shows the intentional misuse of the Law and the whole process (failure to ensure competition in the process, wrong procedures conducted and false/missing documentation).

- **33% of all cases represent the acceptance of bids that are not in line with public procurement contract.** It shows the acceptance of bidder whose products or services are not in line with the public procurement documentation and plan.

- **33% of all cases represent irregularities with material effects** (procurement of products, goods and services that are not included in the contract, invoicing at a higher price than the price submitted by the bidder, invoices without quantities and prices per product specified and payments made at a higher price than the one specified in the contract).

- **31% of all contracts analyzed contain the false estimated value.** The estimated value has not been supported by the market analysis which involves price analysis, quality and warranty analysis and analysis of other characteristics regarding the products purchased and offered in the process.

Estimated value was found to be quite different than the market price, usually much higher.

- **25% of all contracts contain discriminant clauses** In order to limit the competition in the public procurement, many governmental institutions impose discriminant clauses in the tender documentation. Those clauses contain details that are not important for that public procurement case or which are so rare that only one bidder can fulfill.

- **Plan of public procurement has been the main irregularity in 24% of cases.** Plan has not been announced at the online Procurement Portal or changes of the plan have not been announced.

- **Tender documentation has been irregular in 24% of cases.** Some of the irregularities are presented, as follows:

- In the tender documentation no quantities of the product are specified
- Tender documentation does not contain price specifications;

- There is no technical specification in tender documentation;
- Short time period for the contract execution in the tender documentation;
- Object of tender has not been segmented by different products which limits competition per contract;
- No changes in tender documentation are done by the state institution when needed.

- **Increase in contract price has been found in 21% of cases,** those increases are even higher than the price limited by the law.

- **16% of all irregularities are in the domain of purchases to which the Law does not apply.** State institution does not prepare the plan of public procurement and no competition in process is used. Procurement contracts are given to the specific bidder.

- **Quarter reports contain irregularities in 13% of cases.** Quarterly reports are not submitted to the Public Procurement Office during the specified deadline. Submitted reports do not present financial aspect of realized procurement contracts within the institution and the realization is lower than what real transactions have indicated.

- **Irregular technical specification is found in 13% of reports.** Technical specifications are not in line with the purchaser plan and not in line with the real needs of the purchaser. Contracts do not contain adequate specifications of product features which are not aligned with the Law on public procurement (standards, attests, type of the product, supplier)

- **Purchases of identical products make 10% of all contracts.** This group of irregularities includes the cases in which the purchaser makes a number of various purchases during the year which are of the same type and which, in the total sum, cross the limits defined by the law, and for which public procurement procedure should be implemented.

- **Reduced timeline in contracts make 10% of irregularities found,** which has a purpose of decreasing competition in the public purchases because the bidders lack time to prepare for the tender procedure, which in turn results in favorized supplier winning the bid.

- **Not having the internal act to regulate public purchases comprises 10% of all irregularities** state entities do not have the act or it has not been published online on the state web page.

- **9% of cases increased value of contract is considered irregular.** Contract value increases until it reaches the legal limit but the price increase is not supported by the document.

- **Declaration of conflict of interest is missing in 7% of cases.** A Member of the committee for the public purchases needs to sign the declaration stating that he/she is not exposed to the conflict of interest with the bidders.



- **Inadequate financial guarantees comprise 7% of all cases.** Lack of financial guarantees, which are specified in the tender documents to protect the interests of state institutions in case of failure by the bidder, is considered to be a serious offense.

- **6% of irregularities are found in the area of not having an individual trained for the public procurement process.** Not having a person specialized for public procurement is found in all of the cases where other irregularities are also observed.

- **Inadequate realization of public procurement contract is found in 4% of all the investigated cases.** Contract value has been increased or not supported with the adequate procedures.

Report analysis shown in the previous section of the paper supports the idea that irregularities in the public procurement are quite often in all of the stages from inception until contract realization. The highest percentage of all public procurements is not done as a transparent procedure (67%).

3. PROSECUTION OF PUBLIC PROCUREMENT FRAUD CASES

In the next section Purpose report will be analyzed together with the report on control and realization of public procurement cases in Serbia announced in the year 2020 by the Anti-corruption council. The Report consists of the data gathered through Higher prosecutor offices in Serbia located in Belgrade, Niš, Kraljevo and Novi Sad. The Report represents data about different stages of public procurement fraud cases within those offices (Anti corruption council, 2020).

1. Special anti corruption department report for Belgrade in the year 2018 and 2019

Table 1. Author analysis according to the Purpose report, report on control and realization of public procurement cases in Serbia in 2018 and 2019 from the Anti-Corruption Council of the Republic of Serbia

Type of case	Total
Perpetrators prosecuted for public procurement fraud	176
Pre criminal proceedings	95
Decision on dismissal of criminal charges	70
Order for conducting the investigation	3
Proposal for the lawsuit of responsible persons	14
Acquittal- setting free from the charge of an offense	1
Conditional sentences	4

2. Special anti-corruption department report in the city of Novi Sad in the year 2018 and 2019

Table 2. Author analysis according to the Purpose report, report on control and realization of public procurement cases in Serbia in 2018 and 2019 from the Anti-Corruption Council of the Republic of Serbia

Type of case	Total
Criminal charges pressed	31
Pre criminal proceedings	15
Decision on dismissal of criminal charges	5
Order for conducting the investigation	2
Evidence analysis and evaluation before opening the proceeding with the Higher prosecutor office	3
Referred to the jurisdiction of other office	3
Convictions	1
Acquittal	1

3. Report of Special department for anti-corruption in the city of Niš in 2018 and 2019 as a part of Higher prosecutors office

Table 3. Author analysis according to the Purpose report, report on control and realization of public procurement cases in Serbia in 2018 and 2019 from the Anti-Corruption Council of the Republic of Serbia

Type of case	Total
Legal cases in the stage of analysing evidence for the court, additional evidence collected to support the allegations	15
Criminal charges dismissed by the prosecutor's office	8
Criminal charges submitted to prosecutor office	2
Cases resulted in conviction	3

4. Report of Special department for anti-corruption in Kraljevo city in 2018 and 2019:

Table 4. Author analysis according to the Purpose report, report on control and realization of public procurement cases in Serbia in 2018 and 2019 from the Anti-Corruption Council of the Republic of Serbia

Type of case	Total
Legal cases in the stage of analysing evidence for the court, additional evidence collected to support the allegations	9
Convictions	1
Case rejected	1



The results show that in all 4 prosecutors offices we can find only a small number of convictions of public procurement fraud (5 cases only), but there is a large number of cases in procedure.

4. CONCLUDING REMARKS

Based on our best knowledge from the reports of State Audit Institution and Anti-corruption council a conclusion can be made that efficient strategies against irregularities in public procurement can be operationalized only if all state institutions follow legal requirements when going through public procurement procedures and that controlling governmental institutions make irregular and unannounced controls of this process and impose heavy sanctions on perpetrators. New Law on Public Procurement that came into effect on July 2020 imposes new regulation in line with the EU directives (Law on Public procurement). The Law follows the new online portal of public procurement, all offers are sent electronically and procedures are followed transparently. This could lead to the prevention of public procurement irregularities and fraud and to the increase of competition in the process. The Results of the implementation of new Law on Public Procurement will be announced in the future when State Audit Institution prepares a new report. Future researchers are encouraged to extend the research in this area.

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IMPROVING THE BUSINESS RESILIENCE OF AN ORGANIZATION BY APPLYING AGILE PROJECT MANAGEMENT APPROACH

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Abstract:

The global crisis caused by the COVID-19 pandemic triggered the need for organizations to become more flexible to environmental changes, initiate and improve the processes of digital transformation in business, develop a corporate culture based on innovation and creativity and apply the concept of strategic management. The impact of a crisis is minimized if organizations are planning. The subject of this research is the analysis of the case of an organization that uses the Agile project management approach. The goal of this research is to consider the possibility of improving business resilience by applying Agile in the organization's planning. Content analysis based on a case study method was used in the research. The research contributes to the greater ability of organizations to adapt to changes in a turbulent and dynamic environment, especially in times of crisis, with the aim of maintaining, developing, and growing business through applying Agile.

Keywords:

crisis, corporate culture, digital transformation, innovation, strategic planning.

1. INTRODUCTION

Every region in the world was once and, in some way, affected by some crisis event, caused by the action of natural or human factors, which, in a shorter or longer period, affected the behavior of consumers and the functioning of businesses and the economy of the region in general. Business resilience and innovation interact with global market operations and participation in global value chains. Due to the impact of the crisis, the performance of daily business operations must be flexible, adapt to the demands of the environment, on the one hand, achieve sustainability, and generate profit on the other hand. The global crisis caused by the COVID-19 pandemic influenced organizations to be more resilient to changes in the environment, to initiate and improve the processes of digital transformation in business, to develop a corporate culture based on digital innovation and creativity, as well as to start the strategic management concept implementation. Organizations that already operated on the global market and integrated into global value chains adapted to the working conditions imposed by the pandemic more easily. These organizations were more digitally innovative, more creative in strategic management, and more prepared for a turbulent environment, and they quickly reoriented themselves to work remotely, adjusted production, and used available support measures in crises more efficiently.

The subject of this research is the analysis in the case of an organization that uses the Agile project management approach. The Agile project management approach supports the implementation of strategic management concept through the completion of activities within the planned resources, the planned budget, and the planned time of the project. The Software Company Remote Human LLC from Niš was a case in which the application of the Agile approach in strategic

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management and planning during the crisis caused by the COVID-19 pandemic was analyzed. The goal of this research was to consider the possibility of improving business resilience by applying the Agile project management approach in the strategic planning of the organization. Content analysis based on the case study method was used in the research. This research contributes to the greater ability of organizations to adapt to changes in a turbulent and dynamic environment, especially in a crisis, with the aim of maintaining, developing, and growing business by applying the Agile approach.

This research consists of four sections. *The literature review section* provides the analysis of scientific and professional materials related to the impacts of both the macro environment and the global coronavirus crisis on business resilience. Also, this section is considering the need to change corporate culture for achieving business sustainability in the time of crisis, the initiation of digital transformation and implementation of digital innovation to improve business resilience during the crisis, and the application of strategic management concepts for the development and growth of the organization, and the introduction of principles of Agile project management approach. *The methodology section* involves the explanation of using the case study method in the case of the Software Company Remote Human LLC from Niš. The results section includes the findings of the case study analysis. *The discussions and Conclusions section* summarizes findings; proposes recommendations and future research directions.

2. LITERATURE REVIEW

2.1. MACRO ENVIRONMENT AND COVID-19 IMPACTS ON THE BUSINESS RESILIENCE

Organizations depend on macro environment factors: political, economic, socio-cultural, and technological, and it is necessary to choose a suitable strategy to realize significant performance, which is measured by total turnover, profitability after tax, sales volume, and capacity utilization (Mbithi et al., 2017). As per (Yustian, 2021), entrepreneurial competence has an influence on small and medium enterprises' business success during the COVID-19 pandemic by having a higher influence than the business environment on business success but if the business environment is not properly organized, it has the worse effect on business success. The global COVID-19 pandemic led to a massive shutdown of businesses, just the number of active business owners dropped by 22% from February to April 2020, and small businesses needed more support from governments and an understanding of customers to accept online vendors (Fairlie & Fossen, 2022).

As per (Ajili & Ben Slimene, 2021) the COVID-19 crisis influenced changing the order of business objectives in a manner that business resilience became more important than effectiveness, efficiency, and the criteria of global performance.

2.2. CHANGING CORPORATE CULTURE TO BUSINESS SUSTAINABILITY IN A TIME OF CRISIS

In extraordinary circumstances, organizations must be open to new practices, and ready to experiment, in order to preserve corporate cultural values and keep employees feeling safe because otherwise, they would act defensively or recklessly and not take a critical attitude towards changes in corporate culture (Spicer, 2020). As per (AL-Omari & Al'Abri, 2021) the gender and experience of employees play a key role in predicting whether the corporate culture will be affected by the global coronavirus crisis. Embedding knowledge-sharing within the organization may maintain a high level of learning during the crisis (Alonazi, 2021). The COVID-19 pandemic led organizations to emphasize cultural elements related to readiness for changes, challenges, help, decision-making, and being open, more than other elements related to customers, personality, perfection, results, and cooperation, which means that corporate cultures in the pandemic time have put attention on emotion, understanding, and mutual support instead of earlier attention on high performance (Brown, et al., 2021).

2.3. DIGITALIZATION TO IMPROVE THE BUSINESS RESILIENCE

Technology investment contributes to organizations to setup systematic control in business processes and supports talented and innovative employees to grow their capabilities in times of crisis (He et al., 2021). For achieving business resilience, important configurations are "digital transformation and exploitative innovation, digital transformation and exploratory innovation, and exploitative innovation and exploratory innovation" (Zhang et al., 2021, p. 1). As per (Jansen, 2022), good portfolio management is building by crossing the exploitative innovations, but in the more competitive market, organizations have to be exploratory and find new strategies. For the sustainability of small and medium enterprises, they need to urgently adopt and accept digital actions, learn, and prepare for the new reality (Larios-Hernandez, 2021). The role of clusters and networks in the digital transformation of enterprises is very important for the business resilience of small and medium enterprises (Milojković, 2013).



2.4. STRATEGIC MANAGEMENT CONCEPT TO THE DEVELOPMENT AND GROWTH OF AN ORGANIZATION

The application of a concept based on strategic management implies the implementation of certain organizational changes in the field of determination of the strategic goals, the strategic analysis of the environment, the formulation of strategic alternatives, the implementation of strategy, as well as the changes in corporate culture (Milojković, 2008). While strategic management uses and develops new opportunities for tomorrow, strategic planning optimizes today's trends for tomorrow (David, 2011). A strategic plan is a "company's game plan" to compete successfully (David, 2011, p. 6). Due to the global economic recession companies' profit margins have been reduced and there is no space for mistakes in the strategic plan (David, 2011). While the development of an organization defines changes in an organization's age, the growth of the organization presents changes in an organization's size measured by the number of employees (Starbuck, 1965).

2.5. THE PRINCIPLES OF THE AGILE PROJECT MANAGEMENT APPROACH

In the post-global coronavirus pandemic time, the projection of economic growth in 2022 by the International Monetary Fund is 4.9% and 2.3 million project manager positions will open by 2030 (Project Management Institute, 2022). Statistics indicate that 48% of projects did not finish in time, 43% of projects finished over the approved project budget, and 31% of projects met less than the project aims (Kanbanize, 2022), which favors the need for the application of sophisticated software solutions and trained staff in the field of project management and business development and growth. Project professionals are born change-makers fully aware of the world's challenges (Project Management Institute, 2022). The study (Martens & Carvalho, 2016, p. 14) identified the four factors that explain sustainability in project management: "sustainable innovation business model", "stakeholders management", "economics and competitive advantage", and "environmental policies and resources saving". There are many project management approaches and modern project management professionals choose the Agile project management approach that is originally used in the development of digital products (Meick, 2020). In software development project management, the Agile project management approach supports client-based iterative processes that contribute to business development, collaboration, and the satisfaction of market trends (Drumond, 2022). Scrum is a methodology of the Agile project management approach that products are developed in iterations series from planning to retrospectives, which is supported by a project management tool named Jira Software (Atlassian, 2022). The Agile project

management approach is developed by respecting the Agile Manifesto methodology values and 12 principles (Schön et al., 2015) based on customer satisfaction by in-time delivery of valuable products, competitive advantage based on accepting the change of customers' requirements, the frequently delivering of products, daily collaboration between business people and developers, highly motivated team members, face-to-face dialogue, operational digital product as a measure of progress, sustainable development promotion, technical and design excellence, simplicity, the building of self-organizing and effective teams (Agile Alliance, 2022).

3. METHODOLOGY

Through the content analysis, the subject of the research was more deeply understood and explained, and the regularities based on the principles of application of the Agile project management approach were pointed out. Data collection was carried out using the case study method in the case of the Software Company Remote Human LLC from Niš which is experienced in the Agile project management approach application. The case study method consisted of the observation of chosen company, the mapping of influential factors on the research goal, and the structured questionnaire for the management of the company. The questionnaire for the case study preparation consisted of 75 questions divided into the following 6 sections: company information, Agile project management implementation, Agile principles implementation, company communication canals, motivation, and company excellency.

4. RESEARCH RESULTS

Case study on improving the business resilience of the Software Company Remote Human LLC from Niš by applying the Agile approach

Remote Human is a multi-disciplinary engineering start-up company in Serbia, based in Niš that allows a user to experience the world from a remote robot's perspective using a virtual reality head-mounted display. The company operates in the information technology sector and it is specialized in artificial intelligence and virtual reality technology. Their vision is to prepare humanity for the next industrial revolution and the future of work that will look very different than it is currently and their general goal is to provide more information technology engineers.

Due to the fact that Remote Human is a start-up company, they missed situations related to facing problems before they started to use Agile project management as an interactive approach for managing projects of digital product development. Productivity and efficiency were the main reasons for them to choose the Agile approach



for managing projects and teams. Also, providing the overall overview of the development process is something that makes Agile stand out from other approaches, and additionally, that is why the company no longer uses the traditional (waterfall) approach. They have been implementing Agile for up to six months and using Jira Software as an Agile project management tool. Jira Software was easy-to-use software for Remote Human and by combining Scrum and Kanban frameworks they were able to solve problems that occur over time. For managing Agile software development projects they mainly use the Kanban framework.

Remote Human's highest priority is to build products for customers and not to satisfy them through early and continuous delivery which is contrary to one of the Agile principles but in harmony with the company's marketing strategy. They are present on the global market and their target group is adults between the ages of 18 to 40. Valuing customer feedback, they create products according to market needs. Frequently delivering to the market and responding to change are Remote Human's principles. They focus on maintaining operational and technical excellence and good design. The company meets the development needs of its employees and enables them to perform diverse work that allows them to better apply the skills they possess. With projects, the company enables employees to further advance and develop their careers. Employees are provided with optimal working conditions. Additionally, the company creates a stable and safe environment for its employees and practices team building. Realizing the expected scope of the project, Remote Human synchronously manages the project budget and time schedule. They are working on improving the performance of products that are the result of projects. Also, they evaluate the results and monitor the impacts of projects.

The application of Agile is very important for the business resilience of the Remote Human. Incremental software releases are the noticeable results of using Jira Software and Agile. In addition, the company is more competitive in the market.

The company's principle is to strive for easy solutions. By using Agile they were able to simplify parallel tasks, eliminate procrastination and save a lot of time. Moreover, Agile project management helped the company to be flexible in time with the aim to bring value to customers. Using Agile, they spend less time planning and can invest more time in project realization. As a company that has cross-functional teams, they strongly believe that projects will be completed faster and with better quality by reducing micromanagement and empowering motivated team members.

Remote Human's management style is having self-organized teams, giving them freedom and motivation. The company's employees regularly reflect on and adjust their way of work to boost effectiveness. They have follow-ups and feedback after implementing changes and the company rewards and encourages employees for achieved results. Also, synchronous communication is the company's most efficient and effective method for exchanging information. The communication between employees is frequent and mostly direct or synchronous. For quickly reaching people and discussing work matters they use social media (Discord, YouTube, etc.) and media press. Remote Human shares important information with its employees and they receive the necessary, useful, and precise information from other employees, the management team, and clients in a timely manner. Also, employees have frequent and mostly direct or synchronous communication with clients. While working on projects, the Agile approach made communication easier between the different stakeholders.

Remote Human's management described the company's strategy as the following quote: "Start small, think big", advising other companies to improve their business resilience by implementing Jira Software and Agile into their work process starting with the basics, Scrum pillars.

5. CONCLUSIONS AND DISCUSSION

Readiness to changes and help, flexibility to challenges, and openness to new practices are preconditions for a company's sustainability, development, and growth in the time of pandemic and uncertain future. Now people are the focus of the business, actually their empathy, as well as their willingness to talk, gain trust, respect each other and collaborate, as opposed to earlier aspirations for high productivity. Due to the changed business conditions caused by the consequences of the global pandemic, companies accepted changes in the field of digitalization of business, partnerships creation, supply chain, sales, and product development. Networking and clustering are particularly important for the modernization and internationalization of business, thus improving the competitiveness of small enterprises. Strategic management and planning are the foundation of survival and success in a turbulent market. The business of small and medium-sized enterprises is mainly project-based and as such requires professional staff in the field of project management and the active use of digital products and tools that contribute to business optimization.

In the case of Remote Human, the application of Agile contributes to the company's productivity and efficiency becoming more competitive in the market which is very important for the business resilience of the company.



Agile enables readiness for changes through support in solving problems that cannot be planned because they arise during the implementation of business activities, i.e. projects. Using the Jira Software tool for implementing the Agile project management approach removes barriers to the application of innovations in the business of small enterprises. Agile supports the market orientation of the business and aligns with the company's marketing strategy, where some companies may strive for customer satisfaction through earlier and continuous deliveries, and others through quality offered and monitoring sophisticated customer needs. Agile allows companies to focus on excellence in the operational, technical, and design aspects of products. The application of Agile puts people in focus so that employees can develop their careers in an adequate business space, safe environment, and team-building events. By applying Agile, the company is also in focus because it is able to complete the project in accordance with the planned activities, time, and budget, as well as to continue with activities that contribute to improving the performance of products that are projects outcomes, to evaluate the project results and follow project impacts. The use of Agile enables remote work so that the company contributes to lower overhead costs, and small businesses work without an office space, in home conditions. Striving for easy solutions, simplifying parallel tasks, eliminating postponing, and saving time are important advantages of using Agile that support a company to be flexible in time putting more attention on work than on planning, and bringing value to customers. Companies that use Agile and have cross-functional teams, by reducing micromanagement and empowering motivated team members, can complete projects faster and with better quality because of good communication channels between employees, clients, and stakeholders.

The application of Agile enables multi-project management, organizing multifunctional remote teams, development, and the monitoring of operational and strategic project plans that include time plans, resource plan, and cost plan. By using tools for project management and planning, the project manager has daily insight into the progress of all project activities, as well as insight into project costs, work results, and the project's time continuity, which guarantees the optimal completion of the project in terms of time and approved budget. The application of Agile enables project plans, project documentation and results of project activities to be visible to all team members according to the assigned responsibility in the project, and allows the project manager to monitor and control, as well as organize meetings on a daily, weekly or monthly level during the implementation of the project. Agile contributes to transparency and the creation of a virtual business environment in which members of the project team interact and can achieve synergy in their work, while the manager creates a positive business climate and the ability to effectively overcome crisis situations.

The authors recommend small and medium-sized enterprises in all economic sectors to improve business resilience by applying Agile will support their enterprises to be more flexible on changes due to strategic planning, timely detect crisis and mobile their resources, implement cost saving and delivery strategies, manage the market-driven business, and develop both internal and external fruitful working atmosphere. Future research should be in the area of applying similar approaches and tools focusing on aspects of relations with clients, employees, and stakeholders and contributing to the development of new digital products to improve the resilience of small and medium enterprises.

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FOOD DELIVERY APPS: A DIFFUSION OF INNOVATION ANALYSIS

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Abstract:

This paper aims to study the theory of Diffusion of Innovation in food ordering apps. In other words, to see how the innovation of Food Ordering Apps (FDAs) was diffused in the market amongst the various categories of customers. A structured survey form is used, using convenient sampling techniques. Two surveys were conducted with a gap of six months to understand if there was any change in perception in the consumer regarding the FDA. Significant findings were outlined under each demographic factor like gender, age, monthly income, marital status, and work status.

Keywords:

diffusion of innovation, food joints, food deliver apps, restaurants.

1. INTRODUCTION

Online food delivery applications have been on the rise for a few years. Their popularity is not only limited to young people but to everyone with access to the internet and a communication device, whether a smartphone, a tablet, or a PC. It is both convenient to be used by everyone as well as it saves much time. It has also created jobs for the society/market and supported small food joints and ventures. It has also brought a change in lifestyle and society in general (Ray et al., 2019). People usually select a specific restaurant they want food from, choose from all the available dishes, and place it in the cart. Then they can pay for those dishes via several processes, either by debit/credit card, wallets, UPI id, or even cash on delivery. The food delivery apps charge a nominal amount for the delivery depending on the distance of the customer's house from the restaurant. After placing the order and after the valet collects the order, the customer can also track the valet by the live tracking feature in the app itself via GPS.

Some food delivery apps operating in India are Swiggy, Zomato, Uber Eats, Food Panda, etc. The restaurants they provide their services to are KFC, Pizza Hut, WOW Momo, etc., and other restaurants. Diffusion of Innovation is an old tradition followed in the study of communication technology (Atkin et al., 2015). It broadly classifies the consumers in the market into five parts. They are the Laggards, Late majority, Early majority, Early adopters, and the Innovators. This theory states that the diffusion of a new idea or an innovation moves through a proper communication channel over a specific period by the members of the society (Sundstrom et al., 2016). In this paper, we have classified the consumer market into these five parts and tried to find out why the consumers adopted the food delivery apps in the first place and how long it took to diffuse itself into the Indian market.

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2. LITERATURE REVIEW

Application developers usually target Generation Z, the youngest generation, as it constitutes most of the consumers across all the other generations. They also are very tech savvy and have the technical know-how (Mehra et al., 2020; Freestone et al., 2004). On top of that, India is a young country with the average age of 27. Because disposable income has also increased, there is a demand for such new innovative apps. Hence the food ordering apps have seen growth on the Indian market (Business Insider et al., 2020). In research conducted by Aditya Tribhuvan, 2020, it was found that Swiggy was the most preferred food app and that cash on delivery was the most preferred form of payment as it was considered the safest and most secure way of payment by the respondents. It revealed that people trusted the packaging system, food hygiene, and service quality, which were the factors making people use the food ordering apps. With time, the food industry has to keep up with the customers' tastes, fashion, and ease of access. Technology helps with communication spreading worldwide, and market penetration of the internet which is on the rise has helped the food industry a lot. The increase in the number of smartphones sold has also helped the cause by providing real-time connectivity of mobile apps, thus making food delivery applications popular amongst the public (Mensah, 2019). Particularly in Korea, the competitive dynamics of food delivery services have grown by quite a margin. With the entry of the food delivery services into the market, the total market size was estimated to be 1.7 trillion won and extended to 2 trillion won in 2015 (Lee et al., 2017). During 2019, there was a growth in revenue of 56 percent, reaching 556 million Euros in Italy. It has now become one of the most significant segments in the food industry. In major Italian cities, there was a hike in people using the food delivery apps in 2019 to about 93 percent compared to 2017, which was only 74 percent (Troise et al., 2020). In the Philippines, food is treated as culture. The food delivery apps have also been popularized after their entry into the market in 2010. There was an increase in the number of users of the food delivery apps among people living in the Philippines. A 2018 survey showed that they spend 38.1 percent of their annual income on average, which is further divided into 31 percent spent on eating outside/ordering online and 69 percent of food consumed at home (Flores et al., 2020).

A customer who chooses to be loyal to a particular brand is an asset to the brand. These customers passionately follow the brand, spread positive word of mouth for the brand, and work as influencers. A loyal brand lover customer can only be found if the brand provides pure customer satisfaction, maintains a solid and organic bond, and values the customers (Nawaz et al., 2020). Past researchers have considered brand love a multidimensional construct that integrates both consequences and causes of brand love, including constructs such as brand trust, identification, and commitment (Albert et al., 2013).

3. RESEARCH METHODOLOGY

Due to the cost and time limitations, a convenience sampling technique was used to gather the data. For the current study, the sample consisted of respondents of various age groups scattered across India. Data was gathered from the respondents by using closed-ended and open-ended questionnaires. The questionnaire was based on scaled questions. It was divided into two parts, in which section A included 18 questions related to their reaction to the introduction of new innovative technology on the market and their attitude and opinions toward food apps.

Section B included questions about the demographic factors of the respondents. The respondents were asked to select options from a range of 5-point Likert scale with "strongly disagree" on one end and "strongly agree" on the other end. The Cross-tabulation method was used to analyze the data. This was true for survey one and survey two. Both surveys consisting of the same questionnaire were given to the same people with a gap of six months. The Chi-Square test was also done to check whether we had enough evidence to conclude if the sample population for surveys 1 & 2 was big enough be applied to the entire population or not. Trend analysis was also done to check the variations in the perception of the consumers over the past six months. Another small survey was conducted to analyze brand love for the various FDAs. To analyze the data cross-tabulation, descriptive analysis was used.

4. DATA ANALYSIS

Primary survey analysis was conducted based on 203 responses in the study. The gender proportion of males and females surveyed was 72% and 26%, respectively, and 2% did not prefer to mention their gender. Most of the interviewees in the survey were aged above 50 (40.3%), and 52.2% were employed. Most of the respondents were married (61%) and most of them (56%) fall into above INR. ₹40,000 income group. The main objective of conducting this research was to see if there was any relationship between consumer demographic factors and the five categories of consumers in the theory of Diffusion of Innovation. For analyzing this objective, the cross-tabulation was carried out between the demographic factors and question no. 3. Here, we can see that majority of the people, that is, 48% of people, described themselves as trying the food ordering apps somewhere in the middle, that is, as being amongst the Early Majorities, followed by 22% of Early Adopters, 14% of Late Majorities, 12% of Laggards and at last 4% of Innovators. Most of the Innovators (5 respondents) belonged to the age group 21-30.



It can be observed here that most consumers in the first half of the categories, Innovators and Early Adopters, belonged to the age group of 21 to 30. In other words, 31 out of 72 (43%) people in the age group 21-30 belonged to the first half of the categories. 42 out of 82 (51%) people above 50 categorized themselves as the Early Majority. Most people in the last Late Majority and Laggards groups fell under the age group above 50. That is, 33 out of 82 in the age group above 50 (40%) belonged to the last two

categories. So, to understand whether this data coincided with the actual population, i.e., if there was enough evidence this sample could provide that would prove correct for the entire population? For that, we had to do a Chi-square test. Moreover, we assumed no difference in the target population, i.e., between laggards, late majority, early majority, early adopters, and innovators. Refer to table 1.

Table 1. Categories of Customers

Observed	Laggards	Late Majority	Early Majority	Early Adopters	Innovators	Total
15-20	1	3	0	4	16	24
21-30	1	3	0	8	17	29
31-40	4	35	2	14	42	97
41-50	1	26	5	8	5	45
Above 50	0	5	0	1	2	8
Total	7	72	7	35	82	203

The above table revealed that the X^2 (Chi-Square) Value = 7.53471 (After Excel calculations), which is way greater than 0.05. So, we cannot conclude with the above sample

is representative for the attitude and opinion of the entire population; the evidence is not enough.

Cross Tabs 1.2. Categories of consumers and their perception of convenience

	1 (very little convenient)	2	3	4	5 (highly convenient)	Total
Laggards	3	1	6	10	4	24
Late Majority	0	0	7	13	9	29
Early Majority	2	0	8	49	38	97
Early Adopters	0	0	2	10	33	45
Innovator	0	0	1	1	6	8
Total	5	1	24	83	90	203

As presented in the above table 1.2 the highest number of respondents, i.e., 90 respondents, agreed that the introduction of food ordering apps had made eating food at home highly convenient for them. 6 out of 8 (75%) Innovators rated convenience as 5, meaning it was highly convenient for them. The majority of Early Adopters, that is 33 out of 45 (73%), have rated 5, followed by 49 out of 97 (51%) of the early majority, 13 out of 29 (45%), Late Majority, and ten out of 24 (42%). Laggards gave a rate of 4 to convenience due to the introduction of food ordering apps.



Cross Tabs 1.3. Categories of consumers and their perception of the safety of payment

	1 (Not at all safe)	2	3	4	5 (Very much safe)	Total
Laggards	4	7	8	3	2	24
Late Majority	3	3	9	10	4	29
Early Majority	0	7	27	43	20	97
Early Adopters	0	1	6	23	15	45
Innovator	0	0	1	4	3	8
Total	7	18	51	83	44	203

As shown in the above table 1.3, the majority of four categories, that is, 4 out of 8 Innovators, 23 out of 45 Early Adopters, 43 out of 97 Early Majorities, and 10 out of 29 Late Majorities rated 4, which means the majority of the

respondents did feel safe while paying for their food online; however, 8 out of 24 rated three, followed by 7 out of 24 rating it 2.

Cross Tabs 1.4. Categories of consumers and their perception of the hygiene of the order

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Laggards	1	3	11	8	1	24
Late Majority	0	6	16	7	0	29
Early Majority	1	11	41	38	6	97
Early Adopters	0	6	15	22	2	45
Innovators	0	0	3	4	1	8
Total	2	26	86	79	10	203

As mentioned in the table 1.4, the majority of Laggards and Late Majorities and Early Majority, i.e., 46% of Laggards and 55% of Late Majorities, and 42% of Early Majorities, gave a neutral opinion about the hygiene and safety of the food that they ordered. 49% of Early Adopters and 50% of Innovators agreed with the statement. Overall,

42% gave neutral responses, followed by 39% agreeing with the statement. However, 0.9% strongly disagreed.

After thoroughly analyzing both the surveys (with the 6 months period difference), we analyzed the perception change in both surveys using Trend Analysis.

Cross Tabs 1.5. Categories of consumers and their perception of convenience

	1 (very little convenient)	2	3	4	5 (highly convenient)	Total
Laggards	5	3	6	9	9	32
Late Majority	8	6	12	13	23	62
Early Majority	1	4	10	16	23	54
Early Adopters	2	2	4	11	16	35
Innovator	1	1	3	8	7	20
Total	17	16	35	57	78	203



Table 1.5 presented the category of innovators, 18 out of 35 rated it between 4 and 5. In early adopters, 27 out of 35 gave a positive rating. In the early majority, a majority of 39 out of 54 rated between 4 and 5. In the late majority, a majority of 36 out of 62 rated between 4 and 5, and 18

out of 32 laggards gave a positive rating as well. In all the categories, the majority rated between 4 and 5, making it a total of 135 out of 200 having a positive perception of the convenience provided by the food apps.

Figure 1. Comparison of the perception of convenience (From Cross Tabs 1.2 & Cross Tabs 1.5)

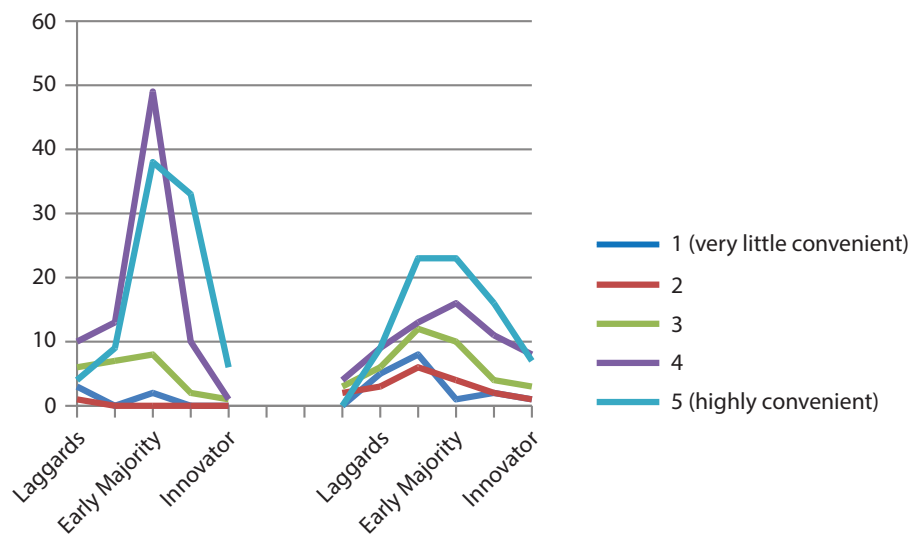


Figure 1 presented the trend analysis; we can easily see a change in the consumers' perception. Even though at the initial part of the pandemic, people seemed to have chosen the online food delivery application as convenient, with passing time the same sample population believed it to be not very convenient or convenience decreased for them.

5. RESULT AND DISCUSSION

It has been observed in the analysis of the first survey that the highest percentage of consumers of food ordering apps fell under the category of Early Majority (48%), of which the highest number of respondents belonged to the age category above 50. Followed by Early Adopters (22%), of which the majority belonged to the age group of 21-30; followed by Late Majority (14%), of which maximum respondents belonged to the age group above 50; followed by Laggards (12%) of which majority were above 50 years of age; followed by Innovators (4%) of which majority belonged to the age group of 21-30. The highest number of respondents were observed to be Early majorities, and the lowest number were the Innovators. Most consumers in all the categories positively responded to their perception of convenience when it came to food ordering apps. On a scale of 1 to 5, most respondents of all the categories rated the safety of online payment via the food ordering apps between 3 to 5; in other words, they responded positively. When it came to the perception of the hygiene of their food order, unlike the previous research questions,

this question had the majority of the respondents rank between Disagree to Agree on a 5-point Likert scale; that is, 86 respondents showed a neutral response, 79 agreeing and 26 disagreeing out of 203 respondents. In the perception of value for money, most respondents ranked between Disagree to Agree in a 5-point Likert scale, with 85 showing a neutral response, followed by 70 agreeing and 35 disagreeing.

Their perception of brand love was also taken into account and then further analyzed with the demographic factors by cross-tabulation to check the relation between them. Where the chosen FDAs mostly got a rating between 3-5 rating points, there were certain things that the respondents wanted to change or improve in their preferred FDA. The suggestions are as follows:

1. More valid discounts,
2. 24/7 service,
3. Lower priced subscription model,
4. Cover wider variety of restaurants,
5. Reduced delivery charge,
6. Better customer support.

According to our research, the COVID-19 pandemic did not significantly impact the sector in terms of consumer behavior. Safety, while it was essential, was of no concern during the inception of the pandemic, but there were significant changes in the perception of the consumers over the course of time, mainly due to a sudden surge



in the number of cases due to the second wave of the coronavirus pandemic. It was observed that the Early Majority significantly contributed to spreading innovation on the market. In the food category, it might be worth noting that the faster the marketeers reach the Early Majority, the greater chance it would have to take off. In other words, in the food sector, marketeers must segment, identify, and reach the Early Majority rather than leaving it to the natural diffusion of innovation. While it might have been hypothesized that younger people would be the ones who would be adopting it quickly, it is to be noted that the older people have taken on this sector perhaps due to convenience for the family and to save them from the burden of cooking continuously. The sector is still open to competition because this has become widely prevalent. The online food delivery market in India is expected to expand at compound annual growth rates of ~30.55% (based on revenue) and ~10.19% (based on the number of users) during the 2020-2024 period to generate a revenue of INR ~1,334.99 Bn and develop a user base of ~300.57 Mn by 2024 (Business Wire, 2020 study). The network effects of more delivery boys, alongside the creation of algorithms for route optimization technologies, have resulted in quicker and value-for-money-based delivery. This has created a flywheel effect for many food delivery players, which continue to play a price war game as they operate on fragile margins in a highly competitive environment. On the consumer end, the "Amplification" of everything remains a sustainable growing market trend, and the food delivery business is riding upon this phenomenon. It is so overriding that contrary to our expectations of safety being a deterrence in the COVID era, convenience triumphed, and the consumers remained undeterred.

6. CONCLUSION

The food ordering apps market in India is going to grow at the rate of 30.55% based on revenue and 10.19% based on the number of users between 2020 and 2024 (Wood, 2020). The COVID-19 pandemic did not initially affect the sector in terms of consumer behavior. However, with time, significant changes in consumers' perception have been observed, primarily due to the sudden surge in cases in the second wave of the coronavirus in India. Brand love has also been studied to tell how a consumer perceives a brand and how he reacts to its elements or changes in the elements. It is observed that the Early Majority has a significant contribution to spreading innovation on the market. In the food category, it might be worth noting that the faster the marketeers reach the Early Majority, the greater chance they would have to take off. In other words, in the food sector, marketeers must segment, identify, and reach the Early Majority rather than leaving it to the natural diffusion of innovation.

While it might have been hypothesized that younger people would be the ones who would be adopting it quickly, it is to be noted that the older people have taken on this sector perhaps due to convenience for the family and to save them from the burden of cooking continuously. The sector is still open to competition because this has become widely prevalent.

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AUTHENTIC LEADERSHIP FOR ORGANISATIONAL ADVANCEMENT IN THE NEW NORMAL

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Abstract:

The pandemic has brought numerous challenges to organisations such as working from home, virtual communication, and management of interpersonal relationships. Considering the notion that people are the lifeblood of the organisations, it is important to understand how and in what ways leaders can support their employees during and after the pandemic. Authentic leadership was shown to be one of the most effective approaches when it comes to supporting employees' psychological and work needs. This paper briefly outlines authentic leadership theory and provides an overview of the studies conducted during the pandemic that show the positive effects of authentic leadership on significant outcomes.

Keywords:

authentic leadership, new normal, pandemic.

1. INTRODUCTION

The COVID-19 pandemic has faced organisations with numerous challenges such as working remotely, relying greatly on technology for communication and managing interpersonal dynamics (Dobrijević & Savić, 2022), (Rayiramkandath, 2021), (Stanković & Radojević, 2022). Some of these newly introduced practices have negatively affected business processes and outcomes (Bonacini, Gallo, & Scicchitano, 2021; Donthu & Gustafsson, 2020). Organisations are, thus, forced to reevaluate their practices in order to secure business continuity in the aftermath of the crisis (Bailey & Breslin, 2021), (Gajić & Đorđević, 2021). Since human resources are the essence of organisations (Ren & Gray, 2009), it is of particular interest to understand how and in what ways leaders can support their employees during and after the pandemic.

Authentic leadership is one of the most successful approaches when it comes to supporting employees' psychological and work needs (Fusco, O'Riordan, & Palmer, 2016; Oh, Cho, & Lim, 2018). Namely, authentic leadership contributes to subordinates' performance and engagement (Joo, Lim, & Kim, 2016a; Lyubovnikova, Legood, Turner, & Mamakouka, 2017). Therefore, authentic leadership seems to be an effective tool for managing employees' needs during crises and for securing business continuity in the new normal. This paper briefly outlines authentic leadership theory and provides an overview of the recently published articles concerning the effects of authentic leadership on various outcomes during the pandemic. Specifically, the studies cover hospitality industry in China (Du, Ma, Lin, & Wang, 2021), public sector in Indonesia (Daraba, Wirawan, Salam, & Faisal, 2021), small and medium-sized businesses in Thailand (Chen & Sriphon, 2022) and aviation sector in Vietnam (Thuy & Van, 2022). Even though positive effects of authentic leadership were known prior to the pandemic, this approach becomes particularly relevant for organisations in the new normal.

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2. AUTHENTIC LEADERSHIP THEORY

Even though there are numerous conceptualisations of authentic leadership, Walumbwa, Avolio, Gardner, Wernsing, and Peterson (2008) view it as a display of leader behaviour rooted in the leader's strong ethics and positive psychological qualities. The authors suggest that authentic leadership entails four intertwined components; internalised moral perspective, self-awareness, relational transparency and balanced processing (Avolio, Walumbwa, & Weber, 2009). The research has demonstrated that these four components constitute authentic leadership (Walumbwa, Christensen, & Hailey, 2011) and that they can be acquired and expanded over time.

Internalised moral perspective refers to the degree of congruence between leaders' behaviours and their own moral standards and personal values. As a self-regulatory process, it allows leaders to control the extent to which they are being influenced by organisational or societal pressures. Thus, authentic leaders' actions are aligned with the morals and beliefs they communicate to others.

Self-awareness entails the extent to which leaders recognise their strengths and weaknesses and the effect that their decisions have on others. It involves reflecting on one's core values, motives, identity, emotions and goals (Northouse, 2021). This process leads to greater-levels of understanding oneself which increases the leader's potential for leading and advancing others (Walumbwa et al., 2011).

Relational transparency embodies the degree to which leaders' feelings and thoughts are perceived to be authentic. This process is self-regulatory as leaders control their openness with others by sharing both positive and negative aspects of themselves (Northouse, 2021).

Balanced processing represents leaders' willingness to pursue, analyse and objectively evaluate evidence before making decisions, even if such perspective contradicts their own positions (Gardner, Avolio, Luthans, May, & Walumbwa, 2005). Authentic leaders are thus open about their own views but are also objective when evaluating others' views.

Authentic leadership theory is appealing since it offers board guidelines to people who aspire to become authentic leaders (Northouse, 2021). Another attractive feature of this theory entails its explicit moral dimension. Indeed, authenticity urges leaders to do what is in the best interest of their followers and society. Importantly, authentic standards and behaviours can be advanced over time, since everyone has the ability to learn how to be authentic. Namely, leaders can be trained to become more aware, transparent, relational and other-directed. Furthermore, Luthans and Avolio (2003) argue that leaders could acquire positive psychological capacities such as optimism, confidence, hope, and resilience which could be used to create positive organisational practices.

Rayiramkandath (2021) views authentic leadership as a mechanism for advancement in the new normal following the pandemic of COVID-19. Indeed, authentic leaders' values tend to provide stability in organisations by enabling employees to deal with stressful and critical situations (Chully, Jose, & Luthufi, 2022; Fox, Davis, & Baucus, 2020). Namely, authentic leaders face crisis situations with clear vision, they adjust to the ongoing change and facilitate reciprocal communication to reach organisational goals (Rayiramkandath, 2021). Furthermore, authentic leaders show empathy and sensitivity towards others' needs (Singh, Sengupta, & Sharma, 2016) which enables them to create positive and gratifying relationships (Hirst, Walumbwa, Aryee, Butarbutar, & Chen, 2016). Reciprocal understanding and trust motivate subordinates to perform to the best of their abilities. Leader's emphasis on open communication makes subordinates feel valued and respected which, in turn, enhances their loyalty to the organisation (Rayiramkandath, 2021). Authentic collaborative approach enhances employee satisfaction and engagement at work (Hsieh & Wang, 2015). Also, authentic leaders encourage positivity and development of their subordinates by placing an emphasis on ethical beliefs and behaviours (Hannah, Avolio, & Walumbwa, 2011). Therefore, authentic leadership is valuable, desired and needed since it enhances the overall morale in the organisation (Walumbwa et al., 2008).

3. AUTHENTIC LEADERSHIP: AN OVERVIEW OF EMPIRICAL STUDIES CONDUCTED DURING THE PANDEMIC

Scholars have recognized that authentic leadership is one of the core approaches for managing organisations in critical periods such as the COVID-19 pandemic and for securing business resilience in the times that follow. Therefore, several studies examined the impact that authentic leadership has on various organisational outcomes across cultures, industries and organisation types including the public sector in Indonesia (Daraba et al., 2021), aviation sector in Vietnam (Thuy & Van, 2022), hospitality industry in China (Du et al., 2021), and small and medium-sized businesses in Thailand (Chen & Sriphon, 2022). This section provides an outline of these studies to highlight the significance and impact of authentic leadership in organisations.

During the pandemic, many organisations had to embrace working from home in order to reduce physical contact among employees. This was the case with many organisations in Indonesia, including governmental institutions. In their study, Daraba et al. (2021) evaluated the impact that authentic leadership, employee gender and psychological capital may have on employees' performance in a public organization under Indonesia's Ministry of Home Affairs while implementing working from home.



Psychological capital is viewed as a constructive phase in one's psychological development that entails self-confidence, resilience, hope and optimism (Luthans, Avey, Avolio, Norman, & Combs, 2006). The gender orientation theory suggests that males and females hold specific opinions regarding the traditional roles that men and women have regarding meeting the demands of family and professional sphere (Bird, Bird, & Scruggs, 1984). The traditional aspect of gender roles implies that women are in charge of taking care of the home and raising the children and while men provide for their family (Mintz & Mahalik, 1996). Even though there are other aspects on gender roles, women tend to be main caregivers and thus are more likely to face work-family conflict (Maume, Sebastian, & Bardo, 2010). The work/family border theory views family and work as two separate realms of life that can affect each other (Clark, 2000). These spheres are divided by borders that come in three forms, namely (1) physical when home and work are in different locations, (2) temporal when office hours are separate from family time, and (3) psychological when strict rules at work differ from family discourse. Interference can occur when participants within the domains communicate and interrupt each other (Clark, 2000). For instance, a manager can interrupt a female employee if he asks her to send a file while she is with her family.

The results based on 116 online surveys showed that the extent to which employees perceive their leader to be authentic could directly impact employees' performance through employees' psychological capital. Employees' gender was shown to significantly moderate the link between authentic leadership and psychological capital as this impact was positive and significant for female employees. In line with the work/family boundary theory and gender role theory, female respondents tend to lose more resources due to work-family conflict compared to their male colleagues. Even though working from home has previously been voluntarily implemented in organisations, it never coincided with the pandemic. This study highlights potential downsides of working from home for male and especially female employees and calls for caution then implementing these practices in public organisations. Additionally, the study highlights that various aspects of authentic leadership have positive impact on employee performance.

Before the pandemic, the aviation sector in Vietnam significantly contributed to the country's economic development. During the pandemic, nevertheless, air transportation in Vietnam suffered severe damage as was the case with the aviation sector worldwide. Indeed, in 2020 and the first half of 2021 aviation enterprises in Vietnam had a 61% decrease in their revenues compared to that of 2019 (Thuy & Van, 2022). For example, Vietnam Airlines reported that in 2020 they had over 100 airplanes

temporarily withdrawn from operation (Thuy & Van, 2022). During these challenging times, authentic leadership was shown to play a vital role in increasing employee engagement and job satisfaction.

Employee work engagement is specified as positive, rewarding work-related attitude that involves dedication, enthusiasm and immersion (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Job satisfaction entails an employee's attitude regarding their job and the value they receive from it (Organ & Ryan, 1995). Additionally, it represents a positive emotional attitude that benefits one's mental and physical health (Judge, Thoresen, Bono, & Patton, 2001).

In the midst of the pandemic, Thuy and Van (2022) conducted a research at an Aviation Operation Centre in order to explore the effect of authentic leadership on employees. The results based on 155 survey responses analysed by partial least square structural equation modelling showed that the four components of authentic leadership (i.e., internalized moral perspective, relational transparency, balanced processing and self-awareness) have a positive effect on employees' engagement while job satisfaction mediated these effects (Thuy & Van, 2022).

The authors provide several recommendations regarding embracing authentic leadership in the aviation enterprises. First, leaders need to be aware of their own, as well as of organisational strengths and weaknesses, and the impact that those may have on employees. Leaders must be aware of their inner self, of their values and yet be able to observe themselves critically. Second, leaders need to root their behaviour in their moral knowledge and beliefs and avoid being controlled by the external pressures. Additionally, they have to be aware of and nourish their moral habits, moral motives, and moral energy and emotions (Thuy & Van, 2022). Third, leaders must enhance their capacity to evaluate objective information and seek others' viewpoints in order to avoid being biased. Leaders need to be fair and strive to implement transparent policies, procedures and methods always showing care and respect for their followers. Finally, leaders should be honest and transparent in their communication with their subordinates. Leaders demonstrate their authenticity by sharing their motivations, tendencies and feelings with their employees.

Another sector that has been negatively affected by the pandemic is the hospitality industry in China (Bergen, 2021). Jobs in hospitality organisations are emotionally demanding and service-intensive (Du et al., 2021). Therefore, it is important for leaders to provide support to their subordinates (Ma & Qu, 2011) and motivate them to provide valuable experiences to their clients (Joo, Lim, & Kim, 2016b). Mark Hoplamazian (2021), the CEO of Hyatt, reported that demonstrating authentic leadership during the pandemic enabled him to effectively manage



the crisis and win trust and support of his colleagues. Close relationships at work develop via social exchanges.

Social exchanges represent a pattern of interactions that generate interdependent commitments provisional on the reciprocity of responses (Blau, 1964). These interdependent transactions tend to create high-quality relationships. On the basis of this conceptualisation, leader-member exchange theory suggests that leaders create relationships of varying quality with their followers (Graen & Schiemann, 1978). High-quality relationships involve mutual trust, respect, affect, intensive communication and exchange of favours (Bauer, Erdogan, Liden, & Wayne, 2006). In contrast, low-quality relationships are rooted in the leader's and subordinate's job description (Bauer et al., 2006).

Building on social exchange theory, Du et al. (2021) proposed and tested a multilevel model that examines conditions under which authentic leadership can impact engagement of employees in hospitality industry in China. Data collected in two waves among frontline employees in luxurious hotels provided 440 valid responses. The study demonstrated that authentic leadership positively impacts work engagement, and that this relationship is mediated by leader-member exchange. Power distance represents the extent to which individuals accept asymmetry in power (Hofstede, 1997). Unlike prior studies which showed the negative impact of power distance on employee behaviour, the study by Du et al. (2021) implies that the link between authentic leadership and respondents' work engagement is strengthened by power distance. Furthermore, Du et al. (2021) explain how the interplay between contextual and personal factors modify the effect of authentic leadership on work engagement among hospitality employees.

Regarding practical implications, Du et al. (2021) note that human resources practices such as recruitment, training, performance evaluation and advancement could consider authentic leadership behaviour and traits. For instance, priority could be given to candidates who demonstrate more authentic features. Considering the notion that authentic leadership could be propagated and developed (Avolio & Gardner, 2005), the authors encourage hospitality organisations to offer leadership training sessions that promote leaders' fairness, transparency and integrity. Furthermore, social activities designed to promote relations between leaders and followers could eventually contribute to staff engagement (Du et al., 2021).

Thailand's small and medium-sized businesses have also faced difficulties related to the COVID-19 pandemic. In addition to the health crisis, economic challenges included interruptions in supply chain which resulted in diminished revenues (Chen & Sriphon, 2022). Interpersonal dynamics in the workplace have also been affected due

to job uncertainty, social distancing and working from home. Chen and Sriphon (2022) conducted a study in which they examined the links between authentic leadership, social exchange relationships, trust and leader behaviour. The data was based on survey responses from 380 supervisors in retail, manufacturing, wholesale, and service industries in Thailand.

The moderating and mediating effects were examined via a regression-based approach (Chen & Sriphon, 2022). The findings suggest that authentic leadership has a positive effect on trust and social exchange relationships, and that trust is directly linked to social exchange relationships. During the pandemic, leader behaviours rooted in ethics, competence, and positive relationships had a positive effect on the links between authentic leadership, trust, and social exchange relationships. Furthermore, authentic leadership and social exchange relationships were positively mediated by trust. The results of the study demonstrate that authentic leadership enhances high-quality social exchange relationships and trust (Chen & Sriphon, 2022). Authentic leaders achieve this by managing change effectively, taking appropriate action, increasing employee work motivation, and by providing support to their followers. In line with the social exchange theory, high-quality leader-follower relationships have a positive effect on other variables. The results of this study highlight the importance of authentic leadership in critical situations which could as well be applied in the aftermath on the pandemic (Chen & Sriphon, 2022).

In view of the fact that continual, disruptive change has become the new normal, and that previous achievements are no guarantee for the future ones, Chen and Sriphon (2022) emphasize that organisations need to abandon traditional command-based routines and embrace authentic leadership. Authentic leaders should coach their followers to embrace and adapt to an ever-evolving organisational settings. Satisfied employees will demonstrate more commitment, engagement, and readiness to face unprecedented challenges and build resilient organisations.



4. CONCLUSION

Several studies conducted across cultures, industries and organisation types have shown positive effects of authentic leadership on employees and organisations during the pandemic such as enhanced job engagement, employee performance, trust and social exchange relationships. Therefore, authentic leadership seems to be a tool for securing organisational progress and business resilience in the new normal especially since it could be acquired and developed over time.

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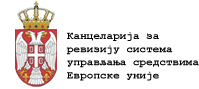
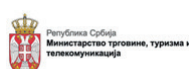


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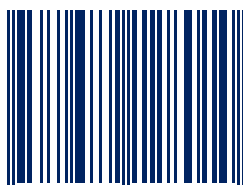
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